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Healthcare provider knowledge and attitudes about pre-exposure prophylaxis (PrEP) in pregnancy in Cape Town, South Africa

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Abstract

Pre-exposure prophylaxis (PrEP) in pregnancy can reduce HIV incidence and reduce vertical HIV transmission. Healthcare providers (HCPs) play a critical role in delivering PrEP in antenatal care but little is known about HCP knowledge and attitudes to PrEP in pregnancy. We conducted a qualitative study in two healthcare facilities in Cape Town, South Africa to study to assess HCPs' PrEP knowledge and perspectives relating to HIV prevention in pregnant women. Between January and March 2019, we administered semi-structured in-depth interviews among consenting antenatal HCPs. We investigated five domains of PrEP experiences/perspectives; each interview was audio-recorded and transcribed. We utilized a constant comparison approach to identify major qualitative findings. We enrolled 35 female HCPs (median age=43; median time as HCP=8 years). Fewer than half of HCPs had heard of PrEP before. Of those who had heard of PrEP, most felt that it was safe to take during pregnancy, though some were unsure. Most HCPs described inaccurate PrEP knowledge regarding effectiveness, and most who knew about PrEP lacked clinical detail. HCPs highlighted important potential barriers to maternal PrEP use including: fear that PrEP may be unsafe, or belief that women must talk to partners/parents before initiating PrEP. Potential facilitators of maternal PrEP use include relatively good knowledge about serodiscordancy and vulnerability to seroconversion in pregnancy, desire to help women gain control over their HIV prevention. HCPs working with pregnant women had limited knowledge about PrEP and expressed confusion about the effectiveness and safety of PrEP in pregnancy. We recommend integrating PrEP training into existing HIV testing and PMTCT nurse training and improve counseling and PrEP delivery for HIV-uninfected women in antenatal care.

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Keywords

pregnancy; PMTCT; PrEP; HIV prevention; South Africa; healthcare providers

Background

In sub-Saharan Africa HIV incidence is high during pregnancy and breastfeeding (Drake, Wagner, Richardson, & John-Stewart, 2014) (Thomson et al., 2018) and acute maternal HIV infection during pregnancy and breastfeeding accounts for an estimated 30% of perinatal HIV transmissions in the region.(Dinh et al., 2015; Johnson et al., 2012; UNAIDS., 2019) To prevent HIV in pregnant women and contribute to the elimination of vertical HIV transmission, the World Health Organization (WHO) recommends the use of pre-exposure prophylaxis (PrEP) in pregnant and postpartum women in high-HIV-burden settings.(World Health Organization, 2017) In September 2019, South Africa updated their PrEP guidelines to include referrals for PrEP counseling and prescription for HIV-uninfected pregnant women at risk of HIV acquisition(Africa, 2019). This change is in line with recent mathematical modeling studies demonstrating the important potential influence of PrEP use on overall HIV prevention and prevention of vertical HIV transmission (Joseph Davey et al., 2019). Despite the increased availability of PrEP in South Africa (Davies & Heffron, 2018), there is limited understanding of healthcare provider (HCP) knowledge of PrEP and their willingness to prescribe this prevention method to high-risk HIV-uninfected pregnant women (Joseph Davey, Bekker, Gorbach, Coates, & Myer, 2017; Matthews et al., 2018).HCP knowledge of PrEP is important because it can lead to ineffective counseling on HIV risk and PrEP adherence, a potential contributor to low PrEP efficacy.(Calabrese et al., 2019; Krakower & Mayer, 2016; Zorrilla et al., 2018) Further, there may be reluctance to prescribe PrEP if HCP hold misconceptions about PreP, such as the belief that PrEP use may increase patient risk behaviors.(Powell, Gibas, DuBow, & Krakower, 2019) Given this incomplete picture of PrEP knowledge among HCPs working in antenatal care, we conducted a study to assess HCP knowledge and attitudes about PrEP use by pregnant women to inform the design of effective interventions to improve access to PrEP for pregnant and lactating women in high HIV incidence settings.

Methods

Between January-March 2019, we conducted a qualitative study with HCPs working in antenatal care in two primary healthcare facilities in Cape Town, South Africa. South Africa released guidelines on PrEP in September 2016, with a focus on high-risk populations(Department of Health South Africa, 2016). HCPs (nurses, midwives, counselors and managers) who work with pregnant women were recruited and consented to participate in the study. They all had the right to decline participation. Individual interviews were conducted in a private space in the clinic by trained research staff.

The interviews covered the following domains: 1) professional background in maternal and child health, 2) knowledge of HIV risk and prevention during pregnancy, 3) perceived agency of pregnant women including control over sex life, 4) PrEP knowledge and

experience. All interviews were conducted in either English or isiXhosa with code switching, depending on participant preference, with interviews lasting between 35–90 minutes.

