


Qualitative focus group discussions exploring PrEP method and service delivery preferences among female sex workers and their managers in four Zambian provinces

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ABSTRACT

Objectives To describe the experiences of oral HIV pre-exposure prophylaxis (PrEP) use, preferences comparing oral PrEP to future long-acting PrEP products (the dapivirine vaginal ring (PrEP ring) and injectable cabotegravir (CAB PrEP)), and service provision preferences among female sex workers (FSWs) and their managers.

Methods Qualitative formative focus group discussions were conducted in two urban (Copperbelt, Lusaka) and two rural (Central, Luapula) provinces in Zambia. Consenting participants included 43 FSWs and 36 sex work managers. Eligible participants self-identified as FSWs or sex work managers, were 18 years or older and spoke English, Nyanja or Bemba.

Results FSWs had a median age of 28 years and 60% reported ever using oral PrEP. Among potential future HIV prevention options, most FSWs preferred longer acting PrEP methods, mainly CAB PrEP over the PrEP ring. This preference was consistent across provinces. Many FSWs had personal oral PrEP experience and appreciated the high effectiveness but conveyed that the realities of daily use, including pill visibility, and attributed side effects did not meet their needs. FSWs and managers also identified frequent stigma and misinformation-related barriers to PrEP access and use at community and facility levels. Most FSWs and managers agreed that informing non-paying or long-term partners of PrEP use was acceptable. Participants offered recommendations for greater sensitisation and peer-led services or service extension through trusted figures in the community.

Conclusions Zambian FSWs and their managers preferred longer acting PrEP methods, particularly CAB PrEP, as part of comprehensive HIV prevention method choice, with little difference between provinces. PrEP programming led by FSW peers, managers or other trusted figures was recommended to address misinformation, sensitise partners and potentially deliver services to circumvent perceived stigma at health facilities.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Female sex workers are a priority population for HIV pre-exposure prophylaxis (PrEP) and previous research has found high levels of interest and uptake of oral PrEP but suboptimal continuation rates despite continued risk for HIV. New, longer acting formulations of PrEP including an injectable (cabotegravir-PrEP) and vaginal ring (PrEP ring) could offer benefits such as longer protective effect and discrete use compared with oral PrEP, but knowledge of potential users' concerns and preferences is limited.

WHAT THIS STUDY ADDS

⇒ Zambian female sex workers and their managers preferred longer acting PrEP methods, especially injectable PrEP. They felt non-client partners did or would support PrEP use. Increased PrEP sensitisation efforts including community-level outreach with trusted individuals and organisations were needed as were improvements to care provided by health-care providers.

HOW MIGHT THIS STUDY AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Results can be used to shape acceptable HIV prevention method provision by ensuring that PrEP programming is led by peers or other trusted figures, partners are sensitised and stigma-free services are provided.

INTRODUCTION

In sub-Saharan Africa, women involved in sex work are more likely to be exposed to HIV than female peers and have corresponding high HIV incidence and prevalence rates.^{1,2} Due to contributing economic, social and biological factors,³ including harmful social and gender norms, unequal access to education and information and systematic rights violations,⁴

female sex workers (FSWs) are a priority population for HIV prevention programming, including HIV pre-exposure prophylaxis (PrEP), where the individual controls product use.⁵ PrEP does not require negotiation with a partner like the male condom. As sex workers are commonly paid more for engaging in condomless sex, male condoms use can be difficult making PrEP an especially beneficial tool for HIV prevention among this group.^{4,6}

PrEP is the use of antiretrovirals (ARV) by HIV negative individuals to prevent acquisition of HIV before exposure. The three methods of PrEP currently recommended by WHO include: tenofovir disoproxil fumarate-based one time a day oral PrEP, the dapivirine vaginal ring (PrEP ring), a flexible silicone ring inserted in the vagina once a month; and injectable cabotegravir (CAB PrEP) where the first two injections are given one month apart, followed by injections every two months. CAB PrEP is more than 90% effective; oral PrEP reduces the chance of getting HIV by up to 90%, and the PrEP ring reduces the change of HIV acquisition through vaginal sex by about 50% when the ring is kept in place for a whole month.⁷

