

## **Knowledge and attitudes of women regarding mother-to-child transmission of HIV infection in the Ehlanzeni district, Mpumalanga Province, South Africa**

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### **Abstract**

The study determined the knowledge and attitudes of women regarding Mother-to-child transmission (MTCT) of HIV infection. The study adopted the qualitative, explorative, descriptive and contextual research design. Purposive sampling was used to select 35 mothers who participated in the study. Data were collected using semi-structured interviews and an interview guide. Tesch's open coding method was used for data analysis. The study revealed that the majority of women had poor understanding of the meaning of MTCT and its importance. The study recommends that health education programmes on MTCT should be provided to enhance knowledge and understanding of MTCT of HIV infection. Media campaigns should be strengthened to encourage people to test for HIV.

**Keywords:** HIV/AIDS, Mother-to-child transmission of HIV infection.

### ***How to cite this article:***

Sechabe, E.V., Jali, M.N. & Lekhuleni, M.V. (2014). Knowledge and attitudes of women regarding mother-to-child transmission of HIV infection in the Ehlanzeni district, Mpumalanga Province, South Africa. *African Journal for Physical, Health Education, Recreation and Dance*, June (Supplement 1:1), 1-14.

### **Introduction**

Human immunodeficiency virus (HIV) infections and acquired immunodeficiency syndrome (AIDS) have risen to alarming proportions worldwide. HIV/AIDS has claimed millions of lives, inflicting pain and grief, causing fear and uncertainty, and threatening the economy of severely affected nations. Approximately 10% of the world's population infected with HIV lives in sub-Saharan Africa (National Department of Health, 2008 a). According to WHO (2000), since the start of the epidemic, over 12.2 million women worldwide have been infected with HIV and women account for 42% of the 30.6 million adults now living with the disease. Because of the particular vulnerability of women, the risk of women contracting HIV is rising worldwide. These figures continue to increase in industrialized and developing countries. In sub-Saharan Africa there are already 6 women with HIV for every 5 men, and close to 80% of women infected are Africans (WHO, 2009).

HIV/AIDS represents one of the major health and social challenges facing South Africa today. Over 5.5 million people are infected with HIV and the majority of those infected are in the reproductive age group, newborn infants and children under the age of one year (National Department of Health, 2004). The National Department of Health (2008 b) estimated that 10.9% of all South African were living with HIV. The Mpumalanga Department of Health (2009 a) estimated that 29.4% of pregnant women between ages 15-49 years were living with HIV. The commonest route of HIV infection for HIV-positive children less than 5 years is through mother-to-child transmission (MTCT), which occurs when an HIV positive woman passes the virus to her baby. MTCT can occur during pregnancy, labour, delivery or breastfeeding and it is called perinatal transmission. Many of these infections involve women who were not tested early enough in pregnancy or did not receive prevention services. In South Africa, babies who were exclusively breastfed were significantly less likely to become infected with HIV/AIDS in the first three months compared to those on mixed feeding (Engender Health, 2007).

Kanabus and Noble (2008) are also of the opinion that in the absence of preventive intervention, the probability that HIV-positive woman's baby will become infected is approximately 25-45%. Kanabus and Noble (2008) state that without treatment, around 15-30% of babies born to HIV positive women will become infected with HIV during pregnancy, labour and delivery while 5-20% of babies will become infected through breastfeeding. At the end of 1999, it was estimated that there were approximately 4.2 million HIV-positive South Africans, almost half of whom were women in their reproductive years. It is also estimated that there are 50,000 HIV-positive children in the country whose HIV transmission was contracted primarily through MTCT.

In 2005, approximately 700,000 children under 5 years of age became infected with HIV worldwide, mainly through MTCT. About 90% of these MTCT infections occurred in Africa where AIDS is beginning to reverse decades of steady progress in child survival (Kanabus & Noble, 2008). An estimated 420,000 children were newly infected with HIV in 2007, the vast majority of them being through MTCT (National Department of Health, 2004).

