

Full Length Research Paper

Assessment of the knowledge of prevention of HIV transmission from mother-to-child in an African community

O. O. Oguntibeju^{1*}, M. Kayinda² and M. Mokgatle-Nthabu²

¹Department of Biomedical Sciences, Faculty of Health and Wellness Sciences, Cape Peninsula University of Technology, Bellville Campus 7535 South Africa.

²School of Public Health, MEDUNSA, University of Limpopo, South Africa.

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Women living with HIV are faced with lack of adequate information about HIV prevention. This study assessed the level of knowledge of prevention of mother-to-child transmission (PMTCT) in Serowe, Botswana. The objectives of this study were to assess the level of knowledge of the PMTCT programme and vertical transmission among HIV-positive women in Serowe, Botswana and as well as describe the practices of family planning among the participants. The study was a cross-sectional descriptive survey using qualitative method. Twenty six (26) participants attending PMTCT clinics at Serowe clinic, Nutrition clinic, and Kadimo clinic participated in the study between October and December 2008 after consenting to participate. In-depth interviews were conducted to collect socio-demographic data of the participants. Qualitative methods were used to collect data about the women's level of understanding of the PMTCT programme and family planning practices. The interviews were conducted in the local language (Setswana) and translated into English by bilingual experts and participants' responses were audio taped. Although all 26 participants had good knowledge and understanding of the family planning practices, but only 18 (69.2%) had used the family planning methods. The findings in this study revealed good social support from the family members and the disclosure of HIV status was not a big issue to the participants. Majority of respondents (66.6%) had good knowledge and understanding of the PMTCT programme. One-third of the participants were single, 96% of participants were unemployed and about one-third of them live on less than 50 US\$ dollars per month. The use of family planning by participants was poor despite their good knowledge about prevention of mother-to-child transmission.

Key words: Knowledge, family planning, prevention, mother-to-child transmission, HIV.

INTRODUCTION

Worldwide, HIV/AIDS is the leading cause of death among women of reproductive age. The percentage of women living with HIV/ AIDS varies significantly between different regions of the world (Crago, 2006; UNAIDS, 2009). However, in regions such as sub-Saharan Africa and the Caribbean, the percentage is significantly higher. Globally, at the end of 2008, it was estimated that around

half of the 31.3 million adults living with HIV/AIDS were women and 2.1 million children were living with HIV (UNAIDS, 2009). More than 90% of newly infected children are babies born to women with HIV, who acquire the virus during pregnancy, labour or delivery, or through their mother's breast milk (UNAIDS, 2009). Generally, women are at a greater risk of heterosexual transmission of HIV. In many countries, women are less likely to be able to negotiate condom use and are more likely to be subjected to non-consensual sex.

Studies have shown that women infected with the HIV face a 20-30% risk of transmitting the virus perinatally

*Corresponding author. E-mail: oguntibejuo@cput.ac.za. Tel: +27 (0) 21 953 8495. Fax: +27 (0) 21 953 8490.

and 25-30% of infected infants die before 2 years of age (Cooper et al., 2007). The spread of the HIV among newborn infants and the resulting morbidity and mortality among new born and their parents are major public health challenges with adverse social and economic implications that the world faces in this HIV era. It is believed that family planning programmes could help clients ascertain their own risk of infection and thus reduce perinatal transmission of HIV by frankly discussing risk factors, offering HIV testing and assisting couples affected by HIV to make better choices about contraceptive methods.

A study conducted in Rwanda by Batya et al. (2009) focused on the understanding of contraception knowledge and use among HIV-positive and negative women in the national PMTCT programme. The findings showed that HIV-positive women were less likely to report wanting additional children than HIV-negative women (8 vs. 49%), and although the majority of women reported discussing family planning with a health worker during their last pregnancy (HIV-positive 79% vs. HIV-negative 69%), modern family planning uptake remained low in both groups (HIV-positive 43% vs. HIV-negative 12%). Condoms were the most commonly used method among HIV-positive women (31%), whereas withdrawal was most frequently reported among HIV-negative women (19%) in the same study.

