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## Perspectives on biomedical HIV prevention options among women who inject drugs in Kenya

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### Abstract

Due to heightened vulnerability to HIV from frequent engagement in sex work and overlapping drug-using and sexual networks, women who inject drugs should be a high priority population for pre-exposure prophylaxis (PrEP) and other biomedical HIV prevention tools. Kenya is one of the first African countries to approve oral PrEP for HIV prevention among “key populations,” including people who inject drugs and sex workers. The objective of this study was to explore preferences and perceived challenges to PrEP adoption among women who inject drugs in Kisumu, Kenya. We conducted qualitative interviews with nine HIV-uninfected women who inject drugs to assess their perceptions of biomedical HIV interventions, including oral PrEP, microbicide gels, and intravaginal rings. Despite their high risk and multiple biomedical studies in the region, only two women had ever heard of any of these methods. All women were interested in trying at least one biomedical prevention method, primarily to protect themselves from partners who were believed to have multiple other sexual partners. Although women shared concerns about side effects and product efficacy, they did not perceive drug use as a significant deterrent to adopting or adhering to biomedical prevention methods. Beginning immediately and continuing throughout Kenya’s planned PrEP rollout, efforts are urgently needed to include the perspectives of high risk women who use drugs in biomedical HIV prevention research and programing.

### Keywords

Pre-exposure prophylaxis; HIV biomedical prevention; people who inject drugs; women; sub-Saharan Africa

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## Introduction

Women who inject drugs should be a high priority population for pre-exposure prophylaxis (PrEP) and other biomedical HIV prevention tools given their heightened vulnerability to HIV from drug use, frequent engagement in sex work, and overlapping drug-using and sexual networks (Azim, Bontell, & Strathdee, 2015; World Health Organization, 2016). Although vaginal gels and rings have undergone testing in women (Abdool Karim et al., 2010; Nel et al., 2016), the most widely available biomedical HIV prevention method is oral antiretroviral PrEP, which has only been tested among people who inject drugs in one major trial to date (Choopanya et al., 2013). The observed 49% reduction in HIV incidence with PrEP was promising, but PrEP research among women who inject drugs remains limited, threatening the accessibility and appropriateness of biomedical HIV prevention interventions for this population. Empirical evidence on the perspectives and preferences of high risk women who inject drugs is needed, particularly in resource-poor settings where PrEP availability is increasing.

The relatively recent emergence of injection drug use across Kenya could exacerbate its already serious HIV epidemic (Guise, Dimova, Ndimbii, Clark, & Rhodes, 2015; Syvertsen et al., 2016). As part of a national HIV prevention strategy, Kenya is one of the first African countries to approve oral PrEP for HIV prevention among “key populations” of people who inject drugs, sex workers, and men who have sex with men (National AIDS & STI Control Program, 2016). In western Kenya, where HIV prevalence is highest, several biomedical trials including women and sero-discordant couples demonstrated reductions in HIV incidence (AIDS Vaccine Advocacy Coalition, 2016). However, these studies did not specifically recruit women who inject drugs, whose perspectives on product acceptability and intervention needs remain unknown. As PrEP is scaled up across Kenya, it will be critical to reach those at highest risk with prevention services that are acceptable and appropriate (Syvertsen et al., 2014).

## Methods

This study describes qualitative data collected from a subset of nine HIV-uninfected women participating in a 2013–2014 mixed methods study of injection drug use in Kisumu, Kenya. As previously described, participants (> 18 years old) who reported recently injecting drugs (past month) were recruited using targeted and snowball sampling in local communities (Syvertsen et al., 2016). Women who completed an initial survey ( $n = 24$ ) were invited back to participate in 90-minute, audio recorded qualitative interviews in women’s preferred language (English, Swahili, Luo) on HIV and sexual health. Of those who participated ( $n = 17$ ), nine were HIV-uninfected and included in this analysis. Participants provided written informed consent. Ethics review boards at the University of California at San Diego, The Ohio State University, and the Kenya Medical Research Institute approved all protocols.

This analysis focused on women’s awareness of and perceptions regarding three biomedical HIV prevention methods that were tested or under development at the time (antiretroviral oral PrEP, intravaginal rings, and topical microbicide gels). The research team

collaboratively developed a codebook and a research assistant coded all transcripts (Ryan & Bernard, 2003). Content analysis identified key findings relating to women's awareness of, interest in, and concerns about these biomedical prevention methods, which are illustrated with representative quotes using pseudonyms to protect confidentiality.

## Results

Among the nine participating women, average age was 25 years (range: 20–35). Four women had steady partners; five reported recent sex work (past month). Only two women had heard of any biomedical HIV prevention methods (oral PrEP,  $n = 1$ ; microbicide gels,  $n = 1$ ). All women were interested in trying at least one method, primarily to protect themselves from partners who were believed to have multiple sexual partners. Most women were interested in microbicide gels ( $n = 7$ ) followed by intravaginal rings ( $n = 6$ ) and oral PrEP ( $n = 5$ ).

