



JAANA AUVINEN

A Description of Male Participation
in Prevention of Mother to Child Transmission
of HIV Programmes, as Viewed by Luba-Kasai Men
and Midwives in the Lusaka District of Zambia



ACADEMIC DISSERTATION

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UNIVERSITY OF TAMPERE

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Written with joy and in tears

To my family

Abstract

Jaana Auvinen

A Description of Male Participation in Prevention of Mother to Child Transmission of HIV Programmes, as Viewed by Luba-Kasai Men and Midwives in the Lusaka District of Zambia

This study aims to produce knowledge that contributes to the prevention of mother-to-child transmission (MTCT) of the Human Immunodeficiency Virus (HIV) by describing the methods of male participation, together with the barriers and resources which relate to the PMTCT of HIV in Lusaka Province, Zambia.

The topic is approached from a qualitative perspective. The descriptive study was carried out in three phases, producing five publications and the summary. A literature review explored the field of study. An interview type study design was used to describe male partners' views on their participation in PMTCT of HIV programmes. A comparison between the male partners' knowledge of the National PMTCT of HIV program to the actual program was conducted to discover how involved male partners are in the program. A written essay study was used to describe midwives' views on male participation in PMTCT of HIV programmes, and an identification of similar views between male partners and midwives was undertaken.

Four data sets were produced. The first data set consisting of 31 references, was collected from existent literature. The second consisted of 21 interviews conducted among Luba-Kasai men. A third data set was provided by the Zambian National Protocol Guidelines Integrated PMTCT of HIV (2008) publication. The fourth consisted of 45 written essays collected from midwives in the Lusaka District.

Inductive content analysis was used to analyze data sets one, two and four, and deductive content analysis was used to categorize the publication data.

The literature review revealed that male participation as a concept is undeveloped. It was described in the context of utilizing antenatal care services by accompanying the wife to the clinic, by taking part in couples counseling and testing for HIV, and by discussing reproductive matters with their spouse.

Luba-Kasai men viewed that as male partners, they help prevent MTCT of HIV by using outside sources of support, by maintaining a spiritual outlook on life, and from participating in antenatal care. Another method was to adopt safe lifestyle and family practices. Luba-Kasai men recognized a variety of barriers which hinder male participation in PMTCT of HIV, of internal, external, and combined origins. Accordingly, they named personal resources, health services

and material resources which help them in PMTCT of HIV. A proportion of the male participants were not involved in the national program.

In the midwives' perceptions, a male partner's method of participation was to utilize health care services and to adopt preventive behavior in an intimate relationship. They described barriers and resources relating to male participation in PMTCT of HIV programmes which were dependent on the male partner themselves, on health care provision, and societal elements.

In general, Luba-Kasai men had a positive attitude toward the PMTCT of HIV in antenatal care, and in most cases had a common understanding with midwives on the methods, barriers and resources involved. However, they also had perceptions which differed from the midwives' views but were common in their tribe and to the male sex in general. It is observed that these should have been taken into account when updating the Zambian National PMTCT of HIV program, and in developing midwife education and clinical practice.

Based on the outcomes of these investigations, it is viewed that a clear definition of the concept "male participation", and further research aiming to increase the levels of male participation in PMTCT of HIV programmes is urgently required.

Tiivistelmä

Jaana Auvinen

Miehen osallisuus HI-viruksen äidistä lapseen tartunnan ehkäisemisessä Luba-Kasai-miesten ja kätilöiden näkökulmasta Lusakassa, Sambiassa

Tutkimuksen tavoitteena oli tuottaa tietoa HI-viruksen äidistä lapseen tarttumisen ennaltaehkäisyä varten kuvailemalla miehen osallisuuden menetelmiä, niiden esteitä ja voimavaroja Lusakan hallintoalueella, Sambiassa.

Aihetta lähestyttiin laadullisesta näkökulmasta. Tämä kuvaileva tutkimus toteutettiin kolmivaiheisesti ja se tuotti viisi osajulkaisua ja yhteenveto-osan. Kirjallisuuskatsaus tutustutti aiheeseen. Haastatteluja käytettiin miesten käsitysten kuvaamiseen heidän osallisuudestaan HI-viruksen äidistä lapseen tartunnan ennaltaehkäisemisessä. Vertailu sen, mitä miehet tietävät kansallisesta HI-viruksen äidistä lapseen tartunnan ennaltaehkäisevästä ohjelmasta ja varsinaisen ohjelman (National Protocol Guidelines, Integrated Prevention of Mother-to-Child Transmission of HIV/AIDS, 2008) välillä suoritettiin selvittämään miesten osallisuus ohjelmaan. Esseekirjoitelmia käytettiin kuvaamaan kätilöiden käsityksiä miehen osallisuudesta HI-viruksen äidistä lapseen tartunnan ennaltaehkäisevään ohjelmaan ja miesten sekä kätilöiden samankaltaisten näkemysten tunnistamiseen.

Tutkimuksessa tuotettiin neljä aineistoa. Ensimmäinen aineisto sisälsi 31 aiempaa julkaisua. Toinen koostui 21 haastattelusta, jotka toteutettiin Luba-Kasai-miesten keskuudessa. Kolmas aineisto oli Sambian kansallinen ohjelma HI-viruksen äidistä lapseen tartunnan ehkäisemiseksi (2008) -julkaisu, (National Protocol Guidelines, Integrated Prevention of Mother-to-Child Transmission of HIV/AIDS, 2008). Neljäs käsitti 45 esseekirjoitelmaa, jotka kerättiin Lusakan hallintoalueen kätilöiltä.

Induktiivista sisällönanalyysia käytettiin analysoitaessa aineistoja yksi, kaksi ja neljä ja deduktiivista sisällönanalyysia käytettiin kategorisoitaessa julkaisudataa.

Kirjallisuuskatsaus paljasti, että miehen osallisuus -käsite on kehittymätön. Miehen osallisuus kuvattiin neuvolapalveluiden hyödyntämisen yhteydessä vaimon kanssa klinikalle menemisenä, osallistumisena HIV-neuvontaan ja -testaukseen parina ja puolison kanssa keskustelemisena lasten hankintaan liittyen.

Luba-Kasai-miesten näkemysten mukaan mies auttaa ehkäisemään HI-viruksen tartuntaa äidistä lapseen käyttämällä ulkopuolisia tuen lähteitä kuten hengellistä elämäkatsomusta ja äitiyshuollon palveluja. Toinen menetelmä oli turvallisen elämäntyylin ja käytäntöjen omaksuminen perheessä. Luba-Kasai-miehet tunnistivat monia esteitä, jotka haittaavat miehen osallisuutta HI-viruksen äidistä

lapseen tartunnan ehkäisemisessä. Esteet olivat sisäisiä, ulkoisia ja sellaisia, jotka olivat samanaikaisesti sisäisiä ja ulkoisia. Vastaavasti he tunnistivat henkilökohtaisia voimavaroja, terveyspalveluihin liittyviä ja aineellisia voimavaroja, jotka auttoivat heitä ehkäisemään HI-viruksen tartuntaa äidistä lapseen. Osa miesosallisista ei ollut osallisia kansalliseen ohjelmaan.

Kätilöiden näkemyksissä miehen osallisuuden menetelmä oli terveyspalvelujen hyödyntäminen ja ennaltaehkäisevän käyttäytymisen omaksuminen parisuhteessa. Heidän mielestään miehen osallisuuden esteet ja voimavarat HI-viruksen tartunnan ehkäisemisessä olivat miehestä itsestään riippuvia sekä terveydenhuoltoon ja yhteiskunnan tilaan liittyviä.

Yleisesti Luba-Kasai miehillä oli myönteinen asennoituminen HI-viruksen tartunnan äidistä lapseen ehkäisevää ohjelmaa kohtaan äitiyshuollossa, ja useimmiten heillä oli kätilöiden kanssa yhteinen näkemys miehen osallisuuden menetelmästä, esteistä ja voimavaroista. Heillä oli kuitenkin myös kätilöiden näkemyksistä eroavia näkemyksiä, jotka olivat yhteisiä oman heimon ja yleensä miesten kesken. Nämä pitäisi ottaa huomioon päivitettäessä Sambian kansallista ohjelmaa ja kehitettäessä kätilökoulutusta sekä käytännön työtä.

Tulosten perusteella ehdotetaan miehen osallisuus -käsitteen selkiyttämistä ja lisätutkimusta miehen osallisuuden lisäämiseksi HI-viruksen tartuntaa äidistä lapseen ehkäiseviin ohjelmiin.

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Turku, September 2014

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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ART	Antiretroviral Treatment
ARV	Antiretroviral
AZT	Azidothymidine
CD4	T-helper white blood cell
CRF	Circulating Recombinant Forms
CVCT	Couples' Voluntary Counseling and Testing
DNA	Deoxyribonucleic Acid
DRC	Democratic Republic of the Congo
HAART	Highly Active Antiretroviral Treatment
HIV	Human Immunodeficiency Virus
ICN	International Council of Nurses
MDG	Millennium Development Goals
MTCT	Mother to Child Transmission
PLWHA	People who are living with HIV/AIDS
PMTCT	Prevention of Mother to Child Transmission
RCT	Routine Testing and Counselling
RNA	Ribonucleic Acid
UNAIDS	The joint United Nations Programme on HIV and AIDS
URF	Unique Recombinant Forms
VCT	Voluntary Counselling and Testing
WHO	The World Health Organization

List of original publications

- I Auvinen J, Suominen T, Välimäki M. 2010. Male participation and prevention of human immunodeficiency virus (HIV) mother-to-child transmission in Africa. *Psychology Health & Medicine* 15(3), 288–313.
- II Auvinen J, Kylmä J, Välimäki M, Bweupe M, Suominen T. Views of Luba-Kasai Men, Zambia, about Prevention of HIV Transmission to Babies. *Public Health Nursing*; doi: 10.1111/phn.12153 (Epub ahead of print).
- III Auvinen J, Kylmä J, Välimäki M, Bweupe M, Suominen T. 2013. Barriers and Resources to PMTCT of HIV: Luba-Kasai Men's Perspective in Lusaka, Zambia. *Journal of the Association of Nurses in AIDS Care*, 24(6), 554–568.
- IV Auvinen J, Kylmä J, Välimäki M, Bweupe M, Suominen T. 2014. Luba-Kasai Men and the PMTCT of HIV program in Lusaka. *Health Promotion International*; doi:10.1093/heapro/dat088 (Epub ahead of print).
- V Auvinen J, Kylmä J, Välimäki M, Bweupe, M, Suominen T. 2013. Midwives' perspectives on male participation in PMTCT of HIV and how they can support it in Lusaka, Zambia. *Midwifery*, 30(1), 17–27.

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1 Introduction

Wellbeing, health promotion and disease prevention in children and families (Wilson, Ramelet, & Zuiderduyn 2010; National Institute of Nursing Research 2013), women's health, and the Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS) (International Council of Nurses 2014; Sigma Theta Tau International 2014; World Health Organization (WHO) 2014) have been identified as essential goals for nursing research. The eight United Nations Millennium Development Goals (MDG) aim to improve the level of overall global wellbeing by the year 2015, and the three goals identified are directly related to health and disease and further goals in nursing research; specifically reducing child mortality, improving maternal health and combating HIV/AIDS, malaria and other diseases. In the year 2012, 75 % of the 6.6 million children who died under the age of five, died from ordinary childhood diseases, but 230 000 died of HIV/AIDS. One of the means of reducing child mortality is the prevention and care of HIV/AIDS in the field of maternal health, especially during pregnancy and childbirth. A pregnant women's health is especially threatened if health facilities are not accessible during childbirth. One of the WHO key working areas is to focus research on improving maternal health in pregnancy, during delivery and after. To combat HIV/AIDS, WHO is working with countries, focusing on children and their families. WHO supports Prevention of Mother to Child Transmission (PMTCT) of HIV programs and helps countries to provide the best care for People Living With HIV/AIDS (PLWHA) and their families (WHO 2014).

HIV has no boundaries, thus HIV research is a worldwide multi-disciplinary activity. In Finland, in nursing science, the HIV area has been the topic of academic dissertations (e.g. Kylmä 2000; Serlo 2008), and has been investigated in international research projects (e.g. Välimäki et al. 2008; Suominen et al. 2009; 2010; Välimäki et al. 2010; Mockiene et al. 2011a; 2011b). The studies have dealt with the experiences of PLWHA (Kylmä 2000), university students' (Serlo 2008) and nursing students' attitudes toward HIV/AIDS patients (Suominen et al. 2009), nurses' knowledge and attitudes toward HIV/AIDS (Suominen et al. 2010; Mockiene et al. 2011b), nursing and midwifery students' (Välimäki et al. 2010) and nurses' willingness to provide care for PLWHA (Välimäki et al. 2008;

Mockiene et al. 2011a). This study has been conducted as an international research collaboration between Finnish and Zambian researchers and focuses on the context of the PMTCT of HIV.

The target of the PMTCT of HIV program is to eliminate infant HIV infections by way of screening pregnant women, using antiretroviral treatment (ART) / antiretroviral (ARV) prophylaxis, using safe obstetric and infant feeding practices, and by providing care and support to mothers living with HIV and their families (WHO 2003). The implementations of the PMTCT program in sub-Saharan Africa have been studied by measuring the outcomes of PMTCT impact at the whole country level (Ciaranello et al. 2011; Nigatu & Woldegebriel 2011; Bannink-Mbazzi et al. 2013; van Schalkwyk et al. 2013), at a provincial level (Moodley, Parboosing, & Moodley 2013) and at a city level (Mirkuzie et al. 2010). Although the results of biomedical intervention in PMTCT of HIV have been encouraging, there are still obstacles at health care system, community and individual levels which restrict some pregnant mothers from becoming involved with the program. Male participation in the PMTCT of HIV is considered as one of the missing factors in the overall implementation of the programme (WHO 2011a; Wettstein et al. 2012; Aizire et al. 2013; Gourlay et al. 2013; Dunlap et al. 2014).

Male participation in the PMTCT of HIV has been studied from different perspectives in Sub-Saharan Africa. The data has been collected from women, when studying the definition of male support (Maman et al. 2011), women's attitudes toward male participation in PMTCT of HIV (Nkuoh et al. 2013), disclosure of their HIV status to their partners (Medley et al. 2004; Sagay et al. 2006; Jasseron et al. 2013), and safer sex practices (Bii et al. 2008b). Male views have been sought regarding their involvement in antenatal HIV testing and counseling (Katz et al. 2009; Aarnio et al. 2010; Koo et al. 2013), male disclosure of their HIV status (Katz et al. 2009), male involvement in antenatal care (Theuring et al. 2009), their views on the barriers faced by pregnant woman (Duff et al. 2012) and themselves (Nkuoh et al. 2010; Koo et al. 2013) in taking part in different ANC activities, and also determinants of male involvement in the PMTCT of HIV program (Byamugisha et al. 2010; Larsson et al. 2010; Tweheyo et al. 2010; Falnes et al. 2011; Kwambai et al. 2013; Mohlala et al. 2013). Perceptions of both genders have been reported concerning infant feeding practices (Traoré et al. 2009; Engebretsen et al. 2010), and the experiences related to the PMTCT of HIV (Njunga & Blystad, 2010). The views of health care personnel on male participation in PMTCT of HIV (Theuring et al. 2010) and the promotion of male participation in maternal health care (Kululanga et al. 2011) have been studied. Male participation in Couples Voluntary Counseling and Testing (CVCT) for HIV has been well studied (Farquhar et al. 2004; Kizito et al. 2008; Mlay et al.

2008; Becker et al. 2010; Conkling et al. 2010; Mohlala et al. 2011; Wall et al. 2012; Jones et al. 2013; Musheke et al. 2013). Male antenatal attendance and their engagement in HIV testing (Msuya et al. 2008; Aluisio et al. 2011; Byamugisha et al. 2011; Osoti et al. 2013) either separately or together with their pregnant spouse have also been topics with a wide interest. This male participation research has produced a valuable contribution to the overall body of topic related knowledge, however the male views on the prevention methods which they can use in PMTCT are missing.

The Zambian PMTCT of HIV program is modified to suit the local settings, but follows the WHO guidelines which emphasize a male partner's involvement in the maternal process (WHO 2010). In practice, this means that pregnant women are encouraged to invite their partners to counseling and testing for HIV during pregnancy (WHO 2011b). However, the male partners' levels of attendance at antenatal clinics has been low (e.g. Aluisio et al. 2011; Byamugisha et al. 2011).

International research projects should be integrated with existent national programs and projects (Chiang-Hanisko et al. 2006) and local experts should be consulted in relation to problem identification and solutions (Freshwater et al. 2006). Therefore, in negotiation with a local expert from the Zambian Ministry of Health, the design of this study was clarified and it was decided that the phenomenon of male participation would be approached from the point of view of the men themselves. The PMTCT of HIV program determines the methods for prevention. Understanding the male partners' thoughts on the issue helps in implementing the national program and considering the needs and circumstances of individuals. Additionally, the views of midwives on male participation were investigated and helped to confirm the study results. The Code of Ethics for Nurses (ICN 2014) obligates researchers to consider "human rights, equity, justice, solidarity as the basis for access to care", to pay attention to vulnerable people such as refugees, and to the poverty and health of vulnerable subpopulations. (ICN 2014). A part of the participants of this study belong to the refugee community in Lusaka, Zambia.

Qualitative research adds to the understanding of the phenomenon which is being investigated by emphasizing the individual aspects of the study participants, and by aiming to capture these aspects in a certain context (Polit & Hungler 1995; Holloway & Wheeler 1996). When studying views on a phenomenon whose concept definition lacks consensus (such as male participation), from the point of view of hard-to-reach refugees and midwives, a qualitative approach is a reasonable strategy to adopt.

This study is compilation-based and has three phases (Table1). These are described in this summary and also in the Papers I-V. The summary summarizes the whole research process, and also identifies and describes the comparative views

of Luba-Kasai men and midwives on the participation of men in the PMTCT of HIV program.

The study produces knowledge which may contribute to the prevention of MTCT of HIV by describing male participation to the PMTCT of HIV programme in Lusaka Province, Zambia. The study offers recommendations that relate to the updating of the Zambian national PMTCT of HIV program, to programmes of midwife education, to clinical practice in the field of ANC, and also to the conduct of future research concerning male participation in PMTCT of HIV programmes.

2 The bases of the study

The bases of a study define major concepts (or describe them if they cannot be defined) and summarize previous studies which are related to the subject (Holloway & Wheeler 1996). To examine previous studies, a literature review was conducted. Its purpose, aims and search methodology have been described in Paper I. Further literature searches for the Papers II, III, IV and V, were also conducted during the reporting period of 2009 to 2013. These were undertaken in order to review recent developments concerning male participation in the PMTCT of HIV. Literature searches were also undertaken for the composition of this summary, so as to briefly review the basics of HIV and HIV infection, epidemiological facts about HIV worldwide and in Zambia, the latest information on the methods of male participation in PMTCT of HIV and the related barriers and resources, and also to review information concerning the Luba-Kasai tribe.

This chapter proceeds chronologically from the origin of the problem, to HIV and HIV infection, to PLWHA worldwide, to PMTCT of HIV programs and to male participation in the PMTCT of HIV. The last paragraph provides a description of the Luba-Kasai people themselves.

2.1 HI-virus and HIV infection

A literature search to determine the basics of HIV was conducted using the PubMed® and Medline® databases. In 1981, a new disease was identified among gay men in the United States of America. The disease was called Acquired Immune Deficiency Syndrome (AIDS) since men suffered from varied opportunistic infectious diseases, cancers and other symptoms. Two years later in 1983, the cause of AIDS, a human retrovirus (later named HIV), was discovered in the Pasteur Institute in Paris (Barré-Sinoussi et al. 1983.) The AIDS disease was also identified among blood transfusion patients. The first blood test was developed in 1985, in order to make blood transfusions safe (Montagnier 2010).

The reports of an increasing number of AIDS patients among men and women in Africa proved that the epidemic was heterosexually transmitted. Two main HIV types (HIV I and HIV II) have been identified (Clavel et al. 1986). HIV I is the most prevalent type, and it is subdivided into groups M, N, O and P. The

M-group is further divided into subtypes A-D, F-H and J-K. Subtypes A and F are divided into sub-subtypes A1-A4, F1 and F2. Circulating recombinant forms (CRF) and unique recombinant forms (URF) are included in group M of the HIV I type. The subtypes of HIV II are divided into eight known groups, A to H (Brun-Vézinet & Charpentier 2013.) Subjects could be co-infected by different types of the HIV virus if they have undergone several exposures to the infection (Montagnier 2010).

The HI-virus has three main parts: The outermost is the virion envelope which surrounds the matrix protein. The virion envelope has membrane proteins, glycoproteins gp120 and gp41, which facilitate viral entry and fusion to a T-helper white blood cell (CD4), once the virus has entered into a body (Barré-Sinoussi 1996). The virus capsid is located in the core of the virus.

The HI-virus can be transmitted through unprotected sexual contact, blood (sharing needles, other injecting equipment, or blood transfusion), and from mother to child (Levy 2009). It infects mainly the CD4 cells, but also other cells such as macrophages and dendritic cells (Levy 2006). One of the virus capsid enzymes, reverse transcriptase, causes the host cell to copy viral RNA into viral DNA, which then integrates into the DNA of the host cell. This integrated viral DNA produces new viral RNA and proteins for the new HI-viruses. The HI-virus causes infection which then slowly damages the immune system. Various opportunistic infections and cancers appear depending on the stage of the disease. The infection progresses individually, and is influenced by other, partly unclear factors (Montagnier 2010).

In 1987, once the existence of reverse transcriptase became known, the first use of azidothymidine (AZT) as an antiretroviral drug was implemented. However, this treatment with a single drug allowed the virus to develop mutations, leading to a resistance to AZT. AZT treatment did not significantly improve the patients' lifetime prognosis, but decreased the occurrence of HIV perinatal transmissions (Montagnier 2010). Finally in the mid 1990s, a combination of three different antiretrovirals, collectively known as Highly Active Antiretroviral Therapy (HAART), offered an effective treatment for HIV infected people (Barré-Sinoussi 2010; Montagnier 2010).

The phenomenon of HIV/AIDS is relatively new. The HI-virus enters the human genes, thus an effective cure seems to be difficult. Due to its genetic variety and extensive heterogeneity, the development of an effective HIV vaccine is challenging (Sanchez et al. 2014). The roll-out of HAART (Duff et al. 2010; Kumwenda et al. 2011) and an increasing use of ARV for the PMTCT (Ikechebelu et al. 2011; Peltzer et al. 2011) – whilst challenging, have already saved millions of lives in resource-limited settings.

2.2 People living with HIV and AIDS (PLWHA)

The information retrieval for this and the next paragraph (2.3) was achieved using the public internet and focuses on publications of the Joint United Nations Programme on HIV and AIDS (UNAIDS), the World Health Organization, and the Zambian Government.

In year 2012, an estimated 35.3 million people (sources range between 32.2–38.8 million) were living with HIV and an estimated 2.3 million of these (1.9–2.7) were new infections. The number of AIDS related deaths that year was approximately 1.6 million (1.4–1.9). Both the number of new infections and the number of deaths have decreased, continuing the progress towards achieving the Millennium Development Goals by the year 2015. Most of the new HIV infections (70%) occur in sub-Saharan Africa, but this incidence has declined by 34% since 2001. Zambia is one of the countries where HIV incidence has declined more than 50% since 2001 (UNAIDS 2013.) In 2013, the estimated number of people living with HIV in Zambia was 1 million, and the estimation of new infections of infants and children aged 0 to 4 was 12 000. Most of the HIV transmission in Zambia is caused by heterosexual contact and by MTCT (Zambia Country Report 2012).

2.3 Prevention of Mother to Child Transmission (PMTCT) of HIV programs

The four-pronged strategy (UNAIDS 2011) is a framework for the elimination of new HIV infections among infants and children, and for keeping their mothers alive to prevent orphanhood. The framework forms a foundation for the Zambian national plans. The four prongs define the target populations which are women without HIV, women living with HIV, their children, and their families. The prongs determine which services will be offered to the target populations. The reproductive health care services including ANC, postpartum, postnatal care and HIV service-delivery points are for the prevention of HIV among women of reproductive age (Prong 1). Family planning services are for preventing unintended pregnancies among women living with HIV and also their families (Prong 2). ANC services with HIV testing and counseling and access to ARV drugs during the maternal process are for the PMTCT of HIV among pregnant women living with HIV (Prong 3). The services which offer HIV care, treatment and support families living with HIV fall under Prong 4 (UNAIDS 2011).

Zambia launched its PMTCT of HIV initiative as a three-year pilot program in 1999 (Ministry of Health, Central Statistical Office, & Macro International Inc. 2006). In 2003, the first national PMTCT of HIV program was initiated

(Ministry of Health 2003). In 2007, an updated version was published (Ministry of Health 2007), followed by another in 2008 (Ministry of Health 2008). The latest updated version (Ministry of Health 2010) was released two years later. There has been a remarkable expansion in the release of prophylactic medication regimens to mothers and babies between the years 1999 and 2010. The current policy recommends that all pregnant women living with HIV, Zambian citizens, and also refugees are provided with free ARV drugs for life, regardless of their CD4 count (Ministry of Health 2013). It also guides health care workers to follow a family-centered approach in testing and counseling for HIV, as well as in care and treatment. Community healthcare providers are expected to help with male involvement in PMTCT (Ministry of Health 2010).

2.4 Male participation as a concept

There are a variety of expressions which are used to describe the concept of a male partner and the PMTCT of HIV. However, there is no consensus about which term would provide a uniform cognitive meaning. For example the latest National Protocol Guidelines refers to a male partner with the terms “male involvement in PMTCT”, “sexual partner”, “couple counseling” and “parents”. It uses the term “family-centred approach” which refers to a larger context that may or may not include male partners (Ministry of Health 2010). Male involvement or participation might be seen as taking part in CVCT. Consequently, a male partner who is not capable of taking part in this activity due to individual reasons, may be considered as irresponsible. However, his behavior could have been more supportive than those who attended couples’ counselling. In this study, “male participation” is the term chosen to best represent the target population and their involvement.

2.5 Male participation in prevention of Mother to Child Transmission (PMTCT) of HIV in previous studies

The literature search for this section was conducted using the PubMed® search engine and the Medline® and Cinahl (EBSCO) databases. It was limited from 2004 to 2013, and included studies published in the English language, with both abstracts and full texts. The search terms were “male and mtct and hiv”; “male and antenatal and hiv and barriers”; “pmtct and male and hiv” and “male participation and pmtct and hiv”. The Pubmed (Medline) search produced 365 citations and Cinahl (EBSCO) 63 citations (“pmtct and male and hiv” PubMed 206; Cinahl 34; “male and mtct and hiv”; PubMed 94, Cinahl 11; “male and antenatal and hiv and barriers” : PubMed 37; Cinahl 10; “male participation and pmtct and

hiv” PubMed 28 ; Cinahl 8). The number of papers available after duplicates were eliminated was 110. These were screened, and review-papers and papers which were not relevant for the purpose of the literature search were excluded. Seventy-eight (78) full-texts and 5 abstracts of empirical studies conducted in sub-Saharan Africa and published in peer-reviewed journals were included.

The analysis of retrieved literature yielded three different areas regarding male participation in the context of PMTCT of HIV - the means of male participation in PMTCT of HIV, the barriers to their participation, and the issues of resources which support such participation.

2.5.1 Means of male participation in PMTCT of HIV

The male partner’s attendance at the antenatal clinic with his pregnant spouse, for different reasons, has been considered as providing a mean for male participation (Katz et al. 2009a; Aluisio et al. 2010; Nkuoh et al. 2010; Tweheyo et al. 2010; Mohlala et al. 2011; Koo et al. 2013a). Issues such as the male partner’s supportive attitude to a pregnant spouse’s disclosure of their HIV+ status (Sagay et al. 2006; Aarnio et al. 2009; Desgrées-du-Loû et al. 2009; Madiba & Letsoalo 2013; Musheke et al. 2013), encouraging a pregnant spouse to take part in different antenatal care activities for PMTCT (Peltzer et al. 2007; Mlay et al. 2008; Aarnio et al. 2009; Byakika-Tusiime et al. 2009; Delvaux et al. 2009; Desgrées-du-Loû et al. 2009; Montgomery et al. 2009; Kasenga et al. 2010; Mbonye et al. 2010; Oladokun et al. 2010; Peltzer et al. 2010; Gilles et al. 2011; Maman et al. 2011; Kalembo et al. 2013; Koo et al. 2013a; Kwambai et al. 2013; Villar-Loubet et al. 2013) and a generally loving and caring attitude toward an HIV positive spouse (Peltzer et al. 2007; Mlay et al. 2008; Nassali et al. 2009; Nkuoh et al. 2010; Maman et al. 2011; Musheke et al. 2013) have all been considered as a mean of male participation. Financial provision for pregnant and nursing mothers (Peltzer et al. 2007; Maman et al. 2011) and a commitment to safe sexual practices (Aarnio et al. 2009; Montgomery et al. 2009; Mohlala et al. 2011; Kalembo et al. 2013) are considered as the male partner’s means for direct involvement in the PMTCT of HIV.

2.5.2 Barriers to male participation in PMTCT of HIV

Several barriers to a male participation were found in the literature. The male partner related barriers included their unawareness of PMTCT issues (Medley et al. 2004; Harms et al. 2005; Nuwagaba-Biribonwoha et al. 2007; Aarnio et al. 2009; Theuring et al. 2009; Duff et al. 2010; Larsson et al. 2010; Duff et al. 2012;

Jasseron et al. 2013; Koo et al. 2013a; Lubega et al. 2013), their negative attitude toward PMTCT program activities (Msuya et al. 2006; Kizito et al. 2008; Aarnio et al. 2009; Chinkonde et al. 2009; Theuring et al. 2009; Madiba & Letsoalo 2013; Hagey et al. 2014) indifference (Sagay et al. 2006) and fears to be tested for HIV (Aarnio et al. 2009; Koo et al. 2013a; Mbonye et al. 2010; Theuring et al. 2009). Other issues that were presented included a lack of time to attend the antenatal clinic with his spouse (Theuring et al. 2009; Maman et al. 2011; Koo et al. 2013a; Nkuoh et al. 2013), and the male partner's risky sex practices which add to the risk of HIV transmission and threaten the health of the mother and baby (Adejuyigbe et al. 2004; Chinkonde et al. 2009; Moses et al. 2009).

Female related barriers to male participation included the following: if a female partner was unaware of her male partner's HIV status (Katz et al. 2009b), if she feared to be tested herself (Mbonye et al. 2010), and if she feared her male partner's reactions regarding PMTCT (Medley et al. 2004; Bajunirwe & Muzoora, 2005; Kiarie et al. 2006; Sagay et al. 2006; Kebaabetswe, 2007; Byakika-Tusiime et al. 2009; Desgrées-du-Loû et al. 2009; Tonwe-Gold et al. 2009; Byamugisha et al. 2010a; Kasenga et al. 2010; Maman et al. 2011; Turan et al. 2011; Mataya et al. 2013; Musheke et al. 2013). Problems in an intimate relationship (Msuya et al. 2006; Larsson et al. 2010; Nkuoh et al. 2010; Nkuoh et al. 2013) and stigma (Oladokun et al. 2010; Turan et al. 2011; Duff et al. 2012; Larsson et al. 2012; Lubega et al. 2013) also posed barriers to male participation.

Strategic barriers are noted, and refer to national PMTCT programs which have not been considered to be supportive of male participation (Msuya et al. 2008; Conkling et al. 2010; Koo et al. 2013b). At an operational level, ANC facilities were not perceived as being male-friendly (Larsson et al. 2012; Koo et al. 2013b; Kwambai et al. 2013) and the venues of care were often centred upon urban areas (Tweheyo et al. 2010), which presents a barrier to participation, especially in rural areas. Clinical practices were also not always perceived as being male-friendly (Nuwagaba-Biribonwoha et al. 2007; Mbonye et al. 2010; Theuring et al. 2010; Duff et al. 2012; Koo et al. 2013b; Musheke et al. 2013).

Cultural beliefs and customs present views on gender roles and infant feeding, and may pose barriers to male participation to PMTCT of HIV. Gender roles may define that ANC is a women's responsibility (Mlay et al. 2008; Aarnio et al. 2009; Byamugisha et al. 2010a; Nkuoh et al. 2010; Falnes et al. 2011; Mohlala et al. 2012; Kwambai et al. 2013) and cast a male partner as a provider (Nkuoh et al. 2010; Kwambai et al. 2013). In paternalist societal constructs, the women has no authority to request male partners attend the clinic (Falnes et al. 2011; Larsson et al. 2012) and traditional attitudes in communities do not support the change of roles (Njunga & Blystad, 2010; Nkuoh et al. 2010; Nkuoh et al. 2013). There is also a pressure to feed a baby in a traditional way, which runs contrary to the

PMTCT program (Moses et al. 2009; Cames et al. 2010; Engebretsen et al. 2010; Mataya et al. 2013). This poses a challenge to male participation, when considering the implementation of feeding guidelines.

Poverty in this context manifests itself as poor health systems (Byamugisha et al. 2010a; Maman et al. 2011) and in poor families (Byamugisha^a et al. 2010; Lubega et al. 2013), both of which are barriers to male participation. Already stretched health systems are struggling with multiple issues, at same time as families struggle with everyday living.

2.5.3 Resources for male participation in PMTCT of HIV

Despite the scarcity of resources, several items that promote male participation have been described in the previous literature. A mutual confidence within intimate relationships encourages the pregnant mother's disclosure of their HIV positive status to their male partner (Brou et al. 2007; Bii et al. 2008a; 2008b; Koo et al. 2013) and engenders their male partner's supportive attitude towards antenatal care (Bajunirwe & Muzoora, 2005). Peer support among men has also been described as resource to male participation (Larsson et al. 2010; Kululanga et al. 2011; Koo et al. 2013a).

Strategic resources refer to the governments' measures to train their health care personnel (Sarker et al. 2009; Larsson et al. 2010; Madiba & Letsoalo, 2013) and community health care workers (Uwimana et al. 2012) to consider the male partners' needs, and reflects the non-governmental, international and national study interventions and programs for developing good practice (Byakika-Tusiime et al. 2009; Desgrées-du-Loû et al. 2009; Koo et al. 2010a; Montgomery et al. 2011; Bannink-Mbazzi et al. 2013). A general accessibility to health facilities (Maman et al. 2011) can also be considered as a strategic resource. Improved levels of education among the population may give an increased access to problem solving skills (Byamugisha et al. 2010a), and improved gender equality also presents an opportunity for increased human resources (Maman et al. 2011).

At an operational level, ANC clinics are the main agents in the implementation of national PMTCT of HIV programs, where male participation is encouraged (Nuwagaba-Biribonwoha et al. 2007; Sarker et al. 2009). Antenatal clinics invite and admit male partners (Aarnio et al. 2009; Aluisio et al. 2011; Byamugisha et al. 2011; Kululanga et al. 2011; Mohlala et al. 2011; Koo et al. 2013a; Nyondo et al. 2013), they offer different types of HIV testing procedures to a male partner at different times and during different phases of the maternal process (Farquhar et al. 2004; Homsy et al. 2006; Mlay et al. 2008; Desgrées-du-Loû et al. 2009; Becker et al. 2010; Byamugisha et al. 2010b; Conkling et al. 2010;

Reece et al. 2010; Aluisio et al. 2011; Diketemena et al. 2011; Jones et al. 2013). Health care workers employ different male-friendly approaches (Chabikuli et al. 2009; Tonwe-Gold et al. 2009; Larsson et al. 2010; Nyondo et al. 2013; Osoti et al. 2013), and also take action to create male-friendly facilities (Larsson et al. 2010; Reece et al. 2010).

Communities may influence male partners to participate in the PMTCT of HIV. Different community mobilization strategies have been discovered to increase the place of communities as a resource (Santmyire & Jamison, 2006; Moses et al. 2009; Larsson et al. 2010; Reece et al. 2010; Kululunga et al. 2011; Wall et al. 2012; Nyondo et al. 2013).

2.6 Luba and Luba-Kasai People

The literature search for this paragraph was conducted using the public internet, the e-resources of the Nelli Portal and the Melinda database. The search terms used were “Luba-Kasai”, “Luba People”, “Luba, Zambia” and “Luba, Democratic Republic of the Congo (DRC)”.

The Luba People are one of the ethnic groups of DRC, formerly known as Zaire. About 4 to 5 million Luba people are located in south-eastern part of the country, in the former Kasai and Katanga (Shaba) Provinces. The Luba’s social system is patrilineal and they speak Luba (Chiluba) which belongs to the Bantu group of languages, the main language group of sub-Saharan Africa (Olson 1996; Encyclopaedia Britannica 2006; Kisangani & Bobb 2009.) The Luba have traditionally dominated the other groups around them and are considered to be an ethnocentric and independent people (Olson 1996), maintaining a well-developed oral tradition (Encyclopaedia Britannica 2006). The Luba Kingdom flourished in the sixteenth and seventeenth centuries when they traded in slaves and ivory. In the late nineteenth century, the Luba Kingdom declined under the pressure of the emerging Chokwe Empire. During Belgian colonial era of 1908-1960, Lubas had both educational and professional connections with their host (Nugent et al. 2007; Kisangani & Bobb 2009) and came under Christian influence. Today, the Luba people mainly work in agriculture and fishing, and are active within the mining and industrial economy (Olson 1996).

Lubas can be divided into the three subgroups, the Luba-Shaba, the Songwe and the Luba-Kasai. The Luba-Kasais settled in the southern savannas of the DRC (Olson 1996; Kisangani & Bobb 2009), and have been involved in at least two political conflicts in the 20th century. The first ethnic cleansing was 1959-60 when they were persecuted by the Lulus, and a second took place in 1992-93 when hundreds of thousands of Luba-Kasai were exiled from Katanga (Shaba)

(Nugent et al. 2007; Kisangani & Bobb 2009). Consequently, many of them crossed over to Zambia.

An essential part of the traditional Luba religion is the faith in the spirits of dead people, and the religion is intertwined with everyday life, influencing customs and beliefs (Burton 1961.) Different rites of passage occur during the lifespan, and certain objects like masks, herbal remedies, dress and rules are inseparable parts of the initiations and rituals they practice (Burton 1961; Petridis 2001).

3 The aim and purpose of the study, and research questions

The overall aim of this study was to produce knowledge that may assist in the prevention of MTCT of HIV, by describing male participation in the PMTCT of HIV programme in Lusaka province, Zambia. In this three phased study, the purpose of Phase I was to explore the methods which were chosen in studies investigating male participation in PMTCT of HIV, and secondly, how male participation was described in the context of PMTCT of HIV. Phase II looked to describe male partners' views on male participation, its methods, barriers and resources. In Phase III, the purpose was to describe midwives' views on male participation in the PMTCT of HIV and the methods that could be used to improve it. The summary also looks to identify the common and differing views of Luba-Kasai men and midwives on this mentioned topic.

The research questions were as follows:

1. What are the methods of male participation in PMTCT of HIV? (Papers I, II and V)
2. What are the barriers to male participation in PMTCT of HIV? (Papers III, IV and V)
3. What are the resources for male participation in PMTCT of HIV? (Papers III, IV and V)

4 Methodology

This chapter describes the philosophical bases of the study, sampling methods, methods of data collection, study participants, the process of analysis and the ethical aspects of the study. The tables and figures which relate to these aspects are placed at the end of this chapter.

4.1 Methodological approach

Male participation in the PMTCT of HIV from both male partner and provider perspectives in Zambia, is not a widely studied area, and the concept of 'male participation' is not well defined. The research questions and overall aims of the study concern subjective opinions and attitudes about a sensitive topic that is both context and culturally dependent. Therefore, a qualitative approach was chosen (Burns & Grove 2005; Broussard 2006). In precise terms, the method used in this study is that of a qualitative description which follows the general tenets of naturalistic inquiry (Sandelowski 2000; 2010). The study is based on the concepts that: 1) the nature of reality is multiple and complex and can be studied holistically, 2) reality is conveyed to a researcher through their own mind, thus interpretations cannot fully removed, 3) the findings of the study will not be generalized because they are context bound, 4) the causes and effects that emerge cannot be put in chronological order, thus causal explanations are not possible, and 5) the research is value bound, and the researcher's values that are inherent in the context, will thus have an effect on the research process (Lincoln & Guba 1985; Patton 1990; Cohen & Crabtree 2008).

4.2 Settings and samples

A narrative literature review brings small pieces of knowledge together into a readable form and offers a broad view of the topic (Green et al. 2006). In **Phase I**, an English language literature search was carried out using PsycINFO[®], PubMed[®] and SocINDEX databases and electronic journals (Paper I) for the period 1998-2008. The searches were limited to studies conducted in Africa, which follows the WHO's portrayal of HIV/AIDS prevalent regions.

The databases and electronic journals gave altogether 773 articles, some of which appeared more than once. First, the titles, abstracts and sub-headings were read through to ensure that the articles were relevant to the topic under examination. Those with inappropriate topics, or that were editorials or reviews were excluded. In purposive sampling the aim is to choose participants who are suspected to know the most about the phenomenon which is being studied (Patton 1990; Sandelowski 1995; Coyne 1997). Thus, 31 sources were selected which were published in peer-reviewed nursing journals, and formed quantitative, qualitative or mixed-method studies, and were linked to male participation in the context of PMTCT of HIV in sub-Saharan Africa.

Phase II was conducted in the suburban areas of Lusaka in Zambia (Papers II–IV). Zambia, (officially the Republic of Zambia), is located in Southern Africa and has a population of 13 million people (Central Statistical Office Zambia, 2011). The country is divided into nine Provinces and these are further divided into 72 Districts. The population consists of about 72 ethnic groups. Zambia's official language is English and the main vernacular languages are Bemba, Nyanja, Tonga, Lozi, Kaonde, Luvale and Lunda (Central Statistical Office Zambia 2012.) 36% of the population is urbanized. The annual number of births is 600 000, the under-five mortality rate is 111 per thousand live births, and the life expectancy at birth is 49 years. The population's annual growth rate is 3,1%. Zambia has struggled with its economy and consequently, 64% of the population lives below the international poverty line of 1.25 USD per day (Unicef 2012).

The capital city of Lusaka is located in the Lusaka District, in Lusaka Province. Estimates of the number of residents varies from 1,413,000 (UNdata 2012) to 1,740,000 (GeoHive 2012). There are refugees and asylum-seekers in Lusaka's suburban areas, mainly from Angola, Burundi, DRC, Rwanda and Somalia. In 2012, the national number of refugees and asylum-seekers from DRC was 12,130 and there are an estimated 10,000 refugees living in urban areas who are not registered (UNHCR 2012). Consequently, it is difficult to assess the number of Congolese refugees (to whom the Luba-Kasai people belong to), living in the city of Lusaka.

Before actual data collection, a pilot study (Otmar et al. 2011) was conducted by interviewing one person who met the inclusion criteria. These were: first, being a male partner to a pregnant woman or having suckling baby. The second criteria for inclusion was to be a male representative of the Luba-Kasai. The pilot study provided an opportunity to verify that the interview questions were relevant and to finalize the interview technique. The actual data was collected from a purposive sample of 21 male partners (Papers II–IV).

The data source used in **Phase II** consisted of one publication from the Zambian Ministry of Health (2008).

Phase III was conducted in the 25 Lusaka District antenatal clinics (Paper V). Public health facilities in Zambia consist of three levels: hospitals, health centers and health posts (Ministry of Health 2012). In 2008, in the facilities that offered antenatal services, the estimated national number of working midwives was 2050 (Tjoa et al. 2010), of which 242 were located in the Lusaka District. An estimated 150/242 were working actively when **Phase III** was conducted. At the time the data was collected, registered midwives had four years professional education and enrolled midwives had three years professional education. The antenatal care provision implements the *Zambian National Program of PMTCT of HIV* (National Protocol Guidelines 2008), in which midwives are guided to invite male partners to be tested for HIV.

The data was collected with a purposive sample of midwives (n=45) (Paper V). There were 25 antenatal clinics in the Lusaka District, 14 of which had no delivery facilities. The aim was to capture the views from all 25 clinics to gain phenomenal variation (Sandelowski 1995; Coyne 1997), thus the number of the participants was determined by the number of the midwives working in a certain clinic (Paper V, Table 1). The inclusion criteria for the sample were being a registered or enrolled midwife, and exclusion criteria were being a nurse or something other than a midwife. A pilot study was conducted by having three midwives from one clinic to write answers to open-ended questions and to provide comments on the topics raised. The process and findings of the pilot study did not give reason to make any changes to the question structure or format.

4.3 Data collection methods and participants

The progression of this three-phased qualitative study is summarized in Table 1. In **Phase I** (Paper I), the keywords “Africa” and “HIV” were used in every search, so limiting retrievals to the African continent. Other keywords were “male”, “partner”, “men”, “participation”, “antenatal”, “pregnant”, “disclosure”, “testing”, “PMTCT”, “vertical”, “violence”, “intimacy”, “domestic”, “alcohol” and “abuse”. These were used in different combinations and the declining terms were cut to reach all references regardless of the phrasing (Green et al. 2006), e.g. pregn*.

31 quantitative, qualitative and mixed-method studies were retrieved, focusing on exploring women’s utilization of PMCT programs and their disclosure of their HIV status to a male partner. In the studies, male participation was presented as one factor which influenced the topic. The participants and informants of the studies were mostly women and the studies mainly produced women’s views on male participation.

In **Phase II**, data was collected among Luba-Kasai men (n=21) using six semi-structured (Papers II and IV) and two open-ended (Paper III) research questions.

It may be helpful at this stage to clarify why Luba-Kasai men were specifically chosen to be participants. I was living as a foreigner, as a representative of the Western world, in a non-Western country. As I became familiar with many people, I came to appreciate that tribal background is an extremely important facet in the composition of identity in the region. The members of a certain tribe share both their mother tongue and their beliefs and myths, and so I paid attention to the Luba people whose tribal unity seemed to be highly prominent. I understood that a part of this unity was caused by their refugee background, but from a practical perspective, I also understood that by choosing Luba men, it was possible to reach informants, and to get representative data and knowledge about male participation in the context of PMTCT of HIV, as viewed by a group of men who share the same life and background situation instead of having a variety of tribal backgrounds and languages (Leininger 1985). As a foreign immigrant however, it would not be possible to reach participants without a proper contact person. The criteria for the contact person were as follows: they should be male, representative of the Luba-Kasai, capable of speaking and writing English, Luba and Nyanja languages, be socially skilled and trustworthy. The selected contact person was inducted to the procedures of qualitative inquiry and specifically to the interview process. As initial tasks, the contact person translated the cover letter in Luba and Nyanja languages, contacted possible participants, and settled the time and place of the interviews.

The interviews were carried out in the participants' homes or the researcher's vehicle and one took place in a bar. The field notes were compiled outside the interview period (Lincoln & Guba 1985). The informed consent and background information sheets were filled out. Individual interviews were recorded in either English (2), Nyanja (1) or Luba (18) languages using an Olympus VN3100PC Digital Voice Recorder. "Who" and "what" are typical questions in a qualitative descriptive study when investigating events or experiences, but in the interviews, "how" something was done was also asked (Sandelowsky 2000). In practice, the researcher posed a question which the contact person then translated to the participant. Their responses were then translated to the researcher who continued by asking for clarification or by deepening the line of enquiry. At the end of each interview, the National Program of PMTCT of HIV was presented, and the participant was encouraged to be tested for HIV and to inform other men in the community about the program.

The thoughts and opinions which participants expressed (regardless of the suburban area where the interviews were conducted), started to recur in the 15th interview. "Data saturation occurs when additional sampling provides no new information" (Burns & Grove 2005), but at the time of the 15th interview, it was not known if the next ones would produce any new information. To capture pos-

sible new thoughts, 21 interviews were conducted. Although these six additional interviews did not reveal any new remarkable data, their repetition did serve to strengthen the reliability of information which had been previously obtained (Morse 1991). The recorded interviews were transferred to a computer using the Digital Wave Player program. The duration of the main interviews varied between 22 and 53 minutes. Verbatim transcription of the interview data was done as soon as possible using Microsoft Word software, and was completed in the presence of the contact person. The verbatim transcription of the interview data comprised 484 reduced sentences.

