



An Exploration of Pre-exposure Prophylaxis (PrEP) Initiation Among Women Who Inject Drugs

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Abstract

Pre-exposure prophylaxis (PrEP) is an effective but understudied tool for preventing HIV among women who inject drugs (WWID). This article is the first to explore WWID's rationale for PrEP initiation (or refusal) in a real-world setting. Purposive sampling was used to recruit 25 WWID, participating in a PrEP demonstration project operating within a syringe services program, based on whether they initiated or declined PrEP care. Content analysis of qualitative interviews was used to explore decisions to initiate PrEP (or not). We found that WWID view HIV as severe, perceive themselves to be susceptible to HIV, and believe PrEP is beneficial for HIV prevention. For some, however, real and perceived barriers outweighed benefits, leading to decisions not to initiate PrEP. Barriers included HIV stigma, fear of side effects, and needing assurance that PrEP care will be available long-term. Despite viewing PrEP as an important HIV prevention tool, not all WWID who were offered PrEP initiated it. For these women, supports to buffer perceived barriers to initiation and access to post-exposure prophylaxis may be warranted. For women who initiate, it is possible that adherence will wane if perceived risk does not remain high. Research to understand PrEP persistence is needed.

Keywords HIV · Pre-exposure prophylaxis · Women who inject drugs · Health belief model

Introduction

Despite representing only 3% of the United States population, people who inject drugs (PWID) represented 6% of new HIV infections in 2017 and 28% of cumulative AIDS deaths (Centers for Disease Control and Prevention, 2018, 2019). Important gender-based disparities in HIV persist among PWID, with women who inject drugs (WWID) reporting more frequent engagement in drug- and sex-related behaviors that introduce greater risks for HIV exposure than male counterparts, such as syringe sharing and inconsistent condom use (Bryant, Brener, Hull, & Treloar, 2010; Davey-Rothwell & Latkin, 2007; Roth et al., 2016; Syvertsen et al., 2014). If incidence rates remain unchecked, it is estimated that 1:23 WWID will be diagnosed with HIV in her lifetime compared to 1:36 men. This disparity is likely to grow in the era of a fentanyl-driven opioid crisis across the U.S. (Cicero, Ellis, Surratt, & Kurtz, 2014; Jones, Logan, Gladden, & Bohm, 2015). Thus, access to HIV prevention methods and interventions to increase their use are critical for WWID. However, using male condoms (Nyamathi, Lewis, Leake, Flaskerud, & Bennett, 1995; Worth, 1989) and new injection paraphernalia often require negotiation with male

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partners (Davey-Rothwell & Latkin, 2007; El-Bassel, Shaw, Dasgupta, & Strathdee, 2014), which has been shown to impede their use (El-Bassel et al., 2014; Worth, 1989). While Pre-exposure Prophylaxis (PrEP) with daily, single-dose tenofovir disoproxil fumarate plus emtricitabine (TDF/FTC) is a highly effective HIV prevention strategy that can be woman-controlled, PrEP use among women is low (Bush et al., 2016). With few clinical or community-based PrEP implementation trials involving WWID, little is known about the specific individual or situational factors that influence their PrEP initiation (Choopanya, Martin, & Suntharasamai, 2013; Kelesidis & Landovitz, 2011).

To further our understanding of PrEP uptake among WWID, we conducted in-depth interviews focused on the decision-making processes that influenced WWID to initiate or decline a PrEP prescription among women accessing PrEP care within a syringe services program (SSP) located in Philadelphia. Such information is crucial to identify high-impact, cost-effective strategies that promote PrEP uptake among WWID. Therefore, our study sought to explore the following research questions: “What are the health beliefs that women who inject drugs have about HIV?” and “How do their health beliefs about HIV influence their decision to initiate (or decline) a prescription for Pre-exposure Prophylaxis?”

Method

Participants

Between April 2018 and March 2019, we enrolled 100 WWID into a longitudinal study designed to identify barriers and facilitators to PrEP initiation when free PrEP care is offered within a SSP. Participants were all HIV seronegative, cisgender women, age 18 or older, who were able to speak and read in English and reported injection drug use within the last 30 days. WWID had to also report one of the CDC’s recommended indications for PrEP (e.g., transactional sex, syringe sharing, HIV serodiscordant partner) (Centers for Disease Control and Prevention, 2017). Women who were pregnant or intending to become pregnant were excluded.