Women's reasons for interest in specific methods differed across the sample. Although Mercy, age 27, was not interested in oral PrEP because pills were “for HIV-infected people,” she was interested in microbicide gels “because I want to protect my body and I want my friends to be protected.” Other women like Lilac, age 23, were intrigued by the ability of women to control microbicide gel application, “since I don't know how my husband goes about outside [with other partners] and he does not want to go for [an HIV] test ... I can apply it to help me to prevent [HIV].” Women's interest in intravaginal rings was linked to perceptions that such products could have additional contraceptive properties, which likely resulted from interviewers describing multi-purpose technologies that were under development.

Five women voiced specific concerns about unknown side effects and efficacy of biomedical prevention methods. April, age 20, said: “I am worried about this gel because I don't know its side effects [and] am not sure if [it] will kill HIV.” She also worried about medications being past their expiration dates, ultimately concluding, “I wouldn't try something I don't trust.” Two women expressed fear of inserting intravaginal rings and worried if they would stay in place during sex or cause harm. One woman also worried that biomedical methods would increase condomless sex and sexually transmitted infections. Josey, age 22, was not interested in oral PrEP because she worried she would not be able to tolerate the medication when experiencing drug withdrawal. Otherwise, however, women did not consider drug use to be a significant deterrent to adopting or adhering to biomedical HIV prevention methods.

## Discussion

In the context of Kenya's ongoing HIV epidemic and the increasingly recognized vulnerability of key populations, the recent approval of PrEP has the potential to prevent HIV transmission among women who inject drugs, many of whom engage in sex work and face dual drug-related and sexual risks for HIV acquisition. In western Kenya and other regions shouldering the burden of the HIV epidemic, efforts to better engage this often hidden population in biomedical HIV prevention research should be prioritized. Our formative study findings carry several implications for policy and practice.

First, although knowledge of biomedical HIV prevention methods was low, most women in our sample were interested in at least one method, suggesting that efforts are needed to improve delivery of information and services. Women's interest was tempered by concerns about side effects and other physical and social harms, reflecting their structural vulnerability, resource scarcity (fears about expired medications), and limited access to healthcare. PrEP dissemination efforts will require careful explanations of how available methods work, including full disclosure of the benefits and potential risks of various methods and demonstrations of how to properly use and adhere to products.

Second, like studies in general populations of women, we identified acceptance of PrEP in our sample and enthusiasm for microbicide gels, which could provide women with a sense of control (Greene et al., 2010; Van der Elst et al., 2013). Interest in intravaginal rings was also high, mainly due to potential contraceptive properties, highlighting the need for multi-purpose technologies and comprehensive sexual and reproductive health programming for women who inject drugs.

Finally, most women in our study did not identify drug use as a barrier to using these prevention methods. People who inject drugs have been largely excluded from studies of biomedical HIV prevention methods, and the single PrEP trial with injectors to date has been criticized for inadequately addressing community concerns (Guise, Albers, & Strathdee, 2016). Future HIV prevention research and local programming should incorporate the perspectives of key populations on their HIV prevention needs, including through the use of qualitative research methods that can help capture the personal perspectives and lived experiences of socially marginalized groups.

Our findings have limited generalizability. Our small sample was constrained because nearly half of the women recruited into our qualitative sample were already HIV-infected, underscoring the urgent need to reach the most "hidden" potential beneficiaries of PrEP before HIV acquisition occurs. Our questions gauging interest in biomedical HIV prevention methods were hypothetical because PrEP was not widely available in sub-Saharan Africa at the time of the study. Our data were collected during a period of rapid progress in the development and testing of biomedical technologies, limiting our ability to assess new innovations that could surpass some adherence concerns (e.g., long-acting injectable PrEP). Nevertheless, we present some of the first data on biomedical HIV prevention perspectives of women who inject drugs in sub-Saharan Africa. Additional research with larger samples is needed to systematically identify the specific PrEP uptake and adherence challenges faced by these women in the context of ongoing PrEP expansion throughout Kenya.

## Conclusion

People who use and inject drugs should be engaged in research on biomedical HIV prevention strategies so their perspectives and experiences can be more accurately understood. Recent efforts to understand women's product preferences should be commended (Luecke et al., 2016). However, additional work including women affected by syndemics of substance use, sex work, and the concomitant social marginalization that

accompanies these stigmatized behaviors is needed. Concerted efforts should be made to engage all key populations in Kenya's planned expansion of biomedical HIV prevention.

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JLS designed the study and collected data; GR collected and transcribed data and translated transcripts; KAY coded data; and all authors helped analyze data and draft and revise the final manuscript.

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