Table 1 in Paper II presents the participants' background information, based on their own stories.

Another dataset of **Phase II** was the *Zambian National Protocol Guidelines Integrated PMTCT of HIV* (Ministry of Health 2008).

Phase III aimed to increase the value of the previous findings, and the study expanded to antenatal clinics, where midwives (n=45) were requested to answer the same questions as the men had answered previously (Paper V). Triangulation is a method where different data sources, methods, researchers or theories are combined in the same study (Knalf & Breitmayer 1991; Holloway & Wheeler 1996; Burns & Grove 2005). This study included two types of triangulation: data triangulation and methodological triangulation (within a single paradigm). The data sets were collected from different groups of sources, from previous literature, male partners, midwives and from the Ministry of Health, in different settings and at different times. In data triangulation, analyzing datasets from multiple data sources may strengthen the results (Burns & Grove 2005; Cohen & Crabtree 2008). The methodological triangulation was approached by collecting different data sets: study reports, interviews, writings and existing publications (Table 1).

The data was collected by distributing 50 forms with ten open ended questions to midwives working in the 25 Lusaka District antenatal clinics. Midwives were presumed to be highly aware of the PMTCT of HIV because of the number of HIV infected mothers in the Lusaka District, with whom the midwives have contact hours, and also by virtue of undergoing training for the implementation of the renewed National Protocol Guidelines of PMTCT of HIV/AIDS (Paper V, Table 2). The forms were delivered to the persons in charge and the dates for collecting the forms were discussed. Midwives were asked to give their opinions about male participation in the PMTCT of HIV, and also how midwives might improve this participation in clinical practice. Forty-seven of the 50 forms were returned. Two were empty, so 45 forms were eligible for analysis. The answers were transcribed using Microsoft Word software and clustered according to the research question number. This resulted in 755 reduced sentences. The participants' background information is presented in Paper V, Table 2.

The detailed descriptions of the four data sources are as follows. In **Phase I**, Paper I presents the settings, authors, study purpose, populations, study design, methods and descriptions of male participation in Table 1. In **Phase II**, the background demographic information (age, marital status, number of children, level of education, employment, religion) and HIV related issues of Luba-Kasai men (n=21) is described in Paper II – Table 1, in Paper III – Table 1 and in Paper IV. The composition of the publication of the Zambian Ministry of Health is presented in Paper IV. In **Phase III**, in midwives (n=45): the demographic information (age, marital status, number of children, educational level), and background knowledge (years of work experience, time given to the client, training received regarding the renewed National Protocol Guidelines of PMTCT of HIV/AIDS, and if they have had an HIV test) is described in Paper V – Table 2.

4.4 Data analysis

The qualitative data analysis used in this study was accomplished by using content analysis (Miles & Huberman 1994a; Miles & Huberman 1994b; Hsieh & Shannon 2005). Content analysis is a qualitative analysis technique where the theoretically important words and expressions of the data are classified into categories (Patton 1990; Burns & Grove 2005). It is based on logic reasoning where qualitative data is disassembled into small pieces, conceptualized and finally recombined to form a logical entity (Straus & Corbin 1990). Content analysis may be conducted inductively where the reasoning moves from specific observations to more general rules; deductively where reasoning moves from a general principle or premise to a particular situation (Polit & Hungler 1995; Burns & Grove 2005); abductively where the analysis starts as inductive but it is concluded deductively by inserting previously developed statements into it (Atkinson & Delamont 2005), or it may be continued to the level of data quantifying to produce new insights or interpretations of qualitative data (Patton 1990).

In this study, inductive reasoning has been carried out in **Phases I and II** (Papers II, III) and in **Phase III** (Paper V). The process of inductive content analysis is described in Figure 1 and an example is provided in Table 2. Both inductive and deductive reasoning have been used in Phase II of the study (shown in Paper IV). The process of deductive content analysis is described in Figure 2.

The value of the units of analysis yielded from the different datasets in this study have been understood as equal, and their value is not established as being high in terms of frequency, but more so in their diversity (Stern 1991; Polit & Hungler 1995).

As characteristic of qualitative descriptions, attempts at high interpretation were avoided in the analysis, but rather aimed to remain close to the data and de-

scribe the male views using everyday language and quotations (Sandelowski 2000; 2010). The analysis of the first dataset has been described in Paper I. The second dataset analysis is described in Papers II, III and in Paper IV (together with the third dataset). The analysis of the fourth dataset has been described in Paper V. In-line with inductive content analysis, the results should be derived from the data (Hsieh & Shannon 2005), so the results from previously analyzed interview data (Papers II, III and IV), were put aside during the analysis of the fourth dataset (Paper V). The comparative views between the Luba-Kasai men and the midwives have been identified and are presented in this summary in Tables 3, 4 and 5.

4.5 Ethical questions

This study followed the general ethical principles of research (Burns & Grove 1997) and the Zambian Biomedical Research Ethics Committee's requirements which follow international principles (University of Zambia Biomedical Research Ethics Committee 2012). The rules of good research practice - rigor, integrity and honesty, have been followed in **Phase I**. All search strategies have been carefully documented and all studies meeting the inclusion criteria were analyzed.

The institutional approval and renewals, which were compulsory for data collection in **Phases II** and **III**, were issued by the Biomedical Research Ethics Committee, of the University of Zambia. The local tribal leader was also informed to avoid any misconceptions being raised. An additional cover letter issued by the Ministry of Health, Lusaka District Health Management Team, was also required for the research conducted in the Lusaka District antenatal clinics in Phase III of the study.

The process of data collection in **Phase II** among the poor and vulnerable led me to think how participants may be treated as an end, and not merely as a means to acquire data. This basic ethical framework for nursing research was addressed by implementing the ethical principles of autonomy, beneficence and justice into this study (Orb et al. 2001; Burns & Grove 2005).

The principle of autonomy was addressed in this study by respecting the participants' right to be informed about the study, to freely decide whether to participate in the study, and having the option to withdraw at any time. All those who were invited to participate in the study did so voluntarily and none withdrew for any reason. Information about the study was given twice. Firstly, the contact person explained the purpose of the study and how participants were expected to act when he recruited possible participants. Secondly, when the participant had given tentative oral consent and had come to the meeting place for the interview, he was provided with the same information, both orally and in writing in his tribal language or in English. After the participant had made the decision to par-

ticipate, he was requested to complete an informed consent form and provided with written contact details that could be used in the event of there being any further questions.

Obeing of principle of beneficence means doing good for others and preventing harm. In this study, this principle was introduced by protecting participants' identity. Before the field work, the contact person was carefully briefed so that they understood the concept of confidentiality. The interviews were conducted in suburban areas, in communities where people live close to each other. Due to the stigma attached to the topic of the study, the participant was free to choose the meeting place to avoid being seen by neighbors. The background information sheets were code numbered, so that the interview records do not carry names of the participants. The names of the suburban areas are not mentioned in the research report and any quotations do not contain any identifying details. The recorded interviews, verbatim transcriptions of the interview data, and the written essay data has been archived on an external hard disk, in two computer hard disks and into email files, of which only the researcher has access.

The design of this study was also intended to promote the principle of justice. By presenting the voice of this vulnerable minority, the Luba-Kasai refugees may achieve an advancement in the equality and fairness they experience in health care.

In **Phase III**, the principle of autonomy was respected by informing the person who was in charge in each clinic of the study details, and by distributing a comprehensive information letter to all of the participants. The person in charge of one clinic contacted the researcher and explained that their midwives had refused to participate in the study because there was no promise of any monetary incentive. A small quantity (approximately 2€) was paid to all the participants of the study (Paper V), according to the number of returned forms, and given to the person in charge who was then responsible for sharing the money among participants. Another person in charge inquired whether they should force the midwives to participate or not. The concept of voluntary participation was underlined and this was honored by asking participants to complete an informed consent form. The principle of beneficence was demonstrated in this study by again, protecting the participants' identity. The forms were distributed with envelopes in which the completed forms were sealed. The background information sheets were code numbered, and the names of the clinics are not revealed in the research report. As previously, any quotations given in the results section are un-attributable (Orb et al. 2001; Burns & Grove 2005).

Table 1.
Purposes, methods of data collection, datasets and types of analysis of the three-phased qualitative study.

Phase	Papers	Methodological approach	Purpose	Methods of data collection	Data sources	Type of analysis
I	I	Qualitative	To explore the methods and descriptions of male participation in the context of PMTCT of HIV	PsycINFO®, PubMed®, SocINDEX 1998–2008, databases, electronic resources, 2008	Previous literature on male participation (n=31)	Inductive content analysis
II	II	Qualitative	To describe male partners' views on how they can prevent their wives and babies from being exposed to HIV	Semi-structured interviews, 2009	Luba-Kasai men (n=21)	Inductive content analysis
	III	Qualitative	To describe male partners' views on barriers and resources that influence the prevention of their wives and babies from being exposed to HIV	Open-ended interview questions, 2009	Luba-Kasai men (n=21)	Inductive content analysis
	IV	Qualitative	To describe factors which have an effect on male partners' attendance in ANC activities To describe male partner's knowledge of the PMTCT of HIV program	Semi-structured interviews, 2009 Zambian National Protocol Guidelines Integrated PMTCT of HIV	Luba-Kasai men (n=21) Publication of Zambian Ministry of Health	Inductive and deductive content analysis
III	V	Qualitative	To describe midwives views on male participation and methods that could be used to improve it	Open-ended question forms, 2010	Midwives (n=45)	Inductive content analysis

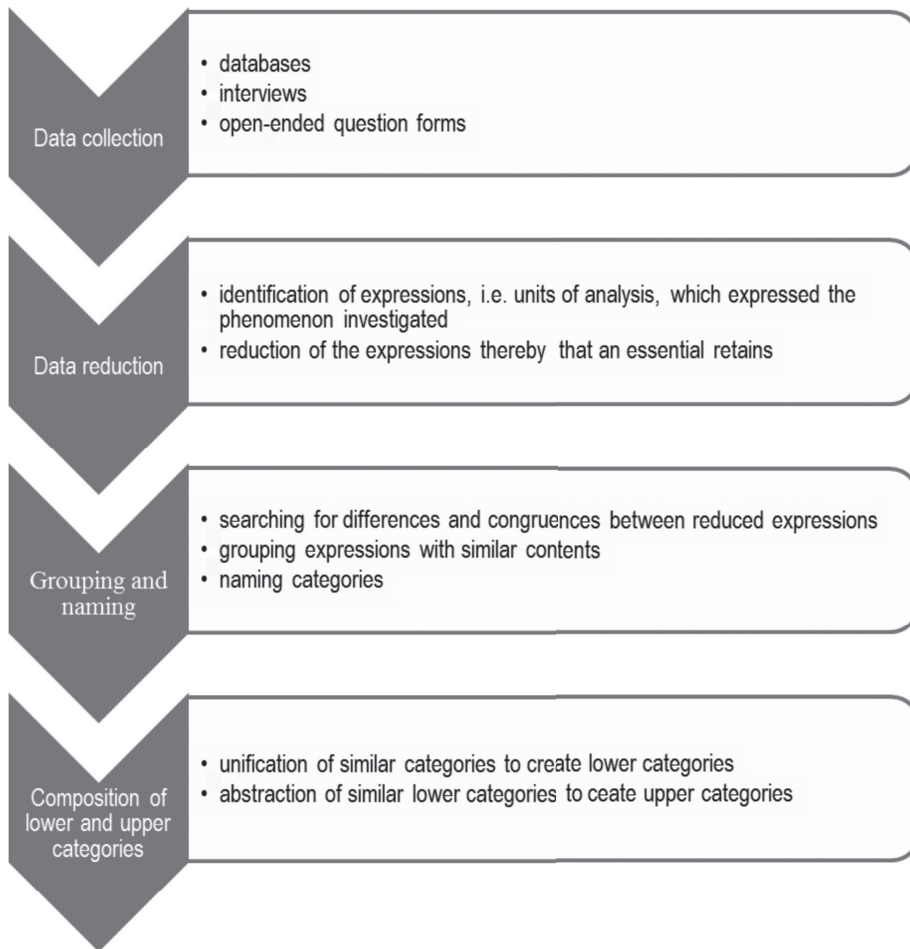


Figure 1.
The process of inductive content analysis

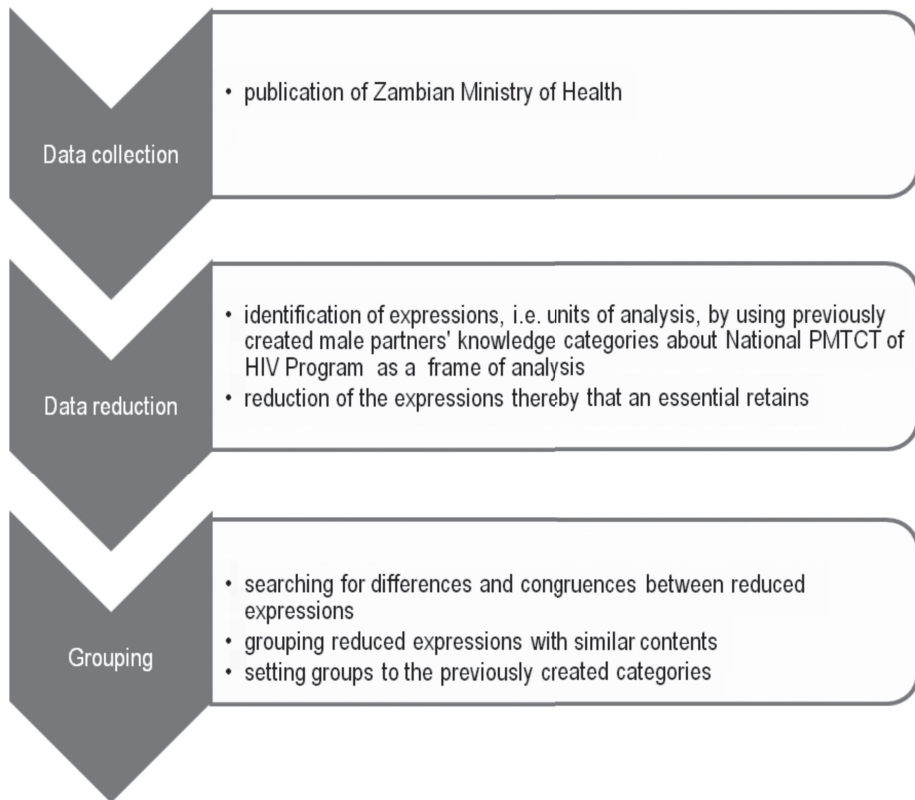


Figure 2.
The process of deductive content analysis

Table 2.
An example of inductive content data analysis

Citation from original verbatim transcription	Reduction	Lower category	Upper category	Main category
<p>"The big thing we can advise is to tell her do not have sex out of the marriage. This is the big advice I can give. Because we have seen here in many marriage women have other boyfriends."</p>	<p>Advising her to avoid extramarital sex</p>	<p>Controlling wife's sex behaviour</p>	<p>Taking care of sexual health issues</p>	<p>Acting safely in one's own and family life</p>
<p>"We need to tell her that if we need to have sexual intercourse we have to use condoms sometimes. To use a condom - if there is no condom, she has to keep controlling herself, that is all."</p>	<p>Telling to the wife about using condoms and keeping control of herself when they are not available</p>			

5 Results

This chapter presents the main results of the methods of male participation in PMTCT of HIV, and the barriers and resources that associate with it. Common and differing views of Luba-Kasai men and midwives on the mentioned issues are presented in each content area, and supported with direct quotes from the interviews or written outputs (Holloway & Wheeler 1996), (Papers II, III, IV and V). The lines between Luba-Kasai men's and midwives' views indicate the common content areas (Table 3).

5.1 Methods of male participation in PMTCT of HIV (Papers I, II and V)

The descriptions of male participation yielded by 31 papers which were raised by the literature review are presented in Paper I. These descriptions are both supportive and non-supportive forms of male participation, presenting an overview on the phenomenon that was studied. In dictionaries (e.g. OED Online a), the term “participation” is usually defined as a supportive action. Thus, in this study, male participation in PMTCT of HIV is presented as a method which seems to lower infants' vertical HIV transmission risks. Male participation was described as (Paper I and precisely in Table1): 1) a male partner utilizes antenatal care services (accompanying his wife to the clinic, taking part in couple's counseling and testing for HIV), 2) discusses reproductive matters with his spouse.

The main methods a male partner used to prevent MTCT of HIV were **using outside sources of support, adopting safe practices around their own and their families' lifestyle** (Luba-Kasai men), **utilizing health care services and adopting preventive behavior in intimate relations** (midwives) (Table 3), (Paper II, Table 3 and Paper V, Table 3). The separately analyzed views of Luba-Kasai men and midwives were not contradictory in terms of male participation, but they had additional characteristics and emphases due to the participants' different background.

Using outside sources of support from the **public health service** (Luba- Kasai men) and **visiting the antenatal clinic for different purposes** (midwives) means that a male partner visits the clinic for HIV testing, learns about HIV issues, receives medication and advises the wife to give birth at the clinic. *“Yes, I can prevent*

because we, we have told at the clinic that when you are positive you have to come here with you wife so that we can assist you, after testing we assist you. It is a good way. It is good because it is helping us in our life. It is helping us because they are giving us some medicine.” (Luba-Kasai man)

Differing from midwives’ views however, Luba-Kasai men used outside sources of support from a **spiritual outlook on life to prevent** MTCT of HIV (Paper II, Table 3). In their view, a spiritual outlook on life consisted of Semitic religions (Christianity and Islam), “Others, sometimes parents are infected but a child is not and God himself knows.” (Luba-Kasai man), and African traditional beliefs (Luba-Kasai man, in Paper II).

Table 3.
Participants’ views on the methods of male participation in PMTCT of HIV

Male partner	Antenatal care
Luba-Kasai men’s views on male participation methods	Midwives’ views on male participation methods
<p>Using outside sources of support</p> <ul style="list-style-type: none"> * Spiritual outlook on life * Public health service <p>Adopting safe practices around their own on their families’ lifestyle</p> <ul style="list-style-type: none"> * Taking actions to prevent HIV transmission from mother to child * Changing the tradition of feeding the Baby * Caring for one’s wife and child * Avoiding contamination * Taking care of** sexual health issues 	<p>Utilizing health care services</p> <ul style="list-style-type: none"> * Visiting antenatal clinic for different purposes * Supporting wife to adhere to phases of the PMTCT of HIV program <p>Having preventive behavior in an intimate relationship</p> <ul style="list-style-type: none"> * Taking care * Having spousal communication * Avoiding blood contact * Practicing safe sex * Being faithful

** take care of = to keep safe (someone or something) and provided for; to deal with (OED Online b)

Supporting wife to adhere to the phases of PMTCT of HIV program means that a male partner encourages his wife to follow the instructions given by the clinic. *“A male partner can prevent his wife to be exposed to HIV by total support of his wife during her pregnancy, and by both of them having HIV-test and following all the medical advice”* (Midwife). In Luba-Kasai views this was expressed by **taking actions to prevent HIV transmission from mother to child and by changing the tradition of feeding the baby** (Paper II).

Caring for one’s wife and child (Luba-Kasai men), **taking care and having spousal communication** (midwives) have common features. In these views, a male partner provides suitable food for the wife and baby. *“If the mother is positive she has to breastfeed this baby up to three months, then after three months, we have to remove, stop breastfeeding and start to give other food or other milk”* (Luba-Kasai man); *“Male partner should ensure that their spouses are eating a well balanced diet”* (Midwife). A male partner loves the wife and baby: *“Loving her, just to do things which she needs in her mind, to feel what she needs”* (Luba-Kasai man); *“By showing love and kindness to his wife and baby”* (Midwife). Male participation appeared as by having spousal communication with the wife (Luba-Kasai man, Paper II), and: *“To also discuss about issues of HIV/AIDS always with the wife”* (Midwife).

Avoiding contamination (Luba-Kasai men) and **avoiding blood contamination** (midwives) reflect a shared view that a male partner avoids blood contamination in everyday life by using own razors, needles and toothbrushes. Men also viewed that a male partner should use shoes in the toilets to avoid HIV transmission (Paper II). Midwives perceived that intimate violence should be avoided to prevent HIV transmission through the placenta (Paper V).

In common view, the methods of **taking care of sexual health issues** (Luba-Kasai men), and **practicing safe sex and being faithful** (midwives), refer to a male partner’s sexual life. Luba-Kasai men disclosed that having sexual partners other than the wife depends on whether the wife is pregnant. During pregnancy a Luba-Kasai man is not supposed to have sex with other partners, *“The work that I am doing is the hard work. I am becoming very tired. I have power but I am not going to have sex outside”*. However, when the baby is born, a male partner is allowed to have other sexual partners (Luba-Kasai man, Paper II). Midwives emphasized faithfulness: *“The male partner needs to only have one sexual partner and that should be the wife”* (Midwife); or he uses a condom with the wife and/or other sexual partners. *“Other way, when you are not abstaining and your heart is leading you to have sex with other women you can use condom”* (Luba-Kasai man); or he is abstinent (Luba-Kasai man, in Paper II).

Midwives viewed that avoiding dry sex is a male partner’s method to prevent MTCT of HIV, but Luba-Kasai men did not mention this sexual practice. Men perceived that male participation in the PMTCT of HIV extends to control of

the wife's sexual behavior. By providing care to the wife, a male partner prevents the wife from practicing transactional sex: *"I have to take care of her and assist her on everything so that she will not have that habit of having sex out of the marriage"* (Luba-Kasai man).

5.2 Barriers of male participation in PMTCT of HIV (Papers I, III, IV and V)

The barriers were the circumstances and attitudes that caused a male partner's participation to be non-existent, non-supportive (indifferent), or take the form of non-supportive participation when a male partner's behavior inhibits prevention (Paper I).

The barriers which inhibit a male partner to prevent MTCT of HIV were **external-**, **internal-**, and **internal-external** barriers (Luba-Kasai men), **male partner dependent-**, **health care dependent-** and **societal dependent** barriers (midwives) (Table 4) (Paper III, Table 3, Paper IV, Table 1 and 2, Paper V, Table 4). As an external barrier, **poverty** (Papers III–V) inhibits men from providing for the necessary needs of a mother and baby, and may lead parents to adopt risky behavior. *"First thing is the hunger and poverty which are leading people to do what we are not supposed to do"* (Luba-Kasai man), and *"...failure to support partner for attending antenatal services for screening"* (Midwife).

The barriers linked to the health care system were **arrangements and working culture in ANC** (Luba-Kasai men), the **PMTCT of HIV program -**, **health personnel -**, and **health care facilities related** (midwives). In the common content areas, these mean that a male partner is not involved in the program and consequently not welcome in the facilities. A Luba-Kasai man described an episode: *"Yes I went, but I went inside and I remained outside. They are not allowing men to be inside". "Men are not involved in antenatal and postnatal issues mainly due to health facilities that have proved not to be male friendly. There are congested with females hence men shun such programmes"* (Midwife). There was found that Luba-Kasai men had a general lack of confidence in the health care system (Papers III–V), or that they were unaware of the PMTCT of HIV program (Paper IV).

Lack of initiative (Luba-Kasai man, Paper III) and **lack of motivation** (Luba-Kasai, midwives) were the male partner's prejudiced barriers to male participation. A midwife wrote an example: *"Ignorant husbands who think there is no HIV"*. **Lack of knowledge** (Papers III–IV) means that a male partner is overall ignorant about HIV issues or he has incorrect knowledge: *"Yes, I can prevent or I cannot. If the mother has this disease or I myself have this disease we cannot prevent"* (Luba-Kasai man), and *"They don't know their status – as a result a woman won't tell the*

result if it is positive, to the husband” (Midwife). Refusal as a barrier in the midwives’ content means that a male partner refuses to take part in ANC activities or to provide financial support during the child’s infancy: “Some men don’t support their wives financially to enable them buy milk and food for the baby - as a result there is mixed feeding which puts the baby more at risk” (Midwife).

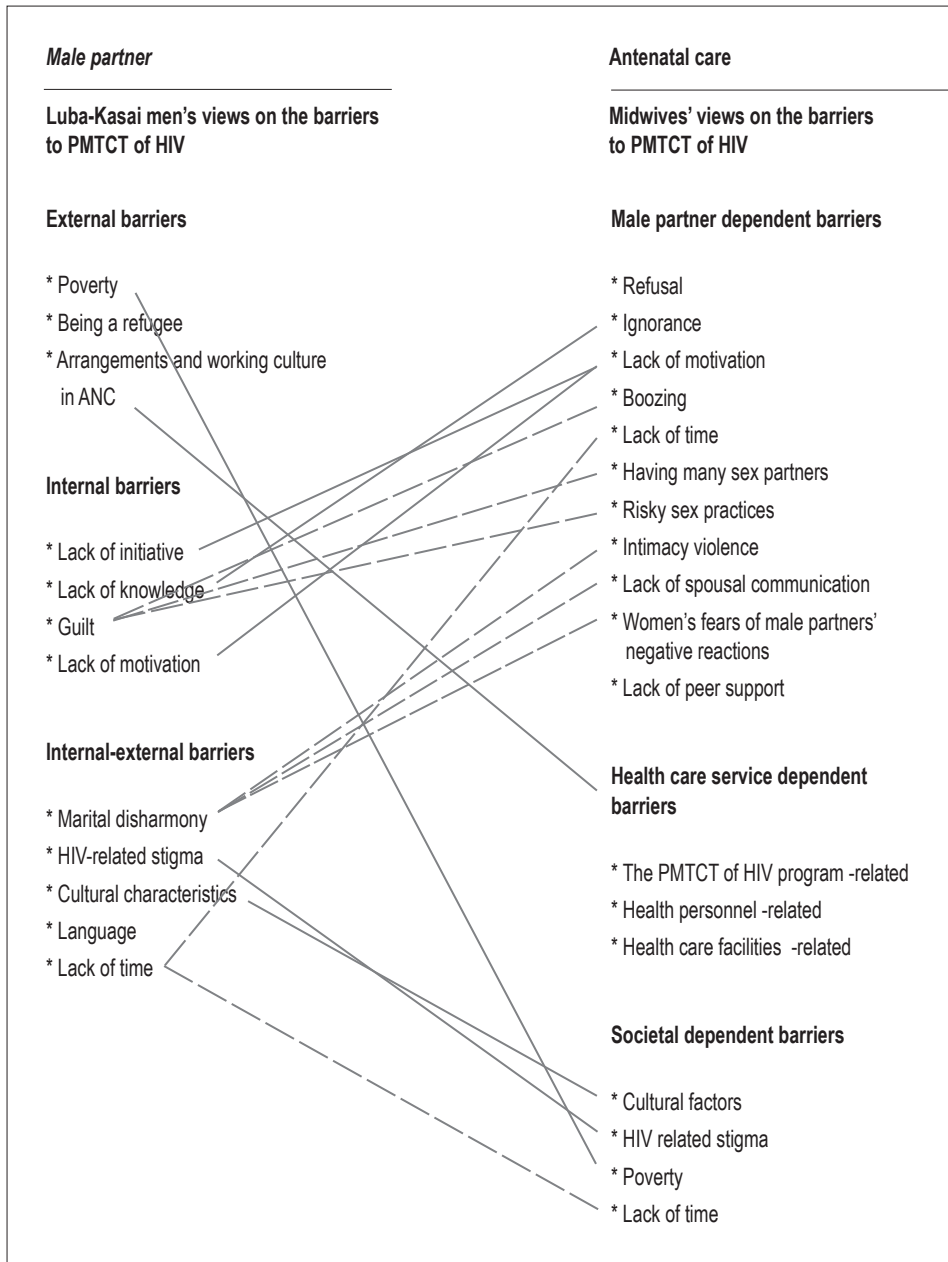
Barriers such as **guilt** (Luba-Kasai men), **boozing**, **having many sex partners and risky sex practices** (midwives) had common features. A male partner’s **guilt** (Paper IV) which was a consequence of his own risky behavior was seen as a barrier to seek and accept HIV tests. *“I was guilty because of what I was doing. Sometimes at the house we quarrelling with the wife and sometimes she used to refuse to give me sex when I wanted. Then I can go out and said since you are refusing there are so many women. I went and got drunk, then, after getting another woman, in the morning I thought what have I done” (Luba-Kasai man).* Midwives discussed the male partner’s **many sex partners** (Paper V), *“Men can have so many sex friends”* and **risky sex practices** (Paper V),... *“demanding sexual intercourse without using condoms” (Midwife).* Consuming alcohol, boozing, (Paper V) causes male partners to behave in risky ways *“Drunken husband who force their wives to have sex without a condom they deny [HIV] completely and even threaten to divorce their wives if they refused” (Midwife).*

Marital disharmony (Luba-Kasai men), **intimacy violence**, **lack of spousal communication and women’s fears of male partners’ negative reactions** (midwives) (Papers III–IV) were seen as barriers to male participation, and were yielded by both data sets. However, depending on the point of view, the results reveal different sides to the arguments. Luba-Kasai men described mutual unfaithfulness, quarreling, a lack of spousal communication and the husband’s failure to carry out their financial responsibilities (Luba-Kasai man, Paper III). Midwives, additionally, raised the topic of intimacy violence (Midwife, Paper V) and also the women’s fears of their male partner’s negative reactions: *“If there is no disclosure, especially, some women go alone for counseling and testing for fear she will be chased” (Midwife).*

HIV related stigma (Luba-Kasai men, midwives) (Papers III-V) forms a barrier and was shown in common content areas: *“... and another thing is if people find out you are HIV positive they start laughing at you” (Luba-Kasai man).* *“usually partners feel that people will laugh at them when they accompany their wives for ANC clinic, more especially those who know their status already” (Midwife).*

Cultural characteristics (Luba-Kasai men) and **cultural factors** (midwives) (Papers III–V) as barriers to prevent MTCT of HIV are seen as twofold. Firstly, religious beliefs are on one hand considered as a method of preventing HIV transmissions (Luba-Kasai men), however they are also perceived as a barrier (Paper V, Table 4). Belief in a supernatural power (Paper III) that is able to move viruses

Table 4.
Participants' views on the barriers of male participation to PMTCT of HIV



from one individual to another may cause a feeling of powerlessness in any attempts to prevent infection: *“Maybe there are some bad spirits.”... “It is like, when we are discussing, when we have a problem, maybe in the house or between us and we are discussing inside but maybe witchcraft is passing outside – he can make his magic so that something happens between us”* (Luba-Kasai man). Secondly is the culturally related aspect of being a man, and traditionally, a man has more than one wife at the same time (Papers III and V).

Lack of time (Luba-Kasai men and midwives) as a barrier to male participation means that males are hindered due to their personal activities and /or that they are at work at the time of appointments. **Lack of peer support** (midwives) was described as a barrier in Paper V, Table 4. **Being a refugee** and **language** were barriers only perceived by Luba-Kasai men (Papers III and IV).

A part of the Luba-Kasai participants did not disclose any barriers to their participation in the PMTCT of HIV.

5.3 Resources in male participation in PMTCT of HIV, as viewed by Luba-Kasai men and midwives (Papers III, IV and V)

The resources identified were **personal resources**, **services**, and **material resources** (Luba-Kasai men), **male partner dependent**, **health care service dependent**, and **societal dependent resources** (midwives) (Table 5) (Paper III, Table 4, Paper IV Table 1 and Paper V, Table 5)

Knowledge about the PMTCT of HIV, to be supported by health care services (Luba-Kasai men), and **health personnel related resources** (midwives) have common content areas. Males viewed that their duty is to receive information *“I do not know what is needed but when I will go to the clinic they will tell me what is needed or the way how I should take care”* (Luba-Kasai man). Midwives perceived that males’ presence in the clinic teaches them to be a supporter for their spouse: *“...by educating women on the importance of coming with their spouses for ANC and family planning. Women need to understand that they need the support of their husband because men are decision makers in the home”* (Midwife) (Papers III–V).

To be involved in the program of PMTCT of HIV, improvement in the overall situation (Luba-Kasai men) and **the PMTCT of HIV program** (midwives) were elements which appeared in the common data content. The PMTCT of HIV program was considered by men as a resource which enabled everything that is good (Paper IV), but they wished for a more developed program and services (Paper III). The midwives wanted more male-friendly content in the program, in order for it to better serve as a resource which promoted male participation (Paper

V). The midwives' methods to improve male participation in PMTCT of HIV are described in more detail in Paper V, Table 7.

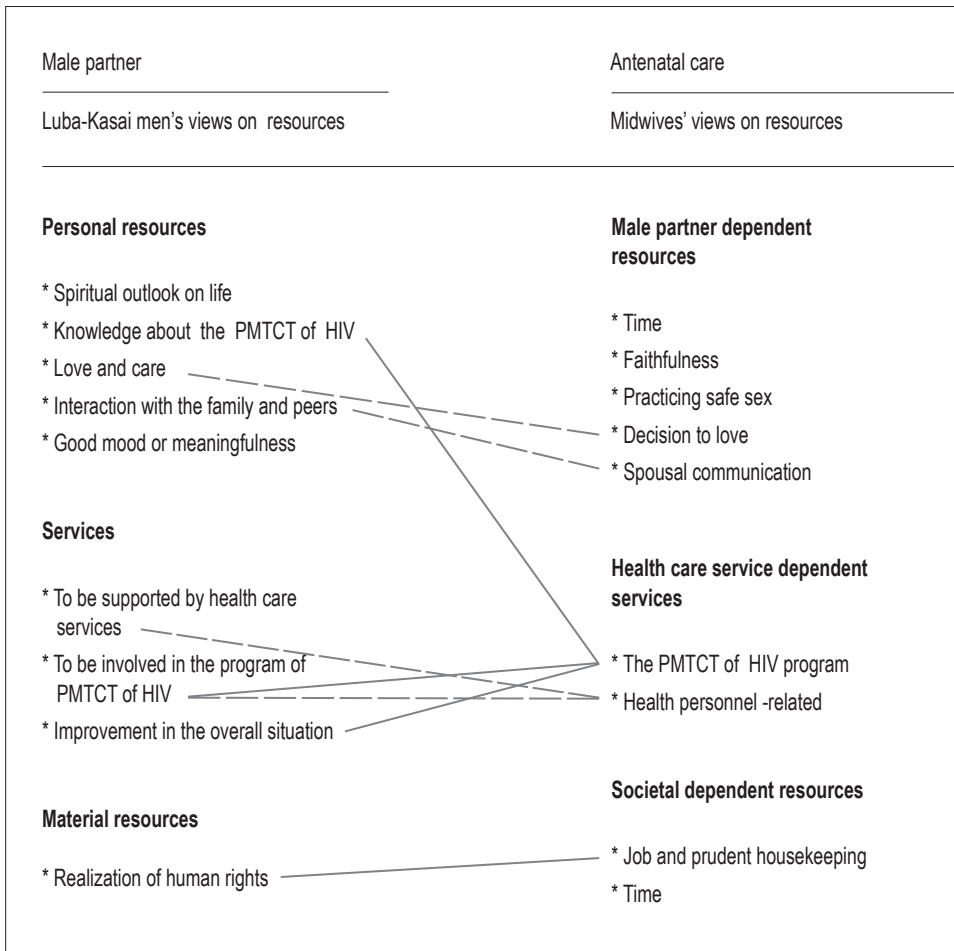
Love and care (Luba-Kasai men) and the **decision to love** (midwives) means a male partner's commitment to the family by being faithful, practicing safe sex, taking time to learn about HIV issues, and as the midwives viewed, by making a conscious decision to love his family. Furthermore, **interaction with the family and peers** (Luba-Kasai men) and **spousal communication** (midwives) meant that a male partner discusses reproductive matters with their spouse. Luba-Kasai men also emphasized the importance of interaction with other family members and peers.

Realization of human rights (Luba-Kasai men) (Paper III), and **job and prudent housekeeping** (midwives) (Paper V) were viewed as resources in PMTCT of HIV in the context of securing sufficient nutrition for the mother and baby and for avoiding risky sex behavior. "*Money to buy things which is needed because when the child is not breastfed he needs to eat every time*" (Luba-Kasai man) and "*Emergency money to use for transport to the clinic for delivery to avoid home deliveries*" (Midwife).

Time as a resource appeared in two contexts in the midwives' data (Paper V). Midwives viewed that men should spend their personal time for PMTCT activities, but also that employers should allow workers to visit antenatal clinics when their appointments are made known beforehand.

The male partner's **faithfulness** and **practicing safe sex** were identified as resources which promoted male participation in PMTCT of HIV according to midwives (Paper V). Additionally, Luba-Kasai men viewed that a **spiritual outlook on life** (Papers III and IV), a **good mood** and a sense of **meaningfulness** (Paper IV) were also resources that helped male participation.

Table 5.
 Participants' views on the resources for male participation in PMTCT of HIV



6 Discussion

In this chapter the trustworthiness of the research, its results, the implications of the study and suggestions for further research are discussed.

6.1 Trustworthiness of the research

Criticism of the findings is integral to scientific research (Lincoln & Guba 1985). The concepts of trustworthiness differ between quantitative and qualitative research, and there is no consensus on these, even among qualitative researchers (Graneheim & Lundman 2004; Houghton et al. 2013). Considering the methodological approach of this study, the following concepts relate to the trustworthiness of the descriptions of male participation in PMTCT of HIV, as viewed by the Luba-Kasai men and midwives who participated in the study: credibility, transferability, dependability and confirmability (Lincoln & Guba 1985).

6.1.1 *The credibility of the research*

The credibility of a study deals with the question of whether the study findings are congruent with reality. Prolonged engagement, persistent observation and triangulation are the means which increase the probability of credible findings and interpretations (Lincoln & Guba 1985). Prolonged engagement means that a researcher spends enough time in a certain culture to become familiar with its languages, political and economic systems (Chiang-Hanisko et al. 2006). This helps to build trust with the participants and to avoid any distortion of the data. During the study process, the researcher worked in both urban and rural areas for a total of three years. The data collection phase took place towards the end of this period.

In establishing trust, it was pointed out that the participants' identities were protected, participation was absolutely voluntary, the material they produced would not be used against them, and the participants could influence the study process. The informed consent form used in the study had an informative cover letter, which was explained to the interviewers and also delivered to the persons

in charge of the antenatal clinics. The written contact details of the research team members were given to the participants, so that they could inquire further about the study at any time. The interviewees defined the environments where the interviews were to be conducted, and the midwives were also able to set conditions that they receive remuneration in return for their written essays.

Distortions of the data may be caused by either the researcher or the participant (Lincoln & Guba 1985). A researcher's own values and constructions are an inseparable part of them. In this study, this influence was contained by both being aware of it and by maintaining an inquiring attitude throughout the study process. The participants' may have caused some unintended distortion in light of the consequences of past colonialism. People from the Western World are sometimes considered as donors, and consequently some of the participants may possibly have over-emphasized the influence of poverty in their lives. However, only one research question dealt with the barriers of HIV prevention. If poverty was brought out in other research questions, then the process of reducing and clustering data in the content analysis helped to illustrate it in its own place. Some distortion may also have been caused by the fact that some of the interviewees probably knew that the researcher was working in the field of HIV prevention. Consequently, some interviewees could have looked to please the researcher by relating aspects of preventive behavior which were not a real element in their own life. Similarly, midwives could have described their attitudes towards male participation too positively, when contrasted with their actual practice. It may also have been the case that interviewees did not consider their own influence on their marital problems and gave more emphasis to their spouses' part. However, for example, the midwife-data yielded intimacy violence as a barrier to prevention, so distortions such as this have been considered when comparing the results of the two data sets. There is however always a question of credibility when investigating views and perceptions of individuals on a given subject, so this aspect is freely acknowledged.

Persistent observation adds to the probability of very important elements being observed in terms of the research questions (Lincoln & Guba 1985; Houghton et al. 2013). In this study, persistent observation was achieved by way of continuing the interview data collection process, over the point when data saturation was noted. Triangulation also improves the probability of credible study findings (Lincoln & Guba, 1985). In this study, both data triangulation (different data sources: previous literature, male partners, midwives and Ministry of Health), and methodological triangulation (different data sets: study reports, interviews, writings and existing publication) have been used.

Additionally, peer debriefing (Lincoln & Guba, 1985) was used in this study in two ways: by having a continuous discussion about the methodological aspects

of the study with an expert senior researcher, and also by publishing all five articles of this dissertation in the peer reviewed scientific journals.

The original interview recordings, transcriptions and study data have been preserved for referential adequacy (Lincoln & Guba 1985), which will allow any aspect of the findings to be checked against raw data, should the need arise.

6.1.2 Transferability of the research

Qualitative research does not aim to achieve statistical generalization but rather a measure of transferability. This in itself is a concept of trustworthiness which infers a probability that the findings of the research can be transferred to other settings or groups (Polit & Hungler 1995). The views of Luba-Kasai men on their methods to prevent vertical MTCT of HIV (Paper II), their views on the barriers and resources involved (Papers III and IV), and also their knowledge about the National PMTCT of HIV Program of Zambia (Paper IV) may not be applicable to other settings or groups. However, it is proposed that the findings of the midwife-data (Paper V) may be applicable to other urban antenatal clinics in Zambia and the conclusions of this summary may be transferred to other urban refugee Luba-Kasai male groups in Zambia. This may be decided by assessing how the context, research methods and quotations of the data have been described in the associated papers and the summary. The contexts have however been concisely described due to limited word counts in the publishing journals and also by the requirement to protect the anonymity of the participants. In this summary, it was difficult to decide to what extent and depth the context should be described, and thus mainly with demographic, geographic and economic variables have been used. The thick descriptions regarding issues such as poor infrastructure (sanitation and water supply, waste management), limited health care resources (overcrowded antenatal clinics, dying children on the floor of interviewees' houses, sick parents), a lack of protection (obvious fear in an urban environment), and a lack of sufficient livelihood (hopelessness and hunger) could have offered a better opportunity to assess the interpretation of the findings and their transferability, however, such significant issues merit an extensive and dedicated coverage that falls outwith the bounds of this work.

6.1.3 Dependability and confirmability of the research

Dependability is an aspect of trustworthiness and is a criterion which refers to the researcher's decisions concerning the theoretical, methodological and analytic choices made during the research process (Lincoln & Guba 1985; Koch 1994;

Polit & Hungler 1995; Graneheim & Lundman 2004). Confirmability means that data, findings, interpretations and recommendations follow one another coherently (Lincoln & Guba 1985). In this study, dependability and confirmability were achieved by an audit trail (Polit & Hungler 1995), outlining the steps made throughout the research process. The origin of the audit trail was the research proposal which was approved by the University of Zambia Biomedical Research Ethics Committee. The Committee followed the data collections through the regular progress reports which they required. The contextual background of the data, i.e. the processes of data collections (Papers I-V) and socio-demographic details of the participants (Papers II-V) have been described. The brief field notes were archived. Problems with sampling may appear when a study population is hidden or hard-to-reach (Sydor 2013), and this was the case in this study. The potential interviewees were illegally in the country and/or they did not have permanent places. Direct recruiting was not possible for the researcher, therefore she had to use a contact person. In this regard, a sampling bias may have been inadvertently caused by the recruiting process. For example, the contact person might have contacted mostly those men who were near his own age and therefore the age structure in the sample is sloped. In addition, the interviewees preferred to be interviewed in their own places, so as to avoid being seen with a stranger which may have caused trouble in the communities. This posed a challenge to the interview content due to the sensitive nature of the subject, and where an interviewee had to be careful offering his account in crowded locations. Ultimately however, it is far more valuable to have limited data from hard-to-reach populations, than to have no information at all (Sydor 2013).

It was also questionable whether the midwives who participated by writing essays, wrote their answers alone (as suggested in the cover letter). For example, they might have asked the opinions of other midwives, and in that way, the data may be representative more of group work instead of individual effort. The processing of data sets, data analysis methods (Papers I-V) and examples of data analysis (Papers II and III) have however been described in great detail and was constantly evaluated by the research team during the whole process.

This compilation-based cross-language qualitative thesis is published in the English language for two reasons. First, the research approval presumed that a copy of the final version should be delivered to Zambia. Second, the interpreter could not speak Finnish (the researcher's native language), thus there would have been an added potential for error during the coding and analysis processes. The interviews were conducted in the Luba, Nyanja and English languages. Using Luba or Nyanja in the interviews was necessary because a part of the interviewees could not speak English (Paper V). On the other hand, considering the topic, using their native language helped them to express and explain their ideas. In

attempting to cross the language barrier, a pilot study was conducted to confirm that the research questions did not entail any linguistic problems. During the pilot study, it was also possible to assess whether the interpreter had understood his objective role in the interview.

Midwives wrote their answers in English, although it is mostly their second language. This may have caused some nuances to be hidden. However, English is the official language of Zambia and a common language in health care service, thus it was assumed that midwives could express their ideas concerning their work in English with a sufficient degree of fluency. A methodological approach to the cross-language study should be chosen in order for the conceptual correspondence not to be threatened (Squires 2008). This study is a qualitative descriptive study which does not aim for high interpretations in its analysis but stays close to the data. It is recommended that all translations should be checked by a well-educated, native speaker (Squires 2008), however such resources were not available. Another Luba language speaker from outside the research study, did however verify the accuracy of the translations.

6.2 Discussion of the results

A discussion of the results contrasts the study findings and the existing body of knowledge (Holloway & Wheeler 1996). This study has produced new knowledge. This is the first study to describe the views of male refugees (or their descendants) on male participation in the PMTCT of HIV. It is also the first which contrasts males' knowledge of the national PMTCT of HIV program, and the first which describes the common understanding of male participation in the PMTCT of HIV, its barriers and resources, between Luba-Kasai men and the midwives who serve their community. The common views are represented in Tables 3, 4 and 5.

6.2.1 *Methods of male participation to PMTCT of HIV*

It was concluded that male participation to utilize ANC is mainly demonstrated by accompanying his spouse to the clinic and by taking part in CVCT (Paper I). This is in-line with previous studies where a male partner's presence in the antenatal clinic (Aluisio et al. 2010; Nkuoh et al. 2010; Tweheyo et al. 2010; Mohlala et al. 2011) and his acceptance for HIV screening (Katz et al. 2009a; Aluisio et al. 2010; Nkuoh et al. 2010; Tweheyo et al. 2010; Mohlala et al. 2011; Koo et al. 2013a) have been considered means of male participation. In this study male participation was viewed as utilizing ANC by visiting a clinic for different

purposes (Table 3), and also for receiving health information (in-line with Katz et al. 2009a) and medicine. In the previous studies, a male partner's support for his spouse in PMTCT program implementations during pre-, peri- and postnatal phases has been described as: encouragement and reminding of laboratory monitoring (Aarnio et al. 2009; Gilles et al. 2011), antenatal appointments (Maman et al. 2011; Kalembo et al. 2013; Kwambai et al. 2013), medical regimens (Byakika-Tusiime et al. 2009; Delvaux et al. 2009; Peltzer et al. 2007; Peltzer et al. 2010), and hospital delivery (Kasenga et al. 2010; Kalembo et al. 2013; Kwambai et al. 2013). In this study, the common understanding of men and midwives was that male participation means supporting the wife in adhering to the PMTCT of HIV program, but midwives also emphasized the male partner's role as a provider who makes it possible for their spouses to reach health facilities (Papers I and V). This is also concluded in the study by Maman et al. (2011).

In this study, in the Luba-Kasai data it emerged that the public health service was one outside-source of support for prevention, however another source was a spiritual outlook on life (Paper II and IV). A faith-oriented perspective on HIV prevention has been also discovered in other studies (e.g. Kagimu et al. 2012; Skinner et al. 2012; Mpofu et al. 2014). Providing a more holistic approach, (including a spiritual dimension) in ANC to the clients may strengthen good preventive decision making in family lives, or help to make the decision to reject harmful traditional or religious customs.

