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Recommended Citation

Jeffers, Noelene K.; Zemlak, Jessica L.; Celius, Lourdes; Willie, Tiara C.; Kershaw, Trace; and Alexander, Kamila A., "'If the Partner Finds Out, then there's Trouble': Provider Perspectives on Safety Planning and Partner Interference When Offering HIV Pre-exposure Prophylaxis (PrEP) to Women Experiencing Intimate Partner Violence (IPV)" (2022). *College of Nursing Faculty Research and Publications*. 901.
https://epublications.marquette.edu/nursing_fac/901

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'If the Partner Finds Out, then there's Trouble': Provider Perspectives on Safety Planning and Partner Interference When Offering HIV Pre-exposure Prophylaxis (PrEP) to Women Experiencing Intimate Partner Violence (IPV)

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Abstract
Pre-exposure prophylaxis is an effective women-controlled HIV prevention strategy but women experiencing intimate partner violencefear partners' interference and subsequent violence could limit its utility. This study explores provider perceptions of safety planning strategies to prevent escalating violence, mitigate partner interference, and promote daily oral PrEP adherence. We conducted interviews (N = 36) with healthcare providers (n = 18) and IPV service providers (n = 18) in Baltimore and New Haven. Using the Contextualized Assessment for Strategic Safety Planning model we organized data into two categories: the appraisal process and strategic safety planning. Themes revealed during the appraisal process, providers conduct routine IPV screening, facilitate HIV risk perception, and offer PrEP. Strategic safety planning utilizes concealment tactics, informal sources of support, role playing and cover stories. Future interventions to enhance PrEP services among women exposed to IPV should implement safety planning strategies, integrate PrEP care with IPV services, and employ novel PrEP modalities to maximize effectiveness.

Keywords
Intimate Partner Violence; HIV; Pre-exposure prophylaxis; Women

Introduction
HIV and intimate partner violence (IPV) are co-occurring health conditions with intersecting risk factors. Intimate partner violence includes sexual violence, stalking, physical violence, psychological aggression and related impacts such as being afraid, having concern for safety, needing assistance from law enforcement, or missing work or school[1]. In the United States, one in four women will experience IPV in their lifetime[1]. Female survivors of IPV are at a greater risk for acquiring HIV than women in nonviolent relationships[2] and evidence suggests that as many as one in two women with HIV have experienced IPV[3]. The link between IPV and HIV incorporates both indirect and direct causal pathways[4]. Indirectly, HIV risks are heightened when experiencing controlling behaviors around sexual activity, forced sex, birth control sabotage, non-monogamy, and nonconsensual condomless sex by an abusive male partner[3, 5]. Directly, trauma to vaginal or anal tissues that may occur during sexual violence perpetrated by a partner with HIV may also increase the likelihood of HIV transmission 7. Given the links between HIV and IPV, HIV prevention is a critical component of health promotion activities for women exposed to IPV.

Women experiencing IPV often prefer to protect their health using women-controlled methods that can be hidden and utilized without a partner's knowledge[9]. However, daily oral pre-exposure prophylaxis (PrEP), a women-controlled and partner-independent HIV prevention method available since 2012, is underutilized by women in the U.S[10]. Prior research indicates that women experiencing IPV are less likely to consider taking PrEP than women without this history[11]. Women with a history of

IPV express concern that their partner will discover their PrEP use, potentially exposing them to a greater amount of violence[12]. Women with intimate partner violence may also lack robust and supportive social networks that might otherwise encourage PrEP use[13].

Adherence to daily oral PrEP medication among women is crucial to its effectiveness[14] but the threat of partner reprisal may negatively impact adherence. Women experiencing IPV often interact with providers in the healthcare and social service sectors that can facilitate planning for safety when implementing this method for HIV prevention, thus potentially increasing adherence and success for reaching optimal sexual health. Healthcare and IPV service providers can play a unique role in assisting patients to balance their need for discrete HIV prevention along with their physical safety needs.

In the context of IPV and health care services, individualized safety plans can mitigate the urgent and specific risks that women survivors encounter[15]. Safety planning incorporates a wide range of activities and strategies that help women consider how to maintain safety in a relationship, prepare to exit a relationship or make life plans after leaving an abusive relationship[16]. Traditional safety planning considerations might include activities such as packing a bag of necessary belongings, keeping a list of emergency contacts, removing weapons from the house, developing a plan of escape, telling family and friends what is occurring, and safeguarding important documents[16]. Healthcare providers conducting evidence-based risk assessments consider a woman's priorities regarding the future for her relationship, her available resources, and the likelihood for severe or lethal violence18.

Safety planning is a crucial component in the health system's response to women experiencing violence[17–19]. Healthcare providers using women-centered approaches focus conversations on women's choices to find individualized solutions and paths to safety[20]. For some women, emergency safety plans have proven to increase safe behaviors and decrease overall violence. One study found that over half of women experiencing IPV that developed emergency safety plans reported that such plans were helpful in dealing with their partner's violence[21]. Social service and healthcare providers are traditional sources of formal support for women experiencing IPV; playing a critical role in IPV identification and intervention.