A survey conducted on sexual functioning and activity among HIV-positive women in all phases of HIV illness (asymptomatic, symptomatic, and HIV-related illnesses) in the USA, found that although most women (90%) remained sexually active after testing HIV-positive, few used safe sex practices, with more than one-third (37%) engaging in regular unprotected sexual activity. Even though, 51% reported consistent condom use, 25.4 % reported never used condoms. Few women reported that HIV itself caused a decrease in sexual functioning. Reasons for abstinence included: no current partner (31%), no interest in sex (27%), 'because of HIV' (19%), physical HIV symptoms (6%) and 'disinterested partner' (4%). The same study showed that after testing positive for HIV, over half of the women reported that the quality of their sexual activity had either stayed the same (31%) or improved (21%); only 11% reported that their sex life became significantly worse. So, sexual functioning did not change as a function of HIV illness stage (Ramkissoon et al., 2008).

The results of the study conducted by Rutenberg and Baek (2005) revealed that there were no differences observed in use of contraceptives between HIV-positive and HIV-negative women in the study communities but HIV-positive women have more affirmative attitudes about condoms and use them significantly more frequently than do their HIV-negative counterparts in Kenya and Zambia.

Although there has been an increased coverage of the prevention of mother to child transmission (PMTCT)

globally (Falnes et al., 2010), there are still many unresolved barriers to the programme, particularly in sub-Saharan Africa. Among the main barriers are low access to and low acceptability of testing (Karamagi et al., 2006). This study is prompted by dearth of scientific information on knowledge of prevention of mother-to-child HIV transmission among HIV positive women and it is hoped that the outcome of this study could contribute effectively and efficiently to the future planning of interventions towards the reduction in re-infection among HIV-infected women and subsequent transmission to their children.

Also, due to the apparent risk associated with transmission of HIV from mother to child, we assessed the knowledge about prevention of HIV transmission of women in the PMTCT programme in semi-urban setting in Botswana.

METHODOLOGY

Study location

This study was conducted in Serowe, which is the largest village in Botswana. The village is semi-urban and situated in the central district of Botswana. A government population and housing census (Botswana Central Statistics Office, 2005) indicated that Serowe has an estimated population of 90 000 people. According to Botswana HIV/AIDS Impact Survey III of 2008, HIV prevalence rate for Serowe was at 20.0% (Botswana Central Statistics Office, 2009). This infers that the number of HIV-infected people could be over 18000 in Serowe general population. As a semi-urban village, the majority of population is involved in farming and cattle post activities and it has a good road network to other places like Gaborone (the capital city), Francistown, Orapa mine, and Maun. The village has one district hospital under the Ministry of Health and five clinics as well as four health posts under the Ministry of Local Government. Curative and preventive health services are provided free of charge in all the above-mentioned government health facilities.

Study design and setting

A cross-sectional descriptive survey method using qualitative inquiry was used to explore knowledge about prevention of HIV transmission from mother to child among HIV-positive women. The study was conducted in three clinics in Serowe, namely: Nutrition Clinic, Serowe Clinic and Kadimo Clinic. The three clinics provide antenatal care and PMTCT services from Monday to Friday weekly starting 07:30 am up to 04:30 pm. Each clinic receives on average 30 to 40 clients daily (including first visit and re-visits).

Study sample

A purposive sampling technique was used to select the participants who were women enrolled in PMTCT programme. Before sampling, the study was introduced as part of morning talk to all women waiting for antenatal clinic (ANC) visit on a specific day. The sampling was done in the consultation room. Only HIV-positive and consented women were selected for the study. Appointment was granted either to come back to the clinic for the interview or to be followed to their home at their convenient time. A total of 26 women enrolled in the PMTCT programme, were included in the study.