MTCT of HIV is an overwhelming source of HIV infections in young children and is also the cause of high infant mortality rates. It is approximated that 20% - 30% of women attending prenatal care in South Africa are HIV-positive. In the absence of intense prevention of MTCT, about 15-45% of babies born to HIV-infected mothers will become infected with HIV during pregnancy, and delivery (National Department of Health, 2009). A further 5-20% will become infected during breast feeding. In 2010 about 390,000 children below the age of 15 years became infected with HIV mainly through mother- to- child transmission. About 90% of children living with HIV live in Sub-Saharan Africa. The proper management of pregnant mothers can save up to a third of the babies during

prenatal care, labour and the puerperal care. Mpumalanga, like all the other provinces in South Africa, has the duty to reduce the incidence of MTCT (National Department of Health, 2009). In 2009 about 1.4 million pregnant women were living with HIV and about 91% of all pregnant women living with HIV were from the low and middle income countries (National Department of Health, 2009).

According to the Mpumalanga Department of Health (2009 b) the proportion of antenatal clients tested for HIV in 2005/2006 at the Ehlanzeni District was 260 and nevirapine uptake among HIV-positive pregnant women was 341, while in 2006/2007 the proportion of antenatal clients tested was 403 and the nevirapine uptake among HIV-positive pregnant women accounted for 470 cases. This discrepancy may be ascribed to cross boundary flow of clients that can impact on the coverage. Millennium Development Goal 4 was set to reduce the proportion of infants infected with HIV by 20% by 2005 and by 50% at the end of 2010 (UNAIDS, 2003). The main risk factor to the prevention of perinatal HIV transmission is lack of awareness of HIV status among pregnant women.

Approximately 25% of all people infected with HIV do not know their HIV status and many women who are infected with HIV may not know that they are infected. Maputle and Jali (2008) in their study of pregnant women's knowledge about MTCT of HIV infection through breastfeeding revealed that the women had inadequate knowledge on MTCT of HIV infection and AIDS through breastfeeding. While a similar study by Kasinga, Mogotlane and van Rensburg (2008) showed that although women were aware of the susceptibility of children if fed on breast milk and formula feeds simultaneously by HIV-positive mothers, people associated the practice of exclusive feeding with a positive HIV status. Women, who had not disclosed their status and were HIV-positive found it difficult to comply with the requirement to exclusively feed their infants with formula milk. The same women either continued with complementary feeds or did not collect the free formula milk supplied preferring instead, to buy the formula feeds privately (Kasinga et al. 2008). Therefore, the purpose of this study was to determine the knowledge and attitudes of women regarding MTCT of HIV infection at the Ehlanzeni district, Mpumalanga province. The research question was, what are the knowledge and attitudes of women regarding mother-to-child transmission of HIV infection in the Ehlanzeni district, Mpumalanga province?

## **Methodology**

### *Design*

A qualitative, explorative and contextual research design was used to explore and describe the knowledge and attitudes of women regarding MTCT of HIV infection. The exploratory design made it feasible for the researchers to gain insight into the knowledge and attitudes of women regarding MTCT of HIV infection by asking follow-up questions designed to allow the participants to clarify areas which were not clear.

### *Population and sampling*

Mpumalanga province has 3 districts namely, Ehlanzeni, Gert Sibande and Ekangala. The population included all pregnant women and those in puerperium at Bourke's Luck and Elandsfontein clinics both in Ehlanzeni district. This district has 6 sub-districts, namely, Thabachweu, Bushbuckridge, Mbombela North, Mbombela South, Nkomazi and Umjindi. The study was conducted in the Thabachweu sub-district of the Ehlanzeni district, where the two clinics are situated. Non-probability purposive sampling technique consisting of pregnant women and those in puerperium at Bourke's Luck and Elandsfontein clinics was used to select a total of 35 participants 18 of whom were drawn from Bourke's Luck clinic and 17 drawn from Elandsfontein clinic.

### *Data collection method*

Semi-structured in-depth interviews with women from the Bourke's Luck and Elandsfontein clinics were conducted with the aim of determining their knowledge and attitudes regarding MTCT of HIV infection. Open-ended questions were asked during the interview sessions with an interview guide that enabled participants to speak freely and give detailed descriptions about the phenomenon studied. Field notes and a tape recorder were used during the interviews to ensure that information collected were accurately recorded. Probing questions were also used to get clarity on issues during the interview sessions. Data collection continued until saturation was reached.