Interviews were audio-recorded, translated, and transcribed with quality checks conducted by an independent researcher to ensure accuracy. Transcripts were coded and analyzed using NVivo v12 (QSR International). Two researchers open-coded five transcripts separately and then discussed the coding to confirm the code list. Afterward, four researchers coded the transcripts using the final code list. We reviewed each transcript twice and ensured that coding was correctly utilized and documented by randomly assigning each coder to review the codes of a team member. All discrepancies in coding were discussed and resolved. We utilized a constant comparison approach to analyze data to develop themes over time (Daniels et al., 2018; Mitchell et al., 2016).

Results

We interviewed 35 female HCPs. Median age was 43 years (interquartile range, IQR= 33–57; median time as HCP=8 years). Most HCPs described incomplete or inaccurate PrEP knowledge, often confusing ART or post-exposure prophylaxis (PEP) with PrEP. Many providers who reported PrEP knowledge lacked clinical detail, or felt that PrEP may be unsafe to take during pregnancy, hindering their ability to educate a patient correctly during pregnancy. (Table 1)

Given their limited PrEP knowledge, HCP counseling focused on traditional HIV prevention methods, prioritizing the importance of condom use, fidelity, and at times, abstinence, to prevent HIV in pregnancy. Few HCPs mentioned PrEP's ability to prevent HIV infection, ART as prevention, or viral suppression preventing HIV transmission.

Understanding of serodiscordancy and potential for PrEP provision

HCPs had a relatively good understanding of serodiscordancy and most knew at least one couple that was serodiscordant. Some HCPs felt strongly that seroconversion was bound to happen in serodiscordant couples. A few thought that women could be immune to HIV, and they may not require HIV prevention methods including ART for the HIV-infected partner or PrEP for the uninfected female partner. However, most HCPs agreed that pregnant women are especially vulnerable to HIV and most had experiences of women who had seroconverted during pregnancy. Thus, PrEP was considered a valuable prevention tool by many HCPs especially in cases where the pregnant women are in serodiscordant relationships.

Control over sex, IPV and PrEP

After learning more about PrEP during the interview, most HCPs mentioned that they felt that PrEP may improve women's agency and ability to take control of their sex lives, especially if condoms were difficult to negotiate or discuss in their relationships. HCPs also felt that women could safely hide that they were taking PrEP from their partner(s). HCPs expressed concerns about younger pregnant women who may place themselves at risk by having condomless sex based on their boyfriend's request, because young women often

believe their relationship is stable and monogamous. Other HCPs highlighted that they felt that women must inform their partners or parents (in the case of adolescent girls) about PrEP to get approval prior to initiation.

HCPs mentioned many situations where pregnant women were forced to have sex, forced to have condomless sex, or generally did not have control over their sex life. If a woman says 'no' to her partner HCPs believed her partner may think she is cheating or being unfaithful. Further, most HCPs encountered situations of intimate partner violence (IPV) prior to or during pregnancy and some mentioned cases of rape that resulted in a pregnancy. HCPs expressed that they were powerless to address IPV, or associated alcohol and drug use in male partners. In cases of IPV, rape and alcohol or other drug use, once HCPs believed PrEP was an important option to empower women to prevent HIV.

Discussion

This study demonstrates limited knowledge about PrEP among HCPs working with pregnant women. Of those who knew about PrEP, most lacked clinical insight, hindering their ability to educate a patient correctly about the risks and benefits of taking PrEP. Once educated about PrEP, HCPs saw it as an important tool to helping women gain control over their HIV prevention and prevent seroconversion in known serodiscordant relationships. HCPs highlighted several potential barriers to PrEP implementation in antenatal care including: beliefs that PrEP may be unsafe in pregnancy, the need to refer pregnant women to inform partners or parents for approval before initiating PrEP, and women's lack of control over decision making.

Recent research demonstrates low uptake of PrEP in pregnant and postpartum women when offered in their antenatal care(Dettinger et al., 2019; Kinuthia, 2019; Pintye et al., 2017). Kinuthia and colleagues reported that 22% of women who were offered PrEP initiated it in Kenyan pregnant and postpartum women.(Kinuthia, 2019) Only 39% of those who initiated PrEP returned at one month for a refill prescription. Integrating PrEP into antenatal clinics may be an effective platform for PrEP delivery because of existing PMTCT services and integrated HIV testing/re-testing of HIV-uninfected women; however HCP training and attitudes may be important barriers to offering PrEP among women who need it and their continued uptake and adherence. A recent landscape analysis for PrEP in pregnancy from Zambia and Malawi similarly demonstrated the importance of provider-level interventions to improve knowledge about PrEP, but also ability to identify women at risk of HIV and counsel them on risks and benefits of taking PrEP, in pregnancy.(Zimba et al., 2019)

Recommendations:

Providers must be provided with accurate data on the efficacy and safety of PrEP so concerns about PrEP safety during pregnancy are addressed. We recommend that training on HIV testing and PMTCT include information about PrEP safety and efficacy, and train nurses about how to prescribe PrEP to high-risk HIV-negative pregnant and breastfeeding women. PrEP policies should include minimum standards for HCP training and quality assurance for PrEP implementation in the public sector, including in antenatal and postnatal care services(Cowan et al., 2016; Krakower & Mayer, 2016).