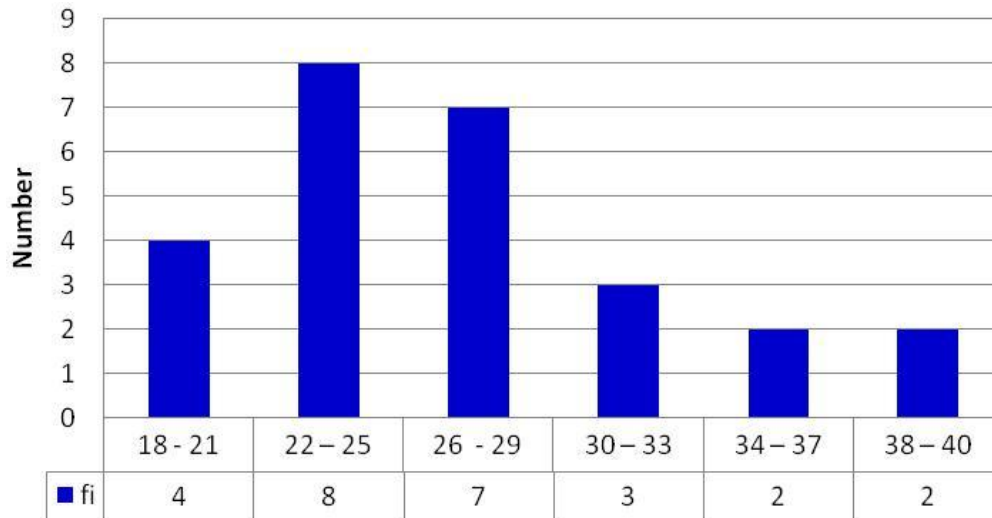


Figure 1. Frequency distribution of participants by age (years).

Data collection methods

One-to-one interviews were conducted on the 26 participants. This was preferred because we thought that one-to-one interviews provide a more relaxed atmosphere and encourages freedom to give appropriate information about one's behavior than in a focus group. We considered that one-to-one interview promote privacy and confidentiality than focus group. Seven women were interviewed at the clinics while 19 participants were interviewed at their home at their convenient time. An interview guide was designed in English and Setswana. The interviews were conducted in the local language (Setswana) by the investigating team. The interviews were conducted for approximately 30 to 45 min and the responses were recorded and reviewed for correctness.

Ethical considerations

In accordance with the requirements of human subject research, prior to beginning of this study, the research proposal was submitted for approval to the Research, Ethics and Publications Committee (REPC) of the School of Public Health (NSPH) and the Medical Campus Research and Ethics Committee (MREC) at MEDUNSA Campus, University of Limpopo including the Botswana Health Research Unit at the Ministry of Health. Written permission was obtained from MEDUNSA with reference number MREC/ PH/ 144/ 2008.

Informed consent

All participants were informed about the purpose of the study and they were free to make informed choice of whether to participate or not. Participants were assured that all data collected would be treated with absolute confidentiality and that all the records would be kept safe. Study data collection instrument did not have names or particulars linking the participants with the study.

Autonomy

Participants were allowed to withdraw at any stage of the study without fear of being victimized or intimidated. Participant's written

consent was sought and only participants who consented were recruited for the study.

RESULTS

Data organization

Characteristics of participants assessed include: age, marital status, living together with a partner or separated, employment, income and education level. The second part covers the qualitative data as follows: decision for joining PMTCT programme; partner reaction to HIV status; perception of family support. No name was used and transcripts were labeled as participant A, B, C to Z corresponding to participant 1-26. Comments and reports from participants were presented according to the responding participant.

Characteristics of participants

Age

From the total number of (n= 26) participants, the minimum age is 18 years and maximum age is 38 years. The average age of the participants is 27 years and the majority of participants aged between 22 to 25 years old, followed by those who are 26 to 29 years old (Figure 1).

Marital status

Out of 26 participants, 20 (76.9%) are singles, 5 (19.2%) cohabitate with stable partners, 1(3.9%) participant is a widow and none was married (Figure 2).