Multiple studies have evaluated oral PrEP use among FSWs and found high interest and uptake but suboptimal continuation amidst ongoing risk.^{8–10} Low continuation rates have been attributed to characteristics of service delivery and of oral PrEP, including the experience of side effects, treatment by healthcare providers (HCPs), missed healthcare appointments and drug stockouts among other factors.^{10–12}

New PrEP methods offer longer protective effect and discreet use relative to oral PrEP.^{13,14} When presented to FSWs as possible future options, the PrEP ring, CAB PrEP and other longer acting methods, as well as vaginal gels, have been positively perceived, as was oral PrEP.^{6,15–17} However, many of these formative and discrete choice experiment studies were conducted among women with no prior PrEP experience and prior to oral PrEP implementation. Oral PrEP experience provides a known comparator to a hypothetical method, nuancing or clarifying what method features women find preferable. Similarly, few studies have explored PrEP service delivery preferences among FSWs, particularly for newer methods.¹⁸ Last, there are limited data about the role of FSW-specific key influencers (eg, client partners, brothel owners),¹⁹ though some HIV prevention interventions that have incorporated peers and brothel owners have demonstrated increased condom use.²⁰ As new PrEP methods are introduced, information about method and service delivery preferences of FSWs and potential roles for their key influencers in demand creation and user support are needed to inform PrEP implementation.

In Zambia, HIV prevalence among FSWs is high with a 2023 study finding HIV prevalence rates ranging from 32.0% to 45.4%.²¹ Additionally, the legal context in Zambia is complex with sex work being partially criminalised—it is legal for an individual to sell sex and for

a client to purchase sex, but activities perceived as facilitating sex work (eg, operating a brothel) are illegal.¹⁸ Sex work is also widely censured, making access to HIV prevention services problematic for FSWs, potentially related to stigma. Additionally, cost and waiting time pose additional barriers for FSWs seeking HIV prevention services, as observed in other contexts.^{6,22} Zambian national HIV prevention guidelines prioritise FSWs among other groups for oral PrEP coverage.²³

METHODS

Study overview and setting

We conducted focus group discussions (FGDs) among FSWs and their managers from Zambian provinces representing two geographical groups: rural (Central and Luapula) and urban (Copperbelt and Lusaka) (figure 1). Data were collected from 16 September through 8 October 2021, as part of the PROMISE (Preparing for Ring Opportunities through Market Introduction Support and Knowledge Exchange) collaboration. The PROMISE collaboration (2020–2021), funded by the U.S. President's Emergency Plan for AIDS Relief in partnership with the United States Agency for International Development and through the Envision FP Cooperative Agreement led by FHI360 conducted a qualitative study among several populations, including FSWs and sex work managers, to explore the landscape for the introduction of new PrEP methods. The findings are intended to inform the scale-up of oral PrEP and the introduction of new methods through efforts tailored to FSWs within Zambia and similar contexts.

In Zambia, sex work managers, locally termed 'queen mothers,' introduce and provide counsel to women entering into sex work. Managers, many of whom are former FSWs, prevent conflict among FSWs and between FSWs and clients and may also be brothel owners or otherwise broker client transactions.

Patient and public involvement

The PROMISE collaboration, under which this study took place created an advisory committee including representatives from civil society organisations delivering services for sex workers, peer advocates and the youth focal point from the National AIDS Council to provide community input for this study and the larger collaboration. The advisory committee provided input throughout the study process. Study research questions were informed by the experiences and priorities of sex workers and managers through engagement in this group. The committee provided input into the design of the study through review of an early concept paper and discussions with study investigators on the study design and approach. The advisory group also reviewed and pretested study interview guides. Input into study recruitment included participation in the selection of recruitment locations, with data collection occurring in offices of participating civil society organisations, and through