Healthcare and social service providers who conduct safety planning with women experiencing IPV can also assess health needs. However, despite evidence that suggests the usefulness of provider-facilitated safety planning and the acceptability of PrEP as a women-controlled method for HIV prevention among women IPV survivors, little is known about how to prepare women to safely plan to use PrEP. To address these gaps, we explored healthcare and social service provider perceptions of safety planning strategies to prevent escalating violence, mitigate partner interference and promote adherence to PrEP.

Methods

Study Design

We analyzed data derived from two parent mixed-methods cross-sectional studies that examined provider perspectives on development of multi-sector collaborations to support women experiencing IPV. We recruited social service and healthcare providers from the Baltimore Maryland Metropolitan Area (BMore Her PrEP Her Way) and the state of Connecticut (Her PrEP | Her Way). The social service

providers in this study included IPV advocates and social workers. The healthcare providers included women's reproductive health providers (e.g., certified nurse midwives and obstetrician-gynecologists) and providers experienced in prescribing PrEP (e.g., primary care providers and infectious disease specialists). National guidelines recommend that all healthcare providers in primary care settings screen for IPV at each encounter[22]. Given these guidelines, the authors analyzed the perspectives of these diverse healthcare providers jointly. Incorporating the perspectives of social service and healthcare providers (hereafter, "providers") provided an opportunity to examine this topic through a multidisciplinary lens and explore how women experiencing IPV might benefit from integrated HIV prevention care.

Both studies used the same semi-structured interview guide to explore provider perspectives on HIV risk reduction among women with IPV experiences. As shown in Table 1, which includes example questions, we asked participants to reflect on their perceptions of barriers to PrEP uptake, adherence, and retention for women experiencing IPV. The guide included topics such as ways that providers can reduce the risk of HIV infection among women in abusive relationships, whether HIV prevention services were offered or recommended, barriers to offering HIV prevention services, how they think the risk of HIV infection can be reduced among women in abusive relationships, and anticipated barriers or facilitators to PrEP interest. There were also questions about important "first steps" to take before recommending PrEP to a woman in an abusive relationship and how they would counsel a woman in an abusive relationship about PrEP. We also asked providers how they would discuss safety when advising women interested in taking PrEP, as well as barriers and facilitators to provision of an initial prescription, PrEP uptake, the required follow-up visits, and long-term adherence.

Table 1 Example questions from the interview guide

• What are some concerns that women in abusive relationships present with when they visit your setting?
• If possible, could you describe a time in which a woman in an abusive relationship was concerned about her sexual health?
• How can the risk of HIV infection be reduced among women in abusive relationships?
◦ Were HIV prevention services offered or recommended?
◦ Are there any barriers to offering HIV prevention services?
• What are your thoughts about PrEP use among women in abusive relationships?
• In your experience, have women in abusive relationships asked or inquired about PrEP?
• Could you describe a scenario in which you would feel comfortable to discuss PrEP with a woman in an abusive relationship?
• What are some barriers women in abusive relationships may experience related to PrEP management?
• What are some facilitators women in abusive relationships may experience related to PrEP management?
• Can you describe how you would counsel a woman in an abusive relationship looking for PrEP?
• How would safety factor into your advising of a woman interested in or on PrEP?
• What are important "first steps" before a provider prescribes a woman in an abusive relationship PrEP?

Study Participants

Both study teams recruited participants using purposive sampling methods. Participants were recruited by research assistants through word-of-mouth, email advertisements to professional list-serves, flyers posted in areas of professional networks, and email inquiries to PrEP providers and IPV social service organizations. Providers were eligible to participate in the study if they were a current (within 6 months) provider of women's

health, IPV services, or PrEP for women; if they had time to participate in a one to two hour interview; and if they could read and speak the English language. The Baltimore Maryland Metropolitan study arm required that the providers offer these services to women aged 18–35. We recruited participants until we reached saturation of ideas and concepts. We offered participants in the Baltimore Maryland Metropolitan area a $10 gift card as a thank you for participating in the study. In the Connecticut arm of the study, two participants in each provider category were eligible to participate in a raffle for a $100 gift card. Graduate-level research assistants trained in qualitative data collection methods conducted the face-to-face interviews. The interviews lasted between 60 min and 90 min and were digitally audio-taped. Each participant was assigned a unique numeric identifier during data collection. Interviews were completed between July 2016 and June 2017 for the Connecticut study and June 2017 and July 2018 for the Baltimore study.

Analysis

Conceptually-Informed Analytic Strategy

Traditional safety planning models aim to meet the immediate crisis needs associated with a woman's decision to leave the relationship or to flee an escalating incident. Researchers developed the Contextualized Assessment for Strategic Safety Planning (CASSP)[20]. The CASSP proposes that women self-define safety and harm, and that working together with a professional can devise safety plans that are individualized to meet women's perceptions of her circumstances, goals and needs. We used the key domains of the Contextualized Assessment for Strategic Safety Planning model to inform our qualitative analysis plan.