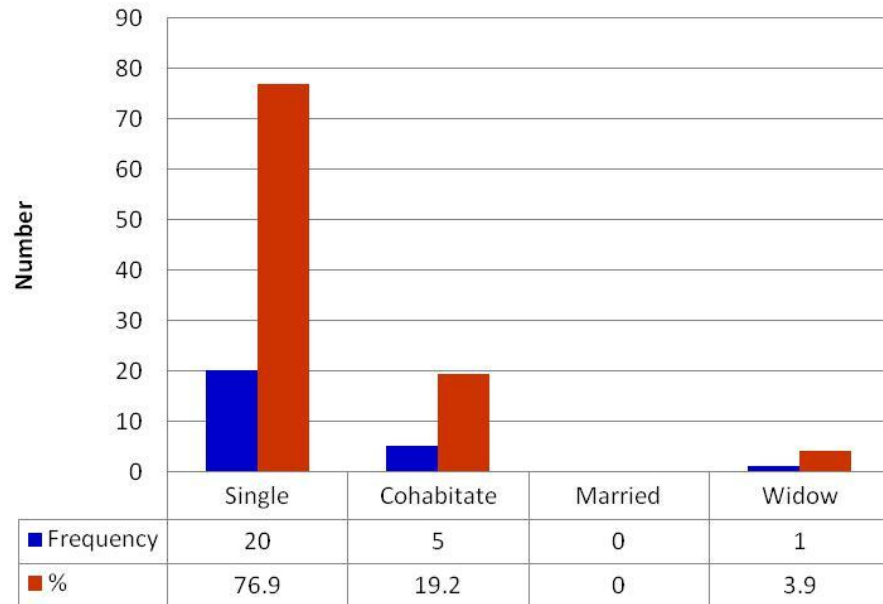


Figure 2. Frequency distribution of participants by marital status.

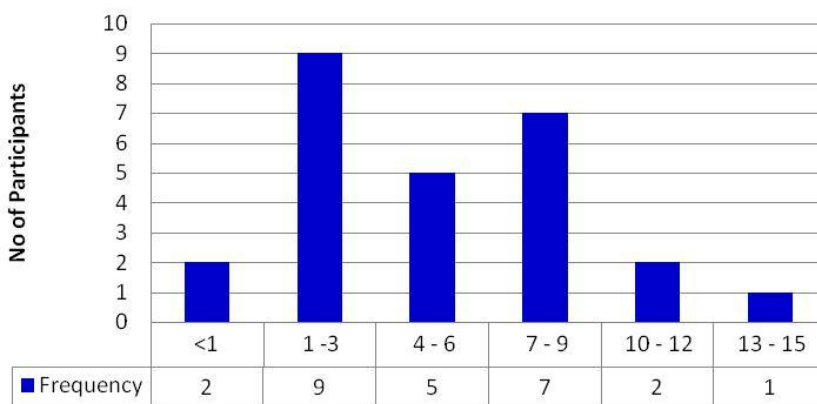


Figure 3. Frequency distribution of participants by period in relationship with the partners.

Period in relationship with the partner

Of the 26 participants, 9 (34.6%) participants are in relationship with their partners for a period of one year to three years, 7 (26.9%) participants are in relationship between seven to nine years, 5 (19.2%) participants are in relationship with their partner in a period of four to six years, 3 (11.6%) participants are in relationship for more than ten years and only 2 (7.7%) participants are in relationship for less than a year (Figure 3).

Living together with the partner

From 26 participants, 12 (46.15%) are living together with their partners and 14 (53.85%) are not living together with

their partners (Figure 4).

Employment

Of the 26 participants, only one (4%) was employed, while the remaining 25 (96%) participants were unemployed (Figure 5).

Income

Ten (38.4%) participants out of 26 have 400 to 600 pula as monthly income which is equivalent to about 50 to 70 US\$ (USD); 8 (30.8%) of the 26 have 100 to 300 pula; only 2 (7.7%) participants with more than a 1000 pula as



Figure 4. Number of participants living together with their partner.