For the present study, “initiating PrEP care” was defined as a participant expressing a desire to receive a PrEP prescription and then returning 1 week later to obtain PrEP either by picking up (1) a paper prescription form to take to their pharmacy or (2) a bottle of TDF/FTC delivered to the study site by a local pharmacy. Following the suggestion of Ulin, Robinson, and Tolley (2012) that qualitative researchers select information-rich cases that are representative of a range of experiences, we elicited a purposive sample of those who initiated or declined PrEP care by (1) reviewing participants’ study records, (2)

identifying participants’ decision (or not) to initiate PrEP care, and (3) inviting women to participate in an in-depth qualitative interview by phone ($n = 6$) or in-person during a study visit ($n = 19$). We reached thematic saturation after interviewing 18 women who initiated and 7 who declined PrEP and concluded recruitment into the sub-study.

Measure and Procedure

Two trained interviewers conducted qualitative interviews, lasting approximately 45 min, using a semi-structured instrument. The instrument was designed to explore factors shown to impact perceived HIV risk and PrEP initiation decisions. This included literature of barriers and facilitators to PrEP uptake among MSM (Galea et al., 2011; Smith, Toledo, Smith, Adams, & Rothenberg, 2012; Young, Flowers, & McDaid, 2014), PWID (Escudero et al., 2015), and women (Auerbach, Kinsky, Brown, & Charles, 2015; Galea et al., 2011; Smith et al., 2012), as well as theoretical drivers of health care utilization among vulnerable populations (Gelberg, Andersen, & Leake, 2000; Stein, Andersen, & Gelberg, 2007). During the interview, we first asked participants to describe their daily lives, focusing on factors that may increase/decrease their perceived susceptibility to HIV. For example, we asked, “Day to day, how vulnerable do you think you are to HIV?” Follow-up items included, “Can you tell me a little bit about what puts you at risk for HIV?” and “Can you tell me a little bit about what keeps you safe from HIV?” We probed for individual, social, and environmental determinants of HIV risk such as addiction severity and ability to negotiate condoms or new syringes within sexual partnerships. In the context of their perceived susceptibility to HIV, we asked participants, “Do you think of yourself as being someone for whom PrEP would be helpful?” Follow-up probes explored the perceived usefulness of PrEP, focusing on salient features of the medication such as its effectiveness and situations that might facilitate or impede their ability to initiate PrEP. To explore WWID’s perceptions of potential benefits or harms related to PrEP, participants were asked, “What do you think about PrEP?” This question was followed with probes such as, “In what ways would being on PrEP benefit you?” and “Are there any ways PrEP could be harmful or bad for you?” Lastly, we explored participants’ decision-making processes around accepting or declining a PrEP prescription. For example, we asked women who accepted a PrEP prescription, “Can you tell me a little bit about why you took the prescription?” while women who declined a PrEP prescription were asked, “As part of our study, we offered you a PrEP prescription, and you did not take it. That is totally okay. I just want to learn a bit more about this decision. Can you tell me a little

about your decision to not take the prescription?” We then explored known barriers to initiation such as concerns about cost, side effects, and PrEP-related social stigma.

All interviews were audio-recorded with the expressed consent of the participant. At the conclusion of the interview, participants were thanked for their time and received \$20USD as compensation. Study procedures were approved by the Drexel University Institutional Review Board and the Prevention Point Philadelphia Executive Board.

Analysis

Interviews were transcribed verbatim. Each interview was checked for accuracy by two research assistants. Transcripts were coded by two research assistants using NVivo software (Bazeley & Jackson, 2013) based on standard content analysis methods (Miles, Huberman, & Saldana, 2013) using an iterative coding framework. To develop the coding framework, we first identified structured codes corresponding to domains in the interview guides (e.g., “Barriers to PrEP Initiation,” and “Facilitators to PrEP Initiation”). Next, three team members read three to five transcripts to develop a set of emergent codes reflecting unanticipated themes that arose during interviews. At this time, we determined that participant narratives mapped well onto the main concepts of the Health Belief Model (HBM) (Becher, 1974). HBM has been used for explaining and predicting engagement and uptake in healthcare services and preventive behaviors. HBM posits that a person’s health behavior, in this case, initiating PrEP, is influenced by four types of health beliefs: (1) susceptibility to an illness (i.e., perceived risk of acquiring HIV); (2) severity of a potential illness (i.e., perception of how bad it would be to acquire and live with HIV); (3) benefits of taking a preventative action (i.e., benefits of PrEP initiation); and (4) perceived barriers to taking the preventative action (i.e., barriers to PrEP initiation). Additionally, HBM suggests that behavior is influenced by cues to action that encourage people to take health-related action. In the context of this study, we consider receiving PrEP information and being offered a PrEP prescription as a part of the parent study a cue to action. Using HBM, we organized main themes into each of these four beliefs.