The CASSP model describes two stages in strategic safety planning: (1) the appraisal process and (2) strategic planning. The appraisal process includes primary and secondary appraisals. During primary appraisal, the team identifies multiple and varied harms that may accompany violence. For example, in this context, violence may lead to physical injury and could also pose additional threats such as increased risk for exposure to sexually transmitted infections, HIV infection, and unintended pregnancy. Women are encouraged to weigh the relative priority that each potential threat poses. During secondary appraisal, women consider their available options to confront each harm as well as their individual capacity to implement these options. During the next stage, strategic safety planning, women are encouraged to use what they learned during the appraisal process to identify existing assets and barriers to mitigate these harms, and reflect on coping efforts. Finally, strategic safety planning includes increasing women's capacity to perform this appraisal and planning process on an ongoing basis. This can facilitate skills that allow them to adapt their safety plans to changing appraisals of their circumstances and the resources available to them. Both the appraisal process and strategic safety planning are conducted within the context of risk and protective factors that exist at the individual and environmental levels. Common contexts that need to be considered include the safety and custody of children, immigration status, larger family responsibilities, and socio religious and cultural expectations and norms. The end goal of the contextualized strategic planning process is a set of strategic safety related actions that may shift and morph over time in response to the context.

Analytic Procedures

All interviews were transcribed verbatim and managed using Dedoose(R)[23], a web-based qualitative data management software application. We used a team-based approach to analyze these data to increase confidence in the consistency and reliability of our findings[24]. Two researchers [Author initials masked for peer review] independently read each transcript and applied conceptually-based emergent

coding techniques to the data[25]. We developed a codebook with corresponding definitions and illustrative quotes from the text. Coding differences were reconciled through consensus after re-examination of the text. Persisting discrepancies were resolved by a third researcher [Author initials masked for peer review] with expertise in IPV and HIV clinical practice.

Informed by the CASSP model, we used directed content analysis due to our interest in examining the concept of safety planning as it applied to PrEP care among women experiencing IPV. We organized the coded data into categories according to the CASSP model and assigned emergent themes related to safety planning and PrEP through a deductive approach [Author initials masked for peer review]. Identification of initial key themes was undertaken by [Author initials masked for peer review] and corroborated by [Author initials masked for peer review] and [Author initials masked for peer review]. The studies were approved by [Institution masked for peer review].

Results

Participants

Our sample (see Table 2) included 36 individuals across the two geographic sites (22 Baltimore, 14 Connecticut). Eighteen were IPV service providers and 18 were healthcare providers. Nine of the healthcare providers reported experience providing PrEP to patients and nine reported providing general reproductive health services to women. Participants reported employment in hospitals (*n* = 11), community health centers (*n* = 15) and IPV programs (*n* = 10). Participant work experience ranged from 2.5 to 42 years. Participants identified racially as: Asian (*n* = 2), Black/African-American (*n* = 4), White (*n* = 26), Biracial (African American and White; *n* = 1) individuals. Three participants ethnically identified as Latina. The mean age of our sample was 42 years old.

Table 2 Characteristics of participants (*N* = 36)

Characteristics	**N (%)**
Sex	
Male	1 (2.8)
Female	27 (75)
Unknown	8 (22.2)
Age, mean (range)	42 (26–61)
Race	
Black	4 (11.1)
White	26 (72.2)
Asian	2 (5.6)
Biracial	1 (2.8)
Unknown	3 (8.3)
Ethnicity	
Non-Hispanic/Latina	33 (91.7)
Hispanic/Latina	3 (8.3)
Geographic location	
Baltimore	22 (61.1)
Connecticut	14 (38.9)
Years of work experience mean, (range)	13 (2.5–42)

Provider type	
IPV service provider	18 (50)
Healthcare provider	18 (50)
Employment setting	
Hospital	11 (30.6)
Community center/clinic	15 (41.7)
IPV program/organization	10 (27.8)

Themes

Our analysis revealed that providers perceived that daily oral PrEP is one component of a comprehensive safety planning strategy for women at increased risk for HIV due to IPV. Providers noted that PrEP use could be a potential source of violence escalation suggesting that safe and successful initiation and retention in PrEP care required a collaborative and contextualized safety planning process. We organized our thematic findings according to the conceptual model's categorical domains: The Appraisal Process and Strategic Safety Planning. Several themes were identified within each category. Exemplar quotes from each theme are presented below; in parentheses are details of the participant's profession and their employment setting.

The Appraisal Process

The *appraisal process* refers to an assessment of all of the threats and potential harms associated with a woman's specific experience of IPV and the safety planning strategies available to mitigate those threats. Two themes emerged in relation to the appraisal process: (1) *You have to ask* describes how IPV screening can assist women to appraise potential harms from IPV experiences, including risks for HIV. The process of IPV screening can also help providers gather necessary information to initiate safety planning during PrEP care; and (2) *Connecting the dots* describes the provider's role in facilitating women's HIV risk perception.