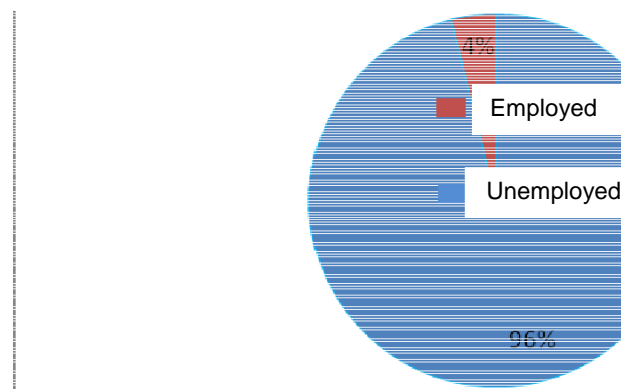


Figure 5. Employment distribution.

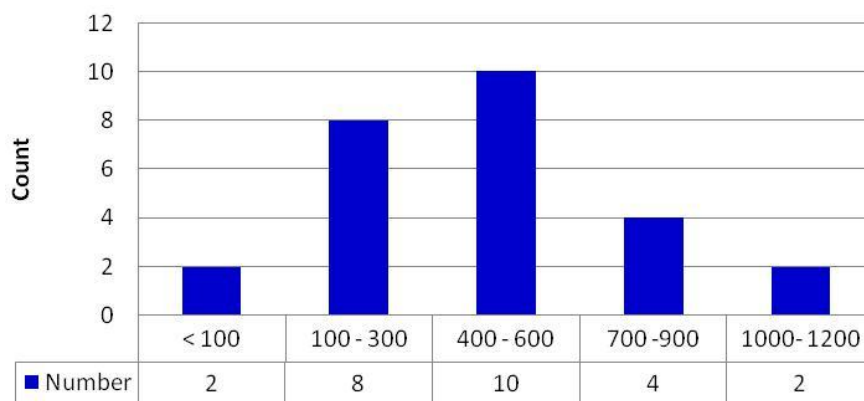


Figure 6. Frequency distribution of participants by income in pula.

monthly income and the monthly income for two others is less than 100 pula (Figure 6).

Education level

The majority of the participants 21 (80.8%) have

secondary level of education, 5 (19.2%) participants have primary level, and no one has tertiary level (Figure 7).

Religious affiliation of participants

Of the 26 participants, 17 (65%) are Christians, 8 (31%)

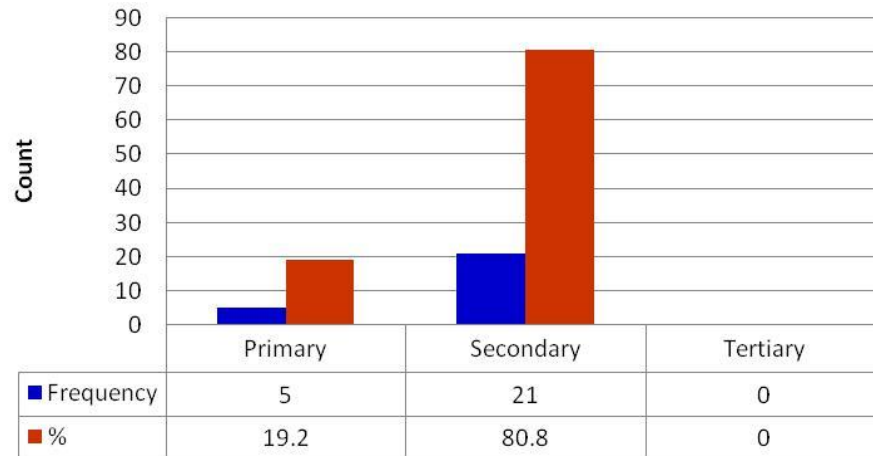


Figure 7. Frequency distribution of participants by education level.