### *Data analysis*

Data were analyzed qualitatively using Tesch's open coding method as described in Creswell (1998), involving eight steps of data analysis. Field notes and voice recordings were used as a point of reference during data analysis. An independent coder was requested to analyze raw data independently to ensure credibility.

### *Trustworthiness*

Trustworthiness was ensured by the use of credibility, transferability, confirmability and dependability as indicated by Lincoln and Guba as cited in de Vos, Strydom, Fouchè and Delport (2007) as well as Babbie and Mouton (2001). Credibility was ensured by prolonged engagement through conducting semi-structured interviews. Transferability was ensured by purposive sampling, a dense description of the research methodology and detailed data collection in the contextual environment of the participants. Confirmability was ascertained by the involvement of the independent coder (de Vos et al., 2007; Babbie & Mouton, 2001). Written field notes and the use of a tape recorder supported the semi-structured interviews as a point of reference (de Vos et al., 2007). Dependability was achieved by a dense description of the research methods.

### *Ethical considerations*

Ethical considerations were based on the ethical standards for nurse researchers (DENOSA, 1998). Ethical clearance was obtained from the University of Limpopo Ethics Committee and Provincial Departments of Health and Social Welfare Research Ethics Committee of the Limpopo and Mpumalanga province. Informed consent was obtained from participants before the study. Permission was also obtained from participants to use a tape recorder and to take notes during the semi-structured interviews. Confidentiality and anonymity were ensured by using codes instead of the names of participants. The identity, privacy and dignity of the participants were protected by means of codes thus ensuring that no connection between the participants and the research data could be made (Seale, Gobo, Gaubrium & Silverman, 2004; Cormack, 2001).

## **Results and Discussion**

Theme and sub-themes that emerged during data analysis are summarized in Table 1.

**Table 1:** Themes and sub-themes

Themes	Sub-Themes
1. Knowledge and understanding about MTCT of HIV infection	1.1 Poor knowledge about MTCT of HIV infection 1.2 Poor understanding about MTCT of HIV infection 1.3 Possession of knowledge about MTCT of HIV infection
2. Attitudes towards MTCT of HIV infection	2.1 Positive attitude towards the use of MTCT of HIV infection 2.2 Risky behaviour decision making enhancement
3. The importance of voluntary counselling and testing (VCT)	3.1 Knowledge of HIV status
4. Prevention of MTCT of HIV infection	4.1 Importance of prevention of MTCT of HIV infection 4.2 The role of ARVs during pregnancy and puerperium

### **Theme 1: Knowledge and understanding of MTCT of HIV infection**

The study found that the majority of participants had poor understanding of the meaning and the importance of MTCT of HIV. They however, shared an understanding of MTCT as the process when the mother is transmitting the HIV virus to the infant through different modes of transmission.

#### *Sub-Theme 1.1: Poor knowledge about MTCT of HIV infection*

The findings of this study revealed that the majority of participants had poor knowledge about MTCT of HIV infection as indicated in the following excerpts: *“I am not sure and mix feed breast milk and formula milk the baby [can cause MTCT]”*. Another participant when responding to the follow-up question about her understanding with regard to MTCT said: *“I don’t know”*. Reflection of poor knowledge was indicated through doubts expressed by another participant: *“I do not know, but I have heard that the mother infects the child. I guess it is through blood from the mother during pregnancy, but I am not sure”*. Other participants who reflected on knowledge about MTCT of HIV infection said, *“It can be transmitted to the baby through unprotected sex, breastfeeding while HIV positive and you find that there is no milk at the clinic and the HIV positive mothers start to mix feed the baby with breast milk and formula milk”*.

An earlier study conducted by Kumar and St John (2003) on the knowledge, attitudes, and sexual practice among the HIV-infected women with repeated childbirths in Barbados revealed that a significant number of mothers did not know that they could transmit HIV to their babies, and further thought that AZT given to them and their babies was to prevent HIV infection to the babies. Sandgren, Sandgren, Urazalin and Andersson (2008) also stated that pregnant women in Semey city, Kazakhstan had a poorer knowledge than women in Hong

Kong about the specifics of MTCT of HIV infection and further indicated that they reflected poor knowledge with regard to the means of reducing MTCT of HIV infection. Maputle and Jali (2008) in their study conducted at a clinic in Polokwane municipality on women's knowledge about mother-to-child transmission of HIV through breastfeeding also found that women had inadequate knowledge of MTCT of HIV/AIDS through breastfeeding.