You Have to Ask: IPV Screening as a Gateway to Safety Planning

Providers described the process of identifying women experiencing violence through screening as an important first step to strategic safety planning. Screening for IPV provides the opportunity for women to disclose violence and providers to assess HIV risk. For example, one healthcare provider stated:

> There's [an] inability to negotiate condom use [and the] potential risk of physical abuse, harm...If you identify women [who] are in those situations then you'd have the opportunity to talk about PrEP. But you have to ask. (Healthcare Provider, Clinic/Community Health Center)

This provider acknowledged that IPV has multiple manifestations, including physical violence, sexual violence and coercion, thereby increasing HIV risks because some women might be forced to engage in sex without a condom. Assessment of sexual violence and coercion could indicate a need to offer PrEP. This participant also suggested that inadequate or inconsistent IPV screening practices could prevent healthcare providers from identifying women that could benefit from utilizing PrEP.

An IPV service provider echoed concerns that providers are not specifically inquiring about sexual violence:

> I think that victims, or just people, in general, are very uncomfortable talking about sex. Probably many more of our clients are experiencing sexual abuse than who are talking about it. Because they're focusing on emotional and verbal and physical abuse but the sexual piece is there and you know, we don't specifically ask... I think we could probably do a better job of opening that door because it is an uncomfortable topic for clients, but knowing that there is something that can help them and that can prevent, you know, the spread of HIV, I think it's really important. (IPV Service Provider, Domestic Violence Organization)

This provider's statement underscored a belief that providers need to be aware that women may not readily disclose sexual IPV. Underlying stigma and shame associated with sexual violence may be a significant barrier to disclosure. Additionally, women may prioritize disclosure of certain harms over others, and physical and emotional violence may take precedence over sexual violence. Direct inquiries about sexual IPV could create a safe space for disclosure that opens up communication and facilitates discussions about PrEP and planning for safety.

Several providers shared specific examples of IPV screening methods that could aid the identification of sexual IPV. This healthcare provider suggested:

> At every visit we should ask them, "Is anybody hurting you? Do you feel uncomfortable or pressured into having sex?" (Healthcare Provider, Clinic/Community Health Center)

This provider advocated for routine IPV screening that includes targeted questions to identify specific high risk sexual IPV experiences. Popular but nonspecific IPV screening questions such as "do you feel safe at home?" may be insufficient for identifying women experiencing sexual abuse and coercion. These questions could help women to more specifically appraise the multiple ways that IPV causes harms so they can communicate their experience to their healthcare provider.

Although providers acknowledged that IPV screening was an important step in identifying PrEP candidates, many noted that healthcare providers lack substantial knowledge around IPV. This healthcare provider shared:

> Maybe the best place to put energy is towards having PrEP providers be much more knowledgeable about IPV issues so that they can screen for [violence] and provide prescriptions for [PrEP]. (Healthcare Provider, Hospital)

This provider posited that deficiencies in IPV screening are related to a lack of in-depth knowledge around IPV. They suggested that providing healthcare providers with additional knowledge and skills to investigate and respond to IPV may improve their ability to initiate contextualized and comprehensive safety planning for this vulnerable group.

Connecting the Dots: HIV Risk Perception and PrEP Awareness as a Potential Safety Strategy

Providers discussed how to engage women in discussions about heightened HIV risks associated with IPV exposure, promote their awareness of PrEP as a strategy to address that risk, and determine whether daily oral PrEP is a feasible HIV prevention mechanism in the context of ongoing IPV. Providers

noted that staying safe and meeting women's primary survival needs may be a competing priority over HIV prevention. One healthcare provider explained:

> "People experiencing IPV [are] thinking about [their] day to day [life], "how do I get my rent paid and still get away from him?" I'm not sure if they're thinking like "Wow I'm at increased HIV risk because he's seeing someone else and/or forcing me to have sex. And maybe, you know there's no lubrication... that puts me at higher risk." (Healthcare Provider, Community Health Center)

This provider perceived the mental burden associated with managing ongoing violence, including decisions to leave the relationship, may be a barrier to forming an accurate perception of HIV risk perception; thus, hindering steps to enhance safety. Some women may not be able to simultaneously manage the dual vulnerabilities associated with physical violence and HIV transmission. The provider's statement also suggested that they perceive women may not identify all of the ways that behaviors common in IPV relationships can increase their risk for HIV. Specifically, the provider raised concerns that a partner's non-monogamy could raise the woman's HIV risk if he is having sex with multiple partners with unknown HIV status. They also suggested that a lack of vaginal lubrication, which can sometimes accompany forced sex, may lead to genital injuries that facilitate HIV transmission.