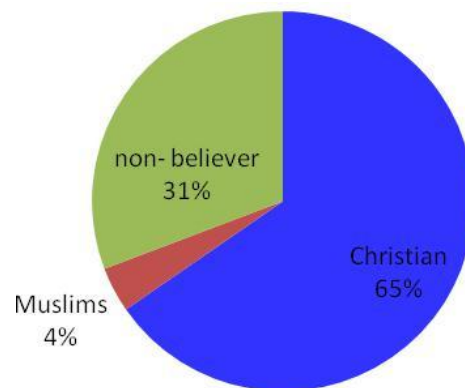


Figure 8. Frequency distribution of participants by religion.

are non-believers and one (4%) is Muslim (Figure 8).

Family planning practices

All 26 (100%) participants had some knowledge or understanding about family planning but only 18 (69.2%) of participants used the family planning method before they got pregnant and 8 (30.8%) of participants did not use any family planning method. Of the 18 participants who were on family planning, 16 (88.9%) participants disclosed to their partners that they were on family planning or they were using it together and 2 (11.1%) participants did not inform their partner about the use of family planning (Figure 9). Over one-tenth (11%) of the participants reported to have been using condoms (male condoms), 8 (31%) participants were on pills, 6 (23%) participants were using injections, one (4%) of participants were using condoms and injections together, and 8 (31%) of participants were not using any contraceptive method (Figure 9).

Period of contraceptive use

Four (15.4%) of participants used contraceptive methods for less than a year, three (11.5%) of participants used contraceptive methods for one to two years, two (7.7%) of participants used contraceptive methods for three to four years, nine (34.6%) of participants used them for more than five years, and eight (30.8%) of participants never used any contraceptive method (Figure 10). Most of the participants (80.8%) disclosed their HIV status (HIV-positive) to their partners and their family members (Figure 10).

Decision to join PMTCT programme

Majority of respondents (about two-third) had good knowledge and good understanding of the PMTCT programme. They understood how the PMTCT programme works and its importance in preventing mother-to-child HIV transmission. About 17 respondents reported that

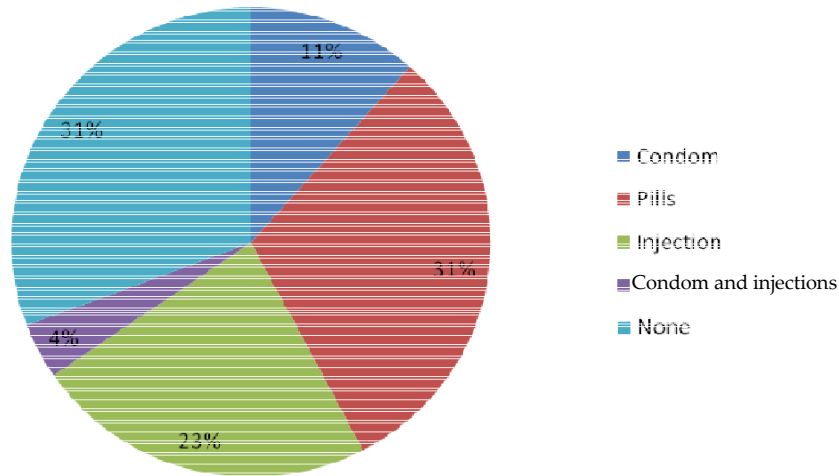


Figure 9. Contraceptive methods used.