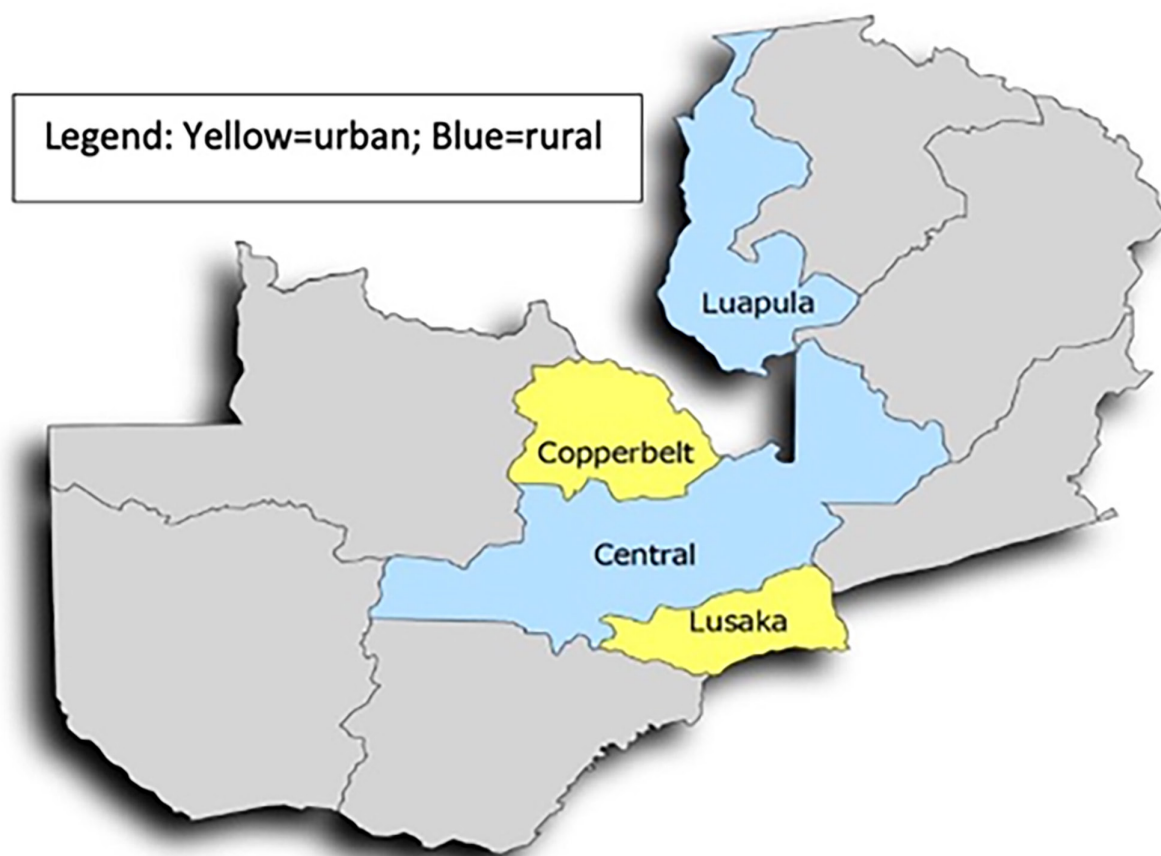


Figure 1 Provinces included in sample analysed for female sex workers and their manager in pre-exposure prophylaxis preferences study.

sharing participant eligibility criteria and details about study information sessions with civil society organisations participating in the committee. Additionally, committee members provided feedback on the burden of time required to participate in the research through guidance on the length of interview guides and guidance on the best times of day to schedule data collection so it would not interfere with participants' work. Finally, committee members reviewed and approved a final report and presentation slide deck for the collaboration and committee members were provided with these dissemination tools for use within their programmes including adapting programme content and services to expand PrEP uptake and use.

Participant selection

Eligible FSW and manager participants were age 18 years or older, spoke English, Nyanja, or Bemba, and were able to provide written informed consent. Potential study participants were identified through members of provincial and district health offices, HIV technical assistance projects and CSOs. All FSW participants were women who self-identified as engaging in sex work or transactional sex and were known as such by those referring them. For FSW managers, eligible participants were those known to CSO staff or FSWs as being managers.

Data collection

We conducted four FGDs among FSWs and four FGDs among managers. Discussions were conducted by experienced research staff who received qualitative training. FGDs were conducted at CSOs, public health facilities providing services to FSWs, or other sites convenient to potential participants. The semistructured guides (online supplemental files 1 and 2) included a variety of questions on perceptions of HIV prevention methods (table 1) were pretested among a small group of FSWs and refined prior to use.