Limitations include that HCPs had been involved in other HIV studies of HIV-infected women and may be more knowledgeable than other providers. The research staff describe PrEP to participants half way through the interview, and participants' positive reflection on PrEP may have been influenced by social desirability bias. Finally, we only included two urban clinics which may limit generalizability.

Conclusions

HCPs working with pregnant women had limited knowledge about PrEP and expressed confusion about the effectiveness and safety of PrEP in pregnancy. Barriers to PrEP delivery in antenatal care included safety concerns and need to get partner "approval" before starting PrEP and limited control over decision making. Facilitators include knowledge of serodiscordant couples and risk of seroconversion in pregnancy, and desire to improve women's control over their ability to prevent HIV in pregnancy.PrEP education should be incorporated into PMTCT provider training to improve knowledge and understanding about how to identify women at risk, prescribe PrEP and counsel women on PrEP adherence to optimize PrEP use.

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Table 1:

Quotations from in-depth interviews with healthcare providers (n=35) who work with pregnant women in Cape Town, South Africa

Incorrect or incomplete PrEP knowledge	**Participant (cadre, age)**
“When you have sex using a condom, the condom bursts. So, it is necessary to get those pills within 72 hours.”	Counselor, 45 years
“I’m not sure because I do not know PrEP fully.”	Midwife, 23 years
“This is my first-time hearing about PrEP.”	Midwife, 60 years
“I’ve never heard about it, this is my first time hearing about it. And with me hearing about it now, it will be a lot of help to my patients because I will make them aware of the drug.”	Counselor, 30 years
Correct knowledge of PrEP	
“I take it as sort of like prophylaxis, it’s a kind of treatment you get before you are diagnosed, just in case.. there is less chances that you will get infected if you take the tablet.”	Nurse, 50 years
“PrEP protects her (pregnant woman) from contracting HIV. Her chances are very low of getting HIV if she is on PrEP.”	Counselor, 40 years
“It is even more important for pregnant women because in a lot of times, people think that if they have tested negative in one instance for example, they think that they will never test positive. They tend to place a lot of trust on their partners, when in fact they do not know what a person does in their private time. So, when they use PrEP, it will help with making things a lot better for them”	Counselor, 30 years
HIV prevention methods in pregnancy	
“Even at home, don’t just live in a household without condoms, there are also female condoms available.”	Midwife, 60 years
“I tell them that every three months they must come and get tested. And I say, ‘You see now, Sisi (sister), you have nothing (HIV-negative). You were lucky. So, for next time… use a condom. Because there is nothing else at the moment that can protect you.’ ”	Midwife, 57 years
“We advise that they always use a condom when having sex and then when she is pregnant, we tell him to be gentle when they are having sex, and tell him that the sisters say that he must be gentle because the part that is the vagina where he penetrates is delicate now, so anything can happen there, like bleeding if he is being aggressive.”	Midwife, 59 years
Partner involvement in PrEP	
“It is important for the male partners to know about what is happening with their partners.”	Nurse, 50 years
“Now she is already using PrEP, and she is protecting herself with it so that she doesn’t get the virus. She uses them every day. Now why should the father be told that she is using the treatment (PrEP)?”	Health promoter, 57 years
Serodiscordancy knowledge	
“I think that (seroconversion) happens during the window period, where the virus isn’t visible, but the partner has to carry on testing after every 3-months. Then I asked another sister how does one stay negative and the other is positive, and she told me something about carriers… it is something that causes the other to stay negative while the other is positive. I don’t know how to explain it.”	Nurse, 27 years
“I think the person is immune to the virus itself, and they end up not contracting the virus… because normally when this starts, the male is negative, and the female is positive they usually say the virus remains in the foreskin and when he washes it gets washed off from the male side…. But now a days there are females that are negative and males that are positive, in which we know that when the male ejaculates he pours all the sperm into the female. And when a female is negative, it means she is immune to the virus.”	Nurse, 58 years
Control over sex and IPV in pregnancy	
“If their partner does not want a condom, then what he says goes. They are unable to control the situation themselves. They can’t put their foot down and say, ‘No let us use a condom’.”	Counselor, 55 years
“If you say no, the man will think there is someone else she may be having sex with, so women end up submitting to having sex even if they don’t want to in order to protect their marriage.”	Nurse, 39 years
“Once he starts drinking and is using drugs and then the next thing he hits you, report him to the police then. Report to the police. Is there anything else we could say?” “They come to the labor ward, you ask what happened and then they say they were raped. There aren’t many, but there are those that admit when asked. I ask why she didn’t have an abortion, and they say it was too late”	Midwife, 57 years