In this study, practicing a safe sexual life was commonly viewed by both the Luba-Kasai men and midwives, to mean that a male partner is faithful to his spouse. This is similarly expressed in the study of Aarnio et al. (2009). However, in the Luba-Kasais' views, tribal traditions influenced the men's perceptions of an intimate relationship (e.g. polygamy) (Paper II). Conceptions of family life vary between tribes even in the same area. Thus, in addition to facing individuals in antenatal care, an understanding of tribal customs helps midwives to focus the health information they provide. Additionally, in this study, male participants viewed that men are responsible for their spouses' sexual behavior. Men are supposed to organize women's lives in order for women to be able to avoid having transactional sex. Practicing a safe sexual life in this study means that a male partner uses condoms in sexual intercourse in case there is a transmission risk. Studies by Mohlala et al. (2011) and Kalembo et al. (2013) have reached similar conclusions.

Avoiding blood contamination was a means of male participation (Papers II and V). In addition to the common views, midwives expressed that in avoiding intimacy violence during pregnancy, a male partner may prevent his baby from being exposed to HIV through the placenta. HIV related intimacy violence was a concern that was seen in the literature review (Paper I) and also in several

previous studies (e.g. Sagay et al. 2006; Desgrées-du-Loû et al. 2009). The male partner could be guided toward good intimacy relations and responsible fatherhood in conversations during ANC. In particular, male partners could realize that a spouse is an equal human being, despite a bride price having been paid for her.

In this study, taking care of the family was a means of male participation in the PMTCT of HIV. The concept of “to take care of” is an ambiguous expression, involving (among others) connotations of “to keep safe (someone or something) and provided for; to deal with (OED Online b). In the literature review (Paper I), it was concluded that male participation means to communicate about reproductive matters with his spouse. In previous studies this is described as: common decision making concerning HIV testing with the spouse (Mlay et al. 2008; Mbonye et al. 2010; Koo et al. 2013a), support for the pregnant spouse’s disclosure of HIV infection (Sagay et al. 2006; Aarnio et al. 2009; Desgrées-du-Loû et al. 2009; Madiba & Letsoalo 2013; Musheke et al. 2013) and shared ideas about sexual issues (Aarnio et al. 2009, Desgrées-du-Loû et al. 2009; Montgomery et al. 2009; Villar-Loubet et al. 2013). In this study, having spousal communication and taking care of the family was a male partner’s method of participation in the common view of both men and midwives. However, in the Luba-Kasais’ views, the prominent role of a man in such communication is recognizable (Paper II). An expression of an overall loving and caring attitude toward the HIV positive spouse was a means of taking care of the family. This was also revealed in previous studies (Peltzer et al. 2007; Mlay et al. 2008; Nassali et al. 2009; Nkuoh et al. 2010; Maman et al. 2011; Musheke et al. 2013). In the views of men and midwives, male participation also involved the provision of a balanced diet for the spouse, and to support the chosen infant feeding practice. These views have also been similarly expressed in previous studies (Maman et al. 2011; Oladokun et al. 2010).

6.2.2 Barriers to male participation in PMTCT of HIV

Many previous studies have looked to discover the barriers to male participation in the PMTCT of HIV, but only a few male partners have been found to contact ANC during maternal process (Paper I). The male partner’s attitude toward learning his own HIV status (Msuya et al. 2006; Kizito et al. 2008; Aarnio et al. 2009; Chinkonde et al. 2009), toward PMTCT program activities (Theuring et al. 2009; Madiba & Letsoalo 2013; Hagey et al. 2014), and their indifference to HIV issues (Sagay et al. 2006) have been cited as barriers to participation, and this was also confirmed in this study, both as a common view of Luba-Kasai men and midwives, and independently from the perspective of a male partner (Papers III and IV).

In previous studies, the male partners' unawareness of PMTCT issues appeared to include that they were: not aware of HIV infection as a disease (Harms et al. 2005; Larsson et al. 2010), not aware of their own (Duff et al. 2012; Koo et al. 2013a) or their spouses' HIV status (Medley et al. 2004; Nuwagaba-Biribonwoha et al. 2007; Duff et al. 2010; Duff et al. 2012; Jasseron et al. 2013; Lubega et al. 2013), or that female partners were not aware of their male partners' HIV status (Katz et al. 2009b). In this study, the commonly expressed views of men and midwives indicated that a lack of knowledge (including misconceptions and obvious wrong knowledge) poses a barrier to male participation in the PMTCT of HIV.

Previous studies have also indicated that problems in an intimate relationship (Larsson et al. 2010; Msuya et al. 2006), a lack of spousal communication (Msuya et al. 2006; Nkuoh et al. 2010; Nkuoh et al. 2013), the male partner's risky sex practices (Adejuyigbe et al. 2004; Chinkonde et al. 2009; Moses et al. 2009), and multiple sexual partners (Chinkonde et al. 2009) add to the risk of HIV transmission and threaten the health of a mother and baby. In this study, the common views of these barriers were similar (Papers III, IV and V) but in the Luba-Kasai data, the issue of guilt due to risky behavior was revealed to be an additional factor. Midwives revealed that men's drunkenness lead them to behave in risky ways. As the origin of some barriers to male participation are in intimacy relations, the content of health education in clinics and communities should encourage couples to take care of their relationships (Paper IV, Table 1; Paper V, Table 7).

Gender roles have been found to be a barrier to male participation in the previous studies. Perceptions that ANC is solely a women's responsibility (Mlay et al. 2008; Aarnio et al. 2009; Byamugisha et al. 2010a; Nkuoh et al. 2010; Falnes et al. 2011; Mohlala et al. 2012; Kwambai et al. 2013), and that a male partner is defined as a provider (Nkuoh et al. 2010; Kwambai et al. 2013) have been concluded to be barriers, and this was also confirmed in the common views of Luba-Kasai men and the midwives in this study (Papers III, IV and V). Traditional infant feeding takes the form of breast feeding in the communities (Moses et al. 2009; Cames et al. 2010; Engebretsen et al. 2010; Mataya et al. 2013) and that poses a challenge to male participation considering the feeding guidelines promoted in the PMTCT. In this study, this did not appear as a commonly noted issue, however the male participants' unawareness of the guidelines was shown. Religions may pose a cultural barrier, and this was revealed in the views of both the men and midwives. In the Luba-Kasai data this barrier emerged as a belief in witchcraft which can cause HIV infection to an individual. Midwives cited the churches' harmful doctrines as a barrier, but they did not elaborate further on the issue. Skinner et al. (2012) found that initiation rites may set girls at the risk of HIV in Malawi. In the clinical practice setting and in health education, such harmful beliefs should be detected and discussed.

HIV related stigma has been studied as a barrier to male participation in several previous studies (e.g. Oladokun et al. 2010; Turan et al. 2011; Duff et al. 2012; Larsson et al. 2012; Lubega et al. 2013). Stigma raises fears among couples, with both male (Aarnio et al. 2009; Theuring et al. 2009; Mbonye et al. 2010; Koo et al. 2013a) and female (Mbonye et al. 2010) partners fearing to be tested for HIV.

Women feared that their spouses would not allow them to take part in the program (Bajunirwe & Muzoora 2005; Kebaabetswe 2007) and that their spouse would act abusively and violently after any HIV disclosure (Medley et al. 2004; Kiarie et al. 2006; Sagay et al. 2006; Byakika-Tusiime et al. 2009; Desgrées-du-Loû et al. 2009; Tonwe-Gold et al. 2009; Byamugisha et al. 2010a; Kasenga et al. 2010; Maman et al. 2011; Turan et al. 2011; Mataya et al. 2013; Musheke et al. 2013). In this study, HIV related stigma was commonly viewed as a barrier (Papers III, IV and V). The fear of ridicule in the eyes of the community was a reason not to contact ANC. Male participants did not reveal that physical violence in their relations may present a barrier to male participation, but midwives did (Paper V). HIV related stigma may be difficult to understand and recognize as a phenomenon but it inconveniences not only male participation but all PLWHA. In Paper V, Table 6 describes interventions to remove the influence of HIV related stigma on male participation.

Lack of time has been found to be a barrier to a male partner to attend the antenatal clinic with his spouse (Theuring et al. 2009; Maman et al. 2011; Koo et al. 2013a; Nkuoh et al. 2013). In this study, this barrier was expressed predominantly in the midwives' data (Paper V). As working conditions are still developing in Zambia, leaving work in the middle of the day for ANC purposes may be found to be unacceptable. In this study, the male participants were mostly engaged in temporary work and so this barrier was not as obvious in their situation.

Barriers associated with ANC organization have three points of view: the national guidance for PMTCT of HIV, ANC facilities and clinical practice. In previous studies, national guidance for PMTCT of HIV focuses closely on HIV, instead of on overall wellness (Koo et al. 2013b). Perceived male friendly practices such as CVCT are not always supported by governments (Conkling et al. 2010) and the approach to the topic is invariably clinic based (Msuya et al. 2008), although men can more often be reached at bars and workplaces. In this study, both men and midwives viewed the national program from their own perspectives and found features which may be considered as barriers. Males viewed that the program does not take into account their overall situation (Paper III), and midwives criticized the program for focusing mainly on women (Paper V).

In the common views of men and midwives, in this study, it was found that ANC facilities are not male-friendly and that men are involved in only some parts of ANC (Papers III, IV and V). Additionally, Luba-Kasai men expressed a lack of confidence in the quality of ANC services generally, and that they felt they

were treated coarsely at the clinic, at least partly because of their refugee background (Papers III and IV). Previous studies have also shown that ANC facilities are perceived as not being male-friendly (Larsson et al. 2012; Koo et al. 2013b; Kwambai et al. 2013) and are often situated far from the residential areas of many of its users (Tweheyo et al. 2010) which poses a barrier, especially in rural areas. In clinical practice, it has been found that men are not really involved in reproductive care (Theuring et al. 2010; Duff et al. 2012; Koo et al. 2013b), staff may use coercive testing strategies at the clinics (Mbonye et al. 2010; Musheke et al. 2013) and there is a labor shortage and staff training is not updated (Nuwagaba-Biribonwoha et al. 2007).

In previous studies, poverty has been found to be a barrier to male participation (Byamugisha et al. 2010a; Maman et al. 2011; Lubega et al. 2013). In this study the common views of men and midwives (Papers III, IV and V) proved that poverty challenges male participation by causing parents' to adopt risky behaviors. This was also found in the study of Musumari et al. (2013). In the Luba-Kasai data, poverty was linked to refugee status. They felt an outsidersness, and a lack of security and opportunities which created a bigger threat to their life than HIV. In the Zambian setting, a lack of language skills was a barrier as Luba and French speaking refugees cannot understand English, and therefore the content of the PMTCT program may have been inaccessible (Paper IV). A proportion of the male participants was not aware of the existence of the PMTCT program (Paper IV).

6.2.3 Resources for male participation in PMTCT of HIV

The male partners' ability to create a safe atmosphere in an intimate relationship has been seen as a resource in previous studies. Confidence in an intimate relationship engenders the pregnant mother's disclosure of their HIV positive status to their male partner (Brou et al. 2007; Bii et al. 2008a; 2008b; Koo et al. 2013a), and engenders their male partner's supportive attitude toward antenatal care (Bajunirwe & Muzoora 2005). In this study, in the common views of men and midwives, a male partners' affection for the spouse and commitment to their family were regarded as male partner dependent resources. Faithfulness to one sexual partner as a resource was also a commonly expressed view, but more emphasized in the midwives' data. Similarly, communication about sexual issues was also commonly seen as a resource, but emphasized more in the men's data (Papers IV and V).

Luba-Kasai men viewed overall knowledge about HIV issues as being a resource (Papers III and IV) and they preferred educational initiatives as a way to attain it (Paper IV). In earlier studies, peer support has been described as a re-

source for male participation (Larsson et al. 2010; Kululanga et al. 2011; Koo et al. 2013a). This was also found in this study (Papers IV and V). Religion was also identified as a resource and this concurs with other previous studies concerning HIV prevention (e.g. Kagimu et al. 2012).

Antenatal clinics are the operational agents in the implementation of national PMTCT of HIV programs (Nuwagaba-Biribonwoha et al. 2007; Sarker et al. 2009). During the research process, the Zambian National PMTCT of HIV Program (Ministry of Health 2010) was updated and renewed guidelines concerning ARV delivery for HIV positive pregnant women (Ministry of Health 2013) have been published. In these new publications, male participation has been taken further into account, in-line with the results of this study (Paper V, Table 5).

Men viewed that knowledge and education by health services are resources which encourage male participation (Paper III and IV). Midwives viewed that regular education on safe motherhood and HIV related stigma could also be the resources to male participation, integrated with moves by health services to increase confidentiality (Paper V). In the previous studies, resources such as a high quality of health information (Madiba & Letsoalo 2013), staff being trained in men's needs (Larsson et al. 2010) and also the developing standards of national guidelines (Sarker et al. 2009) have also been identified. Integrated HIV services were another initiative recommended in the previous studies of Chabikuli et al. (2009) and Larsson et al. (2010).

Recent studies have investigated the means to involve male partners in PMTCT of HIV. Clinics suggested pregnant mothers to ask their spouses to attend (Aarnio et al. 2009; Aluisio et al. 2011; Nyondo et al. 2013), as was also viewed by the midwives in this study (Paper V). The other methods mentioned in previous studies were using a written invitation letter (Byamugisha et al. 2011; Mohlala et al. 2011; Koo et al. 2013a; Nyondo et al. 2013) and partner notification (Kululanga et al. 2011).

Different kinds of testing procedures were considered as resources by both men and midwives in this study (Papers III, IV and V). Male friendly methods such as health workers' home visits (Nyondo et al. 2013; Osoti et al. 2013) and preference being given to couples in admission to the antenatal clinic (Nyondo et al. 2013) may present possible resources for male participation, and similar findings were also found in this study (Paper V). Thus antenatal clinics may further involve male partners by offering couple counseling (Farquhar et al. 2004; Reece et al. 2010; Jones et al. 2013), HIV tests to male partners (Aluisio et al. 2011), CVCT (Mlay et al. 2008; Desgrées-du-Loû et al. 2009; Becker et al. 2010), weekend CVCT (Conkling et al. 2010; Reece et al. 2010), extended weekday hours (Reece et al. 2010), Routine Counselling and Testing (RCT) for HIV instead of Voluntary Counselling and Testing (VCT) (Byamugisha et al. 2010b), VCT in

non-health services (Diketemena et al. 2011) and RCT during labor (Homsy et al. 2006).

Sensitized communities may enhance male participation. In previous studies, community mobilization strategies such as the use of incentives, campaigns, interaction with health workers (Moses et al. 2009; Larsson et al. 2010; Reece et al. 2010; Kululanga et al. 2011; Nyondo et al. 2013) and the use of influential people (Santmyire & Jamison 2006; Wall et al. 2012) have been found to enhance communities as a resource. In this study, in the common views of both men and midwives, communication with health care workers was seen as a resource of male participation (Papers III, IV and V). Uwimana et al. (2012) suggested that trained community health care workers are a resource of male participation and this was also found in this study (Paper V).

6.3 Implications of the study and suggestions for further research

Implications for updating the Zambian National PMTCT of HIV program

The national program has already been updated since 2008, but there is still a need to develop it further to serve citizens in this multilingual country. This study disclosed that a proportion of male partners were unaware of the content of antenatal care and that they could be suspicious of staff intentions. It is proposed that the National PMTCT of HIV program be opened to male partners as a whole. This means that a male partner has the option to participate in every phase of the program, for both his own health needs and for those of his spouse to whom he is expected to give support. Consequently, a male partner will become a focus of interest himself, instead of merely supplementary interest.

Implications for midwife education

In this study the views of men and midwives principally strengthened each other, in regard to the research questions under consideration. However, it is suggested that PMTCT of HIV issues could also be approached from the male partner's point of view in the content of midwife education, so as to gain an understanding that may enhance the interaction with families and to find out how a male partner could also be utilized as a resource in the prevention of MTCT of HIV. In the midwives' views there were only a few references to sub-populations. Thus, it is suggested that the needs of sub-populations, minorities and different tribes regarding PMTCT of HIV could be taken further into account.

Implications for clinical practice in ANC

This study revealed that Luba-Kasai men and midwives had many common concepts, so this would be a sensible starting point of conversations between men

and health personnel. In the results of this study, ANC was viewed both as a resource and as a barrier to male participation. The antenatal appointment is the real forum where a male partner faces the PMTCT of HIV program in practice. Consequently, every contact with a clinic is important as male clients carry their experiences to their communities. The oral spread of information is effective. It is suggested that health providers pay even more attention to their communication with male partners and look to create a confidential and respectful atmosphere. Concerns, such as the worries of an intimate relationship, HIV related stigma, possible cultural and religious barriers, or the use of the male partner's spirituality as a resource could be discussed. Male partners should be encouraged towards good fatherhood and the maintenance of a steady relationship, and this study has proved that male partners are willing to engage in these aims.

Implications for future research concerning male participation

This study describes male participation in the PMTCT of HIV, as viewed by Luba-Kasai men and midwives. However, more research is needed in order to advance from the descriptive level, to the production of a clearer definition of the concept and to formulate a model or theory for developing instruments which will enhance participation. The fact that only a few male partners are active in ANC challenges research to seek interventions which increase male participation. Several barriers and resources relating to male participation have been identified in this study. Consequently, research which aims to remove these barriers and to strengthen resources in ANC is anticipated to be of great benefit in developing this field of care.

7 Conclusions

Based on the results of this study, the following conclusions are drawn:

Male participation in the PMTCT of HIV involves utilizing ANC services for different purposes, so as to meet their own needs, and those of his spouse and baby. A number of the barriers to utilizing ANC services may be removed or mitigated by renewing national programs and by training health care personnel to meet men's needs.

Male participation in the PMTCT of HIV involves adopting preventative behaviors as part of their everyday lives. This is based not only on the ethical choices he makes in terms of his spouse and lifestyle, but also on his awareness of the nature of HIV as a preventable disease. Such skills and knowledge are only reached over a long period of time through constructive interactions with the teaching and education sector, the health care sector, communities and families, and acquiring such skills and knowledge as to help make good decisions in living conditions that are irrefutably challenging. Ultimately, it is words which present the most powerful tools in striving to improve the degree of male participation in the wellbeing of mothers and children.

References

- Aarnio P, Olsson P, Chimbiri A & Kulmala T. 2009. Male involvement in antenatal HIV counseling and testing: exploring men's perceptions in rural Malawi. *AIDS Care* 21(12); 1537–46.
- Adejuyigbe EA, Fasubaa OB & Onayade AA. 2004. Sociodemographic characteristics of HIV –positive mother-child pairs in Ile-Ife, Nigeria. *AIDS Care* 16(3); 275–82.
- Aizire J, Fowler MG & Coovadia HM. 2013. Operational issues and barriers to implementation of prevention of mother-to-child transmission of HIV (PMTCT) interventions in sub-Saharan Africa. *Current HIV Research* 11(2); 144–59.
- Aluisio A, Richardson BA, Bosire R, John-Stewart G, Mbori-Ngacha D & Farquhar C. 2011. Male antenatal attendance and HIV testing are associated with decreased infant HIV infection and increased HIV free survival. *Journal of Acquired Immune Deficiency Syndromes* 56(1); 76–82.
- Atkinson P & Delamont S. 2005. Analytic perspectives. In: Denzin NK & Lincoln YS (eds.) *The Sage Handbook of Qualitative Research*. 3rd Edition. USA: Sage Publication; 821–840.
- Bajunirwe 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 Research and Therapy* 2005, 2:10.
- Bannink-Mbazzi F, Lowicki-Zucca M, Ojom L, Kabasomi SV, Esiru G & Homsy J. 2013. High PMTCT program uptake and coverage of mothers, their partners, and babies in northern Uganda: achievements and lessons learned over 10 years of implementation (2002–2011). *Journal of Acquired Immune Deficiency Syndromes* 62(5); e138–45.
- Barré-Sinoussi F. 1996. HIV as the cause of AIDS. *The Lancet* 348 (9019); 31–3.
- Barré-Sinoussi F. 2010. HIV: A discovery opening the road to novel scientific knowledge and global health improvement. *Virology* 397(2); 255–259.
- Barré-Sinoussi F, Chermann JC, Rey F, Nugeyre MT, Chamaret S, Gruest J & et al. 1983. Isolation of a T-lymphotropic retrovirus from a patient at risk for acquired immune deficiency syndrome (AIDS). *Science* 220(4599); 868–71.
- Becker S, Mlay R, Schwandt HM, Lyamuya E. 2010. Comparing couples' and individual voluntary counseling and testing for HIV at antenatal clinics in Tanzania: a randomized trial. *AIDS and behavior* 14(3); 558–66.
- Bii SC, Otieno-Nyunya B, Siika A & Rotich JK. 2008a. Infant feeding practices among HIV infected women receiving prevention of mother-to-child transmission services at Kitale District Hospital, Kenya. *East African Medical Journal* 85(4); 156–61.

- Bii SC, Otieno-Nyunya B, Siika A & Rotich JK. 2008b. Family planning and safer sex practices among HIV infected women receiving prevention of mother-to-child transmission services at Kitale District Hospital. *East African Medical Journal* 85(1); 46–50.
- Brun-Vézinet F & Charpentier C. 2013. Update on the human immunodeficiency virus. *Médecine et Maladies Infectieuses* 43(5); 177–84.
- Brou H, Djohan G, Becquet R, Allou G, Ekouevi DK & et al. 2007. When do HIV-infected women disclose their HIV status to their male partner and why? A Study in a PMTCT Programme, Abidjan. *PLoS Med* 4(12); e342.
- Broussard L. 2006. Understanding qualitative research: a school nurse perspective. *The Journal of School Nursing* 22(4); 212–8.
- Burns N & Grove SK. 2005. *The Practice of Nursing Research: Conduct, Critique and Utilization*. 5th Edition. Elsevier, USA.
- Burton WFP. 1961. Luba religion and magic in custom and belief. Musée Royal de l'Afrique Centrale, Tervuren, Belgique.
- Byakika-Tusiime J, Crane J, Oyugi JH, Ragland K, Kawuma A, Musoke P & et al. 2009. Longitudinal Antiretroviral Adherence in HIV+ Ugandan Parents and Their Children Initiating HAART in the MTCT-Plus Family Treatment Model: Role of Depression in Declining Adherence Over Time. *AIDS and Behavior* 13; S82–S91.
- Byamugisha R, Tumwine JK, Semiyaga, N & Tylleskär T. 2010a. Determinants of male involvement in the prevention of mother-to-child transmission of HIV programme in Eastern Uganda: a cross-sectional survey. *Reproductive Health* 7:12.
- Byamugisha R, Tylleskar T, Kagawa MN, Onyango S, Karamagi CA & Tumwine JK. 2010b. Dramatic and sustained increase in HIV-testing rates among antenatal attendees in Eastern Uganda after a policy change from voluntary counselling and testing to routine counselling and testing for HIV: a retrospective analysis of hospital records, 2002–2009. *BMC Health Services Research* 10:290.
- Byamugisha R, Astrom AN, Ndeezi G, Karamagi CA, Tylleskar T & Tumwine JK. 2011. Male partner antenatal attendance and HIV testing in eastern Uganda: a randomized facility-based intervention trial. *Journal of the International AIDS Society* 14(43); 558–66.
- Cames C, Saher A, Ayassou KA, Cournil A, Meda N & Simondon KB. 2010. Acceptability and feasibility of infant-feeding options: experiences of HIV-infected mothers in the World Health Organization Kesho Bora mother-to-child transmission prevention (PMTCT) trial in Burkina Faso. *Maternal & Child Nutrition* 6(3); 253–65.
- Central Statistical Office Zambia 2012. Accessed June 2012. Available from: <http://www.zamstats.gov.zm/census.php>
- Chabikuli NO, Awi DD, Chukwujekwu O, Abubakar Z, Gwarzo U, Ibrahim M & et al. 2009. The use of routine monitoring and evaluation systems to assess a referral model of family planning and HIV service integration in Nigeria. *AIDS* 23 (Suppl 1):S97–S103.
- Chiang-Hanisko L, Ross R, Ludwick R & Martsolf D. 2006. International collaboration in nursing research: priorities, challenges and rewards. *Journal of Research in Nursing* 11(4); 307–22.

- Chinkonde JR, Sundby J & Martinson F. 2009. The prevention of mother-to-child HIV transmission programme in Lilongwe, Malawi: why do so many women drop out. *Reproductive Health Matters* 17(33); 143–51.
- Ciaranello AL, Perez F, Maruva M, Chu J, Engelsmann B, Keatinge J & et al. 2011. WHO 2010 Guidelines for Prevention of Mother-to-Child HIV Transmission in Zimbabwe: Modeling Clinical Outcomes in Infants and Mothers. *PLoS ONE* 6(6); e20224.
- Clavel F, Guétard D, Brun-Vézinet F, Chamaret S, Rey MA, Santos-Ferreira MO & et al. 1986. Isolation of a new human retrovirus from West African patients with AIDS. *Science* 233(4761); 343–6.
- Cohen DJ & Crabtree BJ. 2008. Evaluative criteria for qualitative research in health care: Controversies and Recommendations. *Annals of Family Medicine* 6(4); 331–9.
- Conkling M, Shutes EL, Karita E, Chomba E, Tichacek A, Sinkala M & et al. 2010. Couples' voluntary counselling and testing and nevirapine use in antenatal clinics in two African capitals: a prospective cohort study. *Journal of the International AIDS Society* 13:10.
- Coyne IT. 1997. Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries? *Journal of Advanced Nursing* 26(3); 623–30.
- Delvaux T, Elul B, Ndagije F, Munyana E, Roberfroid D & Asiimwe A. 2009. Determinants of nonadherence to a single-dose nevirapine regimen for the prevention of mother-to-child HIV transmission in Rwanda. *Journal of Acquired Immune Deficiency Syndromes* 50(2); 223–30.
- Desgrées-du-Loù A, Brou H, Traore AT, Djohan G, Becquet R & Leroy V. 2009. From prenatal HIV testing of the mother to prevention of sexual HIV transmission within the couple. *Social Science & Medicine*, 69(6); 892–9.
- Ditekemena J, Matendo R, Koole O, Colebunders R, Kashamuka M, Tshefu A et al. 2011. Male partner voluntary counseling and testing associated with the antenatal services in Kinshasa, Democratic Republic of Congo: a randomized controlled trial. *International journal of STD & AIDS* 22(3); 165–70.
- Dunlap J, Foderingham N, Bussell S, Wester CW, Audet CM & Aliyu MH. 2014. Male Involvement for the Prevention of Mother-to-Child HIV Transmission: A Brief Review of Initiatives in East, West, and Central Africa. *Current HIV/AIDS Reports*. Epub ahead of print.
- Duff P, Kipp W, Wild TC, Rubaale T & Okech-Ojony J. 2010. Barriers to accessing highly active antiretroviral therapy by HIV-positive women attending an antenatal clinic in a regional hospital in western Uganda. *Journal of the International AIDS Society* 13:37.
- Duff P, Rubaale T & Kipp W. 2012. Married men's perceptions of barriers for HIV-positive pregnant women accessing highly active antiretroviral therapy in rural Uganda. *International Journal of Women's Health* 4; 227–33.
- Encyclopaedia Britannica, Inc. *Britannica Concise Encyclopedia*. Chicago, IL, USA. 2006. pp. 1144–1145. Accessed April 2014. Available from: <http://site.ebrary.com/lib/tampere/Doc?id=10270935&ppg=1157>

- Engebretsen IM, Moland KM, Nankunda J, Karamagi CA, Tylleskär T & Tumwine JK. 2010. Gendered perceptions on infant feeding in Eastern Uganda: continued need for exclusive breastfeeding support. *International Breastfeeding Journal* 5:13.
- Falnes EF, Moland KM, Tylleskar T, de Paoli MM, Msuya SE & Engebretsen IM. 2011. "It is her responsibility": partner involvement in prevention of mother to child transmission of HIV programmes, northern Tanzania. *Journal of the International AIDS Society* 14:21.
- Farquhar C, Kiarie JN, Richardson BA, Kabura MN, John FN, Nduati RW & et al. 2004. Antenatal couple counseling increases uptake of interventions to prevent HIV-transmission. *Journal of Acquired Immune Deficiency Syndromes* 37(5); 1620–6.
- Freshwater D, Sherwood G & Drury V. 2006. International research collaboration: Issues, benefits and challenges of the global network. *Journal of Research in Nursing* 11(4); 295–303.
- GeoHive 2012. Zambia: preliminary results for districts of the 2010 population census. Accessed June 2012. Available from: <http://www.geohive.com/cntry/zambia.aspx>
- Gilles KP, Zimba C, Mofolo I, Bobrow E, Hamela G, Martinson F et al. 2011. Factors influencing utilization of postpartum CD4 count testing by HIV-positive women not yet eligible for antiretroviral treatment. *AIDS Care* 23(3); 322–9.
- Gourlay A, Birdthistle I, Mburu G, Iorpenda K & Wringe A. 2013. Barriers and facilitating factors to the uptake of antiretroviral drugs for prevention of mother-to-child transmission of HIV in sub-Saharan Africa: a systematic review. *Journal of the International AIDS Society* 16(1); 185–88.
- Graneheim UH & Lundman B. 2004. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today* 24(2); 105–12.
- Green BN, Johnson CD & Adams A. 2006. Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. *Journal of Chiropractic Medicine* 5(3); 101–17.
- Hagey J, Rulisa S & Pérez-Escamilla R. 2014. Barriers and solutions for timely initiation of antenatal care in Kigali, Rwanda: health facility professionals' perspective. *Midwifery* 30(1); 96–102.
- Harms G, Schulze K, Moneta I, Baryomunsi C, Mbezi P & Poggensee G. 2005. Mother-to-child transmission of HIV and its prevention: awareness and knowledge in Uganda and Tanzania. *SAHARA-J: Journal of Social Aspects of HIV/AIDS: An Open Access Journal* 2:2; 258–66.
- Holloway I & Wheeler S. 1996. *Qualitative Research for Nurses*. Blackwell Science Ltd, Great Britain.
- Homsy J, Kalamya JN, Obonyo J, Ojwang J, Mugumya R & Opio C. 2006. Routine intrapartum HIV counseling and testing for prevention of mother-to-child transmission of HIV in a rural Ugandan hospital. *Journal of Acquired Immune Deficiency Syndromes* 42(2); 149–54.
- Houghton C, Casey D, Shaw D & Murphy K. 2013. Rigour in qualitative case-study research. *Nurse Researcher* 20(4); 12–17.

- Hsieh H-F & Shannon SE. 2005. Three approaches to qualitative content analysis. *Qualitative Health Research* 15(9); 1277–87.
- Ikechebelu JI, Ugboaja JO, Kalu SO & Ugochukwu EF. 2011. The outcome of prevention of mother to child transmission (PMTCT) of HIV infection programme in Nnewi, southeast Nigeria. *Nigerian Journal of Medicine: journal of the National Association of Resident Doctors of Nigeria*, 20(4); 421–5.
- Jasseron C, Mandelbrot L, Dollfus C, Trocmé N, Tubiana R, Teglas JP & et al. 2013. Non-disclosure of a pregnant woman's HIV status to her partner is associated with non-optimal prevention of mother-to-child transmission. *AIDS and Behavior* 17(2); 488–97.
- Jones DL, Peltzer K, Villar-Loubet O, Shikwane E, Cook R, Vamos S & et al. 2013. Reducing the risk of HIV infection during pregnancy among South African women: a randomized controlled trial. *AIDS Care* 25(6); 702–9.
- Kagimu M, Guwatudde D, Rwabukwali C, Kaye S, Walakira Y & Ainomugisha D. 2012. Religiosity for HIV prevention in Uganda: a case study among Christian youth in Wakiso district. *African Health Sciences* 12(1); 17–25.
- Kalembo FW, Zgambo M, Mulaga AN, Yukai D & Ahmed NI. 2013. Association between male partner involvement and the uptake of prevention of mother-to-child transmission of HIV (PMTCT) interventions in Mwanza district, Malawi: a retrospective cohort study. *PLoS One* 8(6); e66517.
- Kasenga F, Hurtig AK & Emmelin M. 2010. HIV-positive women's experiences of a PMTCT programme in rural Malawi. *Midwifery* 26(1); 27–37.
- Katz DA, Kiarie JN, John-Stewart GC, Richardson BA, John FN & Farquhar C. 2009a. Male perspectives on incorporating men into antenatal HIV counseling and testing. *PLoS One* 4(11); e7602
- Katz DA, Kiarie JN, John-Stewart GC, Richardson BA, John FN & Farquhar C. 2009b. HIV testing men in the antenatal setting: understanding male non-disclosure. *International Journal of STD & AIDS* 20(11); 765–7.
- Kebaabetswe PM. 2007. Barriers to participation in the prevention of mother-to-child HIV transmission program in Gaborone, Botswana a qualitative approach. *AIDS Care* 19(3); 355–60.
- Kiarie JN, Farquhar C, Richardson BA, Kabura MN, John FN, Nduati RW & et al. 2006. Domestic violence and prevention of mother-to-child transmission of HIV-1. *AIDS* 20(13); 1763–9.
- Kisangani EF & Bobb FS. 2009. *Historical Dictionary of the Democratic Republic of the Congo* (3rd Edition). Scarecrow Press, Blue Ridge Summit, PA, USA. 2009. pp. 317–318. Accessed April 2014. Available from: <http://site.ebrary.com/lib/tampere/Doc?id=10434977&ppg=411>
- Kizito D, Woodburn PW, Kesande B, Ameke K, Nabulime J, Muwanga M. 2008. Uptake of HIV and syphilis testing of pregnant women their male partners in a programme for prevention of mother-to-child HIV transmission in Uganda. *Tropical Medicine & International Health* 13(5); 680–82.

- Knalf KA & Breitmayer BJ. 1991. Triangulation in Qualitative Research: Issues of Conceptual Clarity and Purpose. In: *Qualitative Nursing Research: A Contemporary Dialogue*, pp. 226–239. Ed. JM Morse. Revised Edition. Sage Publications, USA.
- Koch T. 1994. Establishing rigour in qualitative research: the decision trail. *Journal of Advanced Nursing* 19(5); 976–86.
- Koo K, Makin JD & Forsyth BW. 2013a. Where are the men? Targeting male partners in preventing mother-to-child HIV transmission. *AIDS Care* 25(1); 43–8.
- Koo K, Makin JD & Forsyth BW. 2013b. Barriers to male-partner participation in programs to prevent mother-to-child HIV transmission in South Africa. *AIDS Education and Prevention* 25(1); 14–24.
- Kululanga LI, Sundby J, Malata A & Chirwa E. 2011. Striving to promote male involvement in maternal health care in rural and urban settings in Malawi – a qualitative study. *Reproductive Health* 8:36.
- Kumwenda J, Matchere F, Mataya R, Chen S Mipando L, Li Q & et al. 2011. Coverage of highly active antiretroviral therapy among postpartum women in Malawi. *International Journal of STD & AIDS* 22 (7); 368–72.
- Kwambai TK, Dellicour S, Desai M, Ameh CA, Person B, Achieng F & et al. 2013. Perspectives of men on antenatal and delivery care service utilisation in rural western Kenya: a qualitative study. *Pregnancy & Childbirth* 13:134.
- Kylmä J 2000. Dynamics of hope in adult persons living with HIV/AIDS and their significant others – a substantive theory. *Kuopio University Publications E. Social Sciences* 85. University of Kuopio.
- Larsson EC, Thorson A, Nsabagasani X, Namusoko S, Popenoe R & Ekström AM. 2010. Mistrust in marriage-reasons why men do not accept couple HIV testing during antenatal care- a qualitative study in eastern Uganda. *BMC Public Health*10:769.
- Larsson EC, Thorson A, Pariyo G, Conrad P, Arinaitwe M, Kemigisa M & et al. 2012. Opt-out HIV testing during antenatal care: experiences of pregnant women in rural Uganda. *Health Policy Plan* 27(1); 69–75.
- Levy JA 2006. HIV pathogenesis: knowledge gained after two decades of research. *Advances in Dental Research* 19(1); 10–16.
- Levy JA 2009. HIV pathogenesis: 25 years of progress and persistent challenges. *AIDS* 23(2); 147–60.
- Leininger M. 1985. Nature, rationale, and importance of qualitative research methods in nursing. In: *Qualitative Research Methods in Nursing*. M Leininger (Ed.). Grune & Stratton, USA.
- Lincoln YS & Guba EG. 1985. *Naturalistic Inquiry*. Sage Publications, USA.
- Lubega M, Musenze IA, Joshua G, Dhafa G, Badaza R, Bakwesegha CJ & et al. 2013. Sex inequality, high transport costs, and exposed clinic location: reasons for loss to follow-up of clients under prevention of mother-to-child HIV transmission in eastern Uganda – a qualitative study. *Patient Preference and Adherence* 7; 447–54.
- Madiba S & Letsoalo R. 2013. HIV disclosure to partners and family among women enrolled in prevention of mother to child transmission of HIV program: implications for infant feeding in poor resourced communities in South Africa. *Global Journal of Health Science* 5(4); 1–13.

- Maman S, Moodley D & Groves AK. 2011. Defining male support during and after pregnancy from the perspective of HIV-positive and HIV-negative women in Durban, South Africa. *Journal of Midwifery & Women's Health* 56(4); 325–31.
- Mataya R, Mathanga D, Chinkhumba J, Chibwana A, Chikaphupha K & Cardiello J. 2013. A qualitative study exploring attitudes and perceptions of HIV positive women who stopped breastfeeding at six months to prevent transmission of HIV to their children. *Malawi Medical Journal* 25(1);15–9.
- Mbonye AK, Hansen KS, Wamono F & Magnussen P. 2010. Barriers to prevention of mother-to-child transmission of HIV services in Uganda. *Journal of Biosocial Science* 42(2); 271–83.
- Medley A, Garcia-Moreno C, McGill S & Maman S. 2004. Rates, barriers and outcomes of HIV serostatus disclosure among women in developing countries: implications for prevention of mother-to-child transmission programmes. *Bulletin of the World Health Organization* 82(4); 299–307.
- Miles MB & Huberman AM. 1994a. *Qualitative Data Analysis*. SAGE Publications, California, USA.
- Miles MB & Huberman AM 1994b. *Qualitative Data Analysis: an expanded sourcebook*. SAGE Publications, California, USA.
- Ministry of Health [Zambia] 2003. *Integrated Prevention of Mother to Child Transmission of HIV/AIDS Protocol Guidelines*. Accessed March 2014. Available from: <http://www.hsph.harvard.edu/population/aids/zambia.aids.03.pdf>
- Ministry of Health (MOH) [Zambia], Central Statistical Office [Zambia], and Macro International Inc. 2006. *Zambia HIV/AIDS Service Provision Assessment Survey 2005*. Calverton, Maryland, USA: Ministry of Health, Central Statistical Office, and Macro International Inc. Accessed March 2014. Available from: <http://www.zamstats.gov.zm/report/Demo/Zambia%20HIV-AIDS%20Service%20Provision%20Assessment%20Survey%2020.pdf>
- Ministry of Health [Zambia] 2007. *National Protocol Guidelines, Integrated Prevention of Mother- to-Child Transmission of HIV/AIDS*. Accessed March 2014. Available from: <http://apps.who.int/medicinedocs/documents/s19279en/s19279en.pdf>
- Ministry of Health [Zambia] 2008. *National Protocol Guidelines, Integrated Prevention of Mother-to-Child Transmission of HIV/AIDS*. Accessed March 2014. Available from: http://www.emtct-iatt.org/wp-content/uploads/2013/04/Zambia_National-PMTCT-Guidelines_2008.pdf
- Ministry of Health [Zambia] 2010. *2010 National Protocol Guidelines, Integrated Prevention of Mother-to-Child Transmission of HIV*. Accessed March 2014. Available from: <http://www.k4health.org/sites/default/files/National%20PMTCT%20Protocol%20Guidelines.pdf>
- Ministry of Health 2012. *Government of the Republic of Zambia*. Accessed June 2012. Available, from: <http://www.moh.gov.zm/index.php/health-facilities>
- Ministry of Health [Zambia] 2013. *Lifelong Antiretroviral Drugs (ARV's) for all HIV positive Pregnant Women in Zambia. Policy Guidelines for health Facilities in Zambia*. Accessed March 2014. Available from: http://emtct-iatt-v2.org.php54-1.dfw1-2.websitetestlink.com/wp-content/uploads/2012/11/Policy-guidelines-for-eMTCT-Option-B+_Zambia-2013-signed1.pdf

- Mirkuzie AH, Hinderaker SG & Mørkve O. 2010. Promising outcomes of a national programme for the prevention of mother-to-child HIV transmission in Addis Ababa: a retrospective study. *BMC Health Services Research* 10: 267.
- Mlay R, Lugina H & Becker S. 2008. Couple counselling and testing for HIV at antenatal clinics: views from men, women and counsellors. *AIDS Care* 20(3); 356–60.
- Mohlala BK, Boily MC & Gregson S. 2011. The forgotten half of the equation: randomized controlled trial of a male invitation to attend couple voluntary counselling and testing. *AIDS* 25(12):1535–41.
- Mockiene V, Suominen T, Välimäki M, Razbadauskas A, Caplinskas S & Martinkenas A. 2011a. Nurses' willingness to take care of people living with human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) — does a teaching intervention make a difference? *Nurse Education Today* 31(6); 617–22.
- Mockiene V, Suominen T, Valimaki M, Razbadauskas A, Martinkenas A & Caplinskas, S. 2011b. The Impact of an Education Intervention to Change Nurses' HIV-Related Knowledge and Attitudes in Lithuania: A Randomized Controlled Trial. *Journal of the Association of Nurses in AIDS Care*, 22(2); 140–9.
- Montagnier L. 2010. 25 years after HIV discovery: Prospects for cure and vaccine. *Virology* 397; 248–54.
- Montgomery E, Van der Straten A & Torjesen K. 2011. “Male Involvement” in women and children's HIV prevention: challenges in definition and interpretation. *Journal of Acquired Immune Deficiency Syndromes* 57(5); e114–e5.
- Moodley P, Parboosing R & Moodley D. 2013. Reduction in perinatal HIV infections in KwaZulu-Natal, South Africa, in the era of more effective prevention of mother to child transmission interventions (2004–2012). *Journal of Acquired Immune Deficiency Syndromes* 63(3); 410–15.
- Morse JM. 1991. Strategies for Sampling. In: *Qualitative Nursing Research: A Contemporary Dialogue*, p. 141. Ed. JM Morse. Revised Edition. Sage Publications, USA.
- Moses AE, Chama C, Udo SM & Omotora BA. 2009. Knowledge, attitude and practice of ante-natal attendees toward prevention of mother to child transmission (PMTCT) of HIV infection in a tertiary health facility, Northeast-Nigeria. *East African Journal of Public Health* 6(2); 128–35.
- Mpofu E, Nkomazana F, Muchado JA, Togarasei L & Bingenheimer JB. 2014. Faith and HIV prevention: the conceptual framing of HIV prevention among Pentecostal Batswana teenagers. *BMC Public Health* 14:225.
- Msuya SE, Mbizvo E, Uriyo J, Stray-Pedersen B, Sam NE & Hussain A. 2006. Predictors of failure to return for HIV test results among pregnant women in Moshi, Tanzania. *Journal of Acquired Immune Deficiency Syndromes* 43(1); 85–90.
- 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* 20(6); 700–9.
- Musheke M, Bond V & Merten S. 2013. Couple experiences of provider-initiated couple HIV testing in an antenatal clinic in Lusaka, Zambia: lessons for policy and practice. *BMC Health Service Research* 13:97.
- Musumari PM, Feldman MD, Techasrivichien T, Wouters E, Ono-Kihara M & Kihara M. 2013. “If I have nothing to eat, I get angry and push the pills bottle away from

- me”: A qualitative study of patient determinants of adherence to antiretroviral therapy in the Democratic Republic of Congo. *AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV* 25(10); 1271–7.
- National Institute of Nursing Research, 2013. Mission & Strategic Plan. Accessed March 2014. Available from: <https://www.ninr.nih.gov/aboutninr/ninr-mission-and-strategic-plan#>
- Nassali M, Nakanjako D, Kyabayinze D, Beyeza J, Okoth A & Mutyaba T. 2009. Access to HIV/AIDS care for mothers and children in sub-Saharan Africa: adherence to the postnatal PMTCT program. *AIDS Care* 21(9); 1124–31.
- Nigatu T & Woldegebriel Y. 2011. Analysis of the prevention of mother-to-child transmission (PMTCT) service utilization in Ethiopia: 2006–2010. *Reproductive Health* 8: 6.
- Njunga J & Blystad A. 2010. ‘The divorce program’: gendered experiences of HIV positive mothers enrolled in PMTCT programs – the case of rural Malawi. *International Breastfeeding Journal* 5:14.
- Nkuoh GN, Meyer DJ, Tih PM & Nkfusai J. 2010. Barriers to men’s participation in antenatal and prevention of mother-to-child HIV transmission care in Cameroon, Africa. *Journal of Midwifery & Women’s Health* 55(4); 363–9.
- Nkuoh GN, Meyer DJ & Nshom EM. 2013. Women’s attitudes toward their partners’ involvement in antenatal care and prevention of mother-to-child transmission of HIV in Cameroon, Africa. *Journal of Midwifery & Women’s Health* 58(1); 83–91.
- Nugent P, Hammett D & Dorman S (Eds). 2007. *Making Nations, Creating Strangers: States and Citizenship in Africa*, pp. 76–77. African Social Studies Series 16. Brill Academic Publishers, Boston, MA, USA. Accessed April 2014. Available from: <http://site.ebrary.com/lib/tampere/Doc?id=10270812&cppg=91>
- Nuwagaba-Biribonwoha H, Mayon-White RT, Okong P & Carpenter LM. 2007. Challenges faced by health workers in implementing the prevention of mother-to-child HIV transmission (PMTCT) programme in Uganda. *Journal of Public Health (Oxford, England)* 29(3); 269–74.
- Nyondo AL, Muula AS & Chimwaza AF. 2013. Assessment of strategies for male involvement in the prevention of mother-to-child transmission of HIV services in Blantyre, Malawi. *Global Health Action* 6: 22780.
- Oladokun RE, Brown BJ & Osinusi K. 2010. Infant-feeding pattern of HIV-positive women in a prevention of mother-to-child transmission (PMTCT) programme. *AIDS Care* 22(9); 1108–14.
- Olson JS. 1996. *Peoples of Africa*. Greenwood Press, Westport, CT, USA. Cited in April 2014. Available from: <http://site.ebrary.com/lib/tampere/Doc?id=10001965&cppg=355>
- Orb A, Eisenhauer L & Wynaden D. 2001. Ethics in qualitative research. *Journal of Nursing Scholarship* 33(1); 93–6.
- Osoti AO, John-Stewart G, Kiarie J, Richardson B, Kinuthia J, Krakowiak D & et al. 2013. Home visits during pregnancy enhance male partner HIV counselling and testing in Kenya: a randomized clinical trial. *AIDS* 28(1); 95–103.

- Otmar R, Kotowicz MA, Nicholson GC & Pasco JA. 2011. Methodological reflections on using pilot data from fracture patients to develop a qualitative study. *BMC Research Notes* 4(1); 508.
- OED Online a. "participation". Oxford Dictionaries. Oxford University Press. Accessed May 2014. Available from: <http://www.oxforddictionaries.com/definition/english/participation>
- OED Online b. "take care". Oxford Dictionaries. Oxford University Press. Accessed May 2014. Available from: <http://www.oxforddictionaries.com/definition/english/take-care>
- Patton MQ. 1990. *Qualitative Evaluation and Research Methods*. 2nd Edition. Sage Publications, USA.
- Peltzer K, Mosala T, Shisana O, Nqueko A & Mngqundaniso N. 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* 11(1); 57–66.
- Peltzer K, Mlambo M, Phaswana-Mafuya N & Ladzani R. 2010. Determinants of adherence to a single-dose nevirapine regimen for the prevention of mother-to-child HIV transmission in Gert Sibande district in South Africa. *Acta Paediatrica* 99(5); 699–704.
- Peltzer K, Sikwane E & Majaja M. 2011. Factors associated with short-course antiretroviral prophylaxis (dual therapy) adherence for PMTCT in Nkangala district, South Africa. *Acta Paediatrica* 100(9); 1253–7.
- Petridis C. 2001. A Figure for Cibola: Art, Politics, and Aesthetics among the Luluwa People of the Democratic Republic of the Congo. *Metropolitan Museum Journal* 36; 235–58.
- Polit DF & Hungler BP. 1995. *Nursing Research. Principles and Methods*. 5th Edition. J.B. Lippincott, USA.
- Reece M, Hollub A, Nangami M & Lane K. 2010. Assessing male spousal engagement with prevention of mother-to-child transmission (pMTCT) programs in western Kenya. *AIDS Care* 22(6); 743–50.
- Sagay AS, Musa J, Ekwempu CC, Imade GE, Babalola A, Daniyan G & et al. 2006. Partner disclosure of HIV status among HIV positive mothers in Northern Nigeria. *African Journal of Medical Sciences* 35; S119–S23.
- Sanchez AM, DeMarco CT, Hora B, Keinonen S, Chen Y, Christie Brinkley C & et al. 2014. Development of a contemporary globally diverse HIV viral panel by the EQAPOL program. *Journal of Immunological Methods*. [In Press]
- Sandelowski M. 1995. Focus on qualitative methods: sample size in qualitative research. *Research in Nursing & Health* 18(2); 179–183.
- Sandelowski M. 2000. Whatever happened to qualitative description? *Research in Nursing & Health* 23(4); 334–40.
- Sandelowski M. 2010. What's in a name? Qualitative description revisited. *Research in Nursing & Health* 33(1); 77–84.
- Santmyre A & Jamison M. 2006. Educating African pastors on mother-to-child transmission of HIV/AIDS. *Journal of Nursing Scholarship* 38(4); 321–7.