Potential participants were introduced to study staff by trusted community liaisons or CSO workers and screened for eligibility. Those interested in participating were asked to provide written informed consent for an audio-recorded discussion. FSWs completed a brief tablet-based questionnaire on sociodemographics, health history and occupation-related behaviours. During the FGDs, facilitators provided an overview of oral PrEP, the PrEP ring and CAB PrEP after assessing participants' awareness of the methods (online supplemental file 1). Focus groups were conducted in English, Bemba and Nyanja and lasted 1–2 hours. All FGDs were compliant with national COVID-19 prevention guidelines.

Audio recordings were transcribed and reviewed against audio files for quality assurance by another staff

Table 1 Content areas of focus groups

Female sex worker participants	Sex worker manager participants
<ul style="list-style-type: none"> ▶ Perspectives on HIV prevention service availability and access ▶ Oral PrEP awareness, opinions and experiences ▶ Awareness and perceptions about the PrEP ring and CAB PrEP ▶ Preferences for PrEP method selection and use ▶ Preferences for PrEP service delivery ▶ Perspectives on client and healthcare provider roles in their decision and use of PrEP ▶ Recommendations for how to make new PrEP product introduction successful 	<ul style="list-style-type: none"> ▶ Awareness of and perceptions about oral PrEP, the PrEP ring and CAB PrEP ▶ Perceived client and community reactions to FSW PrEP use and disclosure ▶ Recommendations for how to make new PrEP product introduction successful
CAB, cabotegravir; FSWs, female sex workers; PrEP, pre-exposure prophylaxis.	

member.²⁴ Recordings in Bemba and Nyanja were simultaneously translated and transcribed into English, and a second native speaker conducted quality assurance.

Data analysis

A qualitative in-depth analysis of eight FGD transcripts was conducted, four FSW transcripts and four sex worker manager transcripts, with two from rural and two from urban provinces for each group. The number of FGDs selected for analysis was guided by research that found that 80% of all themes are discoverable within two to four FGDs per participant group.²⁵

Using a structured Microsoft Excel matrix, the transcripts were coded using deductive codes from the discussion guides supplemented with emerging inductive codes from the transcripts. Data were summarised by code, including illustrative quotes, for each study population and summarised in memos to allow for comparisons across groups.

RESULTS

Participant characteristics

Participant characteristics from the demographic questionnaire are summarised in [table 2](#).

Most participants had completed secondary school and were not married but had regular partners. Nearly three-quarters owned a mobile phone, but only slightly more than one-third had a smart device. Contraceptive use was common, with 67% being current users and injectable contraception and oral pills were the most common methods. Finally, condom use at last vaginal sex was reported by 70% of all participants.

PrEP product awareness, knowledge and preferred information sources

Nearly all FSWs were aware of oral PrEP, and reported use was higher in urban provinces. Among managers, all participants in Central and Copperbelt, several in Lusaka, and only one in Luapula provinces had heard of oral PrEP. Only a few FSW participants in Central Province and managers in Lusaka Province reported hearing

of the PrEP ring prior to the discussions. Similarly, very few FSWs or managers had heard of injectable or CAB PrEP, and the few managers aware of injectable PrEP appeared to confuse it with other injectable medications.

Regarding preferred PrEP information sources, both groups noted that non-governmental organisation (NGO) clinics providing FSW-focused services were trusted and commonly accessed by FSWs for health information and care. Additionally, managers noted that HCPs, including those at sexual and reproductive health (SRH) and antenatal care clinics, provide PrEP information to women and influence their health decisions. Some participants noted that churches do or could provide HIV education, while others stated that religious leaders often introduce confusion and misinformation regarding HIV, including discouraging ARV use or not addressing HIV at all.

Perceived benefits of presented PrEP methods

FSW participants perceived that oral PrEP had several specific benefits. For example, FSWs often stated that they used oral PrEP because men do not use or incorrectly use condoms, or to stay HIV negative and protect their well-being. When comparing oral PrEP to the PrEP ring and CAB PrEP, FSWs did not ascribe any specific advantages to oral PrEP over the other hypothetical methods. However, managers mentioned that oral PrEP was more effective than the PrEP ring and did not have to be inserted vaginally, which could be embarrassing for younger users.