*Sub-Theme 1.2: Poor understanding about MTCT of HIV infection*

The study revealed that participants had poor understanding of MTCT of HIV infection. These sentiments are expressed in the following excerpts: *"I understand mother to child transmission of HIV infection as prevention of a virus by the doctor from the mother to child while woman is still pregnant"*. *"It is when the mother does not use condoms then the mother will have HIV"*. *"During child birth blood can possibly spread to the child and the child contract HIV"*. Sandgren et al. (2008) evaluated HIV/AIDS awareness and risk behaviour among pregnant women and observed that pregnant women had difficulties in distinguishing HIV from AIDS; only 16% could mention symptoms of HIV/AIDS. Sandgren et al (2008) also found that women's knowledge in general was superficial with less understanding of the details and the nature of the disease. Olugbenga-Bello, Adibimpe, Osundina and Abdulsalam (2013) also found that though the majority of the participants in Southwestern Nigeria shared an understanding of MTCT as a process of transmitting HIV to the infant, the majority of the participants had poor understanding of the meaning of MTCT of HIV.

*Sub-Theme 1.3: Possession of knowledge about MTCT of HIV infection*

The study found that some participants shared different views about MTCT of HIV infection. Participants who had some knowledge about MTCT of HIV infection responded as follows:

*"It is the process of transmitting HIV from the mother to the child. This can happen during labour or when giving birth when the child swallows the mother's blood in the birth canal"*.

*"The mother when she is HIV positive can infect the baby during pregnancy, labour and breastfeeding"*.

*"The mother and the unborn baby share everything through blood circulation. Not using a condom even if the mother knows her HIV status. Early rapture of water. Lastly, during normal birth canal where the baby is exposed to fluids and blood"*.

A survey conducted by Zolfo, Delvaux and Tamburrini (2005) assessed the level of HIV/AIDS knowledge amongst pregnant women as well as the acceptability of a PMTCT programme in rural Zimbabwe and showed that although there was a good level of HIV/AIDS knowledge among pregnant women, a demand still existed for a more comprehensive PMTCT programme. Addo (2005) in a study on pregnant women's knowledge and attitudes to HIV testing revealed that women attending the antenatal clinic in Komfo Anokye Teaching Hospital in Ghana recognized HIV/AIDS as a life-threatening condition and they were aware of the main signs and symptoms as well as the main modes of transmission.

A study conducted by Tan, Pan, Zhou, Wang and Xie (2007), revealed that there was a high level of knowledge of HIV /AIDS infection and most women were also aware that HIV was transmitted by drug users sharing needles, receiving blood from an infected person and from mother-to-child. Abajobir and Zeleke (2013) in their study of women attending antenatal clinic in South Ethiopia referral hospital found that the educational status of the women showed significant association with knowledge on PMTCT of HIV. They further indicated that the educational status of women who had follow up during their last pregnancy showed significant association with knowledge on PMTCT of HIV. Olugbenga-Bello et al. (2013) also concluded that occupation, religion and education are significantly associated with knowledge about MTCT of HIV.

## **Theme 2: Attitudes towards MTCT of HIV infection**

The present study found that participants had positive attitudes towards the prevention of MTCT of HIV infection. The participants explained that HIV counselling and testing would enable them to take precautions not to infect their unborn babies. These sentiments are described in the following sub-themes:

### *Sub-Theme 2.1: Positive attitude towards MTCT of HIV infection*

The majority of the participants had positive attitudes towards the prevention of MCTC of HIV. They explained that it was important that women should receive HIV counselling and testing because it will assist them to know their own status. This was explained as follows:

*“Yes it is important to be counselled because I will be able to know my status because when I know my status I will be able to know how I should take care of myself”. “Yes, because I must know my status to prevent HIV transmission for me and my baby not to pass the virus from the mother to her baby in natural childbirth”.* The findings of this study concur with those of Abajobir and Zeleke (2013) which showed that the majority of pregnant mothers attending antenatal clinic in South Ethiopia had positive attitudes towards PMTCT of HIV. They indicated further that urbanites had positive attitudes towards PMTCT than their rural counterparts. Women who had antenatal follow-up during their last



pregnancies had a significant association with attitude towards PMTCT (Abajobir & Zeleke 2013). Contrary to these findings, Olugbenga-Bello et al. (2013) in their study on the perception on prevention of PMTCT among women of reproductive age group in Southwestern Nigeria found that though the knowledge about PMTCT and voluntary counseling and testing was quite high among the participants, the majority of women had negative attitudes towards PMTCT of HIV. Olugbenga-Bello et al. (2013) also found that most participants who did not know their current HIV status had negative attitudes towards PMTCT of HIV.

### *Sub-Theme 2.2: Risky behaviour decision making enhancement*

This study revealed that pregnant women who displayed risky behaviours were at increased risk of transmitting the HIV infection to their unborn babies. Participants confirmed that risky behaviours of women could lead to an increase in MTCT of HIV as follows: *“If the mother has more sexual partners then the mother has the possibility of having the HIV virus and that can be transmitted to the baby”*. *“If you do not use condom always when you have sex”*. *“If the mother does not know her own status, then you can transmit because if you know your status you will seek medical help and they will give you treatment to drink and you will not infect your unborn child”*.

Themane and Taole (2013) indicated that knowledge about HIV/AIDS alone may not be sufficient to change behavior. Moses, Chama, Udo and Omotora (2009) also found that there was no correlation between one's knowledge of HIV and risk behaviour. Stringer and Sinkala (2004) in their study conducted in Zambia on the knowledge and risky behaviour of women had earlier found that the knowledge women had of HIV did not correlate with actual HIV status and the risk perception did not link up with behaviour. They also found that women who had greater HIV-related knowledge had riskier behaviours.

## **Theme 3: The importance of voluntary counselling and testing (VCT)**

The present study found that the majority of participants recognized the importance of HIV counselling and testing whilst others did not know its significance and therefore, did not undertake VCT.

### *Sub-Theme 3.1: Knowledge of HIV status*

This study found that the majority of the participants understood the importance of voluntary counselling and testing even though some of them did not avail themselves for VCT. These sentiments are expressed as follows: *“It is important to be counseled for the sake of the baby”*. *“It is important because you must know your status, If you tested and find that your HIV then can give you counselling and pills to prevent that”*. *“Yes! Yes! It is necessary because*

*counselling will assist in preventing the infection from multiplying to those with many sexual partners like many girlfriends and boyfriends”. “Yes because she must know her status so that the baby can be safe”.*

The findings of the present study confirm those of Moses et al. (2009) in which the majority of pregnant women in Northeast Nigeria had undergone VCT in which some of the reasons that they gave included premarital requirement, enrolment into PMTCT programme and VCT. Iliyasu, Abubakar, Mohammed and Aliyu (2006), in their study on the knowledge of HIV/AIDS and attitudes towards VCT, strengthen the findings of this study as they indicated that the majority of respondents were willing to be tested and would recommend it to friends and relatives, whereas the remainder stated that they would only consent to the test if a cure were available. However, Abojobir and Zeleke (2013) found that socio-cultural factors such as stigmatization of HIV infected individuals have been found to be a major barrier towards widespread acceptance of VCT in Nigeria. Moses et al. (2009) had earlier found that in Northeast Nigeria, discrimination and stigmatization has driven the epidemic underground with a reluctance of people to undertake VCT.

#### **Theme 4: Prevention of MTCT of HIV infection**

The study found that some participants had knowledge about the importance of prevention of MTCT of HIV infection and they were also aware of the importance of ARVs in the prevention of MTCT. This is discussed in the following sub-themes:

##### *Sub-Theme 4.1: Importance of prevention of MTCT of HIV infection*

The study found that the majority of participants had knowledge about the importance of the prevention of MTCT of HIV. These sentiments are expressed as follows: *“It is important because if the mother can be sick and die due to the HIV virus, the child can remain living being an orphan”.* *“Yes! Because we want to know whether the mother is positive or negative, so that when the mother is positive and then we can protect the baby to the HIV positive status”.*