- Sarker M, Papy J, Traore S & Neuhann F. 2009. Insights on hiv pre-test counseling following scaling-up of PMTCT program in rural health posts, Burkina Faso. *East Afr J Public Health*. 6(3); 280–6.
- Serlo K. 2008. University students' attitudes towards HIV/AIDS in Finland and in Kenya. *Acta Universitatis Ouluensis D. Health Management Science*. Oulun Yliopisto.
- Sigma Theta Tau International, The Honor Society of Nursing, 2014. STTI and the United Nations. Accessed March 2014. Available from: <http://www.nursingsociety.org/GlobalAction/UnitedNations/Pages/STTIandtheUN.aspx>
- Skinner J, Underwood C, Schwandt H & Magombo A. 2013. Transitions to adulthood: Examining the influence of initiation rites on the HIV risk of adolescent girls in Mangochi and Thyolo districts of Malawi. *AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV* 25(3); 296–301.
- Squires A. 2008. Language barriers and qualitative nursing research: methodological considerations. *International Nursing Review* 55(3); 265–73.
- Stern PN. 1991. Are Counting and Coding A Cappella Appropriate in Qualitative Research? In: *Qualitative Nursing Research: A Contemporary Dialogue*, pp. 147–62. Ed. JM Morse. Revised Edition. Sage Publications, USA.
- Stern PN. 1991. Are Counting and Coding A Cappella Appropriate in Qualitative Research? In Morse JM. (ed) *Qualitative Nursing Research: A Contemporary Dialogue*. Revised edition. Sage Publications, USA
- Straus AL & Corbin JM. 1990. *Basics of Qualitative Research: Grounded Theory Procedures and techniques*. Sage Publications, London.
- Suominen T, Koponen K, Staniuliene V, Istomina N, Aro I, Kisper-Hint IR & et al. 2009. Nursing students' attitudes towards HIV/AIDS patients in Finland, Estonia and Lithuania. *Scandinavian Journal of Caring Sciences* 23(2); 282–9.
- Suominen T, Koponen N, Mockiene V, Raid U, Istomina N, Vänskä M-L & et al. 2010. Nurses' knowledge and attitudes to HIV/AIDS – An international comparison between Finland, Estonia and Lithuania. *International Journal of Nursing Practice* 16(2); 138–47.
- Sydor A. 2013. Conducting research into hidden or hard-to-reach populations. *Nurse Researcher* 20 (3); 33–7.
- Theuring S, Mbezi P, Luvanda H, Jordan-Harder B, Kunz A & Harms G. 2009. Male involvement in PMTCT services in Mbeya Region, Tanzania. *AIDS and Behavior* 13(Suppl 1); 92–102.
- Tjoa A, Kapihya M, Libetwa M, Schroder K, Scott C, Lee J & et al. 2010. Meeting human resources for health staffing goals by 2018: a quantitative analysis of policy options in Zambia. *Human Resources for Health* 8:15.
- Tonwe-Gold B, Koumayi DE, Amani-Bosse C, Toure S, Kone M & Becquet R. 2009. Implementing family-focused HIV care and treatment: the first 2 years' experience of the mother-to-child transmission-plus program in Abidjan, Côte d'Ivoire. *Tropical Medicine & International Health* 14(2); 204–12.
- Turan JM, Bukusi EA, Onono M, Holzemer WL, Miller S & Cohen CR. 2011. HIV/AIDS stigma and refusal of HIV testing among pregnant women in rural Kenya: results from the MAMAS Study. *AIDS and Behavior* 15(6); 1111–20.

- Tweheyo R, Konde-Lule J, Tumwesigye NM & Sekandi JN. 2010. Male partner attendance of skilled antenatal care in peri-urban Gulu district, Northern Uganda. *BMC Pregnancy Childbirth* 10:53.
- UNAIDS 2011. Global plan towards the elimination of new infections among children by 2015 and keeping mothers alive, 2011–2015. Geneva. Accessed March 2014. Available from: http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2011/20110609_jc2137_global-plan-elimination-hiv-children_en.pdf
- UNAIDS 2013. Global report: UNAIDS report on the global aids epidemic: 2013. Accessed March 2014. Available from: http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2013/gr2013/UNAIDS_Global_Report_2013_en.pdf
- UNdata 2012. Zambia. Accessed June 2012. Available from: <http://data.un.org/CountryProfile.aspx?crName=ZAMBIA>
- Unicef 2012. Statistics. Accessed June 2012. Available from: http://www.unicef.org/info-bycountry/zambia_statistics.html
- UNHCR, The UN Refugee Agency 2012. Zambia. Accessed June 2012. Available from: <http://www.unhcr.org/cgi-bin/texis/vtx/page?page=49e485ba6&submit=GO>
- University of Zambia Biomedical Research Ethics Committee. Standard operating procedures. Accessed June, 2012. Available from: http://www.healthresearchweb.org/files/UNZAREC_SOPs.pdf
- Uwimana J, Zarowsky C, Hausler H & Jackson D. 2012. Training community care workers to provide comprehensive TB/HIV/PMTCT integrated care in KwaZulu-Natal: lessons learnt. *Tropical Medicine & International Health* 17(4); 488–96.
- van Schalkwyk C, Mndzebele S, Hlophe T, Garcia Calleja JM, Korenromp EL & et al. 2013. Outcomes and Impact of HIV Prevention, ART and TB Programs in Swaziland – Early Evidence from Public Health Triangulation. *PLoS ONE* 8(7); e69437.
- Villar-Loubet OM, Bruscantini L, Shikwane ME, Weiss S, Peltzer K & Jones DL. 2013. HIV disclosure, sexual negotiation and male involvement in prevention-of-mother-to-child-transmission in South Africa. *Culture, Health & Sexuality* 15(3); 253–68.
- Välimäki M, Makkonen P, Blek-Vehkaluoto M, Mockiene V, Istomina N, Raid & et al. 2008. Willingness to care for patients with HIV/AIDS. *Nursing Ethics* 15(5); 586–600.
- Välimäki M, Makkonen P, Mockiene V, Aro I, Blek-Vehkaluoto M, Istomina N & et al. 2010. Nursing and midwife students' willingness to provide care to patients with HIV/AIDS – A comparative study in Finland, Estonia and Lithuania. *Nurse Education Today* 30(7); 674–9.
- Wall K, Karita E, Nizam A, Bekan B, Sardar G & Casanova A. 2012. Influence network effectiveness in promoting couples' HIV voluntary counselling and testing in Kigali, Rwanda. *AIDS* 26(2); 217–27.
- Wettstein C, Mugglin C, Egger M, Blaser N, Salazar L, Estill J & et al. 2012. Missed Opportunities to Prevent Mother-to-Child-Transmission in sub-Saharan Africa: Systematic Review and Meta-Analysis. *AIDS* 26(18); 2361–73.

- WHO 2003. Strategic approaches to the prevention of HIV infection in infants: report of a WHO meeting, Morges, Switzerland, 20–22 March 2002. Geneva, World Health Organization, 2003. Accessed March 2014. Available from: <http://www.who.int/hiv/pub/mtct/en/StrategicApproachesE.pdf>.
- WHO 2010. New guidance on prevention of mother-to-child transmission of HIV and infant feeding in the context of HIV. Accessed March 2014. Available from: <http://www.who.int/hiv/pub/mtct/PMTCTfactsheet/en/#>
- WHO 2011a. Male involvement in the prevention of mother-to-child transmission of HIV. Accessed March 2014. Available from: <http://www.who.int/reproductive-health/publications/rtis/9789241503679/en/>
- WHO 2011b. Testing and Counselling for Prevention of Mother-to-Child Transmission of HIV (TC for PMTCT): Support Tools [2011 Edition]. Accessed March 2014. Available from: <http://www.womenchildrenhiv.org/wchiv?page=vc-10-00#S3X>
- WHO 2014. Millennium Development Goals (MDGs). Accessed March 2014. Available from: http://www.who.int/topics/millennium_development_goals/en/
- Wilson S, Ramelet A-S & Zuiderduyn S. 2010. Research priorities for nursing care of infants, children and adolescents: a West Australian Delphi Study. *Journal of Clinical Nursing* 19; 1919–28.
- Zambia Country Report 2012. Monitoring the Declaration of Commitment on HIV and AIDS and the Universal Access, Biennial Report. Accessed March 2014. Available from: http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2012countries/ce_ZM_Narrative_Report.pdf

Appendix 1

(1/3)

Informed consent form for male participants in English, Luba and Nyanja languages

Dear Sir,

we invite you to give an interview for the scientific purposes. This study is a part of doctoral studies of Jaana Auvinen. This research is done to increase knowledge about male participation to prevent mother to child HIV transmission in Zambia. We are interested in your views about men's role to help mothers to adhere to the Prevention of Mother-to-Child Transmission of HIV programs in antenatal clinics. We are going to ask 40 men whose wives are pregnant or have suckling babies to give their acceptance to be interviewed. Basically, it is like discussing maternal issues. The research assistant is translating between Luba and English and if it is required, between Nyanja and English.

The interview takes approximately from one to two hours and it will be recorded because of a necessary need to repeat it later for analysis. The researcher and research assistant are forbidden to reveal any personal detail to anyone which means that the content of the interviews will be handled confidentially and in privacy. No one can recognize participants through the material during the analyzing process or after. In other words, the researcher Jaana Auvinen and the research assistant J.K. are not allowed to reveal any detail of you or any part of your interview to outsiders so that no one can combine you and your given information.

We have no connections with political issues, police officers, business or antenatal clinics when we are interviewing you. Participation to this interview is voluntary.

I _____ have understood the content of this paper and I give my informed consent to be interviewed.

Signature _____

Signature/thumb _____

In case you have something to ask more do not hesitate to contact The University of Zambia, Biomedical Research Ethics Committee, Ridgeway Campus, P.O. Box 50110 Lusaka. Tel. +260 211 256067. Mobile + 260 97 7801373. Email: unzarec@yahoo.com.

Jaana Auvinen
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Supervisors of the PhD-dissertation are:
Professor Tarja Suominen from University of Kuopio, Finland
Professor Maritta Välimäki from University of Turku, Finland

Mwanetu ,

Udimubikidibue bua kuedibua makonka pamalu scientific . Malonga aa adienzeka bua kubadisha dimanya mukudifila kua batatu bua kuepula bamamu mu kuambukishila kua bana HIV,mu Zambia.

Tudi ne ntema mukumona kuele pa bukokeshi bua ba tatu mukuambuluisha kua bamamu bilondesehele programme wa HIV ne malongesha adi enzeka ku ma clinic anyi ku bipimu buamushidu wa kuambulukishila bana masama.

Tudi ne bua kuebaja batatu 40 badi ne bakaji babobikale ne memi anyi bikale bamuisha bana bitabuje tubele makonka. Bidibumuyuki tuyikila malu adi mudibaka

Muambuluishi wa mudimu eu udi ukudimuna mu Tshiluba ne Angle bikalabio bikenged-ibua mu Nyanja – English.

Muyuki eu udi wenzeka mu diba dimue anyi meba abidi me muyuki onso udi ukuatshibua mukasanji bua kunvua tshakabidi ne kumona mua kupeta tshipetu tshandekelu.

Mulongi ne muambuluishi badi bakandikibue bua kupatulabo malu aa, buanenku muyuk-ieu udiwenzeka mumusokoko. Muntu kena muakujingulula badi bafile menji abo mutshikondo tsha kutaata anyi kunyim.

Katuena mubobumue ne bena politic, police , bangendamushinga anyi bena ku bipimu patudituenza mudimu eu.

Meme.....ndimunvue
tshena bualu

tsha dibeki edi ne ndimusue kuedibua makonka signature/
thumb.....

Biwikala ne makonka kujingakanyi nansha konka ebeja Universite wa Zambia. Biomedical Research Ethics Committee. Ridgeway Campus, P.O. Box 50110Lusaka. Tel. +260 211 256067. Mobile +260 97 7801373. Email: unzarec@yahoo.com.

Jaana Auvinen

RN, MNSc, PhD-mulongi

Email: xxxxxxxxxx

Tel. xxxxxxxxxx

Batangidi ba PhD-dissertation badi aba:

Professor Tarja Suominen from University of Kuopio, Finland

Professor Maritta Välimäki from University of Turku, Finland

Mbale,

Muaitanidua ku kuyanka mafunso pa cholinga cha kufufudza za scientific. Mapunziro awa ni gao limodzi lamapunziro a udokutala a Jaana Auvinen .

Zofufudza idzi zichitika ndicholinga cha kuongezera kuziwa kua adzibambo kukuchingiridza ana

agono ku kutenga H.I.V kuchokera kwa amake muZambia

Ndife odzipereka mukunvera maganizo anu pa udindowa Mzibambo mu kutandiza

Mzimayi kusatira njira yochingiriziramo mwana mukutenga H.I.V kuchokera kwa amke monga bamapundzisa ku chipatala cha bamamimba .

Tidza funsa azibambo 40 bamene akazi ao arindi pakati kapena anyonsha, tiphempa atilole tiwafunse

Chirimonga ticheza pazoyanganira banja, Otandiza aza fotokoza mu Tshiluba kapena mu English, Nyanja ndi English ngati ifunikira

Ntawi yamafunso ni 1-2 hours ndiponso zones zikopedua mukarimba kuti pambuyo pake bangapiturukemo ndikutengapo chimodzi

Opundzira ndi omtadzira niolesedua Kunene za muntu osalola kuzinena kua muntu wina Mwaichi zonse niza mseri, gakale ntawi yosefa muntu sangazindikire za muntu wina.

Munjira ina, opunzira Jaana Auvinen ndiomtandizira John Kayembe sioledua ku ulula mau anu kundja kuti aliyense asakudzindikireni kapena kudzikindikira mau anu.

Tilibe chiguirizano ndi a Ndale kapena police , kapena amalonda gankale aku antinantal clinic

Ine _____ nanvera cholinga cha paper ino diponsonizipereka mofuna kukufunsidwa

Signature _____ Signature/thumb _____

Ngankale murinzo zofunsa funsani Universite wa Zambia.

Biomedical Research Ethics Committee. Ridgeway Campus, P.O. Box 50110Lusaka.

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Oyanganira PhD-dissertation niawa:

Professor Tarja Suominen from University of Kuopio, Finland

Professor Maritta Välimäki from University of Turku, Finland

Appendix 2

Informed consent form for midwives

Dear Participant,

this research is done to increase knowledge about male participation to prevent mother to child HIV transmission in Zambian Lusaka district and at the same time it is a part of doctoral studies of Jaana Auvinen. The goal is to decrease children's exposure to HIV during pregnancy, delivery and feeding of the baby through increased male participation. Your participation will help accomplish this goal.

You are given three different forms. The first one contains some questions about yourself and your work, the second one contains questions about your opinions about male participation and your work and the third one* about your experiences as a nurse working with people living with HIV / AIDS. Each form has instructions for completion.

All collected information concerning your participation will be used for scientific purposes. The content of all material will be handled confidentially and in privacy. No one can recognize participants through the material during the analyzing process or after. The research results will be submitted to the District Health Office at the completion of the study.

I have read the description of the study and I voluntarily agree to participate in the study.

Print name: _____

Signature: _____

Date: _____

In case you have something to ask more do not hesitate to contact The University of Zambia, Biomedical Research Ethics Committee, Tel. +260 21 1 256067. Mobile: + 260 97 7801373. Email: unzarec@yahoo.com OR Ministry of Health, Lusaka District Health Management Team, Tel: +260-211-235554.

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Supervisors of the PhD-dissertation are:
Professor Tarja Suominen from University of Tampere, Finland
Professor Maritta Välimäki from University of Turku, Finland

* A part which is reported elsewhere

Appendix 3

Background information sheet for male participants

1.	Age		
2.	Tribe		
3.	Marital status		
4.	Number of children		
5.	Education level None/Primary Secondary Tertiary (College/University)		
6.	Employment jobless temporary work permanent work		
7.	Religion Christian Muslim Animist Other		
8.	Tested for HIV?	yes	no
9.	Knowing of own HIV status?	yes	no
10.	Ever followed wife to ANC?	yes	no
11.	Have been in VCT during wife's pregnancy?	yes	no
12.	Knowing of wife's HIV status?	yes	no
13.	Has disclosed own HIV status to the wife?	yes	no

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Appendix 4

Background information sheet for midwives

First some questions about yourself and your work. Tick off or write your answer depending on the question, thank you.

1	Age in years	_____ years
2	Gender Female Male	
3	Highest post-school education Certificate Diploma education Post-Basic/Advanced Diploma Degree Post graduate	
4	Years working as a midwife	_____ years
5	Time in minutes for one admitted client or couple (outside of intrapartum care) 5–10 min 11–20 min 21–30 min	
6	Trained for renewed (2008) National Protocol Guidelines of PMTCT of HIV / AIDS? Yes No	
7	Marital status Never married Married Widowed Divorced Cohabiting	
8	The number of children	_____ children
9	Have had an HIV test Yes No	

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Appendix 5

The frame of the interview for male participants

1. Can you prevent your wife to be exposed to HIV during pregnancy?
If yes >> tell me how?
If no >> tell me why not?
2. Can you prevent your baby to be exposed to HIV during pregnancy?
If yes >> Tell me, how you can prevent your baby from getting HIV infection?
If no >> Why you can not prevent your baby to be exposed to HIV during pregnancy?
3. Can you prevent your baby to be exposed to HIV during delivery?
If yes >> tell me, how you can prevent your baby from getting HIV infection?
If no >> Why you not can prevent your baby to be exposed to HIV during delivery?
4. Can you prevent your baby to be exposed to HIV during feeding of baby?
If yes >> Tell me, how you can prevent your baby from getting HIV infection?
If no >> Why you not can prevent your baby to be exposed to HIV during feeding of baby?
5. You have told me about the ways you can use to prevent your baby ... Tell me, if there are any barriers which inhibit you to act so you had told me.
You did not find any ways to prevent your baby... Tell me about the barriers which inhibit you to prevent your baby to be exposed to HIV?
6. What do you need to protect your baby getting HIV? (recourses)
7. Have you ever been with your wife in ANC?
If yes, can you describe the factors which encouraged you to follow your wife to ANC?
If yes, do you remember any barriers to follow your wife to ANC?
If no, can you describe the factors which inhibited you to follow her to ANC?
Tell me about your proposals to remove these barriers to follow your wife to ANC?
8. Tel me about PMTCT program.
From where have you got knowledge about PMTCT?
What would be the most important reason to accept / reject PMTCT program?

In any case I go through the table paper of PMTCT process.

© Jaana Auvinen

Appendix 6

The questions of the written essays for the midwives

Second, in this form you can find five pages including questions about male participation and your work. Read the questions carefully and answer using English on the same paper where you find the question. If the space is insufficient continue to the back side. Note that the interest concerns your personal occupational opinions. Thus, **produce as rich, detailed and extensive text as possible.** Please avoid discussing about the questions with your co-workers before your answer. Thank you.

1. How can a male partner prevent his wife to be exposed to HIV during pregnancy according to your opinions?

How can you improve it at your work?

2. How can a male partner prevent his baby to be exposed to HIV during pregnancy, delivery and feeding of the baby according to your opinions?

How can you improve it at your work?

3. What are the barriers which inhibit a male partner to prevent his baby to be exposed to HIV according to your opinions?

How can you eliminate these barriers at your work?

4. What are the resources which a male partner needs to prevent his baby to be exposed to HIV according to your opinion?

How can you increase these resources at your work?

5. How can HIV-related stigma inhibit male participation to prevent mother to child transmission of HIV according to your opinion?

How can you remove this negative affection at your work?

**Original
Publications**

I-V

Male participation and prevention of human immunodeficiency virus (HIV) mother-to-child transmission in Africa

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The purpose of this review is twofold. First, it aims to summarize how the topic of male participation in HIV programs has been studied from a methodological point of view. The context is particularly in prevention of HIV transmission from mother to child (Prevention of Mother-to-Child Transmission, PMTCT). Second, it aims to describe how male participation has been described in the studies which have researched pregnant women's utilization of PMTCT programs, willingness and acceptance of testing for HIV and disclosure of HIV status to the male partner. This narrative review includes 31 studies (29 full texts and two abstracts) covering 15 different sub-Saharan African countries. The review showed that the approaches have been both qualitative and quantitative; varied study designs have been used in the varied settings. Male participation has been described to be both supportive and non-supportive. Supportive male participation such as a partner's willingness to be tested for HIV and spousal communication about reproductive matters has increased pregnant women's commitment to PMTCT programs. Non-supportive descriptions of male participation have included lack of discussion, HIV-related intimacy violence, and abandonment or fear of abandonment. Male participation has mostly been supportive of HIV positive mothers, but one challenge is how to prevent mother-to-child transmission in the case of non-supportive male participation. Another challenge is how to maintain the HIV negative status of pregnant women because few men have accepted testing. The development of the concept "male participation" in PMTCT of HIV programs might help to choose the most useful approaches to study it.

Keywords: male participation; HIV; PMTCT

Introduction

About 33 million people globally are living with human immunodeficiency virus (HIV) and 67% of them are in sub-Saharan Africa (WHO, 2008). It has been estimated that in 2007 just under 300,000 children living with HIV died under the age of 15 years and 90% of them lived in sub-Saharan Africa (UNAIDS, 2008). More than 350,000 children acquired HIV-infection in 2007 and for more than 90% of children the infection was transmitted during pregnancy, delivery, or breastfeeding, in other words through mother-to-child transmission (MTCT). Without interventions, the risk of transmission is 15–45%, but the rate is remarkably lower even in

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resource-limited countries for those who are involved in prevention of mother-to-child transmission (PMTCT) of HIV programs.

The PMTCT of HIV programs have been developed to protect pregnant women and their babies against HIV infection, e.g. UNICEF pilot programs in 1998, EGPAF the Call to Action program in 1999, the WHO recommended PMTCT as standard MCH care in 2000, and the Global Fund in 2002. Effective antiretroviral (ARV) treatments for mothers and babies are available in many sub-Saharan African countries, e.g. in Mozambique, Tanzania, Uganda, and South Africa through their national programs (Stover et al., 2008). Globally, the coverage for prevention of mother-to-child transmission increased from 14% in 2005 to 34% in 2007 (United Nations, 2008). Although the realization of the PMTCT programs varies in the sub-Saharan African countries, the following steps are generally found in the health care programs. All pregnant women can “(1) attend institutional antenatal care, (2) be offered an HIV test, (3) accept an HIV test, and (4) obtain HIV test results. The HIV-infected pregnant women can (5) agree to ARV prophylaxis, (6) adhere to ARV prophylaxis and (7) adhere to infant ARV doses” (Stringer et al., 2008).

Voluntary counseling and testing (VCT), the opt-in approach, for HIV is the process by which an individual actively seeks counseling and testing at the facility that offers these services. Provider-initiated HIV testing and counseling (PITC), also called the opt-out approach, is testing and counseling which the health provider offers as a standard component of medical care to enable patients to make an informed choice about being tested for HIV (WHO, 2007). The recommendation of the WHO (2007) is that the PITC approach would apply to antenatal care (ANC) in high HIV prevalence areas. One of several recommendations advises pregnant women to “encourage their partners to seek HIV counseling and testing”. However, in many African cultures women are not independent decision makers but they need family or male support to commit to each phase of the PMTCT program. Considering women’s vulnerability and weaker position compared to men in sub-Saharan African societies, openness in families is not self-evident and discussion is met by many barriers (Medley, Garcia-Moreno, McGill, & Maman, 2004). Therefore, strengthened male participation has been thought to be one means to improve the content of the PMTCT programs during and after pregnancy (Bolu et al., 2007; Medley et al., 2004). Instead of concentrating on just the mother and babies, male participation should be involved in the programs (Bolu et al., 2007; Medley et al., 2004).

The presupposition of adherence to the programs is awareness of one’s own HIV status. Acceptance of HIV counseling and testing and the disclosure of status to the partner are steps for the pregnant women which help them to maintain HIV negative status or, in the case of HIV seropositivity, lead them to make safe options to prevent mother-to-child transmission. Bolu et al. (2007) reviewed the best practices needed for the expansion of testing and counseling in PMTCT settings in resource-limited countries, and suggested that male participation should be encouraged because of its positive impact on pregnant women’s decision to be tested and treated for HIV infection.

Disclosure of HIV serostatus to the partner is important for both HIV-infected and non-infected pregnant women. Shared responsibility between spouses can lead to behavior change, which is, e.g. safer sex practices and adherence to ARV prophylaxis if the woman is HIV positive. Medley et al. (2004) found the rate of

disclosure was from 16.7 to 86% and those who were tested in VCT were more likely to disclose their status compared to those who were tested as part of antenatal care. Male partners sometimes appeared to be barriers to disclosure. Women feared accusations of infidelity, abandonment, discrimination, or violence and 3.5–14.6% of the women reported a violent reaction from their partner after disclosure.

The recent PMTCT of HIV research highlights the importance of improved male participation whether the question concerns acceptance of HIV testing, disclosure of the result, or overall involvement in PMTCT programs including having consistently safe sex, ARV treatment both of mother and child, and safe feeding practices. It is known that the male effect on pregnant women's decisions may be supportive or not but little is known about male participation from the male perspective, how male participation has been applied to national PMTCT of HIV programs and how male participation has affected maternal practices.

This study aims to review how male participation has been investigated and described in studies dealing with acceptance of PMTCT of HIV programs, testing for HIV, and disclosure of status to the partners. The concept "male participation" might be thought to be supportive attitudes and behavior toward a pregnant partner to prevent mother-to-child transmission. However, in previous articles included in this review male participation has been found to have an effect on pregnant women's attitudes, decision-making and behavior and it has been both supportive and non-supportive. Accordingly, in this article male participation means not only supportive attitude and behavior but also all kinds of male effects on expressed aims.

Objectives

This article reviews how male participation has been (1) investigated and (2) described concerning

- pregnant women's acceptance of PMTCT programs and testing for HIV.
- pregnant women's disclosure of the result of HIV testing to the partners.

Search methods for identification of studies

The literature search was conducted by using the following databases: Psyc INFO, PubMed, and SocINDEX. To determine relevant search terms the subject term services of the databases have been used. The terms used in a variety combinations were *Africa, HIV, male, partner, men, participation, antenatal, pregnant, disclose, testing, pmtct, vertical, violence, intimacy, domestic, alcohol, abuse*. The terms *Africa* and *HIV* were present in every search. The declining terms were cut with instructions of each database accordingly and the results were plentiful. Related articles were observed. Electronic journals such as AIDS and Behaviour, AIDS Care, AIDS Education and Prevention, Journal of HIV/AIDS Prevention in Children and Youth, Journal of Association of Nurses in AIDS Care, Lancet, and Sahara Journal were browsed using the same search terms.

Criteria for considering studies for this review and analytical methods

Eligible journal articles or abstracts were published in the English language and from the beginning of 1998 to 2008. The total amount of results of the search was 773

articles from which 31 articles were chosen. The chosen articles included 29 full texts and two abstracts. The large number of results was caused by the use of many databases and search terms that were close to each other, thus producing partly the same results.

Saddler's (2008) guidelines were used to assess the validity of each study. Both quantitative and qualitative studies were accepted. To be eligible for this review, the study must have been conducted in sub-Saharan Africa in the context of antenatal care and prevention of mother to child transmission of HIV. Study participants of the studies could be women, men, focus groups of the communities, or other informants but the title, aim of the study, results or conclusion must have included a link to the male/partner participation/involvement or male effect. At the beginning of analysis the following details were analyzed from each study: the state where the study was conducted, the purpose of the study, population, study design, and methods. The next phase was to look for descriptions of men's participation (Table 1). Inductive content analysis was used as the analytical method. Content analysis is possible to use with both qualitative and quantitative data. Inductive content analysis is suitable in cases of a fragmented phenomenon (Elo & Kyngäs, 2007) that male participation in the context of PMTCT of HIV seems to be.

Results

Table 1 supports understanding of the readers giving accurate figures of the results of reviewed studies.

The settings and research methods of the studies reviewed

The first objective was to study how male participation has been investigated in studies dealing with acceptance of PMTCT of HIV programs, testing for HIV, and disclosure of status to the partners. Studies included in this review were from 15 different countries: six from Tanzania, five from Uganda, three from South Africa, two from Kenya, Rwanda, Cote d'Ivoire, Nigeria and Botswana, and one from Malawi, Zambia, Zimbabwe, DR Congo, Ethiopia, Ghana and Burkina Faso and were performed in both rural and urban areas.

In the studies of this review five studies used qualitative and 22 studies quantitative approaches. Four studies included both approaches (Table 1). Data collection methods included different kinds of interviews (four studies), focus group discussions (five studies), and observation (one study) in the qualitative studies or in the studies with multiple approaches. Trained interviewers who were able to use local languages have been used. In the 22 quantitative studies data collection was conducted mostly using questionnaires but also other resources, e.g. logbook, clinical examinations and blood samplings. Most of the reports mentioned what type of questionnaire had been used and if the questionnaire had been pre-tested or modified to the local conditions but Antelman et al. (2001), Dunkle et al. (2004), Kominami et al. (2007), and Makin et al. (2008) also reported the names of questionnaires (Table 1). The four studies that combined both qualitative and quantitative approaches informed about the questionnaire used either focus group discussions or in-depth interviews.

Coaxial coding (Kebaabetswe, 2007), content analysis, (Kasenga et al., 2007; Visser et al., 2008), and the grounded theory approach (Mlay et al., 2008; Pool et al.,

Table 1. Descriptions of male participation concerning acceptance of PMTCT, HIV testing and disclosure of the test results in the context of antenatal care.

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
South Africa, urban	Visser, Neufeld, de Villiers, Makin, and Forsyth (2008)	To explore recently diagnosed HIV+ pregnant women's reasons for disclosure and non-disclosure of serostatus and consequences of their disclosure	293 HIV+ women in antenatal	Qualitative, semi-structured interview, content analysis	Barriers of disclosure: fear of abandonment, discrimination, blame/anger, violence Partners reacted with disbelief and shock
Tanzania	Mlay, Lugina, and Becker (2008)	To gain insight from views of men and women on couple voluntary counseling and testing for HIV at antenatal clinics	Focus groups: women aged 25–48 years ($n = 8$) and 18–24 years ($n = 10$), HIV counsellors ($n = 11$), men aged 20–34 years ($n = 8$) and 35–75 years ($n = 8$); interviews men ($n = 5$) and women ($n = 8$) 293 HIV+ women antenatally	Qualitative, focus groups discussions, in-depth interviews, method by Streubert and Carpenter	It is important to incorporate partner HIV testing to antenatal Culturally antenatal care is only for women The importance of love, care and respect between sero-discordant couple was stressed
South Africa, urban	Makin et al. (2008)	To provide a greater understanding of disclosure among women who test HIV positive in pregnancy and to determine factors	293 HIV+ women antenatally	Longitudinal from June 2003 to December 2004, questionnaires during pregnancy and three months post delivery,	Disclosing to the partners 59% and 67% respectively, by follow-up Factors associated with having disclosed to partners: prior

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Tanzania, urban	Antelman et al. (2001)	associated with an ability to disclose their diagnosis. To examine the socio-demographic and behavioral factors of HIV+ pregnant women's disclosure.	999 HIV+ women antenatally	Scales: Perceived stigma of HIV/AIDS; Personal view, Multidimensional Social Support Inventory (MSSI), Rosenberg Self-Esteem Scale, Center for Epidemiologic Studies Depression (CESD), Brief Cope, logistic regression analysis An additional study of ongoing randomized trial from April 1995 to May 2000 concerning vertical transmission, questionnaire, Scales: Hopkins Symptom Checklist (HSCL-25), Duke-UNC Functional Social Support Questionnaire (modified), Cox	discussion with partner about testing, being married, having a partner with tertiary education, less experience with violence The rate of disclosure ranged from 22% within two months to 40% after nearly four years Reasons for non-disclosure to anyone ($n = 490$): fear of losing confidentiality, fear of social isolation, not wanting to worry others, fear of verbal or physical abuse, fear of separation/divorce, being just afraid

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Cote d'Ivoire, urban	Brou et al. (2007)	To investigate women who accepted HIV testing within a PMTCT program and reported their status to the partner and when; whether or not telling the partner had led to HIV testing of the partner.	546 HIV+ and 393 HIV- women, Within the Ditrane Plus PMTCT project	proportional hazards models Longitudinal study from March 2001 to June 2003, standardized questionnaire was used in the two prospective cohorts of HIV+ and HIV- women for comparative analysis, multivariate logistic regression analysis	Women likely to disclose to a partner were monogamously married, reported having fewer partners than six 19.6% of male partners were tested for HIV Rate of disclosure of HIV- was 96.7% and HIV+ 46.2% during the two year follow up Having co-spouse reduced the probability to disclose More likely to disclose: just before delivery, during early weaning, upon resumption of sexual activity, using formula feeding 82.1% who disclosed reported partners positive reactions 87% approved test for HIV Of those 89% would accept if they were
Nigeria, urban	Okonkwo, Reich, Alabi, Umeike, and Nachman, (2007)	To determine the awareness, attitudes and beliefs of pregnant	240 women antenatally	Cross-sectional, pilot tested questionnaire, univariate logistic regression analysis	

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Rwanda, urban	Kowalczyk et al. (2002)	women toward VCT for HIV To investigate the factors related to acceptability of VCT for HIV among pregnant women	427 women antenatally, two focus groups of women	Cross-sectional, pilot tested questionnaire, focus group discussions, multivariate logistic regression analysis	tested with simultaneously with their partners Married women were more likely to accept test for HIV compared to living together without married Discussions: afraid of being abandoned by their partners Women's insecurity regarding HIV exposure from their partners Partner's consultation to get permission to test for HIV prevents family conflicts and contains a desire to seek testing together 74.2% accepted testing for HIV Partner's skilled and well-paid jobs added the acceptance (OR 3.5)

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
North-Uganda	Fabiani et al. (2007)	To investigate factors potentially associated with the uptake of VCT for HIV	12 252 women antenatally	Cross-sectional from 2001 to 2003, multivariate analysis using log-binomial regression models	VCT uptake 55.6% for overall Being unmarried (cohabitating or single/widowed/divorced) was positively associated with VCT uptake Partner's other female sexual partners increased the number (OR 2.7) Pregnant women's HIV seroprevalence 1.9% 73% went to be tested 40% accepted the whole process of VCT Acceptance was related to discussing with the partner and the number of ANC visits 1.8% women's partners accepted testing for HIV Women: 83.4% accepted individual counseling of whom 75.3% accepted an HIV test
DR Congo, urban	Kimoshita-Moleka, et al. (2008)	To examine the prevalence of HIV and other STDs among pregnant women	2082 women antenatally	Cross-sectional, blood samples, multivariate logistic, regression analysis	
Burkina Faso, urban	Sarker, Sanou, Snow, Ganame, and Gondos, (2007)	To analyze the factors associated with the uptake of VCT and returning for test results	430 women antenatally	Cross-sectional, semi-structured questionnaire, multiple logistic regression analysis	
Uganda, semi-urban	Kizito et al. (2008)	To describe uptake of HIV and syphilis testing in a PMTCT	20,738 women antenatally	Cross-sectional, blood samples, χ^2 -test, Kruskal-Wallis test	

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Kenya	Moth, Ayayo, and Kaseje (2005)	To assess the utilization of PMTCT services	133 women antenatally, and 30 pregnant women dropped out	Exploratory cross-sectional, quantitative: from logbook (n = 1268), interviews (n = 133), qualitative: semi-structured in-depth interview (n = 30), non-participant observation, triangulation	76.5% accepted testing for HIV (n = 1268) 95% did not disclose positive HIV status to spouses/relatives for fear of stigma, discrimination and violence 80.7% dropped out before delivery; reasons: fear of HIV+ status, chronic illness, stigma and discrimination, unsupportive spouse, lack of money 19.3% of HIV+ completed the whole PMTCT process
Botswana, rural and urban	Creek et al. (2007)	To improve program uptake. The study clarified perceptions and awareness of PMTCT issues among pregnant women	504 pregnant and postpartum, 82 health providers	Cross-sectional, survey (n = 504), interview (n = 82), survey included multiple-choice, true/false, open-ended questions, multivariate logistic regression analysis	95% of women believed all pregnant women should be tested Having an HIV test was in connection with having a partner tested for HIV Male partners did not seem to be barrier to testing (most women

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Cote d'Ivoire, urban	Desgrées-Du-Loù et al. (2007)	To investigate couples' communication on STIs and HIV, male partner HIV-testing and condom use at sex resumption after delivery.	306 HIV+, 352 HIV-, 52 HIV status unknown, in the context of ANRS DITRAME PLUS, PMTCT project	Longitudinal study; standard questionnaires, logistic regression analysis, Pearson Chi-square test	were not married or not living with partners). Most did not consult partner or report that partner was the reason for refusal Spousal communication was related to more frequent male partner HIV-testing and condom use Prenatal counseling and testing for HIV appears to be a tool to sensitize women and partners to safer sexual practices
Zimbabwe, urban	Chandisarewa et al. (2007)	To assess the impact of routine antenatal HIV testing for PMTCT of HIV in urban area	4547 pregnant women tested in opt-out approach, 3058 pregnant women tested for HIV in opt-in approach, 221 women in follow-up survey	Comparative cross-sectional, 15-item self-administered questionnaire, interviews, χ^2 -test	7% of the partners of 221 women were tested 8% of women ($n = 221$) reported disclosure related violence 11% of 221 had not disclosed to anyone for the fear of violence, divorce and stigma

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Botswana, urban	Kebaabetswe (2007)	To explore factors which motivate and hinder pregnant women from participating in the PMTCT program	40 subjects (ten HIV+ who accepted and 11 who did not, nine PMTCT healthy workers, ten key informants)	Exploratory qualitative, coaxial coding	Accepted the test: 99.9% opt-out vs. 65% opt-in Post-test return rates of HIV infected: 98% opt-out vs. 95% opt-in Acceptance of PMTCT interv.: 256 opt-out vs. 185 opt-in 194 of 221 disclosed serostatus to their partners, 92% did not reported violence or separation Barriers: fear of knowing one's own HIV status, infant feeding, distribution stigma, lack of male partner's support
Zambia, urban	Semrau et al. (2005)	To test whether couple counseled pregnant women are more likely to accept PMTCT interventions and whether they are less likely to report later adverse social events	868 couple counseled pregnant women, 8541 individual counseled pregnant women in connection with The Zambia Exclusive Breastfeeding Study (ZEBS)	Comparative cross-sectional, from April 2001 to February 2003, χ^2 -tests, <i>t</i> -tests, the Fisher Exact test	28% of HIV+ women (<i>n</i> = 328) reported at least one social adverse event (physical violence, verbal abuse, divorce or separation) on an average in the both groups after six months

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Northern Tanzania	de Paoli, Manongi, and Klepp (2004)	To identify factors associated with pregnant women's expressed willingness to accept VCT	500 pregnant women	Cross-sectional interview survey, pre-tested questionnaire and focus group discussions, multivariate regression analysis	Accepted the test: 96% of women ($n = 868$) vs. 79% (8541); 92% of men accepted HIV testing Uptake of nevirapine was not improved Disclosure of status to the partner needs sensitivity to the women's fear of blame and rejection by partner 41.7% accepted VCT Factors associated with willingness: partner involvement 5.7% of partners were indifferent, 6.7% were quarrelsome and abusive, 1.0% was violent 74% of pregnant women knew husband's status Of these 65.5% were HIV+
Northern Nigeria, urban	Sagay et al. (2006)	To explore the issues concerning HIV disclosure of HIV status to partners of HIV+ mothers in a PMTCT program	570 pregnant women, in the context of national PMTCT program	Cross-sectional, field-tested questionnaires, frequencies	89% of pregnant women had disclosed the status to the partner

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
South-western Uganda, urban and semi-urban	Dahl, Mellhammar, Bajunirwe, and Bjorkman (2008)	To examine risk factors for HIV test refusal and common reasons for not accepting	380 pregnant women	Structured interviews, blood samples, multivariate analysis	86.9% of partners were supportive Reasons claimed for test refusal were need to discuss with partner before decision, fear of partner's reaction 85% accepted HIV testing
Tanzania, urban	Msuya et al. (2006)	To determine the predictors of failure to return for HIV post-test results	2654 pregnant women	Part of a prospective cohort study, face-to-face interview using a structured pretested questionnaire, multiple logistic regression analysis	Pregnant women were less likely to return the results if partners did not come for testing, partners consumed alcohol, they had never discussed reproductive health matters with partners 7% failed to return for HIV test result
Northern Tanzania	Msuya et al. (2008)	To describe the prevalence and predictors for male partner participation in HIV VCT and the effect of partner participation on uptake of MPCT	2654 pregnant women were encouraged to inform and invite partners for VCT-HIV	Pre-test counseling, interviews, clinical examinations, blood samplings, χ^2 -test, the Fisher Exact test, <i>t</i> test, Pearson χ^2 -test	12.5% of male partners participated A high proportion (131; 40%) came after delivering If partners attended HIV+ women were: three times more likely to use Nevirapine

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Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Ethiopia, urban	Worku and Enquelassie (2007, abstract)	To identify factors determining acceptance of VCT for HIV among pregnant women	88 acceptor, 176 non-acceptors	Case-control study, structured pre-tested questionnaire	prophylaxis, four times more likely to avoid breastfeeding, six times more likely to adhere to the infant feeding method selected
Malawi, rural	Kasenga, Hurtig, and Emmelin (2007)	To explore women's experiences of a PMTCT program	24 HIV+ women	Exploratory qualitative, in-depth interviews, content analysis	Factors increasing acceptance: married status and living in the same house with husband Two of four themes were: 1. HIV testing (symptom experience, protection for survival, risk awareness, confirmation of suspicion) \gg A wish to confirm and protect 2. Disclosure of status (fear of social stigma, strengthening of family life, risk of being abandoned, alone with the secret, lack of trust) \gg A dilemma between silence and openness

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
South-west Uganda, rural	Pool, Nyanzi, and Whitworth (2001)	To explore the attitudes of women attending antenatal clinics to VCT	208 pregnant women shared to 24 focus groups	Qualitative discussions, grounded theory approach	If the husbands found out the wife is HIV+ they would be blamed and separation or domestic violence might ensue Almost all of women were in principle willing to take an HIV test 28% ($n = 2836$) of women reported domestic violence before testing 0.9% ($n = 1638$) of women reported domestic violence after receiving results; odds were 4.8 times among those were HIV-1 positive comparing HIV-1 negative 55% reported a history of physical or sexual violence Women with violent or controlling male partners are at increased risk of HIV infection
Kenya	Kiarie et al. (2006, abstract)	To determine the prevalence of lifetime domestic violence by the current partner before HIV-1 testing, its impact on the uptake of PMTCT interventions and frequency after testing.	Antenatally, women and partners	Prospective cohort, interviews before HIV-1 testing and two weeks after receiving results	
South Africa, urban	Dunkle et al. (2004)	To assess associations between newly diagnosed HIV infection and experience of intimate partner violence, male control in	Antenatally, 1366 women accepted routine HIV testing	Cross-sectional, face-to-face interview, Scale: WHO violence against women instrument, The Relationship Control Subscale	

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Uganda, rural and urban	Karamagi, Tumwine, Tylleskar, and Heggenhougen (2006)	relationships, child sexual assault by a non-partner. To find out if the very low antenatal VCT acceptance rate reported in Mbale Hospital was linked to intimate partner violence	457 women with infants, 96 women and men in the focus groups, as part of the Essential Child Health and Nutrition Project in Uganda	from the Sexual Relationship, Power Scale, Multivariate logistic regression analysis Cross-sectional household survey, interviewer-administered questionnaire; focus group discussions, multiple logistic regression analysis, used Open Code to identify of themes	54% of women reported lifetime partner violence and 14% physical violence in the past year, major reasons: multiple partners and consumption of alcohol Fear of violence leads women to fear to test for HIV, disclose HIV results and request to use condoms 35.1% reported intimacy violence in the last year HIV+ were more than twice likely to report physical intimacy violence than HIV - Violence was related with: male's
Rwanda, urban and rural	Ntaganira et al. (2008)	To estimate the prevalence of intimacy violence among HIV+ and HIV- pregnant women and explore factors associated with violence among women	Antenatally, 600 pregnant women, 300 HIV(+), 300 HIV(-)	Survey, interviewer-administered questionnaire, logistic regression analysis	

(continued)

Table 1. (Continued).

Setting	Study	The purpose of the study	Population	Study design and methods	Forms of male participation
Tanzania, west	Kominami, Kawata, Ali, Meena, and Ushijima (2007)	To evaluate the PMTCT program services and to identify the factors for non-acceptance among pregnant women	Antenatally, 401 pregnant women	Exploratory, cross-sectional, structured questionnaire, face-to-face interviews, Scale: HIV-Antibody Testing Attitude Scale by Boshamer & Bruce, 1999 was added to the quest., multiple regression analysis	consumption of alcohol, male's other sex partners, wife's HIV + status, sexual abuse under 14 year Already tested 68.1% Inversely associated with the refusal of HIV testing: frequencies of antenatal clinic visits, intensive family support
Ghana, northern	Baiden et al. (2005)	To assess the perception and attitude of pregnant women toward VCT (willingness to be tested and potentially determinants of this)	Antenatally, 270 pregnant women	Cross-sectional survey, pre-tested questionnaire, multiple logistic regression analysis	92.6% were willing to get tested Predictors of willingness: willingness to disclose the result to the husband (OR 13.3), perceived willingness of husband to accompany wife to ANC (OR 5.2)

2001) were used as analytical methods in the qualitative studies. In the quantitative studies, hypotheses were tested using χ^2 -tests (Chandisarewa et al., 2007), χ^2 -tests, *t* tests and the Fisher Exact Test (Semrau et al., 2005) or χ^2 -test and Kruskal–Wallis test (Kizito et al., 2008). Multivariate analysis methods were used, such as multivariate logistic regression analysis (Baiden et al., 2005; Brou et al., 2007; Creek et al., 2007; de Paoli et al., 2004; Desgrée-Du-Loû et al., 2007; Fabiani et al., 2007; Karamagi et al., 2006; Kominami et al., 2007; Kowalczyk et al., 2002; Makin et al., 2008; Ntaganira et al., 2008; Sarker et al., 2007), Cox proportional hazards model (Antelman et al., 2001) and univariate logistic regression analysis (Okonkwo et al., 2007). Moth et al. (2005) reported their use of triangulation.

Descriptions of male participation

The second objective was to study how male participation has been described in studies dealing with acceptance of PMTCT of HIV programs, testing for HIV, and disclosure of status to the partners. The descriptions of male participation were organized in three areas according to the purposes of reviewed studies. The areas are as follows: (1) male participation and pregnant women's utilization of PMTCT programs, (2) male participation and pregnant women's willingness and acceptability of testing for HIV and returning the result, (3) male participation and pregnant women's disclosure of HIV status to male partner.