For the PrEP ring and CAB PrEP, FSWs and managers identified similar benefits, including not having to remember daily dosing, longer duration of action and allowing for discreet use. The duration of action was particularly appreciated:

Oral PrEP you can't manage every time it's in the bag, but an injection you put for weeks, and you forget, and it will be working in your body.—FSW

For the PrEP ring specifically, some respondents felt the lower efficacy was still acceptable, stating that '50% efficacy is better than nothing', and others noted that the

Table 2 Sociodemographic and behavioural characteristics of female sex worker participants

Variable	Female sex workers (n=43) (% (n) unless otherwise specified)
Age (range)	27.7 (19–49)
Province	
Central (rural)	21% (9)
Copperbelt (urban)	23% (10)
Luapula (rural)	35% (15)
Lusaka (urban)	21% (9)
Highest level education completed	
None	0% (0)
Primary	14% (6)
Secondary	79% (34)
College or higher	5% (2)
No response	2% (1)
Civil status	
Married	5% (2)
Unmarried, regular partner	53% (23)
Unmarried, no regular partner	35% (15)
Separated/divorced/widowed	11% (5)
Owns mobile phone	
Yes	72% (31)
No	28% (12)
Owns smart device	
Yes	37% (16)
No	63% (27)
Currently using contraception	
Currently pregnant*	1
Nothing	33% (14)
Contraceptive user	67% (29)
Current contraceptive method (n=33†)	
Injectable	55% (18)
Male condoms	9% (3)
Oral contraceptives	33% (11)
Implant	3% (1)
Condom use at last vaginal sex	
Yes	70% (30)
No	28% (23)
No response	2% (1)
Condom use at last anal sex	
Yes	35% (15)
No	23% (10)
States no anal sex with clients	30% (13)
No response	12% (5)
Ever used oral PrEP	
Yes	49% (21)
No	49% (21)

Continued

Table 2 Continued

Variable	Female sex workers (n=43) (% (n) unless otherwise specified)
No response	2% (1)
Currently using oral PrEP	
Yes	37% (16)
No	63% (27)
No response	0% (0)

*One participant reported being both pregnant and using contraception.
†Several participants reported both not doing anything to prevent pregnancy and using contraception.
PrEP, pre-exposure prophylaxis.

28-day protection allowed FSWs to protect themselves ahead of sexual activity. A few managers saw the PrEP ring as especially good for young FSWs, who may live with their parents and have little privacy, as it provides 28 days of protection and does not have to be taken daily like oral PrEP. More commonly, however, managers thought the ring should be used by ‘older women’, who were viewed as better able to understand and correctly use the method. Younger women, they thought, could be too embarrassed to insert a vaginal ring and were more likely to forget appointments and be mobile, which managers viewed as barriers to successful use.

Older people can understand because they are mature and have wisdom about it, unlike young girls that are in their twenties, they might face disadvantages.—Manager

Regarding CAB PrEP, participants, especially managers, appreciated the higher efficacy compared with the PrEP ring. FSWs noted that CAB PrEP was protective for vaginal and anal sex, which they perceived as beneficial because clients request and pay more for anal sex. Managers stated that CAB PrEP was a good method for FSWs, as they were more sexually active than other women and potentially exposed to HIV daily. Additionally, CAB PrEP was seen as ideal for women without fixed homes, or for those who travel frequently, though some noted that CAB PrEP was suitable for all women, as anyone could have sex with a person living with HIV.

Perceived disadvantages of the PrEP methods presented

Both FSWs and managers identified the difficulty of remembering a daily pill or forgetting to bring the pills with them as the ‘biggest reason’ people do not use oral PrEP. As FSWs reported being highly mobile, this resulted in missed doses.