The findings of this study concurs with the those of Olugbenga-Bello et al. (2013) in which in their study of women in the reproductive age group in Southwestern Nigeria they found that the majority of women had knowledge about PMTCT and therefore knew about the importance of PMTCT. Tan et al’s (2007) study which assessed HIV/AIDS knowledge, attitudes and behaviours of Chinese students found that students’ knowledge in the area of prevention was moderate. More than 80% of the students responded to the majority of questions. Only 20 (6%) knew the ABC (abstinence, being faithful and condom use) method for preventing HIV and 10. 9% correctly chose all the prevention methods (Tan et al., 2007).

*Sub-Theme 4.2: The role of ARVs during pregnancy and puerperium*

The study found that participants were aware of the significant role that ARVs play in the prevention of HIV transmission to unborn babies and the early initiation of ARVs during pregnancy. These sentiments were expressed as follows: *“The mother should take treatment meaning the ARV’s during pregnancy until birth of the child. And the child will be given treatment for preventing the virus until seven days”. “ Because it is necessary to test if you are HIV positive you will get the treatment until you give birth, after they give the baby treatment, and formula so as they will do the PCR test on the baby at 6 weeks. At that time the results will be negative, so that the baby is not infected”*. Another participant further explained the role of ARVs and the importance of counselling and testing which include PCR (Polymerase Chain Reaction) test on the baby at 6 weeks, *“The mother should be given treatment when in labour and the baby after birth to prevent the virus getting into the baby”*.

According to Damania and Tank (2006), antiretroviral use reduces MTCT by lowering maternal viral load, thereby decreasing viral exposure to the foetus. In situations where resources are not constrained, highly active antiretroviral therapy (HAART) is recommended for pregnant women with CD4 counts lower than 200 to 350 ml or HIV-1-RNA copy numbers exceeding 1000/ml. Damania and Tank (2006) further indicated that the AIDS Clinical Trial Group categorically demonstrated the usefulness of ART in preventing vertical transmission. The drug was administered antenatal after 14 weeks of gestation and continued throughout pregnancy. In labour, it was administered intravenously and a syrup formulation was given to neonates for 6 weeks. Perinatal transmission was 68% lower in a non-breastfed population (Damania & Tank, 2006).

## **Recommendations**

The study recommends that:

- Midwives who are counselors in the PMTCT programme should emphasize the importance of MTCT of IV infection during counseling to empower pregnant women and those in puerperium with information to close the gap in knowledge of HIV infection. MTCT of HIV infection education should be intensified for all women who attend ante-natal care
- Pregnant women and those in puerperium should be encouraged to consult healthcare practitioners if they need more clarity and to update themselves on issues related to MTCT of HIV.
- Quality MTCT of HIV counselling should be provided to eradicate negative attitudes and to enhance positive attitudes towards the MTCT programmes.
- MTCT health education programmes should also be provided to all women who attend ante-natal clinic in order to include topics which will promote

positive attitudes towards MTCT so as to enhance the positive attitudes which women already have towards MTCT of HIV infection

- HIV/ AIDS education including PMTCT should re-enforce avoidance of behaviour that will predispose individuals to be infected with HIV and should further assist in the elimination of misconceptions which are related to the transmission of HIV. PMTCT education campaigns should further emphasize aspects that dispel myths and the stigma attached to certain behaviours leading to HIV infection.
- HIV counselling and testing campaigns should be conducted to enable everyone to be tested for HIV so that even male partners of pregnant women and women in puerperium could be knowledgeable about their status.
- Breastfeeding is recommended in order to improve the survival rate of the infant in unfavorable conditions. Breast milk provides the infant fluid and nutritional requirements, as well as growth factors, antibacterial and antiviral agents that protect the infant from diseases.

## **Conclusion**

The findings of this study revealed that though some of the participants had rudimentary knowledge of MTCT of HIV infection, the majority of the participants had poor understanding of the meaning of MTCT of HIV and its importance. The majority of the participants had positive attitudes towards voluntary counselling and testing and understood the importance of VCT. However, some women did not undertake VCT. It could therefore be inferred that stigmatization of HIV positive women is a major barrier towards acceptance of VCT.

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