Once the final coding framework was developed, two research assistants independently read and applied it to each transcript. Code application was discussed during weekly meetings to ensure consistent coding/analyses, and coding discrepancies were discussed until consensus was reached. During our final phase of analysis, we selected quotes reflecting key themes and replaced participant identification numbers with self-selected pseudonyms. Pseudonyms are used as identifiers for each quote appearing in this manuscript.

Results

Demographic Characteristics

Twenty-five WWID participated in the study. Of these, most (82%) identified as non-Hispanic White, had a median age of 37, and 56% were currently homeless (Table 1). The majority (68%) perceived themselves to be in poor/fair health. CDC (2017) PrEP indications were frequently reported by the sample including transactional sex (72%), inconsistent condom use (76%), having a sex partner living with HIV (8%), bacterial STI diagnosis (20%), sharing injection equipment (52%), and recent opioid agonist treatment (20%), all in the past six months. Forty percent of participants reported experiencing sexual assault within the past year. Almost half

Table 1 Participant characteristics ($n=25$)

	<i>N</i>	%
Age (median/IQR)	37	34–41
Education		
< High school	12	48.0
High school graduate	10	40.0
> High School	3	12.0
Income < \$5000	12	50.0
Insured (yes)	21	87.5
Hispanic or Latino Ethnicity (yes)	5	20.0
Race ^a		
NH White	18	81.8
NH Black	2	9.1
Mixed Race	2	9.1
Currently homeless (yes)	14	56.0
Self-perceived health status		
Poor/fair	17	68.0
Good/very good	8	32.0
Self-perceived HIV risk		
Extremely/very unlikely	13	52.0
Extremely/very likely	12	48.0
Number sex partners ^b (median/IQR)	5	2–11
Transactional sex ^b (yes)	18	72.0
Inconsistent condom use ^b	19	76.0
Sex Partner Living with HIV	2	8.0
Recent bacterial STI ^b	5	20.0
Injection equipment sharing ^b	13	52.0
Opioid agonist treatment	5	20.0
Experienced Sexual Assault (yes) ^c	10	40.0
Initiated PrEP	18	72.0

^aIncludes Asian, Pacific Islander, Native Hawaiian, and mixed race

^bWithin last 6 months

^cWithin last year

of the women interviewed (48%) perceived they were likely to acquire HIV.

Understanding Decisions about PrEP Initiation Through the Health Belief Model

Perceived HIV Susceptibility

Perceived HIV susceptibility was attributed to factors both within and beyond women's control. Regular engagement in harm reduction behaviors (e.g., avoiding syringe sharing) fostered a belief for some women that most of the time, they were at relatively low risk for HIV. We commonly heard women say things like, "I'm not very vulnerable [to HIV]. I'm pretty safe. I don't have sex with random people and I do not share any type of [injection drug] supplies" (Nikki, age 28). Despite regular engagement in harm reduction behaviors, something women perceived they are able to control, participants often simultaneously reported that their ability to engage in these behaviors was constrained by opioid addiction and their need to stave off painful opioid withdrawal symptoms. "It gets real [hard]. I don't like to be dope sick... When you're sick you don't care. You ask your girlfriend, 'Do you have a set of works?' and you'll use 'em" (Sunday, age 36).

Regarding perceived HIV risk, however, women were most concerned about HIV risks stemming from perpetrators of sexual assault and environmental forces (e.g., neighborhood with injection drug litter) beyond their control. Fear of acquiring HIV from sexual assault was a grave concern among many participants. This fear, more than any other, impacted women's decisions to initiate PrEP. "I work—[do] street [sex] work, so yeah [I'm] very vulnerable to HIV... Just the fact I've gotten raped a few times, that impacted my decision [to get on PrEP]" (Farrah, age 50). Tina (age 52) was initially hesitant about initiating PrEP but changed her mind after screening positive for chlamydia, which she believes she contracted during an assault. "That was what changed my mind... I was thinking like [the sexual assault] happened to me. It could happen again, you never know, and next time it could be HIV instead of an STD."