Providers discussed strategies for assisting women through the process of increasing their awareness of HIV risk and linking it to their experiences of IPV. One healthcare provider explained:

> I talk to them about...who they're involved with [and] the background of the other sexual partners...I honestly just ask the patients...is HIV something that you're concerned about? Do you think that's a possibility?...If they say, "No. It's nothing I think about. No, I don't think it's a possibility." Then I talk to them a little bit more about...why aren't you worried about this?...This usually takes a couple visits to...have this discussion. [Be]cause it's sometimes relatively intangible. It's kind of like hypertension, right. People don't always feel sick or feel concerned about it. But, over time it can kill you, right. (Healthcare Provider, Hospital)

This provider summarized the relative invisibility of perceived risk for HIV and the provider's role to assist women through a process of recognizing the connections between IPV and HIV. The provider captured the challenge of enhancing risk perception through a poignant alignment with a chronic illness that is often not recognized until it is too late to preserve life.

Several providers suggested having a conversation to provide opportunities for targeted information about ways in which IPV increases HIV risk and use that as a way to introduce PrEP as a safety planning strategy to prevent HIV. For example, one IPV service provider modeled this conversation:

> [The conversation includes] the barriers that she has and any concerns that she has, and making sure she understands the purpose [of PrEP]. Is she concerned about contracting HIV? Is that a concern? It may be a real conversation about her partner and sex and how she feels about the possibility of contracting any type of STD/STI from him. What are the things she's concerned about? Let me tell you about PrEP and how it's one way that can help you. I mean it's really just having that real conversation with them. I would start out with that, making sure [I give] some really good health education. (IPV Service Provider, Community Health Center)

This IPV provider outlined the importance of highlighting a potential unidentified need for HIV prevention and then using that discovery as an opening to present PrEP as a safety planning resource to address her HIV risk.

Strategic Safety Planning

Strategic safety planning describes a multidimensional process to identify potential harms that accompany the daily use of oral PrEP and also strategizing tactics and resources to create a practical plan to address that harm and optimize the woman's safety. This category incorporates two themes: (1) *If the partner finds out, then there's trouble*: applying a trauma-informed lens to PrEP initiation; and (2) *Keeping it undisclosed*: developing safety plans and strategies to reduce the risk of partner interference or violence; and facilitate adherence and retention in PrEP care.

If the Partner Finds Out, then there's Trouble: Applying a Trauma-Informed Lens to PrEP Initiation

Providers expressed concern that PrEP may increase women's vulnerability and susceptibility to violence. Although PrEP may serve as a safety planning strategy to reduce the risk of HIV transmission, the use of daily oral PrEP among women experiencing IPV poses a risk for escalating violence and therefore, requires a safety planning process as part of its initiation. PrEP prescribing that did not include trauma-informed safety planning could put women at further harm. This participant suggests that most healthcare providers do not adequately acknowledge the potential for violence with PrEP use:

> We don't think...much about whether or not having a pill that prevents HIV will have an impact on that relationship or an impact on their safety...PrEP is individually controlled... But certainly, if they're in a volatile relationship or a relationship where there's IPV, [this is] a medicine that, if it's found, could spark [violence]. (Healthcare Provider, Clinic/Community Health Center)

This participant implied that healthcare providers should consider how prescribing PrEP in the midst of violence could expose the limits of the perception that PrEP is a partner independent therapy. PrEP may be "individually controlled" but concealing daily oral PrEP use could have potentially brutally severe consequences for a woman that is exposed to IPV.

For women making safety decisions, providers acknowledged that they must consider an array of complex factors when considering daily oral PrEP uptake, both hypothetical and actual. This healthcare provider suggested that women must weigh potential risks for HIV acquisition against injury or loss of her life if her abusive partner discovered her PrEP use:

> If she's on the fence [about taking PrEP] and she wants to discuss it, then I think maybe discussing the degree of violence – is this someone especially in terms of physical violation, is he so physically violent that he could kill her? If they're living together, is he more likely to find her medication?... To me, it's all just like risk/benefit. The worst thing that could happen is you'd get killed by your partner...or really seriously injured. And then [the] second worst thing is that your partner infects you with HIV or something else. And so, I sort of put it on a continuum. (Healthcare Provider, Hospital)

Providers suggested that initiating daily oral PrEP use among women exposed to IPV would require safety planning and safety strategizing to mitigate the risk of violence and partner interference. Participants reported the importance of using existing skills for understanding the context of safety. An IPV service provider said:

> Well, I mean I think if the partner finds out, then there's trouble. And I think then that it means that someone – an IPV expert – [should] really do a good assessment with a woman to determine- is this possible? Can you do this?... Is it safe for you? (IPV Service Provider, Hospital)

This provider suggested that facilitating PrEP access and initiating PrEP care must include frank discussions about the potential for violence if the partner finds out about previously undisclosed PrEP use.

Keeping it Undisclosed: Developing Safety Plans and Strategies to Reduce Risk for Violence and Partner Interference with PrEP

In this theme, providers discussed implementation of contextualized safety planning when initiating PrEP care. Providers suggested that long term adherence and retention in PrEP care would partly depend on their ability to facilitate a collaborative safety planning discussion to help patients experiencing IPV to safely take PrEP and engage in the prescribed monitoring activities. Providers expressed concern that communicating test results and sending appointment reminders through the usual mechanisms could be potential sources of undesired partner disclosure and interference. Some clinic and provider-led strategies mentioned included expanding protocols around phone and text messaging while still maintaining patient confidentiality, expanding PrEP access to informal PrEP care sites in the community beyond the clinic, changing the frequency of visits, and altering the way visits are portrayed in the electronic health record.