Male participation and pregnant women's utilization of PMTCT programs

The presence of male support increased women's use of ARV, avoidance of breastfeeding, and commitment to the infant feeding method selected compared to those whose partners did not participate (Msuya et al., 2008). Women have also needed male participation to give birth in the hospital instead at home because of the dosing and timing of ARV syrup to the baby. Some women reported that having male support helped them experience a new understanding within the relationship (Kasenga et al., 2007).

Lack of male participation has been described as a key reason for dropping out from the PMTCT programs (Kebaabetswe, 2007; Moth et al., 2005) and domestic violence as a potential reason for pregnant women's limited involvement in PMTCT (Kiarie et al., 2006). Dropping out from the PMTCT program happened at each stage of the program: HIV testing, receiving status, disclosure of status, and hospital delivery. Male partner's other sex relationships, husband's death or husband's former wives' or girlfriends' death to AIDS were pregnant women's reasons for accepting the test and, on having a HIV positive test result, they blamed the behavior of their husband. After disclosing the results, male partners had not been supportive, males had refused to go for HIV testing and some sought a divorce. Women who gave birth at home felt that they had been without their male partner's support (Kasenga et al., 2007) In Tanzania, 130 HIV positive pregnant of 168 received ARV but only 103 babies received NVP syrup (Msuya et al. 2006) and in Kenya, 1268 pregnant were registered for PMTCT services but only 19.3% of HIV positive mothers completed the whole PMTCT program (Moth et al., 2005).

Male participation and pregnant women's willingness and acceptance of testing for HIV and reporting the result

Male participation has been described to increase pregnant women's willingness to be tested for HIV if they were tested simultaneously with their partners (Okonkwo et al., 2007), if there was perceived willingness of the husband to accompany the wife to the antenatal clinic (Baiden et al., 2005), partner involvement (de Paoli et al., 2004) and having a partner already tested for HIV (Creek et al., 2007). Other factors which correlated positively with willingness were partner consultation to get permission for testing for HIV, partners' skilled and well-paid job (Kowalczyk et al., 2002) and being married (Okonkwo et al., 2007). The rate of willingness to be tested for HIV was from 41.7 to 95% (Baiden et al., 2005; Creek et al. 2007; de Paoli et al. 2004; Kowalczyk et al. 2002; Okonkwo et al. 2007). Other reasons for the lower acceptability for HIV testing have been fears of domestic violence or being abandoned by their partners (Karamagi et al., 2006; Kowalczyk et al., 2002; Pool et al., 2001) and insecurity regarding HIV exposure from their partners (Kowalczyk et al., 2002). In Botswana, pregnant women ($n = 504$) did not find male partners to be a barrier to testing, but in this study 91% of respondents were unmarried (Creek et al., 2007). Knowledge about willingness toward testing for HIV is based on the opinions of participants of whether or not to accept testing for HIV, but not the rate of acceptance in reality.

Male participation, which increased the test acceptance of pregnant women, was described as discussing HIV screening with the partner (Sarker et al., 2007), being in couples counseling (Semrau et al., 2005), having a partner's intensive support (Kominami et al., 2007), being married and having a partner who lived in the same house (Worku & Enquselassie, 2007) or on the contrary, being unmarried (cohabiting or single/widowed/divorced) (Fabiani et al., 2007). Having a partner with a modern occupation and past use of contraceptive also increased acceptance of HIV testing (Fabiani et al., 2007). Fifteen studies reported the rate of acceptance of pregnant women and/or male partners of testing for HIV. The rate varied from 55.6 to 99.9% among pregnant women and from 1.8 to 92.0% among male partners. Sarker et al. (2007) reported that overall acceptance of HIV testing including post-test counseling was 42% although acceptance of plain HIV testing was 73%. The quality of pre-test counseling was very poor, but the amount of pregnant women that dropped out was smaller at every stage of the program if they had discussed the issue with their partner.

Male participation, which decreased the test acceptance of pregnant women, was described as lack of discussion with partner before a decision and as fear of the partner's reaction (Dahl et al., 2008). If pregnant women's partners did not come for testing, consumed alcohol, had never discussed reproductive health matters or if the pregnant women had been verbally or physically abused, 7% of pregnant women ($n = 2654$) failed to return their HIV results in the service where it was not possible to receive the HIV test result during the same day (Msuya et al., 2006).

The rates of HIV tested male partners ranged from 1.8 to 92% (Brou et al., 2007; Chandisarewa et al., 2007; Desgrée-Du-Loû et al., 2007; Kizito et al., 2008; Kowalczyk et al., 2002; Msuya et al., 2008; Semrau et al., 2005). The rate of HIV tested male partners were <28% in all studies except Semrau et al.'s (2005) where it was 92%. In this study, which was conducted in Zambian Lusaka, males were counseled as part of a couple ($n = 868$) and antenatal HIV testing had been previously marketed in the communities. Couple-counseled pregnant women were

more likely to accept HIV testing (96%) than singly counseled (79%). In other studies males have been encouraged to participate in VCT by their pregnant partners (Chandisarewa et al., 2007; Kizito et al., 2008; Msuya et al., 2008). However, male appearance in antenatal clinics might be a culturally sensitive issue although study participants in Tanzania agreed on the importance of couples testing for HIV antenatally (Mlay et al., 2008).

Male participation and pregnant women's disclosure of HIV status to male partner

Supportive participation has included being monogamously married, partners having higher education, prior test discussion, being less violent, financial equality and as women's experiences of male's positive reactions. Forms of non-supportive male participation have been described as male's abusive or violent behavior or fear of it and women's fear of divorce or separation.

Eight studies reported on the rate of women's disclosure of HIV positive status. It ranged from 5 to 89% (Table 1) (Antelman et al., 2001; Brou et al., 2007; Creek et al., 2007; Desgrée-Du-Loû et al., 2007; Makin et al., 2008; Moth et al., 2005; Sagay et al., 2006; Semrau et al., 2005). Sarker et al. (2007) reported that the rate of women's intention to disclose HIV status to their partners was 38% ($n = 242$). When pregnant women had received their HIV positive result the rate of disclosure was 59%, but three months after giving birth the rate was 67% (Makin et al., 2008) and from 22 to 40% during five years (Antelman et al., 2001). Just before delivery, during early weaning, at resumption of sexual activity and when giving formula milk to the baby were occasions when women were more likely to disclose their HIV positive status to their partner (Brou et al., 2007).

Married (Makin et al., 2008) and monogamously married for two years or more (Antelman et al., 2001) women were more likely to disclose their status compared those who were single with a partner. Partners with tertiary education (other options: non-educated, secondary), prior discussion with partner before testing, lesser experience of violence, and women's lower financial dependence were factors associated with a higher rate of disclosure (Makin et al., 2008). Positive male participation has been described as having a supportive male reaction with 86.9% ($n = 570$ HIV+) (Sagay et al., 2006) and 82.1% ($n = 546$ HIV+) (Brou et al., 2007), indicating the start of a new understanding (Kasenga et al., 2007) and becoming closer to each other (Creek et al., 2007).

Women's fears, such as fear of conflict with partner or separation (Antelman et al., 2001; Pool et al., 2001) and verbal or physical abuse (Antelman et al., 2001; Karamagi et al., 2006; Moth et al., 2005) or being thrown out of the home (Pool et al., 2001) have inhibited disclosure of HIV positive status.

Disclosure-related male participation has been described as initiating divorce (Kasenga et al., 2007) or ending the relationship (Brou et al., 2007), being disbelieved (Brou et al., 2007; Visser et al., 2008) or being indifferent or quarrelsome (Sagay et al., 2006). These types of male participation have been low, e.g. Visser et al. (2008). Six studies reported domestic violence by the male partner after disclosure of HIV positive status (Brou et al., 2007; Chandisarewa et al., 2007; Creek et al. 2007; Kiarie et al., 2006; Ntaganire et al., 2008; Sagay et al., 2006).

HIV-related domestic violence has been reported by Ntaganira et al. (2008) where violence of all forms was higher among HIV positive women than negative. Chandisarewa et al. (2007) reported that those of who had disclosed, 8% ($n = 221$)

had been violated and Kiarie et al. (2006) reported that violence among HIV positive women was 4.8 times more likely compared to negatives. Abusive behavior of male partner has been as a barrier of disclosure but in addition, women with a controlling (Dunkle et al., 2004), abusive male partner (Dunkle et al., 2004; Kiarie et al., 2006), and a male partner with extramarital relationships (Kinoshita-Moleka et al., 2008) are also at bigger risk of exposure to HIV. Violent behavior among male partners has been seen to be in connection with consumption of alcohol and having other sex partners (Karamagi et al., 2006; Ntaganira et al. 2008). Creek et al., (2007) did not find a difference in the experiences of violence whether a woman was HIV positive or negative and according to Karamagi et al. (2006) there was no connection between domestic violence and antenatal attendance, testing for HIV, delivery at hospital, HIV talk with male partner or using condoms. Mlay et al. (2008) found that in the case of discordance, domestic violence or other adverse events might still present despite the HIV status of woman. Karamagi et al. (2006) also reported opinions that marital rape can not exist because a woman has no right to refuse sex or that wife-battering may be seen as showing love and repairing the bad behavior of a woman.

Discussion

The objectives of this study were to review how male participation has been investigated and described in studies dealing with acceptance of PMTCT of HIV programs, testing for HIV, and disclosure of status to the partners.

Limitations of the study

This review has several limitations. The first concerns the generalization of the results. Studies reviewed in this article have been conducted in different countries and in different cultures, in rural and urban areas and in varying health care settings even outside official settings. Depending on the study designs and on local possibilities, the testing for HIV has been done using different kinds of testing procedures. Some studies were cross-sectional and some longitudinal. The purposes of the studies have been to seek pregnant women's and male partners' acceptance either of the whole process of VCT or of a part of it; to seek reasons for test acceptance and for test refusal. Comparison of the studies has been challenging and the results of descriptions of male participation are not generally applicable.

Second, the content analysis utilized in this study offers the possibility to produce a concept system or model, but this article does not present one. However, the analyzed manifest content has been clarified and basic themes have been found. Third, the results present every description of male participation in the context of PMTCT of HIV found. However, not all have been discussed but only mentioned. The fourth limitation is that the decision in this review to put all descriptions of male partners' behavior under the concept "male participation" may cause confusion because in the literature "participation" often appears in the context of supportive meanings, e.g. "the fact or condition of holding or sharing something in common; partnership, fellowship; the process or fact of sharing in an action, sentiment, etc.; active involvement in a matter or event" (Oxford English Dictionary). On the other hand this conceptual confusion reveals the importance of concept clarification concerning male participation in the PMTCT process. Finally, it has been possible to consider only English reports.

Discussion related to the results

Male participation has both increased and inhibited pregnant women's acceptance of PMTCT programs, HIV testing, and disclosure of status. The descriptions of male participation in the studies were opinions or expectations of the study participants of what possibly would happen if, e.g. a pregnant woman goes to the VCT without earlier discussion with the partner. Other descriptions showed what had really happened according to participants' understanding of certain events.

The consequences of supportive male participation concerning pregnant women's acceptance of PMTCT programs and testing for HIV, and disclosure of status to the partner have been encouraging. High rates of test acceptance among pregnant women have been gained through the opt-out testing approach (Chandisarewa et al., 2007). Pregnant women accept opt-out testing better than opt-in testing. But having testing for HIV as a standard component of medical care, does not necessarily facilitate disclosure of positive result to the partner without male participation. Some pregnant women may understand integrated HIV test into the maternal test procedure as compulsory despite of the test's nature to be volunteer. Kowalczyk et al. (2002) reported that 73.5% of pregnant women ($n = 427$) were willing to be tested but 74.2% accepted testing for HIV. Shared responsibility between spouses may lead to real acceptance and safe disclosure.

Perceived willingness to follow the wife to ANC has been described to be a PMTCT of HIV supportive form of male participation (Baiden et al., 2005). It would be useful to develop ways of involving men in the visits to maternal clinics. If only their own wives had invited men to join them at the ANC, it was not effective (Chandisarewa et al., 2007; Kizito et al., 2008; Msuya et al., 2008). Already having a tested partner (Creek et al., 2007) or counseling couples simultaneously (Semrau et al., 2005) raised test acceptance in pregnant women.

The presence of spousal communication has been described to be an important factor in women's commitment to the PMTCT of HIV process (Dahl et al., 2008; Kowalczyk et al., 2002; Makin et al., 2008; Msuya et al., 2006; Sarker et al., 2007). Spousal communication has also increased male partner's HIV testing and condoms use (Desgrée-Du-Loû et al., 2007). Traditionally, men have been decision-makers in reproductive matters and wives' opinions have not been seen to be essential. However, HIV and AIDS have changed the need to share sexual issues between spouses because it is important to be aware of one's own HIV status and have the means to prevent being exposed. Awareness demands discussion and ANC visits may be useful occasions to encourage spouses to interact.

Descriptions of male non-supportive participation included the following: being quarrelsome, disbelief, indifferent, consumption of alcohol, having other sex partners, insecurity of exposure for HIV by male partner, refusing to test to HIV, divorce, and being violent. These kinds of expected or actual behavior developed fears which caused test refusal and dropping out from the programs and non-disclosure of test result. Although non-supportive male behavior has been relatively low (Brou et al., 2007; Chandisarewa et al., 2007; Sagay et al., 2006) there is still a need to apply discussion about frightening forms of behavior to the PMTCT of HIV programs so that programs cover as many problems as possible which inhibit prevention of MTCT of HIV. Testing for HIV is a frightening event in itself (Kebaabetswe, 2007; Kowalczyk et al., 2002) for many because of the chance of

receiving a positive result. It might be difficult for pregnant woman to recognize this and report it, compared to their reporting of partners' reactions. Therefore, in addition to strengthened male participation it is also relevant to check the quality of pre-test counseling, e.g. Sarker et al. (2007) reported that after pre-test counseling 42% of pregnant women ($n = 430$) did not understand the process. On the other hand, it might be challenging to study violence as an inhibitor of test acceptance because of different ways of understanding the concept. Perhaps among some people violent behavior by the male partner is interpreted as being normal. This also increases the need to apply content regarding domestic violence to the PMTCT programs. Kebaabetswe (2007) reported many factors which hindered pregnant women from participating in the PMTCT programs and lack of male support was one of them. However, when pregnant women were asked about motivation factors for participating in the programs they did not mention "male support" but "free ARV, food basket and formula milk". It is possible that pregnant women cannot always consider the benefits of male participation during the antenatal process but they prefer basic needs at the first stage.

Conclusion

Only few of studies reported on male participation from the male's view, showing a lack of deeper knowledge about male views on male participation in the context of PMTCT programs. Advanced qualitative knowledge about male participation in a certain culture may help to develop PMTCT programs in a direction that increases the health of mother and babies.

References

- Antelman, G., Smith Fawzi, M.C., Kaaya, S., Mbwambo, J., Msamanga, G.I., Hunter, D.J., et al. (2001). Predictors of HIV-1 serostatus disclosure: A prospective study among HIV-infected pregnant women in Dar es Salaam, Tanzania. *AIDS*, *15*, 1865–1874.
- Baiden, F., Remes, P., Baiden, R., Williams, J., Hodgson, A., Boelaert, M., et al. (2005). Voluntary counselling and HIV testing for pregnant women in the Kassena-Nankan district of northern Ghana: Is couple counselling the way forward? *AIDS Care*, *17*(5), 648–657.
- Bolu, O.O., Allread, V., Creek, T., Stringer, E., Fornal, F., Bultreys, M., et al. (2007). Approaches for scaling up human immunodeficiency virus testing and counselling in prevention of mother-to-child human immunodeficiency virus transmission settings in resource-limited countries. *American Journal of Obstetrics & Gynecology*, *197*(3 Suppl), S83–S89.
- Brou, H., Djohan, G., Becquet, R., Allou, G., Ekouevi, D.K., Viho, I., et al. (2007). When do HIV-infected women disclose their HIV status to their male partner and why? A Study in a PMTCT Programme, Abidjan. *PLOS Medicine*, *4*(12), e342.
- Chandisarewa, W., Sranix-Chibanda, L., Chirapa, E., Miller, A., Simoyi, M., Mahomva, A., et al. (2007). Routine offer of antenatal HIV testing ("opt-out" approach) to prevent mother-to-child transmission of HIV in urban Zimbabwe. *Bullet of the World Health Organization*, *85*, 843–850.
- Creek, T., Ntuny, R., Mazhani, L., Moore, J., Smith, M., Han, G., et al. (2007). Factors associated with low early uptake of a national program to prevent mother to child transmission of HIV (PMTCT): Results of a survey of mother and providers, Botswana, 2003. *AIDS and Behavior*, *13*(2), 356–364.
- Dahl, V., Mellhammar, L., Bajunirwe, F., & Bjorkman, P. (2008). Acceptance of HIV testing among women attending antenatal care in south-western Uganda: Risk factors and reasons for test refusal. *AIDS Care*, *20*(6), 746–752.

- de Paoli, M.M., Manongi, R., & Klepp, K.-I. (2004). Factors influencing acceptability of voluntary counselling and HIV-testing among pregnant women in Northern Tanzania. *AIDS Care*, *16*(4), 411–425.
- Desgrées-Du-Loû, A., Brou, H., Djohan, G., Becquet, R., Ekouevi, D.K., Zanou, B., et al. (2007). Beneficial effects of offering prenatal HIV counselling and testing on developing a HIV preventive attitude among couples, Abidjan, 2002–2005. *AIDS and Behavior*, *13*(2), 348–355.
- Dunkle, K.L., Jewkes, R.K., Brown, H.C., Gray, G.E., McIntyre, J.A., & Harlow, S. (2004). Gender-based violence, relationship power, and risk of HIV infection in women attending antenatal clinics in South Africa. *Lancet*, *363*, 1415–1421.
- Elo, S., & Kyngäs, H. (2007). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115.
- Fabiani, M., Cawthorne, A., Nattabi, B., Ayella, E.O., Ogwang, M., & Declich, S. (2007). Investigating factors associated with uptake of HIV voluntary counselling and testing among pregnant women living in North Uganda. *AIDS Care*, *19*(6), 733–739.
- Karamagi, C.A.S., Tumwine, J.K., Tylleskar, T., & Heggenhougen, K. (2006). Intimate partner violence against women in eastern Uganda: Implications for HIV prevention. *BMC Public Health*, *6*, 284.
- Kasenga, F., Hurtig, A.-K., & Emmelin, M. (2007). HIV-positive women's experiences of a PMTCT programme in rural Malawi. *Midwifery*, *26*(1), 27–37.
- Kebaabetswe, P.M. (2007). Barriers to participation in the prevention of mother-to-child HIV transmission program in Gaborone, Botswana a qualitative approach. *AIDS Care*, *19*(3), 355–360.
- Kiarie, J.N., Farquhar, C., Richardson, B.A., Kabura, M.N., John, F.N., & Nduati, R.W. (2006). Domestic violence and prevention of mother-to-child transmission of HIV-1 (Abstract). *AIDS*, *20*(13), 1763–1769.
- Kinoshita-Molcka, R., Smith, J.S., Atibu, J., Tshefu, A., Hemingway-Foday, J., Hobbs, M., et al. (2008). Low prevalence of HIV and other selected sexually transmitted infections in 2004 in pregnant women from Kinshasa, the Democratic Republic of the Congo. *Epidemiology and Infection*, *136*, 1290–1296.
- Kizito, D., Woodburn, P.W., Kesande, B., Ameke, C., Nabulime, J., Muwanga, M., et al. (2008). Uptake of HIV and syphilis testing of pregnant women and their male partners in a programme for prevention of mother-to-child HIV transmission in Uganda. *Tropical Medicine and International Health*, *13*(5), 680–682.
- Kominami, M., Kawata, K., Ali, M., Meena, H., & Ushijima, H. (2007). Factors determining prenatal HIV testing for prevention of mothers to child transmission in Dar Es Salaam, Tanzania. *Pediatrics International*, *49*, 286–292.
- Kowalczyk, J., Jolly, P., Karita, E., Nibarere, J.-A., Vyankandondera, J., & Salibu, H. (2002). Voluntary counseling and testing for HIV among pregnant women presenting in labor in Kigali, Rwanda. *Journal of Acquired Immune Deficiency Syndromes (JAIDS)*, *31*, 408–415.
- Makin, J.D., Forsyth, B.W.C., Visser, M.J., Sikkema, K.J., Neufeld, S., & Jeffery, B. (2008). Factors affecting disclosure in south African HIV-positive pregnant women. *AIDS Patient Care and STDs*, *22*(11), 908–915.
- Medley, A., Garcia-Moreno, C., McGill, S., & Maman, S. (2004). Rates, barriers and outcomes of HIV serostatus disclosure among women in developing countries: Implications for prevention of mother-to-child transmission programmes. *Bulletin of the World Health Organization*, *82*(4), 299–307.
- Mlay, R., Lugina, H., & Becker, S. (2008). Couple counselling and testing for HIV at antenatal clinics: Views from men, women and counsellors. *AIDS Care*, *20*(3), 356–360.
- Moth, I.A., Ayayo, A.B.C.O., & Kaseje, D.O. (2005). Assessment of utilisation of PMTCT services at Nyanza Provincial Hospital, Kenya. *SAHARA*, *2*(2), 244–250.
- Msuya, S.E., Mbitvo, E.M., Hussain, A., Uriyo, J., Sam, N.E., & Stray-Pedersen, B. (2008). Low male partner participation in antenatal HIV counselling and testing in northern Tanzania: Implications for preventive programs. *AIDS Care*, *20*(6), 700–709.
- Msuya, S.E., Mbitvo, E., Uriyo, J., Stray-Pedersen, B., Sam, N.E., & Hussain, A. (2006). Predictors of failure to return for HIV test results among pregnant women in Moshi, Tanzania. *Journal of Acquired Immune Deficiency Syndrome*, *43*(1), 85–90.

- Ntaganira, J., Muula, A.S., Masaila, F., Dusabeyezu, F., Siziya, S., & Rudatsikira, E. (2008). Intimate partner violence among pregnant women in Rwanda. *BMC Women's Health*, 8, 17.
- Okonkwo, K.C., Reich, K., Alabi, A.I., Umeike, N., & Nachman, S.A. (2007). An evaluation of awareness: Attitudes and beliefs of pregnant Nigerian women toward voluntary counseling and testing for HIV. *AIDS Patient Care and STDs*, 21(4), 252–260.
- "Participation, n." OED Online. (December, 2009). Oxford University Press. Retrieved January 27, 2010, from <http://dictionary.oed.com/cgi/entry/00299371>.
- Pool, R., Nyanzi, S., & Whitworth, J.A.G. (2001). Attitudes to voluntary counselling and testing for HIV among pregnant women in rural south-west Uganda. *AIDS Care*, 13(5), 605–615.
- Saddler, D. (2008). The qualitative research methodology. *Gastroenterology Nursing*, 31(1), 72–74.
- Sagay, A.S., Musa, J., Ekwempu, C.C., Imade, G.E., Babalola, A., Daniyan, G., et al. (2006). Partner disclosure of HIV status among HIV positive mothers in Northern Nigeria. *The African Journal of Medical Sciences*, 35(Suppl.), 119–123.
- Sarker, M., Sanou, A., Snow, R., Ganame, J., & Gondos, A. (2007). Determinants of HIV counselling and testing participation in a prevention of mother-to-child transmission programme in rural Burkina Faso. *Tropical Medicine and International Health*, 12(12), 1475–1483.
- Semrau, K., Kuhn, L., Vwalika, C., Kasonde, P., Sinkala, M., Kankasa, C., et al. (2005). Women in couples antenatal HIV counseling and testing are not more likely to report adverse social events. *AIDS*, 19(6), 603–609.
- Stringer, E.M., Chi, B.H., Chintu, N., Creek, T.L., Ekouevi, D.K., Coetzee, D., et al. (2008). Monitoring effectiveness of programme to prevent mother-to-child transmission in lower-income countries. *Bulletin of the World Health Organization*, 86(1), 57–62.
- Stover, J., Johnson, P., Zaba, B., Zwaren, M., Dabis, F., & Ekpini, R.E. (2008). The Spectrum projection package: Improvements in estimating mortality, ART needs, PMTCT impact and uncertainty bounds. *Sexually Transmitted Infections*, 84, i24–i30.
- UNAIDS. (2008). Report on the global AIDS epidemic. Executive summary. Retrieved March 25, 2009, from http://data.unaids.org/pub/GlobalReport/2008/JC1511_GR08_ExecutiveSummary_en.pdf
- United Nations. (2008). Declaration of commitment on HIV/AIDS and political declaration on HIV/AIDS: Midway to the millennium development goals. A/62/780. Retrieved February 3, 2009, from <http://www.stoptb.org/events/hivtbleaders/assets/documents/Secretary%20General%20Progress%20Report.pdf>
- Visser, M.J., Neufeld, S., de Villiers, A., Makin, J.D., & Forsyth, B.W. (2008). To tell or not to tell: South African women's disclosure of HIV status during pregnancy. *AIDS Care*, 20(9), 1138–1145.
- WHO. (2007). Guidance on provider-initiated HIV testing and counselling in Health facilities. HIV/AIDS programme, strengthening health services to fight HIV/AIDS. WHO Library Cataloguing-in-Publication Data. Retrieved February 3, 2009, from http://whqlibdoc.who.int/publications/2007/9789241595568_eng.pdf
- WHO. (2008). Status of the global HIV epidemic. Retrieved February 23, 2009, from http://data.unaids.org/pub/GlobalReport/2008/jc1510_2008_global_report_pp29_62_en.pdf
- Worku, G., & Enquesslassie, F. (2007). Factors determining acceptance of voluntary HIV counselling and testing among pregnant women attending antenatal clinic at army hospitals in Addis Ababa (Abstract). *Ethiopian Medical Journal*, 45(1), 1–8.

Views of Luba-Kasai Men, Zambia, about Prevention of HIV Transmission to Babies

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ABSTRACT *Objective:* This study describes the views of Luba-Kasai men (a Congolese tribe living in Lusaka Province, Zambia) about different methods through which they can prevent their babies from being exposed to human immunodeficiency virus (HIV) infection during pregnancy, delivery and feeding. *Design and Sample:* Individual semi-structured interview study with a sample of Luba-Kasai refugee men ($n = 21$). *Measures:* Data were translated into English and analyzed using content analysis. *Results:* Two methods of prevention emerged: (1) Outside support (pastoral support, e.g., maintaining a spiritual outlook on life, and support from the public health service); and (2) Adopting safe practices around their own and their families lifestyle. *Conclusion:* Additional attention to male participation in antenatal clinics may strengthen prevention of mother to child transmission of HIV.

Key words: fathers, HIV, infectious disease transmission, refugees, vertical transmission, qualitative research, Zambia.

Background

Human immunodeficiency virus (HIV) infection threatens the health of mothers and infants, especially in sub-Saharan Africa, which accounts for 67% of the world's 33 million HIV infections (World Health Organization, 2008). However, adherence to measures, for example, prophylactic antiretrovirals, learned in prevention of mother to child transmission (PMTCT) of HIV programs can reduce MTCT to less than 5% in breastfeeding populations and to less than 2% in nonbreastfeeding populations (World Health Organization, 2010).

Zambia has an estimated HIV prevalence of 14.3%; with a population of 12.9 million people, more than 900,000 are living with HIV. Almost

one-quarter (24.5%) of pregnant women in Lusaka, the capital province are HIV positive (Killam et al., 2010). The infection rate of the babies of women with HIV infection is 20.9% without the use of any PMTCT interventions compared to 5.0–8.5% with medical interventions among infants aged 0–6 weeks (Torpey et al., 2010). Despite medical interventions to reduce mother to child transmission, the observed transmission rates through feeding practices were high among children aged 6–12 (Torpey et al., 2010).

Male participation is recognized as a key factor in each phase of the PMTCT of HIV programs. However, male participation in antenatal voluntary counseling and testing (VCT) for HIV has been low (Katz et al., 2009; Msuya et al.,

2008). HIV-positive women whose partners had attended VCT were more likely to adhere to HIV testing (de Paoli, Manongi, & Klepp, 2004) and to other aspects of the program, such as using antiretroviral prophylaxis (Msuya et al., 2008; Peltzer, Mlambo, Phaswana-Mafuya, & Ladzani, 2010) or practicing preventative feeding options (Msuya et al., 2008; Traoré et al., 2009). Male participation in VCT also benefits HIV-negative women because of the more frequent male partner HIV testing and condom use (Desgrées-du-Loû et al., 2009a). In contrast, a lack of support from partners is an important reason for women dropping out of the PMTCT program (Chinkonde, Sundby, & Martinson, 2009; Moth, Ayayo, & Kaseje, 2005).

Male partners attend antenatal services because they are willing to participate in HIV testing or to receive health information (Katz et al., 2009). However, several studies conducted in sub-Saharan Africa have revealed barriers to male partners' antenatal attendance, including a lack of respect for cultural beliefs, the poor quality of health systems, antenatal clinics that do not promote a male-friendly environment (Byamugisha, Tumwine, Semiyaga, & Tylleskär, 2010; Reece, Hollub, Nangami, & Lane, 2010), HIV-related stigma (Reece et al., 2010), economics, lack of information (Mbo-nye, Hansen, Wamono, & Magnussen, 2010), a fear of HIV test results, and the indifference of male partners (Theuring et al., 2009).

Research questions

The purpose of this study was to describe Luba-Kasai male partners' views on how they can prevent their wives and babies from being exposed to HIV infection during pregnancy, delivery, and feeding. The following questions guided the individual interviews:

1. How can you prevent your wife from being exposed to HIV during pregnancy?
2. How can you prevent your baby from being exposed to HIV during pregnancy?
3. How can you prevent your baby from being exposed to HIV during delivery?
4. How can you prevent your baby from being exposed to HIV during feeding?

Methods

Design and sample

This topic has not been widely studied; therefore, an inductive qualitative approach was chosen (Swift & Tischler, 2010) to capture the richness and depth of male perceptions. This descriptive qualitative study, which follows the general tenets of naturalistic inquiry (Sandelowski, 2000, 2010), is based on inductive reasoning (MacFarlane & O'Reilly-de Brún, 2012). In practice, the present study refers to "the process by which research findings are derived from the data with no consideration to pre-existing theory" (Swift & Tischler, 2010, p. 564).

To participate in this study, the participants had to be Luba-Kasai men, refugees from the Democratic Republic of Congo (DRC) or the descendants of refugees. Because the reproductive issues were topical in this report, men whose wives were pregnant or whose babies were nursing were included in the study. The Luba-Kasai living in Lusaka Province were selected because there are still urban refugee communities in Zambia (especially in Lusaka), although a remarkable number of refugees have recently been repatriated from the refugee camps to their own countries (United Nations Refugee Agency, 2012). To capture the distinct tribal features concerning HIV prevention in a situation characterized by refugee status, this study is restricted to the investigation of Luba-Kasai men. Different African tribes have common characteristics and unique styles concerning their perceptions about reality. As refugees, they may have special needs, for example, educational material for antenatal care in their tribal language. These needs are not necessarily considered in PMTCT of HIV programs. We worked with a local contact person (also a Luba-Kasai) who recruited the participants by personally invitations. The data were collected from March to June 2009 in the suburban areas of Lusaka, Zambia.

Measures

The research was conducted according to Zambian requirements with the assistance of a local co-researcher from the Zambian Ministry of Health. Research approval for the interviews was provided by the Biomedical Research Ethics Committee of the University of Zambia. The co-researcher is also

a co-author of this report and has provided important support in adjusting the study to meet local requirements and contexts.

A local contact person translated the informed consent forms into the Luba and Nyanja languages and worked as an interpreter in the interviews. We trained the contact person to understand the process of qualitative interview, to assist in the interview process and to act in accordance with the ethical requirements of research. The interviews were primarily conducted in the participants' homes. Each session began by explaining the content of the informed consent form and completing the form, which indicated the participants' voluntary participation in the study. An information sheet containing contact details of both the Biomedical Research Ethics Committee and the researcher was provided. At the beginning of the interview, the participants were asked to use the language that was most comfortable for them.

To protect the participants' confidentiality, the papers were numbered by code. After the interview, the interviewer completed a background variable sheet. The interviews were recorded and later transcribed verbatim by the interviewer, in the presence of the contact person. A total of 21 interviews were conducted. The thoughts and opinions expressed by the participants began to recur in the 15th interview. From this point, it was unknown whether the following interviews would produce new information. To capture new thoughts, additional interviews were conducted; however, the six additional interviews did not reveal any new concepts; instead, they served to strengthen the ideas and opinions previously expressed (Morse, 1991).

Analytic strategy

We analyzed the data in English, shortly after the interviews, using Microsoft Word software. Another interpreter, who was a native speaker of the Luba language, confirmed the quality of interpretation by listening to the recorded interviews. During the analysis, the contact person (who also worked as an interpreter) clarified the meanings of any unclear expressions (local phrases and local spoken language) that arose in the interviews.

Content analysis (as discussed by Miles & Huberman, 1994) was used to evaluate the data

collected through the semi-structured questions. Content analysis enabled us to explore the participants' views on how they can prevent their wives and babies from being exposed to HIV infection during pregnancy, delivery, and feeding. The unit of analysis was any meaningful element of text that fulfilled the purpose of the study. The data were read several times and reduced. Reduction (or coding) refers to the process where the original data are condensed so that no important information is lost. Codes, which are the outcome form of the reduction process, were compared to each other. Codes that were similar to their content were grouped to create lower categories. The lower categories were subsequently compared to create upper categories. The upper categories with similar content were grouped, and primary categories were created. The analysis was conducted close to the data; the study produced "findings closer to the data as given, or data-near" (Sandelowski, 2010). To clarify the analysis process, an example of the data analysis is presented in Table 1.

The analysis was confirmed by discussing the findings among the research team, which also included senior qualitative researchers. The results were presented to two Luba-Kasai men and to the local co-researcher, who is familiar with Luba-Kasai culture, to confirm the validity of the results, thereby enhancing the trustworthiness of the reported findings.

Results

Characteristics of the participants

Twenty-one interviews were eligible for analysis. Two participants used English, one used Nyanja and 18 chose the Luba language. The largest age group was men >50 years of age. All 21 participants were married; 13 participants were monogamous. One third of the participants had 8–14 children. The majority of the participants had completed secondary education. Only three participants had permanent work. More than 50% of the participants had been tested for HIV, knew their own and their wife's HIV status, had disclosed their own status to their wife and had at some point accompanied her to the antenatal care clinic. Approximately 50% of the participants had sought VCT during their wife's pregnancy.

TABLE 1. *Adopting Safe Practices Around Their Own and Their Families' Lifestyle: An Example of the Data Analysis Process*

English-language citations (originally Luba language data)	Lower categories	Upper category	Primary category
“My method is to tell my wife that she must not be a prostitute, and you have to keep yourself, I also. I have to keep myself that we stay longer.”	<i>Sharing responsibility</i>	<i>Taking care of sexual health issues</i>	<i>Adopting safe lifestyles and family practices</i>
“In the way of taking care, maybe looking after her on her way, her way of walking and taking care also of myself on my ways of walking.”			
“I have to prevent my wife when she is pregnant. I have to be without sex outside marriage when I know that my wife is pregnant.”	<i>Controlling own sexual behavior</i>		
“When she is pregnant, I am not supposed to have sex with other women because if I am having sex, I do not know if those women are infected or not. Because if I am having sex with outsiders, then I come and infect also the wife.”			
“As we are together, we encourage one another, and we try to discuss so that no one could have sex out of the marriage because if someone is infected already then the whole family will be infected.”	<i>Communicating with wife</i>	<i>Caring for one's wife and child</i>	
“I have to sit with the mother and discuss that this disease has already come . . .”			
“When she is pregnant, I have to give her food, proper food and she should not think too much and she will not work too hard; she needs rest, and as her husband, I need also to assist her on everything what is needed and provide everything.”	<i>Loving one's wife</i>		
“... this life we have nowadays is very dangerous; it is not like past life; we are living in danger and we need to love each other properly.”			

Methods for preventing the exposure of wives and babies to HIV

Two methods for preventing the wives and babies from being exposed to HIV were identified from the data (Table 2): (1) using outside support, and (2) adopting safe practices around their own and their families' lifestyle.

There were two different sources of outside support: receiving support from spiritual perspectives on life and receiving support from public health services. Receiving support from spiritual outlook on life in this context means first, faith in God and second, adopting and placing faith in tribal traditions to prevent the pregnant wife and the baby from being exposed to HIV. Faith in God consisted of different dimensions. The following examples were expressed by the participants:

Fear of God: Participant 6 said the following: “The one who is not following the commandments of God is the one who will get HIV. When you fear God, you will not get this disease.”

Praying to God: Participant 17 expressed the following: “We are praying so that we are saving our lives and the life of the child”. Participant 11 recalled: “. . . and she (the wife) called me, ‘It is difficult for me, I cannot give birth because they said I do not have enough blood, so they have to make an operation.’ I (the husband) said: ‘No, just pray and give birth.’ I forbade the operation because I know a friend of mine who is in the same position as I, he is also positive, a wife gave birth and she also underwent surgery and the baby got HIV.”

Trusting God: Participant 15 said the following: “As I love my wife, and I put God before everything, and God will assist us so that the baby will be healthy in the name of God.”

Adopting and placing faith in tribal traditions consisted of the following dimensions:

With regard to being a father, Participant 9 described the following: “I am doing what my father was doing. . . . when my mother was pregnant, my father was abstaining. He was telling me

TABLE 2. *Methods Used by Luba-Kasai Men to Prevent Their Wives and Babies from Being Exposed to the HIV Infection during Pregnancy, Delivery, and Feeding*

Methods of prevention during pregnancy, delivery, and feeding

1. Using outside sources of support
 - Support from spiritual outlook on life
 - Support from public health services
2. Adopting safe practices around their own and their families’ lifestyle
 - Taking care of sexual health issues
 - Caring for one’s wife and child
 - Avoiding contamination
 - Being proactive to prevent HIV transmission from mother to child
 - Changing the traditional practices of feeding

that ‘my child, look and see, hear.’ It is a piece of advice that stays with me.” Traditions, however, run strong: “Why should I prevent the child from getting HIV after delivery? I know that after delivery I can have sex as I want.” Participant 19 replied that “In our tradition, if you marry a woman, when she comes into your home, you have to give her a chicken. And when you have given a chicken to her, then she is not allowed to have sex with another man outside of marriage.”

Following traditional beliefs also figured into the data: Participant 8 said that “... if somebody (the wife) is pregnant and you (the husband) are having some sexual relations outside of marriage... then you go to the elder and tell everything, and the elder will tell you other practices ... you follow those practices, and then she will be safe.”

Using support from public health services is a method that is present in each phase of where the woman and baby could be exposed to HIV infection. When the wife is pregnant, the participants received support from public health services that provided information: Participant 16 stated, “We have been told that when she is pregnant, we must not sleep out or take other women.” Being tested for HIV is interpreted as another source of information: Participant 7 said, “Another method is that we have an HIV test so that we know our status.” Receiving condoms also features the following,

according to Participant 12: “At the clinics, they are given (condoms); if you go to any VCT center, they are giving.”

When the baby is in the womb, the participants talked about adhering to instructions. Participant 12 commented, “If she is positive, the doctors will tell them what to do to protect the baby.” To receive medicine, Participant 20 said, “...we have been told at the clinic that when you are positive, you have to come here with your wife so that they can assist you ... they are giving us some medicine.”

Giving birth at the clinic instead of choosing nonprofessional health practitioners was noted to be a preventative method. Participant 16 remarked, “I will prevent it by following the instructions that are given at the clinic. I encouraged her to give birth at the clinic.” Using health care services means that the family is continuously tested for HIV and receives instructions about feeding practices. Participant 16 said, “If I am positive, then I have to follow all the instructions given by the doctors from the clinic because on my own, I cannot do anything.”

Adopting safe practices around their own and their families’ lifestyle create five different means to prevent babies from being infected: *taking care of sexual issues, caring for one’s wife and child, avoiding contamination, taking action to prevent HIV transmission from mother to child and changing the traditional practices of feeding the baby.*

Taking care of sexual health issues implies controlling both the male partner’s and the wife’s sex life. This method is present in each phase of the process, except the phase in which the baby is born. This method can be divided into several dimensions when the wife is pregnant: sharing responsibility, controlling one’s own sexual behavior, controlling the wife’s sexual behavior, and using condoms in extramarital and marital sex. Sharing responsibility means that both husband and wife are mutually faithful to each other by avoiding extramarital relations to protect themselves; for example, Participant 15 said, “... looking after her and also taking care of myself.” Controlling one’s own sexual behavior includes being without other sexual relations during the wife’s pregnancy. Participant 9 said, “I am having sex with women, when my wife is not pregnant.” It means being generally without other sex relations;

for example, Participant 6 stated that “there is no need for other wives, a girlfriend, a boyfriend, never”; and abstaining from sex, Participant 6 said “Now, we live together but we are sleeping in different places because I know that I have the disease.” Controlling the wife’s sexual behavior included the observation that giving food to the wife protects her from being exposed to HIV; for example, Participant 21 said “And if 1 day there is no food, the wife who is pregnant will go out and have sex outside of marriage with other men so that she can get some money to buy food.”

When the baby is nursing, abstaining from sex with the breastfeeding mother appeared to be a new method to prevent babies from being exposed to HIV. For example, Participant 11 said “... I am not supposed to touch her until she has stopped breastfeeding.” Maintaining the HIV-negative status sustains a good situation and protects the nursing baby. Participant 21 expressed that “when it is breastfeeding time, when the mother is not HIV-positive, then I also have to abstain so that I will not be infected.”

Using condoms in extramarital and marital sex as a preventative method emerged when the wife was pregnant. Using condoms appeared in two different situations: first, if the male partner had extramarital relations; Participant 10 said “... when you are not abstaining and your heart is leading you to have sex with other women, you can use a condom.” Second, if the couple is HIV sero-discordant, or both partners are HIV-infected, they use a condom; for example, Participant 11 said “... I have to use condoms each and every time ... because each and every time I have sex without condom, I add to the viruses. I have added to the viruses which she got from me.”

Caring for one’s wife and child contains several characteristics that illustrate the participants’ views about spousal relations in preventing the wife and baby from being exposed to HIV. Communicating with the wife means having a protective attitude toward the wife, such as giving her instructions or counseling her. For example, Participant 2 said, “The wife has to follow instructions to avoid this infection not having sex outside of marriage.” In addition, maintaining an interactive style of thinking or talking together about prevention is critical. Participant 12 expressed, “As we are together, we encourage one another and we try to discuss so

that neither of us could have sex outside of marriage ...”

Guiding the wife’s life involves some arrangements that have been organized by the husband to keep the wife busy during the day. Participant 8 said “... when I am out because of my job... I do offer some money for her just for small purchases ... she makes some food for the children to take to school ... it keeps her busy.”

Loving was expressed by the participants in several ways, such as living in love and peace; for example, Participant 15 said “... I found that what she wants and what she needs was also what I want and need. Now we are together in this peace, and I am even taking care of those children from the other husband...” Loving her as one loves oneself, Participant 15 remarked that “... as you are using your body, you have to consider also the body of someone else ... you have to do to your friends what you would want them to do to you. It is love.” Helping each other is interpreted as love; Participant 15 commented that “... it is not like our past life, we are living in danger and we need to love each other properly.” One way of caring for one’s wife and child is by giving food to the mother; for example, Participant 14 said that “... when the mother is eating good food, then it is preventing the baby from being exposed to HIV...”

Having an influence on feeding the baby emerged as a method, when the baby is nursing. This perspective could be interpreted in two ways: First, by breaking the chain of MTCT through breastfeeding. This can be done by stopping breastfeeding if the mother is infected, by using formula milk and by using heat-treated breast milk; Participant 17 said that “... if I found out that the mother is positive and the baby is negative, I will not allow the mother to breastfeed because she will contaminate the baby.”

The second way is to reduce the risk of MTCT by breastfeeding. This approach may be performed in two ways. Breastfeeding the baby for a shortened period was acknowledged; Participant 4 said “yes, I heard people are saying when the child is 6 months when the teeth start to come out, we have to stop breastfeeding.” Another subject concerning breastfeeding from undamaged breasts was raised; Participant 12 said that “we have to inspect the breasts. If there are sores, then she cannot breastfeed; she has to use the other side.”

Avoiding contamination concerns avoiding contact with blood and dirt. Avoiding blood contact consists of using personal razor blades and toothbrushes and safe injections. Razor blades are important tools that are used for shaving, hair cutting, and manicuring the baby. Using safe injections means that the public health system clients are advised to bring their own new syringes and needles when they come to have any injections. In addition, avoiding the use of traditional doctors is advised because they fear that the injections and other treatments the traditional doctors may give are not safe. Avoiding dirt emerged in the participants' views, for example, by observing that it is necessary to use shoes when going to the toilet to avoid infection. Participant 15 remarked that "maybe the use of the toilets without shoes, you can step on those HIV germs and get it."

Taking precautions to prevent HIV transmission from mother to child means accepting the HIV infection and then putting things into perspective. The participants felt that in this way, the infected mothers could adhere to the programs to protect their babies. For example, Participant 4 replied that "when they find that the mother is infected, we have to accept it so that the baby would not be infected."

Changing the traditional practices of feeding the baby entails restricting the number of wet nurses. Traditionally, other women besides the mothers can breastfeed babies; however, there is now a need to protect the babies against exposure to other women. As Participant 19 described, "Yes, I can prevent it (HIV infection). This new baby will not be breastfed by another woman."

Discussion

This qualitative study describes the views of Luba-Kasai men regarding how they can prevent their wives and babies from being exposed to HIV infection during pregnancy, delivery and feeding. The results of this analysis show that the Luba-Kasai men living in Lusaka Province recognized a range of methods for preventing their wives and babies from being exposed to HIV infection and that they have an accurate knowledge of HIV infection. The study also reveals some misunderstandings that present challenges to awareness campaigns/PMTCT programs. HIV infection and its prevention, natural

progress and treatments constitute a multidimensional collection of scientific knowledge that draws from numerous fields; some failings among low educated men are to be expected. The educational needs of minorities should have been taken into account in the public health, to cross possible language barriers.

The participants in this study expressed their need to receive divine support. This desire is obvious in a society where religion (basically Christianity and adhered to by 87% of the population: Bureau of Democracy, Human Rights & Labor, 2008) permeates the entire society. Zou et al. (2009) reported connections between religious beliefs and interpretations concerning HIV-infected people's promiscuity and their belief that prayer could cure HIV. In the present study, obeying the divine commandments, praying to God and trusting God were all observed to be protective methods against HIV infection, according to the Luba-Kasai men's views. The use of condoms was mentioned as a method with other sex partners, when the couple is sero-discordant or both partners are HIV-infected. However, the majority of heterosexual new HIV transmissions for both men and women in urban Zambia occur in marriage or cohabiting relations (Dunkle et al., 2008). Only 50.0% of men aged 15–49 years, who have had more than one partner in the last 12 months, reported condom use during their last sexual intercourse (Republic of Zambia, 2010). Some teachings of the Catholic Church may decrease the willingness to use condoms (Benagiano, Carrara, Filippi, & Brosens, 2011). The participants also drew support from their tribal identity, which included traditional beliefs in what they considered to be supernatural. Harmful religious beliefs could be detected in an antenatal clinic to help the male partner to realize behavior that may risk the health of the mother or baby.

Taking care of sexual health issues is a multifaceted method for preventing the exposure of the wife and baby to HIV infection. Sharing the responsibility of the issue requires a mutual faithfulness to maintain the HIV-negative status of both partners; together with total sexual abstinence. A problematic method employed is for the male partner to avoid other relations during the wife's pregnancy but to continue with other relations while the wife is breastfeeding because a recently HIV-infected breastfeeding mother exposes the baby to HIV

infection (Torpey et al., 2010). Controlling sexual behavior also means that the husband controls the wife's sexual behavior by giving her food to inhibit potential transactional sex, which is a risk behavior for some poor women in the lowest household wealth quintile (Parkhurst, 2010). Both men and women have been reported to have multiple sex partners. Men are less likely to recognize themselves as being at risk for HIV than women while having unsafe sex (Do & Meekers, 2009), an observation which was also reported in this study among several participants. A prevention of MTCT of HIV could benefit if the male partner is encouraged in an antenatal clinic to commit only to one sexual partner, to have safe sex practices and to support the wife financially.