In addition to fearing personal attack, women also perceived they were susceptible to HIV, and thus in need of PrEP, based on the physical environment in which their daily lives unfold. In particular, women feared accidental needle sticks from drug-related litter common in the neighborhood where the study was conducted (Roth et al., 2019). Adrianna (age 36) describes an incident in which she considered a 'near miss' the previous week: "I freaked out. I was wearing flip flops and I had a [discarded syringe] that stuck through the bottom. It didn't go through, but it was stuck in my flip-flop and I had to pull it out. It didn't hit my foot or anything but it coulda poked me and I coulda caught something and that woulda been it." Similarly, Prepper (age 40) describes that the possibility of stepping on a

used syringe puts her at risk for HIV and in need of PrEP irrespective of behaviors within her control: "...There's needles all over the streets... In the summer time, wearing flip-flops, you step on a needle... You could fall, shit happens. So... I need [PrEP] regardless of how I'm living."

Perceived HIV Severity

Beyond feeling susceptible to HIV, most participants perceived HIV as a severe condition. A common characterization of HIV was shared by Brenda (age 47):

I don't want to die from HIV. I don't want the doctor to come and tell me, "You've got HIV. You're gonna die in a horrible death." [If I found out I had HIV] I'd take Xanax and end my life or a couple bags of dope. I just couldn't live with that.

For some, knowing someone living with HIV increased perceived HIV severity and motivated PrEP initiation. "[My friend] ended up getting HIV like when we were younger... He's getting really sick already. He is only in his mid-30 s... I guess in the back of my head I keep thinking about him too and I was like, damn I have enough problems... At least there is a chance that if I take [PrEP], I will never have to go through that." (Tina, age 52)

Perceived HIV Threat

According to HBM, together perceived susceptibility and severity inform perceived threat to that illness (Becher, 1974). Most participants in this sample had high perceived threat to HIV, which many described as a constant worry. "I've always been afraid to find out my [HIV test] results... You basically mind fuck yourself. It's like, 'Oh, do I have [HIV]?' (Sunday, age 36). Taken together, WWID's high perceived threat of HIV was a main motivating factor in women's desire to initiate PrEP, especially because they faced occasional circumstances in which they were unable to engage in prevention behaviors.

Perceived Benefits of PrEP Initiation

Participants unanimously perceived PrEP to be a beneficial HIV prevention tool for anyone at risk for HIV. PrEP's primary benefit was its effectiveness. "In actuality, if you only have to take a pill once a day to protect yourself, and not getting the [HIV] virus, it's a miracle... We're almost 30–40 years into the AIDS epidemic that we finally have something concrete that we can get to the public—I'm thrilled about it" (Prepper, age 40). Given women's fears of risk factors beyond their control, another benefit of PrEP was that it was a prevention tool within their control that did not depend on the cooperation of sex partners. This feature of PrEP was particularly important in the context of transactional sex, a form of income generation

reported by 18/25 participants. Of particular concern was men removing condoms during sex without their consent. “[PrEP] is awesome...in prostitution, jerks take the condoms off. You tell them to use a condom and they don’t...So we can protect ourselves with PrEP” (Sunday, age 36). As a result of the increased HIV protection, participants described that PrEP would reduce HIV-related anxieties. “Just knowing that if there is a slip up, if you make a mistake...you’re covered. You don’t have to worry so much” (Anonymous, age 36).

Perceived Barriers to PrEP Initiation

While PrEP was considered beneficial because of its effectiveness and ability to be user-controlled, participants described barriers to initiation. For 7/25 of the sample, perceived barriers outweighed the benefits of PrEP and sense of HIV threat. These women declined PrEP. Key barriers included: potential adverse reactions with comorbid conditions, PrEP- and HIV-related stigma, location of care, and the psychological costs of initiating new relationships with PrEP care providers.

In this sample, most reported their health was poor/fair. These women believed the physical toll of experiencing potential side effects, irrespective of how short lived the experience would be, was greater than expected benefits.

I didn’t take PrEP because I was worried about the stomach side effects...I’m already having a lot of stomach problems, so I didn’t want to put that on top of it. I was thinking about taking [PrEP], but then I didn’t want to risk getting sick...I probably should take [PrEP]...I just...the worry about side effects are outweighing the worry of getting AIDS. (Anonymous, age 46)

Similarly, JJ (age 39) was interested in taking PrEP but felt too sick at the time of the study to initiate. “I’m pretty vulnerable [to HIV]..My boyfriend has HIV...But I had pneumonia...I had a heart valve replacement...So, right now I’m on strong medications so I thought that I would just hold off and wait ‘cause I didn’t want to start taking [PrEP] with me feeling sick.”