One IPV provider suggested:

> [Ensure] that [the healthcare provider] get a safe phone number to contact them, not leaving messages on the phone that might be shared, if somebody calls asking for information, [provider should ensure] that it is the patient, whether... they set up a code that...only the patient would know. (IPV Service Provider, Hospital)

This PrEP provider offered a variety of strategies to engage in periodic follow-up while preventing partner interference and enhancing safety for women taking PrEP:

> We could potentially text message, and I could – have a phone call, or even meet outside someplace outside the clinic. Um, you know, really it's just to touch base. (Healthcare Provider, Clinic/Community Health Center)

One PrEP provider suggested that IPV exposed women could potentially benefit from PrEP care that was integrated into existing services for violence survivors:

> Connecting with them, you know, where they are, which may not be here in the clinic. Broadening who prescribes PrEP or the settings in which PrEP is prescribed. So, if, women are being seen in...community agencies that are providing services to women that are in these relationships then maybe that's the setting in which somebody needs to be counseling them

about it, educating them about it, even potentially prescribing it to them. (Healthcare Provider, Clinic/Community Health Center)

This provider suggested re-envisioning PrEP care so that community agencies, which are particularly qualified to meet the social needs of women exposed to IPV, could be equipped to offer and facilitate PrEP. This statement suggested that the most optimal and efficient ways to support PrEP uptake for this group will occur in a location that prioritizes strategic safety from violence.

When asked to consider how they might alter PrEP care to accommodate the needs of women exposed to IPV, providers discussed the importance of developing strategies to mitigate unwanted partner disclosure of PrEP use. Proposed strategies included removing labels from the pills or placing the medication in pillboxes, safes, lockboxes or other nondescript containers. The location would have to be safe from partner and other family and friends, but also not so obscure that women would forget to take the daily pill. One healthcare provider suggested the following:

> I would recommend probably trying to figure out what works best for her situation, whether it be keeping it in her purse so that it's not in a medicine cabinet. It's not somewhere that he accesses regularly. If he often looks through the purse, put it in something else that looks like something else like a Tic-Tac bottle. (Healthcare Provider, Hospital)

This healthcare provider shared:

> And a lot of conversations I might have would be about ways in which you can keep medication private and keep it undisclosed as much as possible, and lots of different strategies we talk about, from pillboxes to other things that hold pills that don't look like pill bottles...Even little safes and things like that. We have safes that we give to patients, that are little lockboxes we give the patients that they can hold their medications in if they don't want other people – so that's how I would envision talking about some of those things. (Healthcare Provider, Clinic/Community Health Center)

Leaving the medication with a trusted family member or friend was frequently suggested as a potential safe solution. While some raised the concern that keeping the medication with another person might lead to non-adherence, especially when attempting to gain access to the medication on weekends or holidays, others noted that leaving the medication in the home at all was too great a risk and that utilizing friends and family members to keep the medication safe could be a preferable solution. This IPV service provider remarked:

> I would say potentially using allies in that person's life to hold the medicine for them, try and give it to them discreetly – whatever. That could be – maybe it's a co-worker that they see every day that they feel comfortable sharing that with. But often, we would recommend not to put something like that in that person's home, because when they're not there... abusers are known for going through things – that no privacy thing. So, I would say look to a close friend or co-worker. (IPV Service Provider, Domestic Violence Organization)

These providers suggested that developing strategies to promote concealment of daily oral PrEP use is a collaborative process that incorporates the woman's knowledge about her partner and his habits, the

provider's ability to provide supplies or suggestions to support the woman's efforts, and the woman's ability to seek help and harness support from informal sources such as friends and family.

Providers acknowledged that despite attempts to hide PrEP use, women should be prepared to cope with a situation in which the medication is found by her partner. Scripting, or developing and rehearsing potential responses to partner inquiries, could be helpful to increase a woman's preparedness in the event of unintended PrEP use disclosure. This healthcare provider explained:

> How are you going to handle the question of why you're taking this medication? Have that conversation scripted so you know, so you could tell the patient, "Okay. I'm your partner, what are you going to tell me when they find the medicine? So, why does your doctor want you to have that?" (Healthcare Provider, Clinic/Community Health Center)

This healthcare provider described the potential benefits of role playing:

> And role playing– like what if he said this? What could you say in this situation? So, in the moment she feels more confident. (Healthcare Provider, Hospital)

One IPV Service provider suggested that along with developing "*cover stories,*" women should consider how they might maintain their PrEP care if their partner attempted to interfere with healthcare visits:

> What to do – cover stories. What to do if he's trying to prevent you from going back to an appointment, like finding a safe time and place for you to call and make another appointment. (IPV Service Provider, Hospital)

These statements described a perception that providers must understand the intersecting ways that violent partners may interfere and exert controlling behaviors. Additionally, these statements suggested that it is crucial for providers to utilize a structured approach to understanding women's specific barriers to safe adherence and work with women to uncover tailored solutions to those barriers. Healthcare providers and women may need to cooperatively develop creative strategies that equip women to respond to unwanted disclosure of PrEP use and partner's attempts to interfere in PrEP care.