Us, we are always on the move, then you go to a friend and that friend does not take that medicine and... you forget that you have left it home.—FSW

Other disadvantages included perceived and experienced side effects, such as weight changes, feeling ‘burnt’, dizziness, headaches, nausea and weakness. Another concern was the possibility of being seen taking oral PrEP tablets, which resemble ARVs and may lead people

to assume an individual is living with HIV, with resulting stigma. This fear of stigma was described as sufficient to cause people to discontinue or not initiate oral PrEP use:

What causes that is stigma, when I am at a public place like a funeral house and you have them [PrEP pills], I wouldn’t take in fear of being seen as taking ARVs. And that the time of taking it clocks [the time the next dose is due], you will not take it because someone might see you.—FSW

For the PrEP ring, FSWs and managers perceived similar disadvantages, to degrees that varied by group. FSWs were most concerned with the PrEP ring becoming dislodged, pushed through the cervix, getting stuck, or being felt by a partner during sex, particularly if the woman had ‘rough sex’, or her partner had a large penis. While managers expressed similar concerns, they were more concerned with the PrEP ring’s relative lower efficacy and perceived side effects (especially pelvic pain and vaginal discharge), whose frequency or severity would not be known until one tried the ring. Managers also felt that the 28 days of ring protection was too short, creating challenges for remembering replacement, especially for women who were travelling.

The process of changing after 28 days I think will be a challenge because some people fail to go and get the drugs after three months... I think some people will not manage. Only a few will manage.—Manager

Compared with FSWs, managers had more concerns about ring insertion and removal. They debated whether women themselves could insert and remove the ring and, if so, whether there would be challenges with hygiene and potentially introducing infection into the vagina. A few managers speculated that specific stereotypes would be ascribed to each PrEP method with associated discrimination. For example, they felt that PrEP ring users would be perceived as FSWs, while those using oral PrEP would be seen as living with HIV and taking ARVs.

Both groups perceived few disadvantages with CAB PrEP. A few FSWs noted that non-aligned injection schedules for CAB PrEP every two months and depot medroxy-progesterone acetate contraception every three months would make care seeking for both burdensome. A few FSWs and managers expressed dislike of injections or

perceived the number of injections to be excessive, and a small number of managers said side effects could be a challenge.

Preferred PrEP method in a scenario of choice

Across all provinces, more FSWs hypothetically preferred CAB PrEP than oral PrEP or the PrEP ring for its comparatively longer duration and higher efficacy. One FSW noted that ‘...I would choose an injection because with the injection I will not have to worry about it whenever am going anywhere, unlike oral medicine [which] I would easily forget’. However, participants from both groups noted that the PrEP method was a matter of personal choice and felt that everyone should be given the opportunity to try different methods and choose the best one for themselves.

Communicating with partners about PrEP

Regarding whether and how FSWs discussed HIV prevention and PrEP use with client and nonclient partners, women described a continuum of acceptance of PrEP use among partners and a preference for open discussion. Long-term relationship partners were more likely to be accepting and required more honest discussion, while PrEP disclosure or discussion with clients or casual relationships was typically viewed as unnecessary. One FSW summarised that discussing PrEP with clients was a ‘sheer waste of time. They just want to get into the business [sex]’.

Many FSWs and managers noted that their non-client partners did or would support PrEP use, with several mentioning that a man would accept and potentially appreciate the information if he loved the woman. Several participants from both groups stated that FSWs having correct PrEP information was important so that they could educate their long-term partners on how PrEP works and the reasons for using it.

If my partner finds out, I will explain to them how they work. If you explain to him, I think he be fine with the situation.—FSW

Overall, both groups stated that discussing PrEP use with partners was acceptable and that FSWs did not need a partner’s permission to use PrEP. However, more FSWs than managers felt partners would support their PrEP use. A small number of both groups discouraged PrEP disclosure to partners, whom they felt would assume that the FSW had a positive HIV status or multiple sex partners, which could result in physical violence or end the relationship.

Recommendations for improving PrEP service delivery

Recommendations to facilitate the PrEP method introduction and better support PrEP services focused mainly on community-level sensitisation and preferred service sites and approaches. Participants recommended broader PrEP sensitisation efforts, including potential end users, the wider community, parents and HCP influencers, using ‘language they understand’. Preferred channels

included mass media (eg, television, radio), roadshows, door-to-door efforts, flyers, billboards and t-shirts. Both groups recommended that sensitisation efforts include peer educators and individuals who are known and trusted by their communities, including experienced PrEP users who could give testimonials.