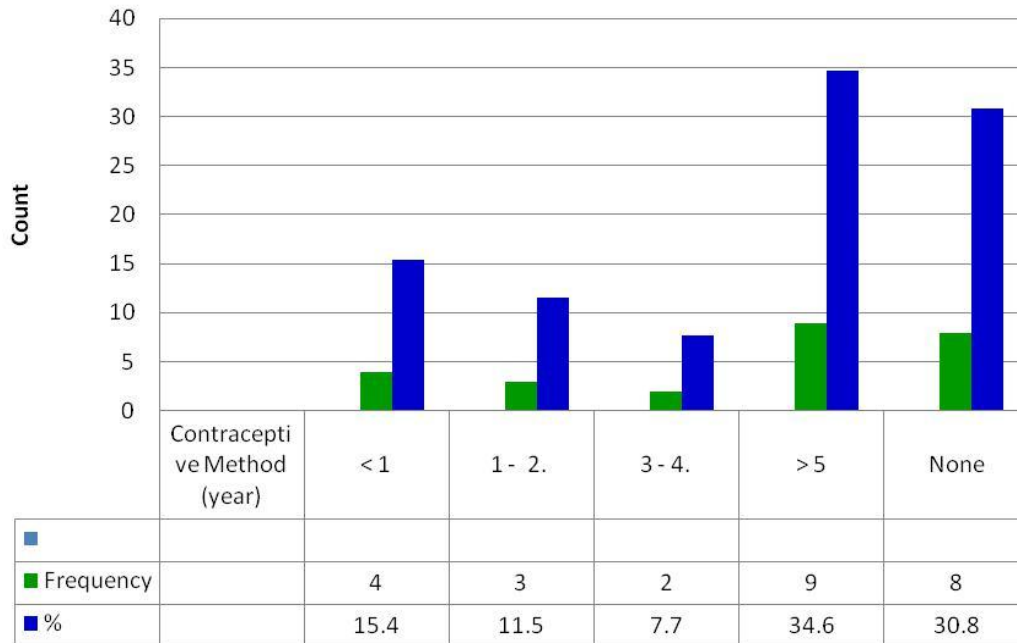


Figure 10. Period of using contraceptive method (years).

their decisions to join PMTCT programme was based on the preventing of their unborn babies from being infected. Others join PMTCT programme because of the counselling received from health professionals or relatives or friends.

Partner reaction to HIV status

Sixteen (16) participants reported that they informed their partners about their HIV status. Majority of partners reportedly did not react badly. According to participants,

the positive reaction from their partners was due to the fact that the partners knew already their own HIV status or the HIV test was performed at the same time to both partners.

But some partners reportedly reacted negatively as their women disclosed their HIV status to them: About one-third of participants did not disclose their HIV status to their partners because they were scared of their partners; or because they did not know or were not sure what could be the reaction of the partner once he is told that his woman is HIV- positive. For some it was because the male partner had never disclosed his HIV status; or

because they did not stay together.

Perception of family support

Most of the respondents reported that they have good supports (social, psychological, spiritual, and financial supports) from their families and even from their partners.

DISCUSSION

Although, the sampling was not random, this study shows that 76.9% of respondents were singles and 96% of respondents were unemployed. It is our opinion this type of social-economic status makes women vulnerable and unable to negotiate the use of condom. In other words, being single and unemployed could easily lead to unstable relationships and contribute to risk of HIV transmission. This study has revealed also that women of reproductive age group are not only being infected with HIV more frequently, but they are becoming infected at a younger age, between the ages of 18 and 29 years.

Most of the respondents (94%) in the study conducted by Wilson (2003) believed that all pregnant women should be tested for HIV, only 56% were tested. Women who refused an HIV test, compared to other women, were more likely to have an unplanned pregnancy (75 vs. 58%) and some were unwilling to take medicine that would only benefit their infant (32 vs. 6%).

Decision to Join PMTCT programme and knowledge about PMTCT programme among HIV positive women

The PMTCT services have been available in Serowe since 2000 and current data showed that the percentage of PMTCT beneficiaries is more than 90% and the percentage of HIV-positive babies born from HIV-positive mothers who were enrolled in PMTCT programme is below 2% in Serowe/Palapye Sub-district. There is no much difference on how women learned about PMTCT programme when comparing the results of this study to that of Wilson (2003). About 69.2% of respondents in our study had good knowledge of PMTCT programme and learned about the programme from clinics or hospitals compared to 67% of respondents in Tracy's study. The other portion of respondents learned about PMTCT programme either from the radio, or from a family member (relative) or from a friend. In our study, most of the respondents reported that they enrolled on PMTCT programme because they wanted to have HIV negative children compared to 68% of respondents in study conducted by Murphy et al. (1998).