In addition to concerns about side effects, stigma associated with HIV was another important barrier. Participants were concerned that someone would see their medications and think that they had HIV. Given HIV stigma, being perceived as HIV seropositive was a barrier to initiation:

I actually did [want a PrEP prescription] at first....But I was scared that if someone seen [my prescription] they... would put a label on it. Some people might think that’s the pill [you take] because you have HIV. And if they see it and it says PrEP, they might assume that I have [HIV]. That’s a little scary. (Butterz, age 33).

Another barrier was women’s fear that being a PrEP user indicated they were at high-risk of HIV. Social mores impeded women’s PrEP initiation because they did not want to engage in conversations about their personal and highly stigmatized behaviors. “I was hesitant to just be taking a medication. Even though [PrEP] is a really good thing, they’d just be like ‘What the fuck are you taking this for?’ Why are you taking a medicine to keep you from getting HIV?’ They just won’t understand” (Tina, age 52).

All women acknowledged that the location of PrEP care was a potential barrier. In this study, participants were able to access PrEP at the SSP. This helped them overcome roadblocks they associated with community-based care such as scheduling health care appointments. “I come, and when my prescriptions done, I get my prescription, I take it to the pharmacy to fill it. I have no problem with it...[Getting PrEP on my own] probably wouldn’t be as easy. It’s hard for people like myself to make appointments” (Sunday, age 36). Further, embedding the PrEP clinic within the SSP capitalized on relationships women had already established with a place they regularly utilize and trust. “It’s just easy [getting PrEP at the SSP]. I come here anyway...I’m already comfortable here. I trust the staff. If I were to have any issues, whereas before with something I might just be like, ‘yeah whatever,’ but I might actually speak up to try to [advocate] for myself, which is something I’m bad at...I’ve seen the people. They remember my name. It’s just nice” (Adrianna, age 36).

A final barrier to initiation was the perception that the study would end, and women would no longer be able to access PrEP through the study team. The potential loss of service and relationships impeded initiation within the study but may have facilitated access to longer-term care. “I loved the way you guys are so caring, but youse are gonna go away...and that’s a hard thing for me to get close especially to women and then they leave...[My new doctor is] experienced in trauma, she’s experienced in PrEP...she’s gonna continue to be there for me and you guys are gonna be gone so I think it was just the best thing for me [to go to her for PrEP]” (B, age 34).

Discussion

We found HBM to be a useful framework for understanding and describing WWID’s decision-making processes about PrEP initiation. In the context of being offered a PrEP prescription within a SSP, which we treat as a cue to action, PrEP initiation depended on whether perceived benefits and HIV threat outweighed real and perceived barriers to initiation. WWID in this sample perceived PrEP to be highly beneficial, and most acknowledged they were susceptible to HIV, a condition they wanted to avoid, even if they did not attribute it to their own behavior.

Most participants perceived themselves to be at risk for HIV, which motivated PrEP initiation. This finding contrasts with numerous studies reporting low HIV risk perception to be a barrier to PrEP uptake among PWID (Biello et al., 2018; Felsher et al., 2018) and MSM (Chan et al., 2016; Felsher et al., 2018; Young et al., 2014). High perceived HIV susceptibility among participants in this study may be attributed to our focus on WWID, 72% of whom reported recent sex exchange and 56% of whom reported being homeless, since street-based sex work and homelessness are both associated with increased risk of sexual assault (Bourgois, Prince, & Moss, 2004; Decker et al., 2012; Tyler & Wright, 2019). Notably, we found that women dichotomize sources of HIV risk as those within their control (e.g., inconsistent condom use, sharing syringes) and those beyond their control (e.g., sexual assault, unintentional needlesticks). Risks beyond their control was the main driver of women's perceived HIV susceptibility, their subsequent perceived need for PrEP and ultimately their decision to initiate. Additionally, the fear of event-driven unintentional exposures may indicate that post-exposure prophylaxis (PEP), which involves taking HIV medication within 72 h of a potential HIV exposure, may be a more appropriate HIV prevention option for some women, especially those who decline PrEP. However, because of the ubiquity of these event-driven sources of risk, both PrEP and PEP should be offered as HIV prevention strategies to WWID living in areas of highly concentrated drug use and crime.