For it to be successful like the way you have taught us, we also teach our friends... Just the same as ARVs, people never used to know them. So, it is through sharing, that’s how we get to know things. Then it will spread just like that.—FSW

Managers noted that government facilities often lack entry into the communities where FSWs can be reached. They recommended conducting sensitisation in non-traditional places, including bars so that ‘as we are having fun, you educate us’, religious settings and other organisations. Messages should describe who can use PrEP according to behavioural exposure rather than by group designation (eg, FSWs, women under 18 years) to prevent stigma.

Regarding service provision, participants prioritised the need to improve HCP behaviours, including ending their mistreatment of FSWs seeking healthcare services (eg, shouting, public revelation of sex work or PrEP use, and arrogant, mocking, or judgmental attitudes), over other service site considerations. Participants advocated training HCPs to be empathetic and supportive of FSWs’ needs and ensuring confidentiality of their personal information.

Supply of PrEP methods was also mentioned as a factor influencing the success of PrEP introduction. Experienced oral PrEP users reported periodic inability to access refills due to stock outs. Both participant groups recommended ensuring a consistent supply of all PrEP methods across health facilities as new methods are introduced.

At the site level, FSWs wanted to receive PrEP information and services from facilities where they feel comfortable. While some FSWs preferred FSW-focused clinics similar to NGOs, others noted that this could increase stigma and suggested that a private space within a larger clinic or hospital may be preferable. Finally, shifting PrEP service delivery away from HIV care sites towards home-based, brothel-based, or mobile service provision with phone follow-ups to increase confidentiality was highly recommended.

DISCUSSION

Our main findings were that FSWs preferred, and FSW managers supported, longer acting PrEP methods, particularly CAB PrEP, as part of HIV prevention options. Participants also expressed the fear of stigma if others thought PrEP use meant they were living with HIV. They noted that inadequate or incorrect information limited PrEP access and use and recommended greater sensitisation among FSWs, their partners and their communities. Managers also noted that HCPs frequently do not

mention or counsel women about oral PrEP and encouraged training HCPs to be sensitised about and empathetic to the needs of FSWs. FSWs had positive attitudes towards discussing PrEP with male partners, particularly longer term partners, and desired additional information to help them do so. Participants also recommended expansion of FSW specialty clinics and peer-led services through trusted figures in their community. Findings did not differ by geographical area.

Many FSWs had personal experience with oral PrEP and appreciated its high effectiveness but reported the realities of daily use and the attributed side effects did not align with their needs, as predicted prior to oral PrEP introduction.^{15 26} FSWs and managers both largely hypothetically supported CAB PrEP, similar to the PrEP-inexperienced FSWs in Zambia, Tanzania and Kenya.^{6 15 27} FSWs also emphasised the importance of choice in PrEP methods and expressed hypothetical receptivity to PrEP ring use, which was more pronounced than among other groups (adolescent girls and young women (AGYW), PrEP experienced and PrEP inexperienced women) we talked to as part of PROMISE Collaboration.²⁸ As regional evidence on PrEP ring implementation becomes available, FSWs' openness to finding the 'right' method for them merits considering PrEP ring inclusion in national guidelines.

FSWs and managers described pervasive community-level perceptions associating women who use PrEP with engaging in sex work, leading to related stigma, similar to other contexts.^{6 22} Oral PrEP introduction activities, including community sensitisation, began in Zambia in 2018, with PrEP visibility increasing at the community level through differentiated service delivery options that rapidly expanded during the COVID-19 pandemic.²⁹ However, due to reported persistent lack of information, misinformation and stigma, expanded community and HCP sensitisation is needed to normalise PrEP for FSWs in Zambia. We identified an emergent concept of method-specific stigma, such as PrEP ring use being equated with sex work, potentially affecting uptake. These issues could be explored in PrEP ring and CAB PrEP implementation studies in the region and subsequently addressed during comprehensive sensitisation efforts.