The method of influencing the feeding of the child has two primary lines: entirely breaking the chain of MTCT and reducing the risk of infection. In this study, it seemed that several participants were unaware of recommendations of the National PMTCT Program, which follows The World Health Organization's guidelines for breastfeeding exclusively to cover the nutritional needs and to protect the babies against diarrhea. Some of the participants' knowledge in this area was accurate, including the need to change the traditional custom of allowing other women to breastfeed the baby. For the HIV-infected mothers, it would be useful to have partner support when making informed decisions to select a feeding method and to persist with the chosen method (Msuya et al., 2008; Traoré et al., 2009). In this study, the perceptions of safe feeding methods varied from whether the vitamin-rich breast milk, in fact, posed any risk to detailed explanations concerning how to use heat-treated breast milk and how to inspect the mother's breasts. Therefore, it would seem that there is a need to continue and to develop a family centered approach in antenatal clinics to reach and teach more male partners about infant feeding, although this approach may present a challenge in resource-limited Zambia.

In our study, the men received support from public health care services to prevent HIV infection, and many participants were aware of the services and resources (e.g., HIV tests, condoms, and medications) that are available at the clinics. Only 15 of the 21 participants, however, had visited the clinic during the wife's pregnancy. Nevertheless, the attitudes

of the participants toward antenatal services were generally positive and open, which is congruent with other studies (Theuring et al., 2009). There is an urgent need for innovations on how male partners would be more active to attend antenatal care clinics.

Caring for one's wife and child is a male method for preventing HIV infection. In the data collected, there were two approaches for providing care; first, as head of the family, the male partner gives orders, expects that these orders are obeyed and makes subsequent arrangements. Second, the male partner communicates interactively, which has also been observed as a preventative method in other studies (Auvinen, Suominen, & Välimäki, 2010; Desgrées-du-Loû et al., 2009b). An expression of love is defined within the data as considering the needs and wants of the wife as one's own, and loving is doing good things for each other, which includes the protection of mother and baby against the HIV infection. Midwives could be the agents in creating and in strengthening of warm relations and equality between spouses.

This qualitative study has several notable features. The participants shared the same cultural background and language, which helped to understand and analyze the stories of the different participants that complemented each other. The stories are drawn from interviews with male partners when studying male participation in the prevention of MTCT. Innovators of preventative programs should have multifaceted knowledge drawn from different perspectives (including men) about family life in the different cultures of Africa. By considering the male perspective and ideas, such programs may appear to be easier for male partners to approach. This study highlights the views of a small urban minority, which is difficult to reach because of its refugee status. It is, however, valuable to present the views of subpopulations, such as refugees, to better inform the preparation of the preventative programs that consider their special needs in the prevention of MTCT.

This study has several limitations in relation to its scope. The participants were refugees (or descendants of refugees) from DRC and lived in an urban area in Lusaka Province. Therefore, the results may not be generalizable to other parts of Zambia and the rest of the population. It is also acknowledged that the participants and the researcher used different languages with the assis-

tance of an interpreter. Thus, there may be some hidden nuances of language and meaning, despite the research assistant's training and the interpretation verification.

The participants of this study, however, recognized several methods for preventing their wives and babies from HIV exposure during pregnancy, delivery, and feeding. To strengthen the preventative knowledge, for example, regarding methods of HIV transmission, preventative skills (e.g., safe sexual and infant feeding practices and positive attitudes), it may be useful to routinely invite male partners to visit antenatal clinics. In addition, the study suggests that discussing MTCT issues and harmful traditions, for example, gender roles, with the couple may encourage them to improve spousal communication and to consider religious aspects. Developing the National PMTCT of HIV programs into a more family centered direction and providing updated training for health care personnel could improve the means of bringing male partners to antenatal care clinics.

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References

- Auvinen, J., Suominen, T., & Välimäki, M. (2010). Male participation and prevention of human immunodeficiency virus (HIV) mother-to-child transmission in Africa. *Psychology, Health and Medicine*, 15(3), 288–313. doi:10.1080/13548501003615290.
- Benagiano, G., Carrara, S., Filippi, V., & Brosens, I. (2011). Condoms, HIV and the Roman Catholic Church. *Reproductive BioMedicine Online*, 22(7), 701–709. doi:10.1016/j.rbmo.2011.02.007.
- Bureau of Democracy, Human Rights and Labor. (2008). International religious freedom report, Zambia. U.S. Department of State. Retrieved from <http://www.state.gov/g/drl/rls/irf/2008/108398.htm>
- Byamugisha, R., Tumwine, J. K., Semiyaga, N., & Tylleskär, T. (2010). Determinants of male involvement in the prevention of mother-to-child transmission of HIV programme in Eastern Uganda: a cross-sectional survey. *Reproductive Health*, 7, 12. doi:10.1186/1742-4755-7-12.
- Chinkonde, J. R., Sundby, J., & Martinson, F. (2009). The prevention of mother-to child HIV transmission programme in Lilongwe, Malawi: Why do so many women drop out. *Reproductive Health Matters*, 17(33), 143–151. doi:10.1016/S0968-8080(09)33440-0.
- Desgrées-du-Loué, A., Brou, H., Djohan, G., Becquet, R., Ekouevi, D. K., Zanou, B., et al. (2009a). Beneficial effects of offering prenatal HIV counselling and testing on developing a HIV preventive attitude among couples, Abidjan, 2002–2005. *AIDS and Behavior*, 13(2), 348–355. doi:10.1007/s10461-007-9316-6.
- Desgrées-du-Loué, A., Brou, H., Traore, A. T., Djohan, G., Becquet, R., & Leroy, V. (2009b). From prenatal HIV testing of the mother to prevention of sexual HIV transmission within the couple. *Social Science and Medicine*, 69(6), 892–899. doi:10.1016/j.socscimed.2009.05.045.
- Do, M., & Meekers, D. (2009). Multiple sex partners and perceived risk of HIV infection in Zambia: Attitudinal determinants and gender differences. *AIDS Care*, 21(10), 1211–1221. doi:10.1080/095401209027300.
- Dunkle, K. L., Stephenson, R., Karita, E., Chomba, E., Kayitenkore, K., Vwalika, C., et al. (2008). New heterosexually transmitted HIV infections in married or cohabiting couples in urban Zambia and Rwanda: An analysis of survey and clinical data. *Lancet*, 371, 2183–2191.
- Katz, D. A., Kiari, J. N., John-Stewart, G. C., Richardson, B. A., John, F. N., & Farquhar, C. (2009). Male perspectives on incorporating men into antenatal HIV counseling and testing. *PLoS ONE*, 4(11), e7602. doi:10.1371/journal.pone.0007602.
- Killam, W. P., Tambatamba, B. C., Chintu, N., Rouse, D., Stringer, E., Bweupe, M., et al. (2010). Antiretroviral therapy in antenatal care to increase treatment initiation in HIV-infected pregnant women: A stepped-wedge evaluation. *AIDS*, 24(1), 85–91. doi:10.1097/QAD.0b013e3283298be.
- MacFarlane, A., & O'Reilly-de Bruin, M. (2012). Using a theory-driven conceptual framework in qualitative health research. *Qualitative Health Research*, 22(5), 607–618. doi:10.1177/104973211431898.
- Mbonye, A. K., Hansen, K. S., Wamono, F., & Magnussen, P. (2010). Barriers to prevention of mother-to-child transmission of HIV services in Uganda. *Journal of Biosocial Science*, 42(2), 271–283. doi:10.1017/S002193200999040X.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*. Newbury Park, CA: Sage.
- Morse, J. M. (1991). Strategies for sampling. In J. M. Morse (Ed.), *Qualitative nursing research: A contemporary dialogue* (rev ed.). Newbury Park, CA: Sage.
- Moth, I. A., Ayayo, A. B. C. O., & Kaseje, D. O. (2005). Assessment of utilisation of PMTCT services at Nyanza Provincial Hospital, Kenya. *SAHARA*, 2(2), 244–250. doi:10.1080/17290376.2005.9724847.
- Msuya, S. E., Mbizvo, E. M., Hussain, A., Uriyo, J., Sam, N. E., & Stray-Pedersen, B. (2008). Low male partner participation in antenatal HIV counselling and testing in northern Tanzania: Implications for preventive programs. *AIDS Care*, 20(6), 700–709. doi:10.1080/09540120701687059.
- de Paoli, M. M., Manongi, R., & Klepp, K.-I. (2004). Factors influencing acceptability of voluntary counselling and HIV-testing among pregnant women in Northern Tanzania. *AIDS Care*, 16(4), 411–425. doi:10.1080/09540120410001683358.
- Parkhurst, J. O. (2010). Understanding the correlations between wealth, poverty and human immunodeficiency virus infection in African countries. *Bulletin of the World Health Organization*, 88(7), 519–526. doi:10.2471/BLT.09.070185.
- Peltzer, K., Mlambo, M., Phaswana-Mafuya, N., & Ladzani, R. (2010). Determinants of adherence to a single-dose nevirapine regimen for the prevention of mother-to-child HIV transmission in Gert Sibande district in South Africa. *Acta Paediatrica*, 99(5), 699–704. doi:10.1111/j.1651-2227.2010.01699.x.
- Reece, M., Hollub, A., Nangami, M., & Lane, K. (2010). Assessing male spousal engagement with prevention of mother-to-

- child transmission (pMTCT) programs in western Kenya. *AIDS Care*, 22(6), 743–750. doi:10.1080/09540120903431330.
- Republic of Zambia. (2010). *Zambia country report: Monitoring the declaration of commitment on HIV and AIDS and the universal access: Biennial report: Submitted to the United Nations general assembly special session on aids, Declaration of commitment: Reporting period, January 2008 – December 2009*. Republic of Zambia. Retrieved from http://data.unaids.org/pub/Report/2010/zambia_2010_country_progress_report_en.pdf
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing and Health*, 23(4), 334–340. doi:10.1002/1098-240X(200008)23:4<334:AID-NUR9>3.0.CO;2-G.
- Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing and Health*, 33(1), 77–84. doi:10.1002/nur.20362.
- Swift, J. A., & Tischler, V. (2010). Qualitative research in nutrition and dietetics: Getting started. *Journal of Human Nutrition and Dietetics*, 23, 559–566. doi:10.1111/j.1365-277X.2010.01116.x.
- Theuring, S., Mbezi, P., Luvand, H., Jordan-Harder, B., Kunz, A., & Harms, G. (2009). Male involvement in PMTCT services in Mbeya Region, Tanzania. *AIDS and Behavior*, 13, 92–102. doi:10.1007/s10461-009-9543-0.
- Torpey, K., Kasonde, P., Kabaso, M., Weaver, M. A., Bryan, G., Mukonka, V., et al. (2010). Reducing pediatric HIV infection: Estimating mother-to-child transmission rates in a program setting in Zambia. *Journal of Acquired Immune Deficiency Syndromes*, 54(4), 415–422. doi:10.1097/QAI.0b013e3181e36616.
- Traoré, A. T., Querre, M., Brou, H., Leroy, V., Desclaux, A., & Desgrée-du-Loué, A. (2009). Couples, PMTCT programs and infant feeding decision-making in Ivory Coast. *Social Science and Medicine*, 69(6), 830–837. doi:10.1016/j.socsci-med.2009.06.001.
- United Nations Refugee Agency. (2012). Zambia: 2014 UNHCR regional operations profile – Southern Africa. United Nations High Commissioner for Refugees. Retrieved from <http://www.unhcr.org/cgi-bin/texis/vtx/page?page=49e485ba6&submit=GO>
- World Health Organization. (2008). Status of the global HIV epidemic. Geneva: World Health Organization. Retrieved from http://data.unaids.org/pub/GlobalReport/2008/jc1510_2008_global_report_pp29_62_en.pdf
- World Health Organization. (2010). Antiretroviral drugs for treating pregnant women and preventing HIV infections in infants: Recommendations for a public health approach (2010 version). Geneva: World Health Organization. Retrieved from http://whqlibdoc.who.int/publications/2010/9789241599818_eng.pdf
- Zou, J., Yamanaka, Y., John, M., Watt, M., Ostermann, J., & Thielman, N. (2009). Religion and HIV in Tanzania: Influence of religious beliefs on HIV stigma, disclosure, and treatment attitudes. *BMC Public Health*, 9, 75.

Barriers and Resources to PMTCT of HIV: Luba-Kasai Men's Perspective in Lusaka, Zambia

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The purpose of this study was to describe the views of Luba-Kasai (a Congolese tribe) men on barriers inhibiting them from the prevention of mother-to-child transmission (PMTCT) of HIV and the resources they need to implement such prevention in Lusaka, Zambia. Twenty-one men were interviewed and the data were analyzed using qualitative content analysis. The barriers identified in the data were poverty, refugee status, absence of support arrangements, and the working culture in antenatal care, passivity, ignorance, marital disharmony, HIV-related stigma, and cultural characteristics, such as ways of being a man and religious beliefs. The resources were spiritual outlook on life, knowledge of HIV issues, support and availability of advanced health services, and satisfaction of basic needs. Improving male participation in PMTCT in this subpopulation presupposes cooperation between different sectors of society and inspiring trust in antenatal care.

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Key words: *barriers, HIV, male participation, prevention of mother-to-child transmission, resources, sub-population, Zambia*

In 2008 the World Health Organization reported that the majority (67%) of the world's 33 million people infected with HIV lived in Sub-Saharan Africa. It was estimated that in 2007, 270,000 HIV-infected children younger than 15 years of age died due to

HIV infection, and more than 90% of them lived in Sub-Saharan Africa. In 2007, more than 90% of HIV-infected children had acquired the virus prenatally, at birth, or through breastfeeding (World Health Organization, 2008). Nearly all these modes of transmission can be prevented through medical and behavioral interventions (Mnyani & McIntyre, 2009; Paintsil & Andiman, 2009), and enhanced male participation in the prevention of mother-to-child transmission (PMTCT) of HIV might be an important intervention.

The Zambia Country Report (Joint United Nations Programme on HIV/AIDS, 2010) stated that in Zambia, which has been one of the most HIV-impacted countries in Sub-Saharan Africa, the rate of HIV infections appears to have fallen to 14.3% in a population of 12.9 million people. Zambia is divided into nine provinces and HIV prevalence

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varies between the provinces from 6.8% in Northern Province to 20.8% in Lusaka Province. Further, provinces are divided into 72 districts and the population consists of about 72 ethnic groups. Zambia's official language is English and the main vernacular languages are Bemba, Nyanja, Tonga, Lozi, Kaonde, Luvale, and Lunda. Christianity is the most common religion (Joint United Nations Programme on HIV/AIDS, 2010).

An estimated 1,300 Zambian health care facilities are divided into public-based (85%), private-based (9%), and religious-based (6%), and public-health facilities exist in three levels: hospitals, health centers, and health posts (Ministry of Health, 2012). HIV prevalence among pregnant women was about 21% in Lusaka, the capital city, but the public health sector has worked actively for the PMTCT of HIV by testing pregnant women for HIV and by providing antiretroviral prophylaxis (Killam et al., 2010). In Zambia, about 90% of pregnant women attend an antenatal clinic at least once (Torpey et al., 2010). However, the study by Killam et al. (2010) found that only 32.9% of the pregnant women in Lusaka ($n = 846$) who were eligible for antiretroviral therapy (ART) actually received it.

In recent years, many African countries have started to invite male partners to accompany their wives to attend antenatal care for counseling and HIV testing as a component of the PMTCT of HIV (Bolu et al., 2007). The goal was to involve male partners by encouraging them to (a) ascertain their HIV status, (b) use condoms correctly and consistently, (c) be screened and treated for other sexually transmitted diseases, (d) discuss these and other reproductive issues with their spouses, and (e) take care of the mother and the baby. However, male participation has been low: from 1.8% to 26.9% of males have participated in counseling and HIV testing measured by the rates of HIV-tested male partners (Desgrées-Du-Loué et al., 2009; Kizito et al., 2008; Kowalczyk et al., 2002; Msuya et al., 2008), whereas in the study by Semrau et al. (2005), the rate in Lusaka was 92%. In the study by Semrau et al. (2005), participants were invited to attend counseling and testing in pairs and the community was sensitized beforehand. Peltzer, Mlambo, Phaswana-Mafuya, and Ladzani (2010) reported that male participation measured by those who accompanied their wives to the antenatal

clinic was 20.5%, and Byamugisha, Tumwine, Semiyaga, and Tylleskär (2010) found it was 5%.

In the African context, the male partner has an important role in family decision-making on whether to attend health care facilities and for what reasons. Pregnant women, if not empowered to make their own decisions, may be dependent on their male partners. For example, women may need their male partners' consent to visit the antenatal clinic and support for transportation (Byamugisha et al., 2010; Nkuoh, Meyer, Tih, & Nkfusai, 2010). It has been shown that male participation has increased pregnant women's willingness to undergo HIV testing (Baiden et al., 2005; Creek et al., 2009; Okonkwo, Reich, Alabi, Umeike, & Nachman, 2007), their HIV test acceptance (Kominami, Kawata, Ali, Meena, & Ushijima, 2007; Semrau et al., 2005), disclosure of HIV status to the male partner (Makin et al., 2008), adherence to antiretroviral (ARV) drugs (Peltzer et al., 2010), and overall use of PMTCT in HIV programs (Kasenga, Hurtig, & Emmelin, 2010; Msuya et al., 2008).

Males may be reluctant to attend antenatal care/PMTCT facilities for various reasons, among them reluctance to undergo HIV testing or to accept health advice (Katz et al., 2009). Studies from Uganda, Kenya, Cameroon, and Tanzania likewise report barriers associated with culture (Mbonye, Hansen, Wamono, & Magnussen, 2010; Nkuoh et al., 2010; Reece, Hollub, Nangami, & Lane, 2010), the health care system (Byamugisha et al., 2010; Reece et al., 2010; Theuring, Nchimbi, Jordan-Harder, & Harms, 2010), HIV-related stigma (Orne-Gliemann et al., 2010; Reece et al., 2010), the socioeconomic situation (Byamugisha et al., 2010; Reece et al., 2010; Theuring et al., 2009), a lack of information (Mbonye et al., 2010; Orne-Gliemann et al., 2010), a fear of HIV test results (Mbonye et al., 2010; Theuring et al., 2009), or indifference (Theuring et al., 2009).

These results suggest that male participation in PMTCT is worth studying and developing in antenatal care. The purpose of our study was to describe the male partners' views on (a) the barriers inhibiting them from preventing the exposure of their babies to HIV infection during pregnancy, delivery, and feeding of the baby; and (b) the resources they needed for PMTCT of HIV in Lusaka, Zambia. The study

provided complementary information about the barriers that reduced male participation in PMTCT and a new male-centered vision of conditions that would encourage involvement in PMTCT of HIV. This article is part of a larger research project to produce information about male participation in the context of PMTCT of HIV in Lusaka, Zambia. Our findings, structured as responses to two of eight research questions, are described.

Methods

This qualitative descriptive study (Sandelowski, 2000; 2010) followed the general principles of naturalistic inquiry (Lincoln & Guba, 1985). Naturalistic inquiry is “descriptive research in natural, unmanipulated, social settings using less obtrusive qualitative methods” (Bowling 2009, p. 466). According to Sandelowski (2000):

... in any naturalistic study, there is no a priori commitment to any one theoretical view of a target phenomenon. Accordingly, the naturalist inquirer will use techniques that allow the target phenomenon to present itself as it would if it were not under study. (p. 337)

A qualitative approach was chosen because qualitative methods are “the best strategy for discovery” and “exploring a new area” (Miles & Huberman, 1994, p.10) and we wanted to investigate a less studied area (i.e., male views of the barriers and resources regarding their preventive behaviors in the context of PMTCT). In this qualitative descriptive study, the findings will be presented in the participants’ own, everyday terms (Sandelowski, 2000). In this way, a more profound understanding of males’ daily lives in regard to HIV can be achieved.

Study Setting, Participants, and Sampling

The study was conducted in the suburbs of Lusaka, Zambia. Some two million people live in Lusaka, and the main languages are English and Nyanja. The population from which the sample was to be collected was Luba-Kasai men who were refugees from the Democratic Republic of Congo (DRC). There are also refu-

gees and asylum-seekers from Angola, Burundi, Rwanda, and Somalia, in Lusaka. The number of Congolese refugees and asylum-seekers from the DRC was 12,130 in the whole of Zambia, with an estimated unregistered 10,000 refugees living in urban areas. Zambia has recently repatriated refugees but some remain, especially in Lusaka (United Nations Refugee Agency, 2012).

Data collection was from only one tribe in Lusaka to ensure homogeneity in the data and to give minorities a voice. Nevertheless, in spite of such heritage, people with a specific cultural heritage have their individual perceptions as well. For reasons of confidentiality, the name of the area is withheld.

In purposive sampling, “the researcher selects subjects for the study on the basis of personal judgment about which ones will be most representative or productive” (Polit & Hungler, 1995, p. 650). The inclusion criteria for study participants were as follows: the participant’s wife was pregnant or had a child who was nursing. A local contact person, a Luba-Kasai himself, had an important role in this study. He translated the informed consent forms into the Luba and Nyanja languages. He also selected potential participants and invited them to participate in the study. The contact person was trained by the first author to understand the nature of qualitative interviews and to commit to the ethical requirements of scientific research.

Data Collection and Interviews

Data were collected from 21 Luba-Kasai men from March to June 2009. The contact person served as an interpreter in the interviews. Individual interviews (Sandelowski, 2000) were conducted by the first author and recorded. They were mostly conducted at the interviewees’ homes or in the back seat of a car, and one interview was conducted in a bar. It was not always possible to use the participants’ own houses, as they were often shared with an extended family and the number of occupants was high. The interviewee was free to use the language he preferred.

Before the open-ended qualitative interview questions, participants completed a background information form. A qualitative descriptive study typically

aims to discover the who, what, and where of events or experiences (Sandelowski, 2000), and therefore, the following questions guided the individual interviews: (a) What are the barriers inhibiting you from preventing your baby's exposure to HIV? and (b) Which resources do you prefer when trying to prevent your baby's exposure to HIV? At the end of the interview the interviewee was given refreshments. Data saturation was reached during the 15th interview; nevertheless, to capture possible new ideas, data gathering continued to include 21 interviews. The later interviews revealed no new notable aspects but corroborated earlier interviews (Morse, 1991). At the end of each interview, the document presenting key ideas of PMTCT was discussed with the interviewee and he was encouraged to take an HIV test and to inform other men in the community about the program.

Ethics

The University of Zambia Biomedical Research Ethics Committee gave research approval. The co-researcher from the Zambian Ministry of Health assisted with practical issues. The local tribal leader was also informed of the study. At the beginning of each interview, the informed consent form was explained to the participant and completed for individual approval, indicating that participation was voluntary. For further questions, the contact details of the Biomedical Research Ethics Committee and of the researcher were given (Burns & Grove, 2005). After completion of the background information form, the papers were number coded to protect respondent confidentiality (Burns & Grove, 2005). Basic ethical principles guided this study. During the interviews, care was taken not to cause interviewees any distress.

Characteristics of the Participants

The participant description and contextual description were written for potential users of the findings in order to ensure the transferability of the study findings (Lincoln & Guba, 1985). Twenty-one interviews were eligible for analysis. Two participants chose to conduct the interview in English, one chose Nyanja, and 18 the Luba language. Twenty men were Chris-

tians and members of different Christian churches; one was a Muslim (Table 1). Eight men were older than 50 years of age, four participants were in the age groups 40–49 and 30–39 years, and five men were younger than 30 years.

All participants ($N = 21$) were married, 13 of them monogamously. Eight men were in polygamous marriages; their wives lived separately with the children and other relatives. Seven participants had between 8 and 14 children, eight had 4 to 7 children,

Table 1. Sociodemographic Characteristics of the Participants ($N = 21$)

Characteristic	Frequency
Age	
Younger than 30 years	5
Ages 30–39 years	4
Ages 40–49 years	4
Older than 50 years	8
Marital status	
Married	21
One wife	13
Two wives	6
Three wives	1
Divorced or living apart	1
Number of children	
1–3 children	6
4–7 children	8
8–14 children	7
Education level primary	
Grades 1–4	0
Grades 5–7	2
Secondary	
Grades 8–9	9
Grades 10–12	8
Tertiary	
College/university	2
Employment	
Jobless	5
Temporary work	13
Permanent work	3
Religion	
Christian	20
Muslim	1
Tested for HIV	14
Aware of own HIV status	16
Ever accompanied wife to antenatal care	15
Has sought VCT during wife's pregnancy	12
Aware of wife's HIV status	14
Has disclosed own HIV status to wife	16

Note: VCT = voluntary counseling and testing.

and six had 1 to 3 children. Two participants had studied at college or university, eight had completed school grades 10–12, and nine had completed school grades 8–9. Two participants had studied at grades 5–7. Only three had permanent work, 13 had temporary work, and five were jobless. Fourteen participants had been tested for HIV and 16 reported that they knew their own HIV status. Fourteen knew their wife's HIV status and 16 participants had disclosed their own status to their wives. Fifteen had accompanied their wives to antenatal care and 12 participants had sought voluntary counseling and testing during the wife's pregnancy. As is typical in Lusaka, participants lived in small brick houses of two rooms, a living room and a bedroom and maybe some small storerooms.

Data Analysis

The data analysis of this study was based on the following principles. The analysis stayed close to the data, avoiding high interpretations, and data were not summarized numerically but by partly using the interviewees' own language and quotations (Sandelowski, 2000; 2010). Content analysis as presented by Miles and Huberman (1994) was used for analyzing qualitative data collected in the semi-structured interviews. Content analysis enabled the exploration of each participant's views on barriers inhibiting him from PMTCT and the resources he needed to achieve this.

Verbatim transcription of interview data was used as a data management strategy. The software used was Microsoft Word. Transcripts were read several times by the first author. First, codes answering the research questions were reduced from the transcripts. Based on the similarities in interview contents, lower and upper categories were generated from codes (Graneheim & Lundman, 2004). An example of data analysis is presented in Table 2 for readers to assess conformability of the study (Lincoln & Guba, 1985). The quality of interpretation from the Luba language into English was confirmed by using another native speaker of Luba. To gain credibility (Lincoln & Guba, 1985), the results were discussed with two Luba-Kasai men and within the research team.

Results

Barriers Weakening Luba-Kasai Men's Capacity to Prevent MTCT of HIV

The barriers identified in the data were classified into three subclasses: (a) external barriers, (b) internal barriers, and (c) external-internal barriers (Table 3).

External barriers. External barriers for the participants included poverty, being a refugee, and the arrangements and working culture in antenatal care. Poverty influenced the capacity to adhere to PMTCT in many ways. Unemployment and the resulting lack of money lead to financial imbalance when there were too many expenses and few possibilities for jobs. Without money, participants could not satisfy basic needs. They could not buy food for an ailing wife or afford transportation for her to travel to the faraway hospital. Poverty deprives people of the capacity to make choices they want to make. For example, giving formula to the babies of HIV-infected mothers instead of breastfeeding was not financially feasible. Poverty is inherited when poor parents are not able to take care of their children, which may lead to difficulties such as stealing and sickness in the children. Transactional sex, one possible consequence of poverty, inhibits PMTCT. Lack of food and social pressure lead some wives to seek other sex partners to earn money. Hunger is thus considered to be a more difficult problem than HIV infection:

Since 2000, when the mother of some of my children died, the children were not suffering from the disease but from hunger. Maybe diseases are killing people, but sometimes it is not the diseases that are killing but it is hunger that is killing more than diseases. This is what I have seen. (Interviewee 10)

Poverty makes it difficult to take care of personal health and results in advanced HIV infection, as unemployment makes it impossible to adhere to ARVs, even if it is free, when the family is hungry.

To be a refugee is to be an outsider in society, to be an unwelcome person, and to experience discrimination.

Table 2. Poverty as an Example of the Data Analysis

English-language Citations From Originally Luba-language Data	Reduced Sentences	Lower Categories	Upper Category
“Barriers include a lack of possibilities, the clinic is far, we do not have money ...”	Difficulties to raise money to bring the wife to the hospital, which is far away	Lack of money	Poverty
“We are fighting to raise money to bring her (the pregnant wife) to the hospital. This is the barrier.”			
“When I do not have possibilities to buy what is needed. We have too many children. The other one is going to school, you think you need to buy a cup of milk (for the baby) at ten thousand (Zambian kwacha), and the other needs five thousands for school. That is the barrier.”			
“So, if you parents, you have the chance and discipline: if there is mealie meal (cornmeal) in the house then they (the children) can eat shima (basic food) even with okra and they will know that we are going to school, bathing, and sitting at home. Those things will be not happening, we put everything is in the hand of God.”			
“I want to prevent exposure by asking the wife to stop (breast) feeding but I cannot because there is no other option and that’s all, just because of that.”	Stopping breastfeeding is not financially possible	Incapacity to make real choices	
“... there is a time when you do not have money, then it is not possible to act as you want to.”			
“... sometimes we are failing to take care of the family because of poverty which is leading children to witchcraft or stealing and having so many diseases ...”	Poverty inhibits family from taking care of the children and leads them to witchcraft, to steal and have many diseases	Inherited poverty	
“When I do not have resources that I can manage to feed my family and you know the problem of influence from the groups, the group can influence my wife to have sex outside of marriage and she will be infected.”	The influence of group can push the wife to have sex outside of marriage when there are no resources in the house	Transactional sex	
“This is how we are surviving, it is what is happening in the community.”			
“Even those older men they have money and they have HIV. They are walking with money, driving in their cars and looking for schoolgirls to have sex, infecting them with HIV. But if the parents have the possibility to take care and support the children, buying them everything they need, they will not be infected because they know that everything I need my father will buy.”			
“... people are taking care or preventing the child from getting this disease (HIV), but we find that the children are not dying because of this disease but they are dying of hunger.”	The sick child can be taken to the doctor to protect or prevent the child from being infected but it is hunger that kills children	Hunger	
“Maybe diseases are killing people, sometimes the diseases are not killing people but hunger is killing more than diseases. This is what I have seen.”			

Being an outsider in society has several consequences, such as living without a national registration identity card, which, in turn, prevents employment. Unemployment may lead to vagrancy and other crimes. Interviewee 20 said, ... “this is not our country, we are foreigners and the government is catching us day and night, always we are caught by immigration and we are suffering” ..., and he continues, “We are not working and we are living in a foreign country without work and without a permanent place to live, we are suffering too much.” Being an outsider in Lusaka also meant exclusion from programs at health clinics.

Being an unwelcome person encompassed dimensions that were regarded as barriers to PMTCT, including constant fear of arrest due to having no national registration identity card and consequent imprisonment. While a breadwinner is in prison, the wife may have transactional sex to feed herself and the children, and thereby risk exposing herself to HIV.

Discrimination in the data focused on discrimination on the grounds of nationality in the health care system. It referred to an experience of inequality in medical treatment due to nationality and to beliefs that the clinics deliberately transmitted HIV to children of refugees. One interviewee expressed his concerns, “But when they (the children) are sick, they go to the clinic or hospital, maybe they (staff) are using infected needles or injections” (Interviewee 21).

Arrangements and the working culture in antenatal care contributed to barriers in two ways. First, because men were not present during delivery, they felt like outsiders in the clinic. “When the mother is giving birth there, I cannot be there and I don’t know if the doctors will handle it, I don’t know how, I don’t know” (Interviewee 8). Second, and for the same reason, there was a lack of confidence in the clinics. This was manifested as fear of nurses’ mistakes, doctors’ carelessness, and doubts about the general competence of clinic workers and their benevolence. As one interviewee put it,

How can I prevent it? We do not assist the women with the delivery, but those who do at the clinics, they can use contaminated scissors, which have the blood of someone who is infected already, and the child can be infected (Interviewee 21).

Additionally, participants suspected that health workers were selling ARVs for personal profit. “...

we do not know if the doctors that we have nowadays are doing their own business. The medicine that government is giving for free they are selling to get a little” (Interviewee 5).

Internal barriers. Internal barriers in these data included failure to take action and lack of knowledge. Failure to take action was rooted in indifference, “Sometimes it is laziness, they are telling you to do something but you are too lazy to do what you are told to do” (Interviewee 4). Lack of knowledge was a barrier in two ways. First, lack of knowledge of transmission modes and prevention of HIV led to beliefs that only doctors knew about prevention, only the mother was able to protect the baby, prevention was not possible if the parents had HIV infection, or the male partner had no means to protect the baby during pregnancy. One interviewee explained, “When the child is still in the womb, I do not know how to prevent it” (Interviewee 22). The second barrier was a participant being unaware of his own HIV status. “I cannot know, because maybe the mother is infected or I am infected but we have not been tested, and then it is a secret of our body, no one knows” (Interviewee 20).

Internal-external barriers. Internal-external barriers included marital disharmony, HIV-related stigma, and cultural characteristics. Marital disharmony appeared as a lack of spousal communication, quarrelling, having other sex partners, revenge, and conflicts due to failure as a breadwinner.

... if she is asking something or she is told to eat something then I have to find some money to buy what she was told (by a doctor) to eat but when I do not have money then there is no good communication (Interviewee 4).

HIV-related stigma had four dimensions that inhibited male partners from preventing exposure of their babies to HIV. Self-stigmatizing develops when other people realize that someone is infected with HIV. The infected person becomes apprehensive and may not seek treatment and other health services. Fear of testing for HIV may result in not knowing of an HIV infection, thereby risking exposure for the baby. Being affected by HIV occurs when someone lives close to someone who is suspected of being or

Table 3. Barriers Undermining the Capacity for PMTCT of HIV According to Luba-Kasai Men

External Barriers	
Poverty	<p>Lack of Money “Barriers include a lack of possibilities, the clinic is far, we do not have money ...”</p> <p>Incapacity to Make Real Choices “I want to prevent exposure by asking the wife to stop (breast) feeding but I cannot because there is no other option”</p> <p>Inherited Poverty “Sometimes we are failing to take care of the family because of poverty, which is leading the children to witchcraft or stealing and having so many diseases”</p> <p>Transactional Sex “When I do not have resources that I can manage to feed my family and you know the problem of group influence, the group can influence my wife to have sex outside of marriage and she will be infected. This is how we are surviving, this is what is happening in the community.”</p> <p>Hunger “People are taking care or preventing the child from having this disease (HIV), but we find that children are not dying because of this disease but they are dying of hunger.”</p>
Being a Refugee	<p>Being an Outsider in Society “Money that we have here, like those who are giving loans, they have their terms and conditions, they are requesting papers of this country, national registration card, if you do not have it, you are not given this money.”</p> <p>Having the Role of an Unwanted Person “I am suffering too much. We are here in Zambia, this is not our country, we are foreigners and the government is trying to catch us day and night, we are always caught by immigration and we are suffering”</p> <p>Experiencing Discrimination A participant went to the hospital with a sick child and at first a Congolese doctor treated the child. “After prescribing the medicine they transferred this doctor to another ward and the doctors who remained refused to assist me, they said, ‘You follow your brother (meaning the Congolese doctor).’”</p>
Arrangements and Working Culture in Antenatal Care	<p>Feeling of Being an Outsider “I do not know because men are not there, I am not there when she gives birth that is why I cannot prevent it.”</p> <p>Lack of Trust in the Clinics “We are not assisting women at delivery, but at the clinics maybe those who are working there, they can use the scissors, which have been already used and which have the blood of someone who is infected already, the child can be infected.”</p>
Internal Barriers	
Lack of Initiative	<p>Indifference “When you are told what to do but you are not able to do that, that is the reason for laziness.”</p>
Lack of Knowledge	<p>Lack of Knowledge of Transmission Modes and Prevention “I do not know how I can prevent that baby from being infected. I just saw a person with HIV giving birth to a healthy baby, but I do not know how that happens.”</p> <p>Being Unaware of One’s Own HIV Status “The reason is that we have not been tested and I do not know if I am positive or negative and the mother, I do not know if she is positive or negative.”</p>

Internal-External Barriers	
Marital Disharmony	<p>Lack of Spousal Communication “If there is no communication between husband and wife.”</p> <p>Quarreling “When there are two people the husband is blaming the wife and the wife is blaming the husband and there is no unity.”</p> <p>Other Sex Partners “I have to prevent her from getting infected. Sometimes I, as a father, a man, if I am not being faithful, if I am not being abstinent, I can bring this infection, this HIV to my wife. If I am having sex. If I have other women.”</p> <p>Revenge “The main reason is that when the wife is not being faithful and has some boyfriends, I also, I have some girlfriends.”</p> <p>Conflicts due to Failure as a Breadwinner “... when there is confusion and little money and you are accomplishing what is needed but you are failing.”</p>
HIV-related Stigma	<p>Self-Stigmatizing “If they find that he is HIV positive, he starts to feel shy”</p> <p>Fear of HIV Testing “Yes, if you have a fear you are not willing to go” (to the VCT)</p> <p>Being Affected by HIV “So I think there are many things that make somebody to separate from the family. Maybe, the wife is hush about it and then they react; now they are saying that if you are in such problem, you have that disease ...”</p> <p>Fear of HIV Infection “If they ask you to test for malaria he is willing to do that but if they ask for an HIV test he is frightened because he knows that this one can take me to the grave.”</p>
Cultural Characteristics	<p>The Ways of Being a Man “The time when the wife has a baby, it is the time that we are facing many difficulties because you cannot manage to abstain, it is the time when we are looking at other wives and having sex outside of marriage.”</p> <p>Religious Beliefs “People they do make love because they might think, these African men, they might be, maybe it is witchcraft ...”</p>

Note: PMTCT = prevention of mother-to-child transmission; VCT = voluntary counseling and testing.

who actually has HIV and faces negative attitudes from the community or members of his extended family. Fear of HIV infection appeared to be the fear of death among the participants, "... if they find that I am positive then I will die before my time because I am constantly thinking about my life and I will die because of too much thinking ..." (Interviewee 20).

Cultural characteristics in the data consisted of ways of being a man and religious beliefs. Tribal identity, including ways of being a man, was a barrier to PMTCT when a Luba-Kasai man followed a traditional polygamous lifestyle and had unprotected sex with other sex partners outside marriage: "... when the wife has a baby, it is a time we are facing many difficulties because you cannot manage to abstain, it

is the time when we are looking at other wives and having sex outside the marriage" (Interviewee 12).

Religious beliefs as a barrier were related to the belief that HIV transmission could occur through witchcraft, for example: "... maybe you are negative and your wife is negative, but because of rumors, because of the community, they can use some words, talking, and through that something could happen, like witchcraft, they can use that" (Interviewee 18).

Resources of Luba-Kasai Men for PMTCT

The resources we identified for PMCTC were personal resources, services, and material resources. They are presented in Table 4.

Table 4. Resources Preferred by Luba-Kasai Men for Preventing the Exposure of Wives and Babies to HIV

Personal Resources	
Spiritual Outlook on Life	<p>Faith in God "As I said before, we are living by the grace of God, even if I do not have money, but the first thing that I need is life, having life which God has given me."</p> <p>Hope in God "... we are working hard and we are in the hands of God, maybe in the future we will be more than better."</p>
Knowledge	<p>To Receive Education and Counseling "What I need, I need knowledge, someone to teach me. I need knowledge about the things I do not know."</p>
Services	
To be Supported by Health Care Services	<p>To be Advised "I do not know what is needed but when I go to the clinic they will tell me what is needed or how I should do it."</p> <p>Services are Available "As far as I know I have to take her or him where she will find help."</p>
Improvement in the Overall Situation	<p>Effective PMTCT in HIV Programs "There are too many ideas that have been planned to support us but we do not have support."</p> <p>Development of the Services "When diseases are coming to the house, malaria and others, you can sit there hungry but you will get two Panados in the clinic from morning up to afternoon."</p>
Material Resources	
Realization of Human Rights	<p>Livelihood "First of all I need money to buy food, to pay the rent, to have clothes and everything that it is needed. We have a child who is eating soil. In the rainy season water makes puddles and after rainy season the child is eating soil that is infected with germs, which are creating diarrhea and other diseases. If I have money I can take care of the family."</p> <p>Adequate Nutrition "Food to take care of this child so that I can prevent it from being infected; we need food."</p> <p>Satisfaction of Other Basic Needs "The resources we need are good food, good drink and the place should be clean; we have to avoid the infections."</p>

Note: PMTCT = prevention of mother-to-child transmission.

Personal resources. Personal resources consisted of a spiritual outlook on life and knowledge. A spiritual outlook on life referred to faith and hope in God, which could be seen in seeking protection against HIV from God by praying to God and relying on Him, who is understood to be the giver and maintainer of life.

... when she (the wife) gave birth, the baby was tested and she was negative. Then I prayed to God so that she would not be positive, I prayed to God to protect her and to give me a chance so that I can do everything that is needed for her not to be positive. (Interviewee 11).

The second type of resource, knowledge, was described as the most important thing. Knowledge is needed to know what to do. Interviewee 19 said, "The first thing is knowledge, the second is help with the things I do not have," and Interviewee 16 said, "At first I need knowledge. Second I need food that I can take care of her and her health."

Services. Support from health care services was an important resource for the participants. It was vital for the participants to be advised to follow instructions on how to prevent MTCT and that services were available if they wanted to refer their wives to the clinic or have their babies tested for HIV. Second, improvement in the overall situation required more effective PMTCT of HIV programs and development of services. The participants thought that, despite many plans, people were not supported and that the public sector was ineffective, as Interviewee 5 pointed out, "When diseases are coming to the house, you can sit there hungry but you will get two Panados (a pain-killer) from the clinic from morning to afternoon."

Material resources. Material resources consisted of one main aspect, the realization of human rights, which had three partly overlapping features. Livelihood meant a job and money, by working it was possible to earn money and achieve well-being. Money was all-powerful: money was needed for prevention and money could feed the family.

First of all I need money to buy food, to pay rent, to have clothes and everything that is needed. We have a child who is eating soil

when in the rainy season water makes puddles and after the rainy season the child is eating soil, which is infected with germs, which causes diarrhea and other diseases (Interviewee 2).

Adequate nutrition is needed for PMTCT of HIV, to be healthy, and to avoid risk behavior. "There is no food, which is why people are going to the bars and taverns to get money so that they can survive. If I have food we can stay at home" (Interviewee 16). Satisfaction of basic needs meant having a shelter to sleep in and safe food and drink to enjoy regularly.

Discussion

The results of our study found that the participants struggled against various hardships and barriers that made PMTCT of HIV challenging. Barriers to prevention have complicated interrelationships that may be interpreted either as causes or consequences, that contributed to each other, and that made life harder and HIV prevention more difficult. However, the participants also reported resources for PMTCT. Some reported having a spiritual outlook on life, having adopted preventive behaviors, and acquiring relevant knowledge about HIV infection.

The study participants lived in severe poverty, and poverty was a barrier to prevention, making HIV infection a less urgent problem among bigger problems, such as hunger. Satisfaction of basic needs was difficult for the unemployed and for those who had only temporary work in a developing country where social security was in its infancy. Sixty-four percent of the population of Zambia lives below the international poverty line of \$1.25 (U.S.) per day (United Nations Children's Fund, 2012).

People cannot afford to spend time in the antenatal clinic when they must earn money for food, a problem found in other studies as well (Byamugisha et al., 2010; Reece et al., 2010; Theuring et al., 2009). Another consequence of poverty identified in our data, that could expose mothers and babies to HIV, was transactional sex, which was often undertaken for survival and subsistence. This was congruent with results of studies conducted in Nigeria (Saddiq, Tolhurst, Lalloo, & Theobald, 2010) and by Dunkle et al. (2004), who reported that 21.1%

($n = 1,395$) of antenatal clients in South Africa had had transactional sex, which was associated with HIV infection. However, the association between poverty and risky behaviors cannot be regarded as simple, as claimed by Parkhurst (2010) in a review stating that both wealth and poverty might result in risky or protective behaviors, dependent on the context. In our data, food insecurity was the fundamental obstacle to taking care of personal health and preventing HIV infection, because adherence to ARVs presupposed that food was available. This was consistent with the results of Weiser et al. (2010).

The refugee policy in Zambia attempted to repatriate refugees when political turmoil in the countries of origin ended (United Nations Refugee Agency, 2012). As shown in our data, being a refugee undermined PMTCT due to being outsiders in society and through constant fear of being arrested by immigration officials. Collaboration between the health sector and other branches of administration including the immigration service, the purpose of which is to enhance the situation of refugees, may improve the success of PMTCT.

Arrangements and the working culture in antenatal care as a barrier to male participation in PMTCT meant that our participants felt they had no place in the clinic (Byamugisha et al., 2010; Reece et al., 2010; Theuring et al., 2010). Increased transparency in antenatal care and a family-centered approach might encourage men to trust maternity services and to be involved in them.

Lack of action as a barrier in this study basically referred to indifference; participants used the word "laziness," or knowing what to do but being too lazy to do it. Theuring et al. (2009) used the term "neglected importance" to express low motivation among men who had not attended the antenatal clinic. In our study, lack of knowledge was a barrier among the participants. Lack of awareness of the modes of transmission, prevention, and personal HIV status contributed to ignorance of the necessary elements of PMTCT (Orne-Gliemann et al., 2010).

In our study, marital discord was an internal-external barrier to preventing infant exposure to HIV. Only 14 participants knew their wives' HIV status; 16 had disclosed their own HIV status to their wives, which may be interpreted as a lack of communication about reproductive matters for the nondi-

sclosing partners. HIV-related stigma has been found to be a barrier in PMTCT (Turan & Nyblade, 2013). Men do not attend the antenatal clinic for an HIV test if HIV infection is associated with death in their minds. Negative attitudes toward HIV-infected people may hamper commitment to preventive behavior and treatment (Mbonye et al., 2010; Orne-Gliemann et al., 2010; Reece et al., 2010; Theuring et al., 2009).

In addition, the traditional ways of being a Luba-Kasai man may be a barrier to PMTCT because of multiple sex partners. Polygamy is not necessarily a risk for HIV infection if the marital partners have no extramarital relations (Saddiq et al., 2010).

While professing Christianity, Zambians may well cherish traditional beliefs; in our study, witchcraft appeared to constitute a barrier to PMTCT. Similar results have been reported by Mshana et al. (2006) and Pearson and Makadzange (2008) regarding local beliefs about HIV transmission. Such beliefs contradict what is taught about HIV at antenatal clinics and inhibit HIV prevention. If tradition tells people that they are subject to magical powers, they may refuse to take responsibility for their own actions.

If the view of the barriers to PMTCT described in this paper were seen as a reflection from a concave mirror, which shows the image upside down, we would see that some of the barriers are reflected as resources. The resources can be classified first into personal resources. Viewed as a personal resource, knowledge is needed to know how to cope and a spiritual outlook on life is important in a situation in which one cannot do anything but pray. Second, support from health care services is needed as an informational resource and as a place where men can refer the wife or the baby to be examined and treated. Third, material resources and livelihood are needed to feed the family and to avoid risky behaviors. All of these resources are factors constituting a good life and if they could be made a reality, the male partners of this study might, in their own view, prevent their babies from being exposed to HIV.

Our study has some limitations. The data consisted of 21 interviews collected from urban Luba-Kasai refugees from the DRC, and the results may not be applicable in other parts of Zambia or in other populations. The majority of the interviews were conducted in the Luba language and translated into English. It

is possible that some nuances may have been lost in translation, although the quality of translation was checked and the research assistant was trained in interpretation.

This is the first paper to report on male participation in the context of PMTCT among a tribe that has been forced to flee from a country of origin and that is politically unwelcome in the receiving country. Reporting male views on traditionally female-centered issues may further enhance the development of a family-centered approach in antenatal care.

Conclusion

Study participants, Luba-Kasai men, reported external, internal, and external-internal barriers that inhibited them from contributing to PMTCT. Collaboration between different sectors of society, including health care, is needed to improve the position of refugees. Transparency and openness in antenatal care could relieve suspicion and lack of trust. The content of counseling in the antenatal clinic should also deal with marital problems, religious beliefs, and traditional customs if they pose a risk to the baby. Removing barriers and supporting personal resources would enhance the resources preferred by these men.