Discussion

This study explored the perceptions of strategic safety planning among healthcare and IPV service providers when offering PrEP to women exposed to IPV. Our findings indicate that healthcare and social service providers perceive PrEP can be an optimal safety strategy for women to reduce their risk for HIV infection. Providers also acknowledged that women taking daily oral PrEP may be at risk for further violence. Therefore, PrEP initiation among this group of women requires additional and tailored safety planning to reduce partner interference and promote adherence and retention in PrEP care. Providers highlighted several safety strategies to facilitate safe daily oral PrEP use: provider- and clinic-initiated tactics to promote privacy, women-led strategies to conceal PrEP use, and the integration of PrEP care within IPV support services.

Participants noted that IPV screening could play an important role to identify women at increased risk for HIV and facilitate the appraisal process for safety planning. However, current IPV screening rates in healthcare settings are suboptimal. The percentage of providers reporting that they always or almost

always screen for IPV ranges from 2% to 50%[26]. While screening has not been shown to decrease IPV rates, it is associated with improved identification of individuals experiencing IPV[27]. Thus, IPV screening is a critical mechanism to contextualize safety planning assessments designed to ascertain the multiple harms associated with IPV. Provider-led questions inquiring about the presence of violence, specifically sexual violence, might help both providers and women identify distinct sexual health harms and risks that accompany IPV, including heightened STI and HIV risk. Identifying the numerous ways women cope with IPV and build on their existing capacities are characteristics of strengths-based intervention approaches that could be useful in clinical and IPV organizational settings implementing PrEP-related strategic safety planning. For example, aligned with our study's findings, the appraisal process that includes IPV screening and raising perceptions of HIV risk could attend to women's internal sources of strength, tapping into deep-seated desires to harness self-reliance or protect one's children[28].

Our findings also suggest that providers perceive women experiencing IPV have low HIV risk perception that could impede their interest in PrEP as a safety planning strategy. While some studies indicate low HIV risk perception among women experiencing IPV[11], more recent studies indicate that past IPV experience is associated with increased HIV risk perception[29, 30]. Despite increased perceived risks for HIV risk transmission, women with a history of sexual IPV might fear their partner could prevent them from using PrEP[12]. This underscores the need for collaborative strategic safety planning conversations which directly addresses concerns about partner interference and escalating violence in PrEP care. Collaborative safety planning models could use well-documented interventions informed by the transtheoretical model of change to assess IPV and HIV risk perception along a continuum of readiness for PrEP[31]. Recognizing this continuum, at times, might be nonsequential[32] and affected by partner type[12] given the circumstances of many IPV relationships, IPV and healthcare providers working in tandem could facilitate women-led PrEP safety strategies. Building on women's existing desires to overcome relationship challenges and preserve their health could catalyze turning points that are integral to supporting women survivors' journey to preventing HIV[33] while experiencing IPV. Turning points signify dramatic shifts in beliefs around HIV risk perception that could alter women's motivation to consider PrEP as an option for HIV prevention. Recognizing that women often arrive at turning points in a nonsequential fashion could facilitate acknowledgement and implementation of individualized action steps.

Interventions that are individualized, recognizing and emphasizing a woman's autonomy when making decisions and planning for her safety could be useful to the PrEP safety planning process[21, 34]. To date, few women in the US have adopted PrEP as an HIV prevention strategy[35] therefore, strategies such as working in groups among other women experiencing IPV could foster awareness as well as self-efficacy because participants can connect interpersonally, increase awareness of community resources for safety, and encourage learning about effective coping techniques when facing IPV[34].

Extant literature shows women experiencing IPV rely on informal and formal resources for support such as engaging with IPV organizations and healthcare organizations to foster health promoting behaviors[36]. In fact, among women living with HIV, who have disproportionate exposures to trauma and IPV, these support systems are crucial to medication adherence and follow-up visits. Drawing on literature examining supportive systems for women living with HIV, healthcare providers are vital resources of resilience to maintaining health. Resilience is linked to higher quality of life, undetectable

viral load, and improved medication adherence among this group[37]. Therefore, an expanded definition of strategic safety planning within the healthcare environment would require an integrated approach to safety from IPV as well as from HIV.

Our findings suggest that successful and safe PrEP use for women experiencing IPV may require clinicians and IPV service providers to reconfigure PrEP care. Case management and care navigations systems commonly occur in both the provision of PrEP services and IPV care[38]. The siloed nature of these care models often results in missed opportunities to link IPV exposed women to PrEP care. Current CDC guidelines do not include the IPV experience in PrEP eligibility[39] potentially hindering the integration of service provision. PrEP eligibility guidelines should be expanded to include IPV to facilitate this care integration model[12, 30]. Practice and policy guidelines developed to support the integration of these services could reduce barriers to care for women[29].