We asked FSWs and managers whether it was appropriate or safe to discuss PrEP use with male partners, anticipating differences between clients and longer term partners. Discussion with clients was not advocated by either group however; most participants felt confident to discuss PrEP with partners, particularly in advocating for PrEP use within longer term relationships, and emphasised the need for comprehensive PrEP information to foster these discussions. Compared with FSWs, fewer managers thought that partners would support their use of PrEP which may reflect their experience with violence or volatility in relationships and their desire to mitigate risk. Overall however, few participants in both groups feared that PrEP disclosure or discussion would lead to intimate partner violence or end the relationship,

in contrast to findings in Uganda.²⁷ This topic would benefit from exploration in contexts where managers or similar influencers may be engaged to promote and support PrEP use.

Due to stigma and other barriers, FSWs and managers advocated for specialised FSW services with two clear though differing preferences of either peer-led services in dedicated sites (including community level) or large public health facilities with staff trained in respectful care tailored to FSWs. These preferences are similar to those of FSWs in Malawi prior to oral PrEP introduction, who advocated for combined SRH and PrEP services at facilities and for NGO-run clinics to serve as dispensing sites.¹⁸ Many participants had direct positive experience with community-led services as either peer educators or recipients, reflecting WHO guidance recommending differentiated service delivery models.^{5 30} Additional recommendations for sensitising HCPs and improving supply chain management to ensure stable PrEP stocks mirror those for other contexts.^{31 32}

Participant recommendations to optimise the PrEP method introduction focused on greater community sensitisation to improve knowledge and reduce stigma towards both sex work and PrEP, and expanding community-based, peer-led services. These recommendations are similar to those made prior to or at oral PrEP introduction in Malawi and Uganda^{26 31 33} and continue in Zambia as oral PrEP is taken to greater scale.²⁹

FSW mobility was identified as a barrier for PrEP use, particularly for ongoing effective use, but no specific recommendations were made to mitigate this barrier. FSW mobility should be explored further following introduction of long-acting PrEP methods to determine whether required intervals between injections or having additional rings on hand will ensure consistent coverage.

Managers emphasised their role as influencers and, thus, their utility as current or potential community-led service providers. In Zambia, CSOs have worked informally with managers to expand SRH and HIV prevention service reach, especially in brothels and other sex work venues with limited access, and they credit managers with high oral PrEP uptake in some areas (personal communication, Rodrick Nyendwa).

This study had several limitations. First, FSW and manager status were self-reported. To mitigate the enrolment of ineligible women, we recruited participants with the assistance of experienced outreach workers and other facility or project staff. Many managers and some FSW participants were recruited through CSOs with FSW-targeted HIV prevention programming and may have had greater PrEP awareness; therefore, they may not represent the average FSW or manager. However, we see this as a potential advantage as their greater insight can inform the development of desirable programme features to guide adaptation. Data on CAB PrEP and the PrEP ring are hypothetical, as oral PrEP was the only product available at the time of data collection. Therefore, participants' preferences are based on hypothetical

rather than actual experiences with CAB PrEP and PrEP ring. However, conducting the study among women aware of and (for many) experienced with oral PrEP provides a standard for comparison to the hypothetical longer acting products. Once CAB PrEP and PrEP ring are available, additional research on user preferences for PrEP products and the content and delivery of both clinical services and demand generation activities are important as knowledge of and experience with these products changes. Finally, qualitative data provide insight into participants' perspectives but does not necessarily represent all FSW and managers' experiences in these provinces and may not be generalisable to other settings within Zambia and beyond.

CONCLUSIONS

FSWs and their managers hypothetically preferred longer acting PrEP methods, particularly CAB PrEP. However, they noted that method choice is important to meet varying individual needs and circumstances. FSWs face stigma and misinformation-related barriers to PrEP access and use. To combat these barriers, participants recommended greater community sensitisation, and peer-led community-based services through trusted figures such as managers, who also requested this role and welcomed training to provide comprehensive information and PrEP services. FSWs felt that client and non-client partners would support PrEP use, but they need comprehensive information on PrEP and, potentially, on engaging partners in dialogue to explain PrEP. Product introduction efforts should develop this content as part of a comprehensive package in collaboration with FSWs and their influencers.

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