Key Considerations

- Increased transparency in antenatal care might help men trust maternity services.
- The midwife's family-centered approach might encourage men to be involved in prevention of mother-to-child transmission of HIV.
- Midwives should give support during marital crises.

Disclosures

The authors report no real or perceived vested interests that relate to this article that could be construed as a conflict of interest.

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References

- Baiden, F., Remes, P., Baiden, R., Williams, J., Hodgson, A., Boelaert, M., & Buve, A. (2005). Voluntary counseling and HIV testing for pregnant women in the Kassena-Nankana district of northern Ghana: Is couple counseling the way forward? *AIDS Care*, *17*(5), 648-657. <http://dx.doi.org/10.1080/09540120412331319688>
- Bolu, O. O., Allread, V., Creek, T., Stringer, E., Fornia, F., Bultrey, M., & Shaffer, N. (2007). Approaches for scaling up human immunodeficiency virus testing and counseling in prevention of mother-to-child human immunodeficiency virus transmission settings in resource-limited countries. *American Journal of Obstetrics & Gynecology*, *197*(Suppl. 3), 83-89. <http://dx.doi.org/10.1016/j.ajog.2007.03.0006>
- Bowling, A. (2009). *Research methods in health: Investigating health and health services*. Glasgow, UK: McGraw-Hill Open University Press.
- Burns, N., & Grove, S. K. (2005). *The practice of nursing research: Conduct, critique and utilization*. St Louis, MO: Elsevier Saunders.
- Byamugisha, R., Tumwine, J. K., Semiyaga, N., & Tylleskär, T. (2010). Determinants of male involvement in the prevention of mother-to-child transmission of HIV programme in Eastern Uganda: A cross-sectional survey. *Reproductive Health*, *7*, 12. <http://dx.doi.org/10.1186/1742-4755-7-12>
- Creek, T., Ntuny, R., Mazhani, L., Moore, J., Smith, M., Han, G., ... Kilmars, P. H. (2009). Factors associated with low early uptake of a national program to prevent mother to child transmission of HIV (PMTCT): Results of a survey of mothers and providers, Botswana, 2003. *AIDS Behavior*, *13*(2), 356-364. <http://dx.doi.org/10.1007/s10461-007-9322-8>
- Desgrées-Du-Loû, A., Brou, H., Djohan, G., Becquet, R., Ekouevi, D. K., Zanou, B., ... Leroy, V. (2009). Beneficial effects of offering prenatal HIV counselling and testing on developing a HIV preventive attitude among couples, Abidjan, 2002-2005. *AIDS Behavior*, *13*(2), 348-355. <http://dx.doi.org/10.1007/s10461-007-9316-6>
- Dunkle, K. L., Jewkes, R. K., Brown, H. C., Gray, G. E., McIntyre, J. A., & Harlow, S. D. (2004). Transactional sex among women in Soweto, South Africa: Prevalence, risk factors and association with HIV infection. *Social Science & Medicine*, *59*(8), 1581-1592. <http://dx.doi.org/10.1016/j.socscimed.2004.02.003>
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and

- measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105-112. <http://dx.doi.org/10.1016/j.nedt.2003.10.001>
- Joint United Nations Programme on HIV/AIDS. (2010). *Zambia country report: Monitoring the Declaration of Commitment on HIV and AIDS and the Universal Access, Biennial report*. Retrieved from http://www.unaids.org/en/dataanalysis/monitoringcountryprogress/progressreports/2010countries/zambia_2010_country_progress_report_en.pdf
- Kasenga, F., Hurtig, A.-K., & Emmelin, M. (2010). HIV-positive women's experiences of a PMTCT programme in rural Malawi. *Midwifery*, 26(1), 27-37. <http://dx.doi.org/10.1016/j.midw.2008.04.007>
- Katz, D. A., Kiarie, J. N., John-Stewart, G. C., Richardson, B. A., John, F. N., & Farquhar, C. (2009). Male perspectives on incorporating men into antenatal HIV counseling and testing. *PLoS One*, 4(11), e7602. <http://dx.doi.org/10.1371/journal.pone.0007602>
- Killam, W. P., Tambatamba, B. C., Chintu, N., Rouse, D., Stringer, E., Bweupe, M., ... Stringer, J. S. (2010). Antiretroviral therapy in antenatal care to increase treatment initiation in HIV-infected pregnant women: A stepped-wedge evaluation. *AIDS*, 24(1), 85-91. <http://dx.doi.org/10.1097/QAD.0b013e32833298be>
- Kizito, D., Woodburn, P. W., Kesande, B., Ameke, C., Nabulime, J., Muwanga, M., ... Elliot, A. M. (2008). Uptake of HIV and syphilis testing of pregnant women and their male partners in a programme for prevention of mother-to-child HIV transmission in Uganda. *Tropical Medicine and International Health*, 13(5), 680-682. <http://dx.doi.org/10.1111/j.1365-3156.2008.02052.x>
- Kominami, M., Kawata, K., Ali, M., Meena, H., & Ushijima, H. (2007). Factors determining prenatal HIV testing for prevention of mother to child transmission in Dar Es Salaam, Tanzania. *Pediatrics International*, 49, 286-292. <http://dx.doi.org/10.1111/j.1442-200X.2007.02355.x>
- Kowalczyk, J., Jolly, P., Karita, E., Nibarere, J. A., Vyankandondera, J., & Salihu, H. (2002). Voluntary counseling and testing for HIV among pregnant women presenting in labor in Kigali, Rwanda. *Journal of Acquired Immune Deficiency Syndromes*, 31(4), 408-415.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Makin, J. D., Forsyth, B. W. C., Visser, M. J., Sikkema, K. J., Neufeld, S., & Jeffery, B. (2008). Factors affecting disclosure in South African HIV-positive pregnant women. *AIDS Patient Care and STDs*, 22(11), 908-915. <http://dx.doi.org/10.1089/apc.2007.0194>
- Mbonye, A. K., Hansen, K. S., Wamono, F., & Magnussen, P. (2010). Barriers to prevention of mother-to-child transmission of HIV services in Uganda. *Journal of Biosocial Science*, 42(2), 271-283. <http://dx.doi.org/10.1017/S002193200999040X>
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis*. Newbury Park, CA: Sage.
- Ministry of Health. (2012). *Health facilities*. Government of the Republic of Zambia. Retrieved from <http://www.moh.gov.zm/index.php/health-facilities>
- Mnyani, C. N., & McIntyre, J. A. (2009). Preventing mother-to-child transmission of HIV. *British Journal of Obstetrics and Gynecology*, 116(Suppl. 1), 71-76. <http://dx.doi.org/10.1111/j.1471-0528.2009.02312.x>
- Morse, J. M. (1991). Strategies for sampling. In J. M. Morse (Ed.), *Qualitative nursing research: A contemporary dialogue (rev ed.)*. Newbury Park, CA: Sage.
- Mshana, G., Plummer, M. L., Wamoyi, J., Shigongo, Z. S., Ross, D. A., & Wight, D. (2006). 'She was bewitched and caught an illness similar to AIDS': AIDS and sexually transmitted infection causation beliefs in rural northern Tanzania. *Culture, Health & Sexuality*, 8(1), 45-58. <http://dx.doi.org/10.1080/13691050500469731>
- Msuya, S. E., Mbizvo, E. M., Hussain, A., Uriyo, J., Sam, N. E., & Stray-Pedersen, B. (2008). Low male partner participation in antenatal HIV counselling and testing in northern Tanzania: Implications for preventive programs. *AIDS Care*, 20(6), 700-709. <http://dx.doi.org/10.1080/09540120701687059>
- Nkuoh, G. N., Meyer, D. J., Tih, P. M., & Nkfusai, J. (2010). Barriers to men's participation in antenatal and prevention of mother-to-child HIV transmission care in Cameroon, Africa. *Journal of Midwifery and Women's Health*, 55(4), 363-369. <http://dx.doi.org/10.1016/j.jmwh.2010.02.009>
- Okonkwo, K. C., Reich, K., Alabi, A. I., Umeike, N., & Nachman, S. A. (2007). An evaluation of awareness: Attitudes and beliefs of pregnant Nigerian women toward voluntary counseling and testing for HIV. *AIDS Patient Care and STDs*, 21(4), 252-260. <http://dx.doi.org/10.1089/apc.2006.0065>
- Orne-Gliemann, J., Tchendjou, P. T., Miric, M., Gadgil, M., Butsashvili, M., Eboko, F., ... Dabis, F. (2010). Couple-oriented prenatal HIV counseling for HIV primary prevention: An acceptability study. *BMC Public Health*, 10(197), 1167-1177. <http://dx.doi.org/10.1186/1471-2458-10-197>
- Paintsil, E., & Andiman, W. A. (2009). Update on successes and challenges regarding mother-to-child transmission of HIV. *Current Opinion in Pediatrics*, 21(1), 94-101. <http://dx.doi.org/10.1097/MOP.0b013e32831ec353>
- Parkhurst, J. O. (2010). Understanding the correlations between wealth, poverty and human immunodeficiency virus infection in African countries. *Bulletin of the World Health Organization*, 88(7), 519-526. doi:10.2471/BLT.09.070185
- Pearson, S., & Makadzange, P. (2008). Help-seeking behaviour for sexual-health concerns: A qualitative study of men in Zimbabwe. *Culture, Health & Sexuality*, 10(4), 361-376. <http://dx.doi.org/10.1080/13691050801894819>
- Peltzer, K., Mlambo, M., Phaswana-Mafuya, N., & Ladzani, R. (2010). Determinants of adherence to a single-dose nevirapine regimen for the prevention of mother-to-child HIV transmission in Gert Sibande district in South Africa. *Acta Paediatrica*, 99(5), 699-704. <http://dx.doi.org/10.1111/j.1651-2227.2010.01699.x>
- Polit, D. F., & Hungler, B. P. (1995). *Nursing research: Principles and methods* (5th ed.). Philadelphia, PA: J.B. Lippincott Company.
- Reece, M., Hollub, A., Nangami, M., & Lane, K. (2010). Assessing male spousal engagement with prevention of mother-to-child

- transmission (pMTCT) programs in western Kenya. *AIDS Care*, 22(6), 743-750. <http://dx.doi.org/10.1080/09540120903431330>
- Saddiq, A., Tolhurst, R., Lalloo, D., & Theobald, S. (2010). Promoting vulnerability or resilience to HIV? A qualitative study on polygamy in Maiduguri, Nigeria. *AIDS Care*, 22(2), 146-151. <http://dx.doi.org/10.1080/09540120903039844>
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334-340. [http://dx.doi.org/10.1002/1098-240X\(200008\)23_4<334::AID-NUR9>3.0.CO;2-G](http://dx.doi.org/10.1002/1098-240X(200008)23_4<334::AID-NUR9>3.0.CO;2-G)
- Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing & Health*, 33(1), 77-84. <http://dx.doi.org/10.1002/nur.20362>
- Semrau, K., Kuhn, L., Vwalika, C., Kasonde, P., Sinkala, M., Kankasa, C., ... Thea, D. M. (2005). Women in couples ante-natal HIV counseling and testing are not more likely to report adverse social events. *AIDS*, 19(6), 603-609.
- Theuring, S., Mbezi, P., Luvand, H., Jordan-Harder, B., Kunz, A., & Harms, G. (2009). Male involvement in PMTCT services in Mbeya Region, Tanzania. *AIDS and Behavior*, 13, 92-102. <http://dx.doi.org/10.1007/s10461-009-9543-0>
- Theuring, S., Nchimbi, P., Jordan-Harder, B., & Harms, G. (2010). Partner involvement in perinatal care and PMTCT services in Mbeya Region, Tanzania: The providers' perspective. *AIDS Care*, 22(12), 1562-1568. <http://dx.doi.org/10.1080/09540121003758572>
- Torpey, K., Kabaso, M., Kasonde, P., Dirks, R., Bweupe, M., Thompson, C., & Mukadi, Y. D. (2010). Increasing the uptake of prevention of mother-to-child transmission of HIV services in a resource-limited setting. *BMC Health Services Research*, 10, 29. <http://dx.doi.org/10.1186/1472-6963-10-29>
- Turan, J. M., & Nyblade, L. (2013). HIV-related stigma as a barrier to achievement of global PMTCT and maternal health goals: A review of the evidence. *AIDS and Behavior* <http://dx.doi.org/10.1007/s10461-013-0446-8> Online ahead of print.
- United Nations Children's Fund. (2012). *Zambia statistics*. Retrieved from http://www.unicef.org/infobycountry/zambia_statistics.html
- United Nations Refugee Agency. (2012). *Zambia*. Retrieved from <http://www.unhcr.org/cgi-bin/texis/vtx/page?page=49e485ba6&submit=GO>
- Weiser, S. D., Tuller, D. M., Frongillo, E. A., Senkungu, J., Mukiibi, N., & Bangsberg, D. R. (2010). Food insecurity as a barrier to sustained antiretroviral therapy adherence in Uganda. *PLoS One*, 5(4), e10340. <http://dx.doi.org/10.1371/journal.pone.0010340>
- World Health Organization. (2008). *Status of the global HIV epidemic*. Retrieved from http://data.unaids.org/pub/Global_Report/2008/jc1510_2008_global_report_pp29_62_en.pdf

Luba-Kasai Men and the Prevention of Mother to Child Transmission (PMTCT) of HIV program in Lusaka

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SUMMARY

Male participation in the prevention of mother-to-child transmission (PMTCT) of HIV has been determined as one of the key factors in sub-Saharan African countries, but its realization is challenging because of male-related and institutional factors. The purpose of this study is two-fold: first, we explored the views of Luba-Kasai men, living in Zambia in the Lusaka Province, on the factors that encourage, inconvenience or inhibit them in accompanying their wives to the antenatal clinic and their ideas to improve their experience. Secondly, the study considered their knowledge of the PMTCT program and how such knowledge conformed to the Zambian National Protocol Guidelines Integrated PMTCT of HIV/AIDS. Twenty-one interviews were analyzed using qualitative inductive content analysis. The National Protocol Guidelines

Integrated PMTCT of HIV/AIDS were analyzed using the deductive content analysis. The encouraging factors that emerged were involvement in the program, the time of delivery, love and care, and also the suspicion of corruption. The inconveniencing factors were the arrangements and working culture of the clinic, together with stigma and guilt. A lack of motivation, fear of death, socioeconomic circumstances and again the arrangements and working culture at the clinic were held as inhibiting factors. The ideas to remove inconvenient factors were maintaining a spiritual outlook on life, education, interaction, a good mood and a sense of meaningfulness. Considering such male views and paying attention to minorities in the development of national PMTCT of HIV Programs may enhance male participation in the process.

Key words: male participation; PMTCT; HIV; refugee

INTRODUCTION

In 2009, of 125 million pregnant women in low- and middle-income countries, an estimated 1.4 million were living with human immunodeficiency virus (HIV) infection (WHO, 2010). Without intervention, HIV can infect 25–45% of births from HIV-positive mothers during pregnancy, delivery and/or breastfeeding in developing countries. The efficacy of antiretroviral

(ARV) drugs has been shown (Chigwedere *et al.*, 2008; Horvath *et al.*, 2010). Approximately 53% of 1.4 million pregnant women in low- and middle-income countries received antiretroviral treatment (ART) to reduce the risk of mother-to-child transmission (MTCT) of HIV. In Zambia, with a population of 12.9 million people, the estimated number of pregnant women in 2009 needing ART was 68 000 (WHO, 2010). Annually, more than 90% of ~500 000 pregnant women in

Zambia utilize antenatal care (ANC) services, thus the Prevention of Mother-to-Child Transmission (PMTCT) program is available to those women who test HIV positive.

Male participation has been found to be an important factor for the mothers, in the overall use of PMTCT of HIV programs (Msuya *et al.*, 2008; Kasenga *et al.*, 2010). In many African countries, by way of their national PMTCT of HIV programs, male partners are invited to attend antenatal HIV counseling and testing at the beginning of the mothers' ANC visits (Bolu *et al.*, 2007a). Male participation as partners of pregnant mothers has been <28% (Kizito *et al.*, 2008; Msuya *et al.*, 2008; Desgrées-Du-Loû *et al.*, 2009). However, even if the rate of male partners tested for HIV was higher, it would not necessarily solve the problem of postnatal transmissions, and Torpey *et al.* (Torpey *et al.*, 2010) reported higher transmission rates through the feeding practice among children aged 6–12 months compared with younger ones. Male participation in the program of PMTCT of HIV is needed to increase couples' awareness of their own HIV status, to support maintaining HIV-negative status and to encourage HIV-positive mothers to commit to the program throughout the whole maternal process.

The implementations of national PMTCT of HIV programs have been studied in several sub-Saharan countries. Women's program attendance has been studied in Kenya and Ethiopia (Bolu *et al.*, 2007b), Zimbabwe (Perez *et al.*, 2004; Bolu *et al.*, 2007b), Malawi (Chinkonde *et al.*, 2009) and South Africa (Doherty *et al.*, 2005). A program's efficacy to decrease the number of HIV-infected infants has been studied in Botswana (Creek *et al.*, 2008; Stover *et al.*, 2008), and the professional activity of health workers in antenatal clinics has been studied in Cameroon (Labhardt *et al.*, 2009) and in Botswana, Kenya, Malawi and Uganda (Chopra and Rollins, 2008).

The Zambian National Program of PMTCT of HIV has been studied from different aspects, i.e. the sufficiency of health labor for the increasing HIV workload (Walsh *et al.*, 2010), the efficacy of PMTCT of HIV in different age bands among perinatally exposed children (Torpey *et al.*, 2010), sufficiency of funds and human resources to implement a more effective ARV regimen (Nakakeeto and Kumaranayake, 2009), the implementation of an efficacious ARV regimen among HIV-positive pregnant women and

associated factors (Mandala *et al.*, 2009) and the infant feeding components of a PMTCT of HIV program (Chopra *et al.*, 2009). No studies have focused on male partners' knowledge of the program of PMTCT of HIV and whether this knowledge conforms to the content of the National Protocol Guidelines of Zambia (National Protocol Guidelines of Zambia, 2008), PMTCT of HIV/AIDS.

The purpose of the study is to examine Luba-Kasai men's views on the factors encouraging, inconveniencing or inhibiting them in accompanying their wives to the antenatal clinic and their ideas to remove the factors that present an inconvenience to them. In addition, the study looks to describe the men's knowledge of the PMTCT of HIV program and examine its conformity to the National Protocol Guidelines Integrated PMTCT of HIV/AIDS. By choosing informants who share common language, beliefs, myths and a similar life situation, it enabled the study to reveal a more representative level of data, than would otherwise have been derived from subjects having a variety of tribal backgrounds and languages (Leininger, 1985). Considering male views, their experiences, barriers and expectations in developing PMTCT of HIV programs may lead to enhanced male participation. This study presents a male perspective on the program of PMTCT of HIV in Zambia and ideas with which to further develop the program's guidelines. The consolidated criteria (COREQ) proposed by Tong *et al.* (Tong *et al.*, 2007) were used in reporting.

METHODS

The study has two datasets: participant interviews and data from the National Protocol Guidelines of Zambia (2008), PMTCT of HIV/AIDS.

Study setting and recruitment of participants

Zambia is located in Eastern Africa. It is divided into nine provinces, which are further divided into 72 districts. The qualitative dataset for this study was collected during March–June 2009 in the suburban areas of the capital town Lusaka.

The study participants were Luba-Kasai men who were either refugees from the Democratic Republic of the Congo or descendants of Congolese refugees. This served as an inclusion

criterion. Another criterion was that participant's wife was pregnant or had a suckling baby. In this study, purposive non-probability sampling was used, a method typically used in qualitative research (Polit and Beck, 2008). The participants were recruited by a local contact—a Luba-Kasai man. He contacted possible participants who met the inclusion criteria in advance, explained the key ideas of the research and set up an appointment with the first author. The contact person translated the informed consent forms into Luba (the mother tongue of the Luba people) and Nyanja (the local main language) and also worked as an interpreter in the interviews. He was initiated into the concept of qualitative interviews and into the ethical requirements of research by the first author. A pilot study was then conducted to practice the interview and interpretation techniques.

Interviews

The participants chose the interview locations. The interviews were performed predominantly in their homes, some in the back seat of a vehicle and one in a bar. Field notes were recorded by the researcher. There were four different documents or forms in the 'interview package'. The informed consent form was explained and filled out, indicating voluntary participation. For further questions, the contact details of the Biomedical Research Ethics Committee and the researcher were given (Burns and Grove, 2005). To protect participant confidentiality, a background variable sheet was filled out and coded (Burns and Grove, 2005). At the end of each interview, the key ideas of the National PMTCT of HIV were presented and discussed with the participant. He was encouraged to be tested for HIV by the researcher and encouraged to inform other men in the community. During the process, the participants used the language that they found most comfortable.

The interviews were guided by the following questions:

- 1) Have you ever visited the antenatal clinic with your wife?
- 2) What do you know about the PMTCT of HIV program?

After the opening questions, the interviews continued with additional questions aiming to discuss the factors that participants considered to influence their participation in antenatal visits.

Data saturation was reached after 15–18 interviews. Twenty-one interviews were recorded and later transcribed verbatim.

The National Protocol Guidelines of Zambia (National Protocol Guidelines of Zambia, 2008), PMTCT of HIV/AIDS was obtained from the Ministry of Health of Zambia. It has been prepared in co-operation with partners such as the National PMTCT and Pediatric HIV Technical Working Group, UN Agencies, USG Partners, Global Fund and UNICEF. The guidelines contained 60 pages and were intended mainly for use by health care providers and district PMTCT program managers.

Composition of the National Protocol Guidelines to the Program of PMTCT of HIV/AIDS

The cover of the *National Protocol Guidelines to the Program of PMTCT of HIV/AIDS* portrays two women and a suckling baby. The foreword section offers epidemiological data on HIV infection in Zambia and the status and efficacy of the PMTCT of HIV program. It enumerates the partners and explains the guideline's intended use. The goal of PMTCT of HIV program is 'to eliminate HIV infection in children'. The introduction section provides information on HIV prevalence in the country, describes the three goals of the National PMTCT of HIV Strategic Framework and the four approaches used to reach these goals. The expected outcomes are given at the end of the section.

The main content has been divided into eight chapters and eight annexes. The chapters are 'Testing and Counseling', 'Antenatal Care', 'Intrapartum Care', 'Immediate Post Natal Care and Neonatal Care', 'Postnatal Check-up', 'Follow-Up Pediatric HIV Care and Long Term support to Mothers', 'Care for Health Workers and Community Health Providers' and 'Monitoring and Evaluation'. The annexes deal with medication, antenatal care, nutrition, living with HIV and the WHO Staging System for HIV Infection and Disease. The terms 'spouse', 'him', 'men' and 'partners or husbands' are found once; the terms 'he', 'male' and 'husband/partner' are found twice; the term 'male partner' is found three times. The gender-neutral term 'partner/s' is found seven times; however, male-gendered terms appear in total 20 times in the text, excluding the annexes.

Data analysis

The quality of interpretation in interviews was confirmed using a second interpreter who was a native speaker of the Luba language. Content analysis (as presented by Miles and Huberman, 1994a) was used in analyzing the qualitative data collected through interviews. This made it possible to analyze the participant's views on the issues discussed and their knowledge of the program of PMTCT of HIV.

The approach of this study was to use a meaningful element of text as the unit of analysis. The transcribed data were read through several times and reduced. This reduction (or coding) allowed original data to be condensed without losing important information. The outcome codes of the reduction process were compared. Codes with similar contents were grouped together to create lower categories. These were then compared with each other to create upper categories. The validity of the analysis was confirmed by discussing the findings within the research team. The veracity of the results was confirmed by two Luba-Kasai men in their capacity as members of the tribe and as family fathers.

The National PMTCT of HIV/AIDS Guidelines were analyzed deductively (Miles and Huberman, 1994b) by using the upper and lower categories created from the interview data of Luba-Kasai men, as a frame of analysis. The chosen unit of analysis was a sentence or a word. The Guidelines were read through several times, looking for similarities with the male views, which had been coded as lower and upper categories. Thus, the results are composed of those passages that correspond with the male partners' knowledge of the program of PMTCT of HIV. The validity of the analysis was discussed with senior researchers.

The research was carried out with the assistance of a local co-researcher, a co-author of this report. Approval to conduct the study was given by the Biomedical Research Ethics Committee of the University of Zambia. The local tribal leader was also informed of the study. This article presents the final two of eight questions which comprised the full study.

RESULTS

Characteristics of the interviewees

Twenty-one interviews were analyzed: 2 in English, 1 in Nyanja and 18 in the Luba

language. One participant was a Muslim, whereas the remaining 20 were Christians. Eight men were over 50 years of age, four participants were aged 40–46 years, four aged 30–39 years and five participants were aged below 30 years. Thirteen men were monogamously and eight polygamously married. Seven men had 8–14 children, eight had 4–7 children and six had 1–3 children. Two participants had studied at college/university level, eight had studied in grades 10–12 and nine in grades 8–9. Two participants had studied in grades 5–7. Three participants had a permanent job, 15 a temporary job and 5 had no work.

Fourteen participants had been tested for HIV, but 16 told that they knew their own HIV status. Fifteen had previously accompanied their wife to an antenatal clinic and 12 had sought VCT (voluntary counseling and testing) during their wife's pregnancy. Fourteen said they knew their wife's HIV status and 16 told they had disclosed their own status to their wife.

Factors encouraging participation

Factors encouraging male partners to accompany their wives to the antenatal clinic are given in Table 1. This involvement in the program of PMTCT of HIV entailed four aspects. First, regarding testing, becoming aware of one's HIV status was described by participants as 'getting the truth of the body', 'testing of our life' or 'seeing how the body is'. They either went to the test together with their wives or were tested separately. They valued becoming treated and counseled regarding the symptoms of other sexually transmitted diseases, determining their HIV status and also receiving counseling as required. The participants also valued learning about HIV from a doctor (a person wearing a white lab coat seemed to be considered as a doctor) and from the information leaflets received. When telling the man his HIV status, the doctors were sometimes reported as asking him 'to continue to pray' and to be faithful.

The time of delivery/health concerns the perinatal phase and covered issues such as a fear of the wife's death. This context provided a second aspect that encouraged participation. The participants described many worries about their wives—some were sick and pregnant, or there was disharmony in the home causing confusion. Together, these were seen as factors leading to the potential death of the wife when she gives

Table 1: Male partners' views on factors having an effect on male antenatal clinic visits and ideas to improve them

Factors encouraging male partners to accompany their wives to antenatal clinic	
To be involved in the program of PMTCT of HIV	<ul style="list-style-type: none"> • Becoming aware of their HIV status • Receiving treatment and counseling • To learn about HIV
The time of delivery	<ul style="list-style-type: none"> • Fear of wife's death • Getting a new baby and their wife alive
Love and care	<ul style="list-style-type: none"> • Mutual love • Assisting the wife
Doubt of corruption	<ul style="list-style-type: none"> • To know the real fees for admission
Factors inconveniencing male partners to accompany their wives to antenatal clinic	
Arrangements and working culture at the clinic	<ul style="list-style-type: none"> • Men are not allowed to go inside • Nurses' unpleasant way of communicating • Unpredictable timing
Stigma	<ul style="list-style-type: none"> • Fear of HIV • Difficulty revealing test results to their wife
Guilt	<ul style="list-style-type: none"> • The man's own risk behavior
Reasons for not accompanying the wife to antenatal clinic	
Lack of motivation	<ul style="list-style-type: none"> • No need to go • No need to go if the mother is HIV negative • Not a place for men
Fear of death	
Socioeconomic circumstances	<ul style="list-style-type: none"> • Lack of time • Poverty • Not invited • No place for men
Arrangements and working culture at the clinic	
Ideas to remove inconvenient factors	
Having a spiritual outlook on life	<ul style="list-style-type: none"> • Faith in God
Education	<ul style="list-style-type: none"> • Correct knowledge of HIV
Interaction	<ul style="list-style-type: none"> • Peer communication • Wife insistence • Rearing of children • Communication within the family
Good mood or meaningfulness	<ul style="list-style-type: none"> • Being taught • Visits are part of life • Positive attitude

birth. *'Sometimes people go there and they die, sometimes they come back alive, that is why I had that fear and I had to go there . . .'* The health facility was, however, seen as a place where the wishes of getting a new baby and getting their wife back home alive may come true.

Love and care was a third aspect that encouraged male partners to accompany their wives to the antenatal clinic. The feature of mutual love may be described as unity—people who are together are one; and what happens to one, also happens to the other. One way to show love was to test their blood together with their wife. Love was seen to clarify values, so visits to the clinic were seen as important. *'The fact that the doctor requested me to be there was not the only reason; I did it because of love. I said that as you are tired let us go step by step until we get to the antenatal clinic.'*

Assisting their wife if she was sick, pregnant or if the delivery was imminent and she was in pain

and weak was another feature that encouraged male partners to accompany their wives to the clinic. Following the delivery, the wife may also need assistance with the baby while waiting to see the nurses or the doctor.

A suspicion of corruption provided a fourth encouraging factor, with the male partner needing to go to the clinic to find out the real admission fees and avoid suspected overcharging.

Inconveniencing factors

Factors inconveniencing male partners in accompanying their wives to the antenatal clinic are divided into three different aspects. The arrangements and working culture at the clinic included features such as men not being allowed to go into the doctor's room which is considered a place for women. However, some participants would have been willing to accompany the wife into the

room had it been possible. Male partners are not allowed to be present during delivery and are made to sit outside. As such, they felt that there was no place for men. Nurses had an unpleasant way of communicating, including shouting and accusing male partners of irresponsibility and a lack of support if the male partner had not prepared things properly for the mother and the baby: '(nurses say) *You are irresponsible, you have gotten the wife pregnant and you are not supportive*'. Clinics are often overcrowded and this makes timing unpredictable. Participants felt it hard to sit for the whole day at the clinic without eating. It was also difficult to reconcile clinic visits and work.

Secondly, stigma associated with issues such as a fear of HIV may cause male partners to run away from the clinic and leave their wives alone, and also, the difficulty in revealing test results to their wife. Guilt, as an inconvenient factor, is composed of the male partner's own risk behavior. From the interview data, if the wife, for some reason, had refused to have sex with him, he had taken to drinking and had sex with other women. *'... I brought this on myself'*.

The data showed that a lack of motivation, fear of death, socioeconomic circumstances and the arrangements and working culture at the clinic are reasons given by those men who had never accompanied their wives to the antenatal clinic. A lack of motivation included several features such as expressing no need to go, unless they are called by the nurses or the doctor: *'Our wives, when they are pregnant, they go there. I am not pregnant, why should I go there?'* Also expressed was that there is no need to go if the mother is HIV negative and that the clinic is not a place for men. Some participants said that they were not invited, and they expected an invitation from the nurses or doctors. Some participants were just so troubled over HIV that even the thought of their own possible infection led them to fear death: *'If I go they might find that I am positive and then I will die very early.'*

Socioeconomic circumstances included features such as a lack of time and poverty. Participants had to travel for work or they had other activities to attend to while their wife visited the antenatal clinic. Participants living in deep poverty may primarily not be willing to know their status of HIV: *'I do not want to go ... I do not have a job, I do not have good food, I do not have a permanent place to live and other things.'*

Solutions to inconvenient factors

Participants' ideas to remove inconvenient factors are related to religion, learning, other people and their own mind. Having a spiritual outlook on life means faith in God by praying for God's help: *'... God is the one who has created everything and we have to pray ... My faith gives me strength to abstain.'* On the other hand, a spiritual outlook on life means trusting an almighty God who determines the destiny of everyone.

Education in this context means a correct knowledge of HIV which in turn reduces fears of HIV tests. Interaction is proposed as an idea to remove inconvenient factors, and talking with peers attending VCT could help test acceptance. Also, the wife who has been asked by the antenatal clinic to invite the husband to come for testing may insist that the husband accompany her: *'... at night she insisted, she cried, I said when she sleeps also I will come ... They said your result is positive and they started to counsel us.'* Interaction also includes features such as the rearing of children and communication in the family, and in this context, the family was seen as a basic unit where the role of father is pivotal in teaching the wife and children to avoid sexual risk behavior.

Maintaining a good mood or sense of meaningfulness are proposed as ideas to remove inconvenient factors. These include features such as being taught, considering antenatal visits as part of life and having a positive attitude: *'... when we went together with her I was very happy and encouraged to go there.'*

Knowledge of the PMTCT of HIV program

Participants who were familiar with the program had heard about it from various sources: the public sector (antenatal clinic, other clinic, VCT, school and non-governmental organization center); the third sector (church seminar); media (TV, radio) and from other people (wife, community and others). The program was known as a preventive program and as a resource for counseling which provided information on matters such as nutrition, human relations, avoiding blood contact in daily care and forbidden, limited or controlled breastfeeding of the baby by an HIV-infected mother (Table 2). Furthermore, the program is identified with testing for HIV, avoiding blood contact in birth and in medication and receiving ARVs. *The National Protocol Guidelines to the Program of PMTCT of HIV/AIDS*

Table 2: Male partners' knowledge of the PMTCT of HIV program and conformity with the National Protocol Guidelines of PMTCT of HIV/AIDS

	The PMTCT of HIV program	The National Program of PMTCT of HIV
Informants	<ul style="list-style-type: none"> • Public sector : antenatal clinic, other clinic, voluntary counseling and testing for HIV, schools, NGO center • Third sector: church seminar • Media: TV, radio • Other people: wife, communities, other people 	<ul style="list-style-type: none"> • HIV counseling and testing • Invitation through their wife
The program is	<ul style="list-style-type: none"> • A way of prevention • A resource for counseling (nutrition, human relations, forbidden, limited or controlled breastfeeding of the baby by HIV-infected mother, avoided blood contact in daily care) • Testing for HIV • Avoiding blood contact in birth and in medication • Giving antiretroviral drugs 	<ul style="list-style-type: none"> • Educating and counseling (risks of HIV-positive women getting pregnant, medical care, good nutrition, infant feeding, prevention of sexually transmitted diseases, promotion of safer sex) • Counseling and testing for HIV • Following obstetric practices which should reduce the risk of transmission to the baby • Providing antiretroviral drugs
Ignorance about the program	<ul style="list-style-type: none"> • Have not heard of the program • Language barrier 	<ul style="list-style-type: none"> • Pregnant women are encouraged to invite their partners for the test during pregnancy

NGO, non-governmental organization.

cover all of these areas. Concerning breastfeeding, the men's views differed from the Guidelines. Some participants felt that HIV-positive mothers should not breastfeed at all. The most important reasons given for accepting the program are to acquire information about prevention, having a good life, staying alive, having a future and being assisted: *'We accept this program because when we go there after testing they find that you are positive or negative. If you are positive, they will provide counseling and give some medicine to you. But if you are negative, they will still offer counseling and show you how to stay negative.'*

Participants who had accompanied their wives to the antenatal clinic did not find any reason to reject the program or they mentioned evil spirit or difference of opinion between spouses. For those participants who had not heard about the program, the interview was perhaps the first time they had heard about it or, as the information had been distributed in the English language, its message had not reached the French-speaking refugee: *'I do not have any idea because they are always talking in English, I am not able to hear or understand English and it is very hard.'*

DISCUSSION

This study describes Luba-Kasai men's views on factors that encouraged or inconvenienced or inhibited them in accompanying their wives to

the antenatal clinic, and their ideas to remove inconveniencing factors.

In this study, becoming aware of one's HIV status, learning about HIV (Katz *et al.*, 2009) and becoming treated and counseled were factors that encouraged male partners to accompany their wives to the antenatal clinic. Invitation through the pregnant spouse, HIV counseling and testing, information about PMTCT of HIV, the possibility to join the program, continued education for HIV positives, provision of ARVs if needed and the distribution of condoms are the Guidelines' methods in which male partners are involved (National Protocol Guidelines of Zambia, 2008). However, the interview data produced some other details that seem to affect male participation, and ensuring a safe birth, human feelings and a suspicion of overcharging were other reasons given to visit the clinic.

Male partners who had visited the antenatal clinic reported that they are not allowed to enter the clinic, that nurses treat clients unkindly and that they must wait a long time for admission (Byamugisha *et al.*, 2010). Similarly, those who had never visited the clinic felt that it was not a place for men and they had to work instead of visiting.

Male partners had faced barriers such as HIV-related stigma (Reece *et al.*, 2010) and guilt. While offering HIV testing and counseling, the National program also has a chance to help males with these obstacles. The program offers

psycho-social support, for example, the provision of: *'Continued education and counselling of mothers and their partners on vital aspects of prevention on Mother-to-Child transmission of HIV. Issues to address should include the risks of HIV-positive women getting pregnant, medical care, good nutrition, infant feeding, and prevention of STIs as well as promotion of safer sex practices.'* The program also refers couples to local mother support groups ([National Protocol Guidelines of Zambia, 2008](#)).

Male partners who did not accompany their wives to the antenatal clinic cited several reasons. These included a lack of motivation ([Theuring et al., 2009](#)), fear of death, poverty ([Byamugisha et al., 2010](#)) and not being invited. An invitation system that uses pregnant women to invite their partners may convince some men, but as raised in this study and earlier study ([Byamugisha et al., 2010](#)), some male partners prefer to be invited by staff.

When discussing clinic visits and the views on the PMTCT of HIV program, three types of participants emerged: those who had visited the clinic, those who knew about the program but had not visited the clinic at all and those who had not heard about it.

The participants of this study accompanied their wives with contradictory feelings. Incorporating male views into the program would make it more easily approachable and more tempting. Consequently, motivated male clients may serve as sensitizers in their communities among other men. The participants understood the importance of knowing their own HIV status, which is the first step, but the program could highlight the male partners' role as a central factor in the overall program. Male partners are expected to be active in HIV testing, but the practices of antenatal care limit male participation in the maternal process by restricting their free movement on clinic premises. Thus, it may cause the feeling that male partners are not truly welcome ([Theuring et al., 2010](#)). Some study participants felt that the antenatal clinic was only for women ([Mlay et al., 2008](#); [Byamugisha et al. 2010](#)), but views differed among participants. Those male partners who were willing to deepen their involvement in antenatal care, however, could have been able to do so. Addressing this may advance HIV-related spousal communication and support couples in adhering to preventive practices.

In further developing the National Protocol Guidelines PMTCT of HIV/AIDS, the issues

surrounding the male partner's responsibilities in birth preparedness, love and care in the intimate relationship, trust in antenatal care, a male-friendly working culture, religion, HIV-related discussions in the family and a positive attitude toward PMTCT of HIV might merit further consideration.

The study also describes Luba-Kasai men's knowledge of the program of PMTCT of HIV and conformity to the National Protocol Guidelines Integrated PMTCT of HIV. Some study participants had detailed knowledge of the program, and it was congruent with the national program, despite some differing views on safe feeding practices. The men had a positive attitude toward the program and knew its goals and some methods. Similar findings were also found in Nkuoh et al.'s ([Nkuoh et al., 2010](#)) study in Cameroon. However, an alarming fact is that some participants had no knowledge of the program even though they were expectant fathers or already had a suckling baby.

This study acknowledges *some* limitations: the participants were from a small tribal minority; thus the results may not be applicable to the wider population or to other tribes. The Luba language was not known by the researchers, so it may be that some nuances were hidden although the interpreter was trained in the study context and interpretations were cross-checked. The printed booklet of the National Protocol Guidelines of Zambia ([National Protocol Guidelines of Zambia, 2008](#)), PMTCT of HIV/AIDS was analyzed in this study. Using the same frame of analysis (the upper and lower categories created from the interview data of Luba-Kasai men) in the context of clinical practice, the results would be different. On the other hand, the guidelines as the foundation of activities should be a document to which everyone should be able to refer in clinical reality. The strengths of this study are, first, that the participants could use their own mother tongue which helped them to express their ideas and secondly, this study is the first to compare male knowledge of the Zambian National program of PMTCT of HIV.

CONCLUSION

The Zambian National Program of PMTCT of HIV has resulted by way of an enormous effort, especially in the context of resource limitations and its results have been promising. To

strengthen the outcomes of the program, there is a need to develop its briefing and content to be more male-friendly in terms of the Luba-Kasai male population. Therefore, more comparative evidence needs to be acquired by studying other tribal groups and provinces.

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REFERENCES

- Bolu, O. O., Allread, V., Creek, T., Stringer, E., Forna, F., Bultrey, M. *et al.* (2007a) Approaches for scaling up human immunodeficiency virus testing and counseling in prevention of mother-to-child human immunodeficiency virus transmission settings in resource-limited countries. *American Journal of Obstetrics & Gynecology*, **197**, S83–S89.
- Bolu, O., Anand, A., Swartzendruber, A., Hladik, W., Marum, L.H., Sheikh, A.A. *et al.* (2007b) Utility of antenatal HIV surveillance data to evaluate prevention of mother-to-child HIV transmission programs in resource-limited settings. *American Journal of Obstetrics & Gynecology*, **197**, S17–S25.
- Burns, N. and Grove, S. K. (2005) *The Practice of Nursing Research: Conduct, Critique & Utilization*. Elsevier Saunders, St Louis.
- Byamugisha, R., Tumwine, J. K., Semiyaga, N. and Tylleskär, T. (2010) Determinants of male involvement in the prevention of mother-to-child transmission of HIV programme in Eastern Uganda: a cross-sectional survey. *Reproductive Health*, **7**, 12.
- Chigwedere, P., Seage, G. R., Lee, T. H. and Essex, M. (2008) Efficacy of antiretroviral drugs in reducing mother-to-child transmission of HIV in Africa: a meta-analysis of published clinical trials. *AIDS Research and Human Retroviruses*, **24**, 827–837.
- Chinkonde, J. R., Sundby, J. and Martinson, F. (2009) The prevention of mother-to-child HIV transmission programme in Lilongwe, Malawi: why do so many women drop out. *Reproductive Health Matters*, **17**, 143–151.
- Chopra, M. and Rollins, N. (2008) Infant feeding in the time of HIV: rapid assessment of infant feeding policy and programmes in four African countries scaling up prevention of mother to child transmission programmes. *Archives of Diseases in Childhood*, **93**, 288–291.
- Chopra, M., Doherty, T., Mehattru, S. and Tomlinson, M. (2009) Rapid assessment of infant feeding support to HIV-positive women accessing prevention of mother-to-child transmission services in Kenya, Malawi and Zambia. *Public Health Nutrition*, **12**, 2323–2328.
- Creek, T., Tanuri, A., Smith, M., Seipone, K., Smith, M., Legwaila, K. *et al.* (2008) Early diagnosis of human immunodeficiency virus in infants using polymerase chain reaction on dried blood spots in Botswana's national program for prevention of mother-to-child transmission. *The Pediatric Infectious Disease Journal*, **27**, 22–26.
- Desgrées-Du-Loû, A., Brou, H., Djohan, G., Becquet, R., Ekouevi, D. K., Zanou, B. *et al.* (2009) Beneficial effects of offering prenatal HIV counselling and testing on developing a HIV preventive attitude among couples, Abidjan, 2002–2005. *AIDS Behavior*, **13**, 348–355.
- Doherty, T. M., McCoy, D. and Dohohue, S. (2005) Health system constraints to optimal coverage of the prevention of mother-to-child HIV transmission programme in South Africa: lessons from the implementation of the national pilot programme. *African Health Sciences*, **5**, 213–218.
- Horvath, T., Madi, B. C., Iuppa, I. M., Kennedy, G. E., Rutherford, G. and Read, J. S. (2010) Interventions for preventing late postnatal mother-to-child transmission of HIV. *Cochrane Database of Systematic Reviews 2009*, (1):CD006734. DOI: 10.1002/14651858.CD006734.pub2.
- Kasenga, F., Hurtig, A.-K. and Emmelin, M. (2010) HIV-positive women's experiences of a PMTCT programme in rural Malawi. *Midwifery*, **26**, 27–37.
- Katz, D. A., Kiarie, J. N., John-Stewart, G. C., Richardson, B. A., John, F. N. and Farquhar, C. (2009) Male perspectives on incorporating men into antenatal HIV counseling and testing. *PLoS ONE*, **4**, e7602. doi:10.1371/journal.pone.0007602.
- Kizito, D., Woodburn, P. W., Kesande, B., Ameke, C., Nabulime, J., Muwanga, M. *et al.* (2008) Uptake of HIV and syphilis testing of pregnant women and their male partners in a programme for prevention of mother-to-child HIV transmission in Uganda. *Tropical Medicine and International Health*, **13**, 680–682.
- Labhardt, N. D., Manga, E., Ndam, M., Balo, J. R., Bischoff, A. and Stoll, B. (2009) Early assessment of the implementation of a national programme for the prevention of mother-to-child transmission of HIV in Cameroon and the effects of staff training: a survey in 70 rural health care facilities. *Tropical Medicine and International Health*, **14**, 288–293.
- Leininger, M. (1985) *Nature, Rationale, and Importance of Qualitative Research Methods in Nursing*. In Leininger, M. (ed.), *Qualitative Research Methods in Nursing*. Grune & Stratton, USA.
- Mandala, J., Torpey, K., Kasonde, P., Kabaso, M., Dirks, R., Suzuki, C. *et al.* (2009) Prevention of mother-to-child transmission of HIV in Zambia: implementing efficacious ARV regimens in primary health centers. *BMC Public Health*, **9**, 314.
- Miles, M. B. and Huberman, A. M. (1994a) *Qualitative Data Analysis*. Sage, Newbury Park, CA.
- Miles, M. B. and Huberman, A. M. (1994b) *Qualitative Data Analysis: an Expanded Sourcebook*. Sage, Thousand Oaks.
- Mlay, R., Lugina, H. and Becker, S. (2008) Couple counseling and testing for HIV at antenatal clinics: views from men, women and counsellors. *AIDS Care*, **20**, 356–360.
- Msuya, S. E., Mbizvo, E. M., Hussain, A., Uriyo, J., Sam, N. E. and Stray-Pedersen, B. (2008) Low male partner participation in antenatal HIV counselling and testing in northern Tanzania: implications for preventive programs. *AIDS Care*, **20**, 700–709.

- Nakakeeto, O. N. and Kumaranayake, L. (2009) The global strategy to eliminate HIV infection in infants and young children: a seven-country assessment of costs and feasibility. *AIDS*, **23**, 987–995.
- National Protocol Guidelines of Zambia. (2008) *Integrated Prevention of Mother-To-Child Transmission of HIV/AIDS*, 2008, 2nd edn. National AIDS Council, Zambia Ministry of Health.
- Nkuoh, G. N., Meyer, D. J., Tih, P. M. and Nkfusai, J. (2010) Barriers to men's participation in antenatal and prevention of mother-to-child HIV transmission care in Cameroon, Africa. *Journal of Midwifery & Women's Health*, **55**, 363–369.
- Perez, F., Mukotekwa, T., Miller, A., Orne-Gliemann, J., Glenshaw, M., Chitsike, I. *et al.* (2004) Implementing a rural programme of prevention of mother-to-child transmission of HIV in Zimbabwe: first 18 months of experience. *Tropical Medicine and International Health*, **9**, 774–783.
- Polit, D. F. and Beck, C. T. (2008) *Nursing Research*. Wolters Kluwer, Lippincott Williams & Wilkins, Crawfordsville, IN.
- Reece, M., Hollub, A., Nangami, M. and Lane, K. (2010) Assessing male spousal engagement with prevention of mother-to-child transmission (pMTCT) programs in western Kenya. *AIDS Care*, **22**, 743–750.
- Stover, J., Fidzani, B., Molomo, B. C., Moeti, T. and Musuka, G. (2008) Estimated HIV trends and program effects in Botswana. *PLoS ONE*, **3**, e3729.
- Theuring, S., Mbezi, P., Luvand, H., Jordan-Harder, B., Kunz, A. and Harms, G. (2009) Male involvement in PMTCT services in Mbeya Region, Tanzania. *AIDS Behavior*, **13**, s92–s102.
- Theuring, S., Nchimbi, P., Jordan-Harder, B. and Harms, G. (2010) Partner involvement in perinatal care and PMTCT services in Mbeya region, Tanzania: the providers' perspective. *AIDS Care*, **22**, 1562–1568.
- Tong, A., Sainsbury, P. and Craig, J. (2007) Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, **19**, 349–357.
- Torpey, K., Kasonde, P., Kabaso, M., Weaver, M. A., Bryan, G., Mukonka, V. *et al.* (2010) Reducing pediatric HIV infection: estimating mother-to-child transmission rates in a program setting in Zambia. *Journal of Acquired Immune Deficiency Syndrome*, **54**, 415–422.
- Walsh, A., Ndubani, P., Simbaya, J., Dicker, P. and Brugha, R. (2010) Task sharing in Zambia: HIV service scale-up compounds the human resource crisis. *BMC Health Services Research*, **10**, 272.
- WHO. (2010) Towards universal access: Scaling up HIV services for women and children. Progress Report. <http://www.who.int/hiv/topics/mtct/en/> (last accessed 29 August 2011).