The study conducted by Petrovic et al. (2007) on primiparous mothers' knowledge about mother-to-Child transmission of HIV in Lusaka, Zambia revealed that the majority of the women interviewed did not have basic

knowledge about PMTCT. In the Lusaka study, the mothers did not know that HIV is present in breast milk and according to them the most effective way of preventing transmission of HIV to the unborn baby was a single dose of nevirapine. The overall feeling of mothers interviewed was that they had not received information and support from the antenatal clinics and postnatal wards.

Knowledge of HIV status and disclosure

One of the findings of this study is that majority of respondents (21) had some level of education (secondary level). They were knowledgeable about HIV infection and able to understand what it means to be HIV-positive. Most of the women (24) who knew their HIV status, had disclosed their HIV status (HIV-positive) to their family members and twenty-one participants had disclosed their HIV status to their partners. However, considerable stigmatization of HIV-positive women has been reported by other researchers and women found themselves particularly pressured by such attitudes and this could act as a constraint to disclosure of their HIV positive status. The disclosure has not been a big issue as the results showed in our study, majority of participants supported the idea of disclosing their HIV status either to their family or to their partners. This is similar to the previous report by Suryavanshi et al. (2008) in which the results showed that repeat pregnancies were more likely to occur for women who did not disclose their HIV status to their spouses.

Perceptions of family support

The findings in this study showed good support from family, partners, and peers toward HIV-infected women on PMTCT programme and this concurs with the early study of Murphy et al. (1998). One of the findings in this study was also that the majority of participants stated that their family advised or encouraged them. This is in contrast to the study of Chinkonde et al. (2009) which revealed lack of support from partners, unequal gender relations, and stigmatization which consequently resulted in dropout from PMTCT programme.

Family planning practice

The findings of this study showed that although most participants seemed to know the contraceptive methods and understood the importance of these methods, only four participants were using condoms, the method which prevents both pregnancy and sexual transmitted infections (STIs and HIV). The responses from participants showed that they have knowledge about family planning through PMTCT counseling. However,

family planning use was still low among HIV-positive women. This agreed with the results of a study conducted in Rwanda by Batya et al. (2009) on pregnancy desires and contraceptive knowledge and use among prevention of mother-to-child transmission clients. The study conducted by Bij (2008) in Kenya revealed similar results of low use of contraceptive. Another survey conducted in USA on sexual functioning and activity among HIV-positive women found that although most women (90%) remained sexually active after testing HIV-positive, few used safe sex practices, with more than one-third (37%) engaging in regular unprotected sexual activity.

Study limitations

It is important to underline that there were some limitations during the course of this study. Language barrier was one of the limitations since most of the participants speak the local language (Setswana). The other limitation is the sample size.

Conclusion

Participants in this study reported supportive family members, partners and peers. The disclosure of HIV status of most of the participants was not a problem to their family members and they had good social support. Additionally, this study has shown that socio-demographic factors such as being unmarried, unemployment (low income), and poverty were also most likely to be associated with transmission of HIV. It also reveals the success rate of the PMTCT programme in Serowe given the number of respondents in the study sample who are well-informed about the programme. HIV-infected women must be cautiously counseled about the risk of transmitting HIV to their infants during pregnancy and delivery. Although the majority of the participants in this study had good knowledge about family planning or were aware of it, many did not use family planning methods. This is a great challenge and those who used family planning did not use appropriate one for their health status. This study revealed that very few HIV-positive women used condom which is the appropriate family planning method for them.

RECOMMENDATIONS

Women should be encouraged to undergo HIV test and be encouraged to bring their partners for voluntary counseling and testing (VCT) and HIV prevention counseling.

The health care providers should not only concentrate on provision of condoms but should offer a comprehensive family planning service. Therefore, further efforts are needed to improve uptake of modern methods,

including dual protection in PMTCT settings. And also anyone counseling an HIV-infected woman should support her family planning decisions.

There is a need for policy makers to come up with guidelines which provide information on prevention approaches for HIV-positive women.

We suggest intervention research on contraceptive counseling, monitoring and evaluation, and partners' behaviors.

A comprehensive study is needed to inform a more coordinated approach to policies and PMTCT programmes.

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