Women experiencing IPV might find it difficult to safely maintain the daily dosing regimen required to achieve 90% efficacy in preventing HIV infections[40, 41]. Receiving targeted adherence support is crucial to meeting the safety and HIV prevention needs of this group. Among people living with HIV, including women who have a history of sexual abuse, trauma-informed interventions improve engagement in HIV care[42, 43]. Individual and group sessions designed to enhance coping skills[43] and cognitive-behavioral therapy[44] are promising strategies that could be applied to women experiencing IPV who need support to safely adhere to the daily oral PrEP protocol. Additionally, utilizing custom, discrete text messages to deliver medication and appointment reminders is another strategy that healthcare providers could integrate into safe PrEP prescribing[45]. Further research is necessary to understand whether these interventions could improve PrEP adherence among women experiencing IPV.

Evidence from the reproductive coercion literature suggests that women experiencing IPV might benefit from novel PrEP modalities with alternative dosing strategies and administration routes. Many women experiencing reproductive coercion, or partner interference in their reproductive decision-making[46], have found success in using long-acting, covert, and less detectable birth control such as injectable methods, subdermal implants, and intrauterine devices to resist birth control sabotage. Similarly, on-demand PrEP dosed around sexual activity has been shown effective in preventing HIV among men who have sex with men while reducing the need for daily adherence[47]. However, similar research among cis-gender women supporting on-demand dosing of current PrEP formulations suggests that the inability to accurately predict sex prevented women from being able to take PrEP prior to intercourse[41, 48]. For women experiencing IPV, the risk of forced sex could similarly prohibit adherence with this event-based protocol. However, clinical trials of other novel PrEP formulations are exploring the efficacy of injectable long-acting PrEP among cis-gender women[40]. Such formulations may allow women to discreetly administer injections every 4–8 weeks at home or in a clinician's office and may play a role in safety planning for HIV prevention among IPV exposed women[30]. The option to manage HIV risk in this way has parallels to the preference for use of covert contraception among IPV exposed women[9, 43]. Healthcare and service providers of IPV exposed women must continue to advocate for and stay current with research regarding novel PrEP formulations which hold implications for both appraisal and strategic planning safety planning for women experiencing IPV. Safety planning must be highly individualized and the expansion of novel PrEP may offer women additional options for tailoring a safety plan to meet their needs.

Limitations

The aim of this study was to explore the perceptions of healthcare providers and social service providers in developing safety plans and strategies to facilitate PrEP uptake, adherence, and retention in women exposed to IPV. The participants in this study were located in two areas—the Baltimore, MD metropolitan area and Connecticut State. Given that health and safety nets for IPV services are delivered within state-specific laws and policies, it is possible that there may be differences in the ways providers from two different states perceive safety planning for this population in terms of referral and follow-up services. However, the small sample size prevented us from comparing findings among providers across the two sites. Additionally, the existence of state- and region-specific IPV services and resources may preclude the transferability of the provider recommendations identified in this study to providers located in other states and regions, including rural areas. This study focused on the perceptions of providers caring for cisgender women experiencing IPV. Additional research is needed to further explore perceptions of safety planning with PrEP use among other populations with demonstrated risks for HIV and high rates of IPV including men who have sex with men and transgender women. Finally, this study was focused primarily on the perceptions of healthcare and social service providers which may be different from those of women experiencing IPV. Future research should explore the perceptions of safety planning and safety strategizing with PrEP from women who have experienced IPV.

Conclusions

Women experiencing IPV are at greater risk of HIV. PrEP offers an opportunity for women-controlled HIV risk reduction. Incorporating PrEP planning into safety planning for women has important implications for HIV risk reduction among this vulnerable population. Future interventions should focus on integration of IPV and PrEP care services, implementing safety planning with PrEP initiation, and expansion of clinical policy guidelines to include IPV in PrEP eligibility criteria.

Author Contributions

Conceptualization: NKJ, KAA; Methodology: KAA; Formal analysis and investigation: NKJ, LC, KAA; Writing—original draft: NKJ, KAA, JZ; Writing—review and editing: KAA; TK, TCW; Funding acquisition: KAA; TK, TCW; Supervision: KAA.

Funding

This study was funded by the Johns Hopkins Population Center [NIH/NICHD 5R24HD042854] and the Center for Interdisciplinary Research on AIDS – Yale University [P30MH062294]. TCW was supported by the National Institute on Minority Health and Health Disparities (NIMHD) [K01MD015005]. KAA was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development Office for Research on Women's Health (NICHD/ORWH) [K12HD085845].

Data Availability

To prevent potential identification of participants, we will not share data or material from this study.

Declarations

Conflict of Interest

The authors have no relevant financial or non-financial interests to disclose.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The study was approved by the Johns Hopkins University School of Medicine Institutional Review Board (#IRB00129432) and Yale University Human Investigation Committee (#IRB1602017161).

Consent to Participate

Informed consent to participate was obtained from all individual participants included in the study.

Consent for Publication

Participants gave verbal informed consent to publish their data.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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