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Midwives' perspectives on male participation in PMTCT of HIV and how they can support it in Lusaka, Zambia

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ABSTRACT

Objective: the purpose of this study is to describe midwives' perspectives on (1) male participation in Prevention of Mother-To-Child Transmission (PMTCT) of Human Immunodeficiency Virus (HIV) and (2) the methods that could be used to improve male participation in the Lusaka District, Zambia.

Design: a qualitative descriptive study. Data were collected using 10 open-ended questions.

Setting: 25 public antenatal clinics in the Lusaka District, Zambia.

Participants: midwives ($n=45$).

Findings: content analysis highlighted that a male partner can prevent his wife and his infant from being exposed to HIV by preventive behaviour in their intimate relationship and by utilising health-care services. Several barriers to male participation were identified. These were linked to the male partner himself, to health-care services and to society. Stigma as a multifaceted barrier was considered to permeate every level. The sources of the resources that a male partner needs to prevent Mother-To-Child Transmission (MTCT) were the male partner himself, health-care services and society. The methods that midwives can use to improve male participation were the following: first, influencing individuals, the community, employers and health personnel; second, intervening in risk behaviour; and third, providing disease intervention services.

Key conclusion: male participation in PMTCT of HIV is diverse, not only in HIV testing at the beginning of pregnancy, and it is influenced by various dimensions. Midwives' methods to improve male participation were broad, extending outside the antenatal clinic. A shortage of midwives and other typical issues of limited resources of developing countries pose challenges to male participation in PMTCT of HIV.

Implication for practice: the study showed that cultivating a male-friendly approach in antenatal care is urgent to protect infants.

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Introduction

In many African countries the Human Immunodeficiency Virus (HIV) prevalence is high (WHO, 2010). This is also the case in Zambia, where in 2009 14.3% of the total population (12.9 million) had HIV, and in the Lusaka Province 20.8% had been diagnosed with HIV in 2007 (Zambia Country Report, 2010). HIV is a serious problem among families: in the Lusaka District, the HIV prevalence among pregnant women was about 21% (Stringer et al., 2008). The

World Health Organization (WHO) has recognised this serious health concern and recommended the introduction of Voluntary Counselling and Testing (CVCT) for Couples in countries with a high HIV prevalence (WHO, 2002). In this task, midwives have an important role and midwives in Zambia are guided to encourage pregnant women to invite their partners to accompany them on visits to the clinic. The National Program of Prevention of Mother-To-Child Transmission (PMTCT) of HIV offers opportunities for HIV counselling and testing and involves male partners in the programme when necessary (National Protocol Guidelines of Zambia, 2008). The problem is, however, that the facilities offering antenatal services suffer from a shortage of midwives. The estimated number of working midwives was 2050 in 2008, when the minimum level required to meet the need is 4751 (Tjoa et al., 2010).

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Unfortunately, male partners have been reluctant to attend antenatal clinics for HIV testing (Msuya et al., 2008; Becker et al., 2010; Byamugisha et al., 2010a; Conkling et al., 2010; Larsson et al., 2010; Orme-Gliemann et al., 2010). On the other hand, in a recent Zambian study, it appeared that men had not been allowed to go inside the clinic. Men had also encountered unfriendly health workers (Auvinen et al., submitted for publication-b). Practices and attitudes that are not male friendly are not conducive to male participation in pregnancy monitoring at the clinics. Similarly, Theuring et al. (2010) found in Tanzania that health-care providers' attitudes towards male partners' overall involvement in the services. But on the other hand, the providers had restrictive attitudes towards male participation in the services. This was the case especially if the services were related to perinatal examinations or childbirth.

Midwives' attitudes and practices have been assessed in relation to male participation in PMTCT, which is not, actually, well defined. Male participation in PMTCT of HIV may refer only to males' HIV testing or to their involvement in the whole maternal or reproductive process. Midwives are aware of the opportunities and challenges in PMTCT in the families, and thus they are important informants to explore this relatively new aspect. The study provides an additional viewpoint on clinical practice in improving male participation. We therefore described midwives' perspectives on male participation in PMTCT of HIV and the methods that could be used to improve male participation.

Methods

Zambia is divided into nine provinces which are divided into 72 districts. The Lusaka Province is situated in south-east Zambia and borders on Mozambique and Zimbabwe to the east. The capital city Lusaka is situated in the Lusaka District, where all the 25 districts' antenatal clinics are located and where the data were collected. At the time of data collection, from April to June 2010, 11 of the 25 clinics had childbirth facilities. Midwives have two types of education: registered midwives have three years of nursing education and one year of midwifery and enrolled midwives have two plus one respectively.

The data were decided to be collected using forms with 10 open-ended questions on which the midwives were asked to write their views about male participation and how it might be improved in clinical practice. Due to practical obstacles, e.g. lack of proper venues and midwives' heavy burden of work, interviewing as a data collection method was not considerable. The open-ended questions were as follows:

1. How in your opinion can a male partner prevent his wife from being exposed to HIV during pregnancy?
2. How can you improve it in your practice?
3. How in your opinion can a male partner prevent his infant from being exposed to HIV during pregnancy, childbirth and feeding of the infant?
4. How can you improve it in your practice?
5. What in your opinion are the barriers that inhibit a male partner from preventing his infant from being exposed to HIV?
6. How can you eliminate these barriers in your practice?
7. What in your opinion are the resources that a male partner needs to prevent his infant from being exposed to HIV?
8. How can you increase these resources in your practice?
9. How in your opinion can HIV-related stigma inhibit male participation in preventing mother to child transmission of HIV?
10. How can you remove this negative effect in your practice?

Each form package had an informed consent sheet to indicate the participant's voluntariness and the background variable sheet. Institutional approval to conduct the study was obtained from the Biomedical Research Ethics Committee of the University of Zambia and from the Ministry of Health, Lusaka District Health Management Team.

Altogether fifty copies of open-ended question forms were given to the antenatal clinics in the Lusaka District, including both clinics that did not have childbirth facilities and clinics that had them (Table 1). The number of forms given to the clinics depended on whether the clinic had childbirth facilities and on the number of the midwives at each clinic. The 14 clinics that did not have childbirth facilities were given one from each because the number of midwives was less than eight. Clinics with childbirth facilities and where the number of midwives was 10–18 were given three forms, and if the number of midwives was 19 or more, the clinic was given four forms.

The forms with envelopes were given to the person in charge of each clinic and she/he was informed about how to proceed (sharing the form packages to the midwives, underlining the voluntary participation and the confidentiality of the study, and collecting the forms on time). The first author collected the returned form packages, which were in closed envelopes and paid 10,000 ZMK (approximately 1.9 USD) as a token of appreciation to the participants. In total, 45 of 50 forms were eligible for analysis. Two forms were returned empty and three were missing.

The qualitative data were analysed using inductive content analysis (Miles and Huberman, 1994). The forms were number coded to ensure confidentiality. The answers were read through several times and they were transcribed. Transcription was used as a data management strategy. A unit of analysis was any meaningful element or word of text and they were looked at depending on the purpose of the study. The transcribed data were reduced. In reduction (or coding) the original data were condensed aiming to capture all the important information. The codes, which were the outcomes of the data reduction process, were further coded into the lower categories and labelled. The lower categories were compared to each other and the analogous lower categories were grouped together, creating the upper categories. The main categories were created upon the analogous upper categories. The codes yielded from the data, have been understood as equal and their value is not in the high frequency but in diversity (Stern, 1991; Polit and Hungler, 1995). The findings were discussed in the research team.

Findings

All participants ($n=45$), were females, aged 45.7 years on average and most of them were married (Table 2). The participants were enrolled midwives and registered midwives (22 versus 21) and only one of them had a university level degree.

Table 1
Collecting the data.

Type of data	Sampling	Sample size	Eligible for analysis
Written answers to the open-ended questions	Purposive, 14 antenatal clinics without childbirth facilities	14, midwives	13
	Purposive, 11 antenatal clinics with childbirth facilities	36, midwives	32
	In all 25 antenatal clinics	Total 50	Total 45

Less than half were trained for the renewed National PMTCT of HIV programme and almost all were tested for HIV.

Male partner's methods to prevent his wife and his infant from being exposed to HIV during pregnancy, childbirth and feeding the infant (Table 3).

The midwives responded that the main methods for a male partner to prevent his wife and infant from being exposed to HIV during pregnancy, childbirth and feeding the infant are preventive behaviour in their intimate relationship and utilising health-care services. Preventive behaviour in an intimate relationship includes inter-spousal relations, sexuality, the man's financial responsibility and involvement in infant care. In an intimate relationship a male partner can prevent MTCT of HIV by having spousal communication about reproductive issues. This method includes aspects such as HIV status disclosure, discussing sex in general and HIV issues with the wife and giving her emotional support. Avoiding blood contact implies firstly the importance of using one's own razors and needles in everyday activities. Secondly it is important for men to avoid violence against women to avoid HIV transmission through the placenta.

Practising safe sex has three aspects. Using condoms is dependent on how the male partner fulfills his sexual desires and whether one or both of the spouses are HIV infected. The first aspect entails knowing the right way to use a condom. Abstinence from sexual relations is the second method and avoiding dry sex is the third one. By avoiding dry sex the male partner inhibits HIV transmission that could happen through cuts in the mucous membrane of the vagina, which may occur during intercourse if the vagina has been dried:

Ensuring that even as he has sex with her, it must be 'wet' sex to prevent cuts, which can act as entry points for the HIV virus.

When they avoid using herbal drugs to shrink in the vagina.

The method of taking care emphasises in particular the male partner's financial responsibilities for the family needs and his involvement in the everyday life of the family. When supporting his wife, he provides balanced food, helps her to maintain her health, helps with preparedness for the birth by following the guidelines given by antenatal care and participates in baby care. When ensuring safe infant feeding, the male partner chooses the feeding option together with the wife, prepares for the chosen feeding option beforehand and gives financial support to cover the chosen feeding option:

He should also participate in decisions of whether the baby is to be fed – breast or formula, since men are the ones with finance who can buy milk if they choose to use formula.

When utilising health-care services, a male partner visits the antenatal clinic himself for different purposes and on the other hand, he supports his wife to adhere to the programme of PMTCT of HIV. When visiting the antenatal clinic during his partner's pregnancy the male partner will be tested for HIV and other STIs as an individual and as a couple, and he will be treated for other STIs. In the clinic he can learn about changing behaviour and about the transmission modes of HIV. At the time of childbirth, the male partner prevents MTCT of HIV by bringing the wife to deliver at the clinic. During the childbirth he has the opportunity to discuss his concerns with the midwife. By continuing visits to the antenatal clinic while the infant is being fed, the male partner ensures that the infant from an HIV positive mother will be tested for HIV and that he will be regularly tested for HIV himself and as a couple. He will learn more about feeding options and other aspects of PMTCT of HIV and adhere to the programme:

During delivery he should know what the wife needs for her to have a safe delivery by encouraging the wife to deliver in a safe environment in a hospital, he should keep money aside for such an event.

Supporting the wife to adhere during her pregnancy to the phases of the PMTCT of HIV programme as a method means that the male partner promotes his wife's visits to the antenatal clinic at the beginning of a suspected pregnancy and further as the visits have been planned. He encourages his wife to be re-tested at each trimester of the pregnancy and to adhere to the prescribed medication to decrease the risk of vertical HIV transmission. Furthermore, he reminds her to go for a T-helper white blood (CD4⁺ T) cell checking if planned. In addition, he may also help his possibly illiterate wife to learn the important issues:

Because a man can understand and be able to support and encourage the woman to take preventive medicines during pregnancy, ...A man can also encourage the woman to take malaria drugs like Fancida to avoid malaria which can predispose to transmission through the placenta.

As the due date approaches, the male partner advises the wife to deliver at the clinic and provides money for transport if he is not able to join the wife. He supports the wife to adhere to the prescribed antiretroviral (ARV) drugs for herself and the infant and encourages her to follow instructions the health workers' instructions during the birth. While the infant is being fed, a male partner supports his wife by taking care that she takes the ARV drugs and that they are also given to the infant. The male partner contacts family planning services with his wife to protect her against unplanned pregnancies.

Table 2
Background characteristics of study participants.

Characteristic	Frequency	Mean
Age (n=40)		45.7 SD=9.9
Marital status (n=44)		
Never married	4	
Married	28	
Widowed	10	
Divorced	2	
Number of children (n=44)		
No children	4	
1–2 children	12	
3+ children	28	
Educational level (n=44)		
Enrolled midwife	22	
Registered midwife	21	
Postgraduate	1	
Years of work (n=43)		14.4 SD=11.0
Time for client (n=38)		
5–10 minutes	12	
11–20 minutes	14	
21–30 minutes	12	
Trained on revised (2008) National Protocol Guidelines of PMTCT of HIV/AIDS (n=45)		
Yes	19	
No	26	
Have had an HIV test (n=45)		
Yes	42	
No	3	

Note: All of the study participants (n=45) did not reply to all the questions.

Table 3
Midwives' perspectives on male partner's methods to prevent his wife and the **infant** from being exposed to HIV during pregnancy, childbirth and baby feeding.

Having preventive behavior in intimate relationship	During pregnancy	During childbirth	During baby feeding
Having spousal communication	<ul style="list-style-type: none"> – by disclosing one's HIV status – by discussing about sex issues with the wife 		<ul style="list-style-type: none"> – by discussing about HIV issues – by giving emotional support to ensure consistent feeding
Avoiding blood contact	<ul style="list-style-type: none"> – use of own razors and needles – to avoid HIV transmission through placenta due to intimate violence 		<ul style="list-style-type: none"> – use of own razors and needles
Being faithful	<ul style="list-style-type: none"> – to one sexual partner 		<ul style="list-style-type: none"> – to one sexual partner
Practising safe sex	<ul style="list-style-type: none"> – by using condoms <ul style="list-style-type: none"> male and female condoms during window period if the status is unknown if the mp has many sex partners if the couple is infected – by avoiding dry sex – by abstinence 		<ul style="list-style-type: none"> – by using condom correctly consistently to prevent re-infection to prevent other STIs – by abstinence
Taking care	<ul style="list-style-type: none"> – by supporting the wife <ul style="list-style-type: none"> by providing well balanced diet to the wife by helping the wife to maintain her health by helping with birth preparedness 		<ul style="list-style-type: none"> – by supporting wife <ul style="list-style-type: none"> by providing well balanced diet to the wife by participating in baby care by ensuring the wife rests enough – by ensuring safe baby feeding <ul style="list-style-type: none"> by choosing the feeding option together with the wife by preparing for the chosen feeding option by supporting financially to cover the chosen feeding option
Utilising health-care services	During pregnancy	During childbirth	During baby feeding
Visiting antenatal clinic for different purposes	<ul style="list-style-type: none"> – by being tested for HIV and other STIs as a couple as an individual – by being treated for other STIs – by learning on PMTCT of HIV behaviour changing HIV transmission modes 	<ul style="list-style-type: none"> – by taking the wife to deliver at the health centre – by discussing with midwife about concerns 	<ul style="list-style-type: none"> – by determining the HIV status the infant of a HIV+ mother his own status tested as a couple every three months – by learning on feeding options PMTCT of HIV – by adhering to PMTCT programme
Supporting the wife to adhere to the phases of PMTCT of HIV programme	<ul style="list-style-type: none"> – by promoting visits to antenatal clinic at the earliest possible time – to visit antenatal clinic as planned – to be re-tested in each trimester – to adhere to prescribed medication <ul style="list-style-type: none"> ARV drugs malaria deworming opportunistic infections – to check the CD4 count 	<ul style="list-style-type: none"> – by advising wife to deliver at the clinic – by providing money for transport – by supporting the wife to adhere to ARV drugs for herself and the infant – by supporting the wife to follow instructions at birth 	<ul style="list-style-type: none"> – to take ARV drugs

Table 3 (continued)

Having preventive behavior in intimate relationship	During pregnancy	During childbirth	During baby feeding
	– by helping his illiterate wife to understand		– by visiting family planning clinic

ARV = antiretroviral; CD4 count = a number of T-helper white blood cells per cubic millimetre of blood; PMTCT = prevention of mother to child transmission; STIs = sexually transmitted infections.

Factors inhibiting male partners from preventing MTCT of HIV and resources which could improve male partners' capacity to participate (Tables 4 and 5).

The inhibiting factors are divided into barriers dependent on the male partner, health-care services and society. The first of these barriers means that the male partner refuses to accompany his wife to an antenatal clinic or to pay for artificial milk. Ignorance is a barrier if a male partner does not know about HIV issues or his wife's HIV status. The male partner's low level of formal education may prevent him from understanding about HIV/AIDS. Lack of motivation may cause the male partner to think that it is enough if the wife is taught about PMTCT issues, and it also results in reluctance to attend to the wife's demands to visit the antenatal clinic. Denial of HIV and indifference towards HIV issues are aspects indicating lack of motivation. The midwives reported that drinking habits cause the male partner to get drunk and afterward possibly to insist on unprotected intercourse with his wife. A drunken male partner may also threaten the wife with divorce if she refuses. Lack of time inhibits a male partner from visiting the clinic and from learning health education on the radio or from brochures. The midwives considered that a male partner should organise time for his personal issues.

Having many sex partners is a barrier among male partners in three ways—having extramarital partners, being polygamously married and working as a prostitute:

Men can have so many sex friends. '...out all the time with other relations, girlfriends and drinking friends.' 'Polygamy - a man with more than one wife or a prostitute husband with many sexual partners'.

The midwives emphasised fidelity to one sexual partner as a resource. Risky sexual practices are another barrier with several aspects. Some men want to have dry sex or the male partner refuses to use a condom when having sex with his wife or with his other sex partners. The male partner may think that a condom makes sex unenjoyable or that he may fail to use the condom correctly or that he may fail to abstain from sex. Practising safe sex was seen as a resource, likewise correct use of a condom to prevent other sexually transmitted infections (STIs).

Intimate violence as a barrier may occur when the man wants to assert his supremacy, whereas the decision to love himself and his family encourages him to prevent MTCT of HIV. Lack of spousal communication as a barrier has two aspects, lack of shared confidentiality between spouses and lack of trust, whereas spousal communication was seen as a resource where spouses can share their problems. Women's fears of the male partner's negative reactions are related to the intimate relationship, to sex behaviour and to different phases of PMTCT of HIV. HIV infected women fear rejection, divorce and violence in a relationship, and

they are afraid of asking the man to use a condom. They refuse to follow a PMTCT programme such as using prescribed ARV drugs and following safe feeding practices if they feel that they lack male support:

A man should at times beat his wife to show that he is the head of the house. Other women believe that getting beaten shows that your husband loves you.

The woman may not follow the instructions about taking her medication when the husband is around if he does not know about it.

The woman may not choose the appropriate infant feeding method for fear of being asked by her husband.

Lack of peer support as a barrier means the male partner's failure to discuss his concerns with peers.

Barriers dependent on health-care services are related to health personnel, to the PMTCT of HIV programme issues and to health-care facilities. If a health worker's attitude is not open, the male partner may feel that he is not really welcome. The midwives considered that too long waiting times and lack of health personnel are barriers inhibiting male partners' prevention of MTCT of HIV. The health personnel's supportive attitude and its sufficient availability were seen as resources.

Issues related to the PMTCT of HIV programme can also be barriers. The object of antenatal care tends to be only women and men feel that antenatal care is women's business. Moreover, the publications of the programmes are usually in English, forgetting the local tribal languages:

Clinics do not encourage men to attend an antenatal clinic, so men feel it is a women's activity, and so they lack knowledge.

The men feel uneasy because of the pregnant women around and also because of some teachings that are given on sexuality [at the clinic].

The participants considered that male friendly Maternal and Child Health (MCH) care would improve the male partner's participation. The male partners should learn more about their own HIV status, pregnancy and PMTCT, young infant feeding and the nutrition of the whole family, ARV prophylaxis and condoms by using methods such as CVCT, Information, Education and Communication (IEC), Health Education (HE), listening to the radio, watching TV, reading pamphlets and booklets.

Health-care facilities are seen as barriers when there are no venues for men at the clinic, when the distances to the clinics are long and when the venues are not male friendly. Not male friendly in this context means that the venues are full of females, and all the teaching about sexuality makes men feel uncomfortable with all the women around, and so the men shun the PMTCT programme.

Table 4
Midwives' perspectives on barriers that inhibit male partners to prevent their wives and babies from being exposed to HIV.

Refusal	Ignorance	Lack of motivation	Boozing	Lack of time	Having many sex partners
Male partner dependent barrier					
<ul style="list-style-type: none"> – to accompany wife to the antenatal clinic – to support wife financially to buy artificial milk 	<ul style="list-style-type: none"> – lack of knowledge about HIV issues – lack of knowledge about wife's HIV status – incorrect knowledge about HIV – low level of formal education 	<ul style="list-style-type: none"> – 'it is enough that the wife is taught' – lack of interest in listening to wife's demands – denial of HIV – indifference 	<ul style="list-style-type: none"> – drinking company – drunk husband wants to have unprotected sex – threatening wife with divorce if she refuses 	<ul style="list-style-type: none"> – men are too busy to visit antenatal clinic to learn HE on radio/brochures 	<ul style="list-style-type: none"> – girlfriends – polygamy – working as a prostitute
Risky sex practices					
<ul style="list-style-type: none"> – dry sex – refusal to use condom with a wife – sex without condom in extramarital relations – condom makes sex unenjoyable – failure in condom use – failure to abstain 	Intimacy violence		Lack of spousal communication		Women's fears of male partners' negative reactions
	<ul style="list-style-type: none"> – showing the man is the head of the household 	<ul style="list-style-type: none"> – lack of shared confidentiality – lack of trust 	<ul style="list-style-type: none"> – fear of rejection in relationship – fear of divorce – fear of violence – women's fear of asking to use condom – women's refusal of the PMTCT programme because lack of male support non-adherence to ARV drugs in presence of husband failure to follow feeding recommendations for fear of being asked by the husband 	<ul style="list-style-type: none"> – failure to discuss with peers 	
Health personnel		The PMTCT of HIV programme issues			Health-care facilities
Health-care service dependent barriers					
<ul style="list-style-type: none"> – health personnel's attitude not open men feel they are not welcome – too long waiting times – lack of health personnel 	<ul style="list-style-type: none"> – the objects of ANC are women only men shun such programs – men feel it is women's activity – publications are in English 			<ul style="list-style-type: none"> – lack of venues – distant location of clinics – not male friendly venues all-female environment 	
Cultural factors		HIV related stigma	Poverty	Lack of time	
Society dependent barriers		Table 6	<ul style="list-style-type: none"> – lack of money – wife's transactional sex 	<ul style="list-style-type: none"> – men are at work companies do not support antenatal visits at working time 	

ANC=antenatal care; ARV=antiretroviral; CVCT=couples' voluntary counselling and testing; HE=health education; PMTCT=prevention of mother to child transmission.

Barriers dependent on society are related to culture, HIV related stigma, presented in a separate paragraph, poverty and lack of time. Cultural factors as barriers include aspects such as a traditional mindset and customs. A traditional mode of thinking inhibits male participation by defining a real man as one who needs many women and a weak man as one who listens to his wife, and by defining mothering issues as being for women and the man making the decisions as the head of the house. Custom defines what behaviour is to be expected of men and women. Women are not expected to initiate sex talk, men are not involved in child health and a woman may choose another woman to accompany her to the clinic instead of her husband.

Poverty constitutes a barrier in two ways. Lack of money prevents the male partner from paying for the chosen artificial

milk, and the wife's transactional sex is an attempt to seek money for food from other men if the husband cannot afford it. The midwives suggested as solutions that the men could seek work and be prudent in everyday life:

No proper care for the family that can lead a wife to other men to get money for either food or any help they need.

In this context, lack of time means that men who work are not able to come to the clinic, as companies do not support antenatal visits during working hours. A more flexible policy among employers could enable men to attend the clinics.

Table 5
Midwives' perspectives on resources male partners need to prevent their wives and babies from being exposed to HIV.

Male partner dependent resources				
Time – willingness to organise time from his personal issues	Faithfulness – to one sexual partner	Practising safe sex – condom use skills prevention of other STIs	Decision to love – himself – family	Spousal communication – sharing problems
Health personnel	The PMTCT of HIV programme issues			
Health-care service dependent resources				
– supportive – sufficient numbers of staff	– male friendly MCH content: men's own HIV status; pregnancy and PMTCT; infant feeding; nutrition of the whole family; ARV prophylaxis; condoms – methods: IEC; HE; CVCT; radio; TV,-pamphlets; booklets			
Job and prudent housekeeping		Time		
Societal dependent resources				
– money for basic need for mother's and infant's nutrition for safe childbirth		– workplace flexibility for antenatal visits of men		

ANC=antenatal care; ARV=antiretroviral; CVCT=couples' voluntary counselling and testing; HE=health education; IEC=information, education and communication; MCH=maternal and child health; PMTCT=prevention of mother to child transmission; STIs=sexually transmitted infections.

The ways HIV related stigma inhibits male participation in MTCT of HIV and interventions to remove it (Table 6)

HIV related stigma influences a male partner's feeling by making him feel shy and to think that PMTCT is only for women. The male partner fears stigmatisation by other people, he fears for his reputation and he feels guilty about HIV infection in the family. HIV related stigma influences the male partner's actions in several ways. It makes him to avoid PMTCT activities and inhibits him from being tested for HIV. Stigma causes the male partner to refuse to use condoms with his wife, to deny that he might contract HIV. Stigma further inhibits him from learning about HIV. He may blame his wife as the one who brought HIV into the house and, if the wife is infected, he dissociates himself from her to avoid being also considered infected in other people's eyes. Stigma causes the male partner to forbid his wife from going for Voluntary Counselling and Testing (VCT) for HIV, to threaten with divorce if the wife contacts PMTCT services and inhibits him from supporting the wife to choose the best feeding option.

Stigma creates a barrier to male participation by influencing on the mother's actions. The mother may not talk about vertical HIV prevention to the male partner and she fears disclosing her HIV status to him. Stigma inhibits the mother from suggesting that her male partner use condoms and causes her to deliver at home rather than at the clinic. Furthermore, stigma inhibits her from using a safe feeding method and from collecting HIV medication for the infant:

So as a result, some women will not disclose [their HIV status] to their spouses for fear of rejection, thereby exposing the unborn child to a high risk of infection because there will not be any protection.

After delivery, due to fear of victimization, mixed feeding of the baby may happen.

Stigma also influences the couple's actions. Spouses may not disclose their HIV status to each other and this separates spouses. Stigma causes the couple to have unprotected sex and inhibits them from asking questions related to HIV prevention. It inhibits the couple from attending an antenatal clinic, from adhering to

ARV drugs and from giving them to the infant for fear of ridicule by neighbours.

At the community level, stigma as a barrier influences people's thoughts, actions and HIV prevalence. Stigma makes people think that HIV positive individuals are promiscuous. It makes them discriminate against those who are suspected or known to be HIV infected. Stigma inhibits people from talking about their status and about the benefits of HIV testing. It inhibits people from seeking treatment and from adhering to ARV drugs. Consequently, the number of HIV infected people is increasing and the desired outcomes among mothers and the babies are not being achieved:

No one wants to be associated with HIV because people think that a person who has HIV is promiscuous.

The community and the family may not accept the infected couple.

Collection of medication for the baby when the mother is busy or unwell is also highly stigmatized.

The midwives considered that the methods of removing HIV related stigma and its effects have to be used on three levels: in health policy, at the antenatal clinic among workers and in nursing. To avoid all segregation of HIV clients and others, the integration of health services improves confidentiality and consequently the attendance of HIV positive individuals. Another aspect is increasing the number of health personnel. The midwives considered that an accepting attitude among coworkers and support for HIV positive colleagues mitigates HIV related stigma, likewise continuing education on HIV issues. In nursing, the methods are divided into ethics, aims and methods. Working confidentially, admitting couples in the same way regardless of their HIV status, accepting each patient unconditionally and providing compassionate care without discrimination, are methods highlighting equality and confidence. The aims of nursing in removing stigma are that all the people are educated on HIV related stigma issues, that they have a deeper understanding of the role of traditional beliefs in HIV related stigma, and that HIV positive parents cope with that stigma. The methods to achieve the aims are using functional methods such as drama and role

Table 6
Midwives' perspectives on how HIV related stigma inhibits male partners to prevent their wives and babies from being exposed to HIV and the means to remove the effect of the stigma.

Male partners' feelings	Male partners' actions	Mother's actions	Couples' actions	Communities
Stigma influences – to feel shy – to think PMTCT is only for women – to fear that one will be stigmatised by other people – to fear for their reputation – to feel guilty for HIV infection in the family	– to shun away from the PMTCT activities – discourage mp from being tested for HIV – to refuse to use condoms with the wife – discourage mp from learning correct knowledge about HIV – to refuse to believe that they could contract HIV – to blame his wife as the one who contracted HIV – to dissociate themselves from the HIV+ wife so as not to be considered HIV+ – to forbid their wives from going for VCT – to threaten with divorce if the wife contacts PMTCT services – discourage mp from supporting mother to choose the best feeding option	– discourage from talking about MTCT of HIV to the mp – make it difficult to disclose the HIV status for fear of mp's reaction – discourage mothers from suggesting that mp use condoms – make mothers to deliver at home – make mothers not to use safe feeding practices – discourage mothers from collecting HIV medication for the infant	– make it difficult to disclose their HIV status to each other – separate couples from each other – lead to unprotected sex – discourage from asking questions about HIV prevention – discourage couples from attending ANC – discourage couples from adhering to ARV drugs – discourage from giving ARV drugs to the infant for fear of ridicule of neighbours	thoughts: – make people think HIV+ is promiscuous actions: – make people discriminate other people – discourage people from talking about their status – discourage from seeking treatment – discourage from adhering to ARV drugs HIV prevalence: – the number of AIDS cases increases – compromises the expected outcomes among mothers and babies

Interventions to remove the influence of HIV related stigma on male participation

In nursing ethical action:

- working confidentially
- admitting couples in the same way regardless of their HIV status
- embracing each patient and showing love

The aims of activities:

- all people are educated on HIV related stigma issues
- deepen understanding of the role of traditional beliefs in HIV related stigma
- parents cope with stigma

Methods:

- functional methods such as drama and role plays
- setting up support groups
- motivating with good outcomes like having HIV-infant
- giving time
- being culturally sensitive

At the antenatal clinic among midwives Methods:

- accepting HIV+ colleagues
- supporting HIV+ colleagues
- educating health personnel continuously on HIV related stigma

In health policy Methods:

- integrated services to improve confidentiality
- increased numbers of health personnel

ANC=antenatal care; ARV=antiretroviral; mp=male partner; PMTCT=prevention of mother to child transmission; VCT=voluntary counselling and testing.

play, forming support groups, motivating with good outcomes such as having an HIV negative infant, giving time to the clients and being culturally sensitive:

Integrate all health services into one so that no one knows who has HIV or not.

By encouraging men and their partners to come and see counsellors so that they can give information about the disease while maintaining confidentiality.

The couple needs to be encouraged to mingle with those who are HIV negative.

Provide an environment which will not segregate the care between the exposed and not exposed so that they all feel being cared for in the same way.

Midwives' methods to improve male participation in PMTCT of HIV (Table 7).

First, the midwives should influence individuals, the community, employers and health personnel by providing information and counselling; second, they should intervene in risky behaviour; and third, they should provide disease intervention services. When a midwife is influencing individuals, she counsels, invites and encourages male partners and their wives to attend

Table 7
Midwives' methods to improve male participation in PMTCT of HIV.

Individuals	Community
Influencing individuals, community, employers, health personnel	
<ul style="list-style-type: none"> – inviting mp through their wives – encouraging mp to visit antenatal clinic <ul style="list-style-type: none"> to be counselled and tested for HIV to learn about HIV, PMTCT of HIV, health education, to be involved in maternal and child health – informing the mp of the number of visits to allow him to make arrangements – allowing mp to enter the clinic – encouraging mothers to come with their mp – Counselling couples to get tested for HIV – admitting couples before other clients in clinical practice – encouraging clients to employ themselves 	<ul style="list-style-type: none"> – advertising through media about PMTCT of HIV programme – training community agents to sensitise mp <ul style="list-style-type: none"> community health workers traditional healers community leaders – involving agents to educate people by using drama groups, pamphlets, wall charts <ul style="list-style-type: none"> Neighbourhood community committee members community health workers – Sensitising the community on importance of CVCT <ul style="list-style-type: none"> in churches in bars in workplaces – setting up support clubs <ul style="list-style-type: none"> couple mother to mother father to father – offering CVCT services in community
Employers	Health personnel
<ul style="list-style-type: none"> – suggesting ANC visits to be mandatory to men – Organising health talks at workplaces (e.g. on condom use) – developing PMTCT friendly work policy 	<ul style="list-style-type: none"> – having monthly safe motherhood meetings – networking in health-care services
Educating on PMTCT of HIV issues	Giving time for interaction with clients
Intervening in risk behaviour	
<ul style="list-style-type: none"> – Topics: <ul style="list-style-type: none"> CVCT maintaining HIV status ARV drugs condoms birth preparedness safe childbirth EBF good nutrition hygiene misconceptions – Methods: <ul style="list-style-type: none"> giving reading material using posters educating illiterates educating continuously discussing with clients distributing male condoms to the high risk couples teaching male and female condom use <ul style="list-style-type: none"> to avoid re-infection to be used consistently 	<ul style="list-style-type: none"> – ensuring the couple has understood – allowing mp to express his opinions – clarifying information – providing mp enough time for questions – strengthening the roles of husband and father
	Emphasising faithfulness to one sexual partner
	Promoting spousal communication
	<ul style="list-style-type: none"> – encouraging <ul style="list-style-type: none"> women to talk about shared information to their mp couples to disclose their HIV status to each other couples to talk about sexuality to change sexual behavior to avoid any suspicion among each other
Assessing the need for treatment and treating if needed	
Disease intervention	
<ul style="list-style-type: none"> – CVCT – providing ARV drugs – following up adherence – monitoring by making home visits 	

ANC=antenatal care; ARV=antiretroviral; CVCT=couples' voluntary counselling and testing; EBF=exclusive breast feeding; mp=male partner; PMTCT=prevention of mother to child transmission; VCT=voluntary counselling and testing.

the antenatal clinic, to be tested for HIV and to learn about PMTCT of HIV. She allows the male partner to enter the clinic, allocates the number of visits needed for prior arrangements and gives priority over others for consultation to couples attending the clinic. She encourages clients to seek employment in order to cover for future expenses:

This will enable all women coming with their spouses to get attended to first and those without the spouses later.

In a community, the midwife uses media for advertising about the PMTCT of HIV programme, trains different types of community agents such as health workers, traditional healers and community leaders to sensitise people and involves the local community's committee members and community health workers to train people by using drama groups, pamphlets and wall charts. The midwife sensitises people in churches, bars and in workplaces to the importance of CVCT, forms support groups and advertises them to couples, fathers and mothers and offers CVCT services in the community. The midwife influences employers by suggesting antenatal care (ANC) visits be made mandatory for men, by organising health talks at workplaces and by developing a PMTCT friendly work policy. Influencing health personnel, the midwife improves male participation by having monthly meetings on safe motherhood and networking within the health-care services.

The midwife intervenes in risky behaviour first by educating on PMTCT of HIV issues, second by giving time for interaction with clients, third by emphasising fidelity to one sexual partner and fourth by promoting spousal communication. The contents and the methods of education on PMTCT are detailed in [Table 7](#):

During this service, HIV negative couples are encouraged to maintain their HIV negative status by being faithful to each other, using condoms during the window period and avoiding risky behaviour and continuing to be tested every 3 months.

Giving health education to the men and sharing knowledge with them about HIV, modes of transmission and how to prevent mother to child transmission. Because if they understand this, they will be able to support their wives.

Giving time can be used as a second method of intervention by ensuring that the couple has understood what they are taught, allowing the male partner to express his opinions, clarifying information when necessary, providing enough time for the male partner for questions and strengthening the roles of a husband and a father:

...special attention so that the male partner understands what is expected of him and his partner.

By emphasising fidelity to one sexual partner, the midwife reduces the risk of transmission through many sexual partners. Promoting spousal communication is done by encouraging women to talk about the importance of sharing information with their male partners, by encouraging couples to disclose their HIV status to each other, to talk about sexuality to change sexual behaviour and to avoid any mutual suspicions:

Encouraging men to be open to their wives, especially when it comes to their [HIV] status because if they hide, they will be putting the unborn child at risk.

The midwife provides disease intervention services by assessing the need for treatment and treating when necessary. This is done by offering CVCT, providing ARV drugs, following up on adherence and monitoring by doing home visits:

Providing a CD4 count check [a measure of the number of T-helper white blood cells per cubic millimeter of blood] to every positive couple. Give prophylaxis antiretrovirals to all positive mums and all exposed babies.

Discussion

In evaluating the findings of this study, the following aspects should be kept in mind. The study has some limitations. The results were from 45 participants in only one district, and thus the results may not be applicable to other midwives in Zambia. However, qualitative research data is always context-bound ([Kylmä and Juvakka, 2007](#)). Asking participants to write answers to the open-ended questions may not be the best way to collect data among midwives, for whom English is mostly their second language. More detailed information could have been obtained by interviewing the participants, but this was not possible due to practical considerations. The results of the data from the open questions have not been quantified but they are presented as equal, which is typical in qualitative research ([Kylmä and Juvakka, 2007](#)), regardless of how often they were mentioned in the data. This is why the results described cannot be compared with each other based on how often they were mentioned in relation to each other in the data. However, it should also be kept in mind that midwives are core practitioners in antenatal care and therefore their perspective on male participation in PMTCT of HIV is of utmost importance. Their perspectives on male participation, which have not been previously documented in Zambia, are fundamental. The authors believe that the important information in this article may advance PMTCT of HIV through improved male participation.

This study described midwives' perspectives on male participation in PMTCT of HIV and on the methods they could use to improve male participation in the Lusaka District in Zambia. A male partner's methods to prevent his wife and the infant from being exposed to HIV during pregnancy, childbirth and feeding the infant are partially consistent with the findings in the study by [Auvinen et al. \(submitted for publication-a\)](#), where Luba-Kasai men were interviewed on the same topic in the same geographic area. In both studies, having spousal communication on PMTCT issues, being faithful to one partner, although polygamy is not unusual in the local culture ([Central Statistical Office Lusaka, 2009](#)) avoiding blood contact in everyday life, using condoms in marital and extramarital sex, ensuring safe infant feeding and providing funds to the wife and infant for balanced nutrition were the preventive methods in the intimate relationship. Related to health-care services, the male partner's prevention methods were being tested for HIV, being treated, learning about PMTCT of HIV and bringing the wife to the clinic for her childbirth. By combining the provider and client perspectives, it may be possible to create a model that satisfies both sides.

The factors inhibiting a male partner from preventing MTCT of HIV found in this study are congruent with those reported in earlier studies: indifference ([Theuring et al., 2009](#)), ignorance of HIV issues ([Orne-Gliemann et al., 2010](#)), women's fears of male partners' negative reactions ([Moth, Ayayo and Kaseje, 2005](#)) and lack of time as a socio-economic factor ([Byamugisha et al., 2010b](#)). In this study, additionally, lack of time was a factor caused by a male partner's own personal activities not related to work.

Health personnel not having an open attitude may result in men feeling that they are not actually welcome. [Byamugisha et al. \(2010b\)](#) and [Larsson et al. \(2010\)](#) found a similar attitude and behaviour related features among health-care personnel in Uganda, which were seen as barriers. In this study, some cultural

factors that define the man's role, and the perception of antenatal care as exclusively the province of women inhibit male partners from preventing MTCT of HIV. Lack of venues, the distant location of the clinics and no male friendly venues have been found to be barriers in other studies (e.g. [Reece et al., 2010](#)). Considering the limited human and financial resources in Zambian health-care and the cultural aspects, the new male friendly approaches to work and a new way to use existing venues are worth developing.

HIV related stigma inhibits a male partner from preventing PMTCT of HIV in many ways: by influencing the male partner's feelings and the male partner's, mother's, the couple's and the community's actions. It is important to understand that stigma touches the deepest human needs to be accepted and respected in the community. Thus some other barriers, e.g. lack of time, may have their roots in stigma and they could be called by another name.

The midwives were of the opinion that the areas where they can improve male participation are both at the clinic and outside of it in communities and workplaces where men are working. The considerable number of improvement methods concentrates on influencing people's attitudes, knowledge and skills towards PMTCT of HIV, and in addition, intervening in risky behaviour and in diseases. Midwives are guided by the Zambian National Program of PMTCT of HIV, and therefore its development to be more male friendly is essential ([Auvinen et al., submitted for publication-b](#)). Accordingly, it is important to increase midwives' capacity to involve male partners better and to continue to provide education on the importance of a male friendly approach. Finding effective but affordable methods to improve male participation is important, e.g. a family-centred approach has produced promising outcomes ([Betancourt et al., 2010](#)). Companies' supportive attitude towards antenatal visits may give a sign about a changed cultural atmosphere that allows and expects males to be involved in antenatal care. Fundamentally, people's choices are based on values. When a healthy infant and family are the core values, male participation in PMTCT of HIV can be achieved.

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References

- Auvinen, J., Kylmä, J., Välimäki, M., Bweupe, M., Suominen, T. Preventing HIV transmission to the babies—views of Luba-Kasai men in Lusaka Province, Zambia. *Journal of Immigrant and Refugee Studies*, submitted for publication-a.
- Auvinen, J., Kylmä, J., Välimäki, M., Bweupe, M., Suominen, T. Participation of Luba-Kasai men in the prevention of mother to child transmission (PMTCT) of HIV program in Lusaka: an explorative study. *Health Promotion International*, submitted for publication-b.
- Becker, S., Mlay, R., Schwandt, H.M., Lyamuya, E., 2010. Comparing couples' and individual voluntary counseling and testing for HIV at antenatal clinics in Tanzania: a randomized trial. *AIDS and Behavior* 14, 558–566.
- Betancourt, T.S., Abrams, E.J., McBain, R., Fawzi, M.C., 2010. Family-centred approaches to the prevention of mother to child transmission of HIV. *Journal of the International AIDS Society* 13, S2.
- Byamugisha, R., Tylleskär, T., Kagawa, M.N., Onyango, S., Karamagi, C.A., Tumwine, J.K., 2010a. Dramatic and sustained increase in HIV-testing rates among antenatal attendees in Eastern Uganda after a policy change from voluntary counselling and testing to routine counselling and testing for HIV: a retrospective analysis of hospital records, 2002–2009. *BMC Health Service Research* 10, 290. (last accessed 22 October 2012) <<http://www.biomedcentral.com/1472-6963/10/290>>.
- Byamugisha, R., Tumwine, J.K., Semiyaga, N., Tylleskär, T., 2010b. Determinants of male involvement in the prevention of mother-to-child transmission of HIV programme in Eastern Uganda: a cross-sectional survey. *Reproductive Health* 7, 12. (last accessed 22 October 12) <<http://www.reproductive-health-journal.com/content/7/1/12>>.
- Central Statistical Office Lusaka, Zambia, Ministry of Health, Lusaka, Zambia, Tropical Diseases Research Centre Ndola, Zambia, & University of Zambia, 2009. *Zambia Demographic and Health Survey, 2007*.
- Conkling, M., Shutes, E.L., Karita, E., et al., 2010. Couples' voluntary counselling and testing and nevirapine use in antenatal clinics in two African capitals: a prospective cohort study. *Journal of the International AIDS Society* 13, 10.
- Kylmä, J., Juvakka, T., 2007. *Laadullinen terveystutkimus (Qualitative Health Research)*. Edita Prima, Helsinki.
- Larsson, E.C., Thorson, A., Nsabagasani, X., Namusoko, S., Popenoe, R., Ekström, A.M., 2010. Mistrust in marriage – reasons why men do not accept couple HIV testing during antenatal care – a qualitative study in eastern Uganda. *BMC Public Health* 10, 769.
- Miles, M.B., Huberman, A.M., 1994. *Qualitative Data Analysis*, 2nd edn. SAGE Publications, California, USA.
- Msuya, S.E., Mbizvo, E.M., Hussain, A., Uriyo, J., Sam, N.E., Stray-Pedersen, B., 2008. Low male partner participation in antenatal HIV counselling and testing in northern Tanzania: implications for preventive programs. *AIDS Care* 20, 700–709.
- National Protocol Guidelines of Zambia, 2008. *Integrated Prevention of Mother-To-Child Transmission of HIV, 2008*, 2nd edn. National AIDS Council, Ministry of Health.
- Orne-Gliemann, J., Tchendjou, P.T., Miric, M., et al., 2010. Couple-oriented prenatal HIV counseling for HIV primary prevention: an acceptability study. *BMC Public Health* 10, 197. (last accessed 31 January 2011) <<http://www.biomedcentral.com/1471-2458/10/197>>.
- Polit, D.F., Hungler, B.P., 1995. *Nursing Research. Principles and Methods*, 5th edn. J.B. Lippincott Company, USA.
- Reece, M., Hollub, A., Nangami, M., Lane, K., 2010. Assessing male spousal engagement with prevention of mother-to-child transmission (pMTCT) programs in western Kenya. *AIDS Care* 22, 743–750.
- Stern, P.N., 1991. Are counting and coding a cappella appropriate in qualitative research? In: Morse, J.M. (Ed.), *Qualitative Nursing Research: A Contemporary Dialogue*, revised edn. Sage Publications, USA, pp. 147–162.
- Stringer, E.M., Chintu, N.T., Levy, J.W., et al., 2008. Declining HIV prevalence among young pregnant women in Lusaka, Zambia. *Bulletin of the World Health Organization* 86, 697–702.
- Theuring, S., Mbezi, P., Luvand, H., Jordan-Harder, B., Kunz, A., Harms, G., 2009. Male involvement in PMTCT services in Mbeya region, Tanzania. *AIDS Behavior* 13, s92–s102.
- Theuring, S., Nchimbi, P., Jordan-Harder, B., Harms, G., 2010. Partner involvement in perinatal care and PMTCT services in Mbeya region, Tanzania: the providers' perspective. *AIDS Care* 22, 1562–1568.
- Tjoa, A., Kapihya, M., Libetwa, M., et al., 2010. Meeting human resources for health staffing goals by 2018: a quantitative analysis of policy options in Zambia. *Human Resources for Health* 8, 15. (last accessed from 12 October 2011) <<http://www.human-resources-health.com/content/8/1/15>>.
- WHO, 2002. *Strategic Approaches to the Prevention of HIV Infection in Infants: Report of a WHO Meeting*, Morges, Switzerland, 20–22 March 2002 <<http://www.who.int/hiv/pub/mtct/pub35/en/>> (last accessed 14 October 2011).
- WHO, 2010. *Towards Universal Access: Scaling up HIV Services for Women and Children. Progress Report* <<http://www.who.int/hiv/topics/mtct/en/>> (last accessed 29 August 2011).
- Zambia Country Report, 2010. Republic of Zambia, *Monitoring the Declaration of Commitment on HIV and AIDS and the Universal Access. Biennial Report*. Submitted to the United Nations general assembly special session on aids, Declaration of Commitment. Reporting period: January 2008–December 2009. <http://data.unaids.org/pub/Report/2010/zambia_2010_country_progress_report_en.pdf> (last accessed 21 February 13).