By removing structural barriers known to challenge health care utilization among PWID (i.e., inflexible scheduling systems, stigma from medical providers), offering PrEP care within the SSP positively impacted initiation (Biello et al., 2018; Felsher et al., 2018; Koechlin et al., 2017; Shrestha & Copenhaver, 2018). In particular, women described co-located care as convenient because they regularly attend the SSP for other services. Initiation was also facilitated by women's trust for the SSP staff. Women reported that compared to other places they receive medical care, they were better able to advocate for themselves and medical concerns within this space. Thus, being offered a PrEP prescription (i.e., being cued to act) by trusted staff in a convenient location facilitated uptake. Furthermore, removing structural barriers may have decreased barriers to PrEP initiation, such as self-efficacy and thus contributed to participants' ability to weigh the perceived pros and cons of PrEP and their decision to initiate.

For 7/25 participants, HIV threat and increased PrEP access were insufficient, and they declined PrEP. Perceived side effects, PrEP and HIV stigma, and potential loss of trusted PrEP service after study participation ended were highly salient in this group. Despite most patients reporting few side effects with TDF/FTC use (Baeten, Donnell, & Ndase, 2012; Grant, Lama, & Anderson, 2010; Thigpen, Kebaabetswe, & Paxton, 2012), WWID reported being afraid of any potential side effects, such as nausea. These fears have been documented

in other populations (Auerbach et al., 2015; Galea et al., 2011; Mustanski, Johnson, Garofalo, Ryan, & Birkett, 2013; Philbin et al., 2016), but may be intensified for PWID, because of their similarities with the symptoms of opioid withdrawal (Gowing, Ali, & White, 2017; Spinner et al., 2016). Thus, tailored messaging about the gravity and duration of PrEP side effects should be incorporated into PrEP counseling, especially in populations with comorbid health conditions.

Study findings must be interpreted within the limitations of the design of a small, exploratory, qualitative study that was not intended to be generalizable. We conducted interviews with women who were actively engaged with a parent study that offered WWID PrEP within an SSP and provided them PrEP care at no cost. Selection bias, in terms of recruiting from a harm reduction agency and the parent study, may have contributed to the positive perceptions of PrEP. Women who do not access the SSP, did not enroll in the parent study, or who were not retained in the study may perceive their HIV risk to be lower or barriers to initiating PrEP to be greater. With regards to the interviews conducted, there are some limitations in the study design. In some cases, we asked participants questions that may have elicited a yes/no response. For example, participants were asked a closed-ended question about whether they considered themselves someone who would benefit from PrEP. While this was a follow-up question that occurred within the context of first exploring their perceived vulnerability to HIV, both the question format and the order of the interview questions may have biased some women to answer in the affirmative. Another example is when we asked participants, "Are there any ways PrEP could be harmful or bad for you?" within the context of a conversation about women's perceptions of PrEP. The closed-ended nature of this question may have biased women to respond negatively, thereby endorsing PrEP safety. However, we describe here a substantial number of real and perceived barriers raised by participants, which suggests that they did not feel pressured to be supportive of PrEP. Future research should consider the limitations of this study design and expand on it through additional open-ended explorations of women's experiences across the continuum of PrEP care. We also recognize that using the Health Belief Model to frame findings, which does not explicitly consider environmental and social influences of health and health behavior, may limit this work. Importantly, these concepts emerged organically in participant narratives and we were able to locate them within our analytical framework. For example, women described perceived HIV risk as being shaped by participants' experiences with environmental factors such as exposure to injection drug litter or from partnered sexual experiences which are social in nature.

To our knowledge, this is the first study to explore WWID's decision-making processes impacting PrEP initiation in a real-world context. Our results highlight the importance of removing barriers to care in order to promote uptake among a highly vulnerable population of WWID. Most women

recognized their HIV risk, believed they would benefit from PrEP, and thus, initiated PrEP. However, one-third declined PrEP primarily due to their concerns about PrEP-related side effects and stigma. In order to increase initiation, additional interventions that effectively decrease the saliency of these barriers will be necessary.

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Compliance with Ethical Standards

Ethical Approval Study procedures were approved by the Drexel University Institutional Review Board (ID 1704005331) and the Prevention Point Philadelphia Executive Board.

Informed Consent Informed consent was obtained from all individual participants included in the studies.

Conflict of interest The authors declare that they have no conflict of interest.

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