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Pre-exposure prophylaxis awareness, acceptability and potential stigma among medical and non-medical clinic staff in methadone treatment settings in northern New Jersey: The key role of non-medical staff in enhancing HIV prevention

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Abstract

Background: HIV prevention is needed among people who use drugs (PWUD) due to mixing sex and drugs, selling/trading sex, and/or injecting drugs. Pre-exposure prophylaxis (PrEP) is an extremely effective biomedical HIV prevention strategy, but uptake remains low among communities most in need of HIV prevention, including PWUD. Previous studies have found that providers are less willing to prescribe PrEP to PWUD, yet PWUD express high levels of PrEP acceptance. More research is needed to understand how people who provide substance use treatment services think about PrEP to maximize this biomedical prevention strategy.

Methods: The study conducted semistructured interviews with 29 staff members in two methadone clinic settings in urban northern New Jersey. Staff members included medical providers, methadone counselors, intake coordinators, front desk staff, lab technicians, security guards, and administrative/leadership personnel.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jsat.2021.108371>.

Results: All staff recognized the need for HIV prevention among their patient populations, but most were either unaware of PrEP or unfamiliar with its purpose and how it works. Medical providers were more likely to have some PrEP knowledge in comparison to counselors and other staff, but the former largely did not have in-depth knowledge. Among those familiar with PrEP, many confused PrEP with HIV medication, as Truvada was the only FDA-approved PrEP at the time of the study. About half of participants expressed clear support for PrEP, while the other half expressed mixed or negative attitudes related to HIV, sexual behavior, and mistrust of the medication. Both the positive and negative perceptions entailed stigmatizing elements.

Recommendations: Due to patients' frequent interactions with non-medical staff (e.g., front desk staff, lab technicians, etc.), all staff, not only medical personnel, should be aware of PrEP and comfortable discussing it to foster well-informed, nonjudgmental conversations about HIV prevention with patients. PrEP education should specifically address HIV and sexual-related stigma, as even positive perceptions of PrEP may entail stigmatizing elements.

Keywords

PrEP; HIV prevention; HIV; OAT; Methadone; Clinic staff

1. Introduction

HIV prevention efforts are critical among people who use drugs (PWUD), as this population may engage in injection drug use (Lake et al., 2016), combine sex with drug use (Friedman et al., 2015; Jin et al., 2014; Palamar et al., 2018), and sell or trade sex for drugs (Bond et al., 2019; Boyer et al., 2017; Walters et al., 2018). The Centers for Disease Control and Prevention has identified PWUD as one of the top three priority groups for pre-exposure prophylaxis (PrEP) (CDC, 2014). PrEP is a highly effective oral antiretroviral medication taken daily by people who are HIV-negative to prevent acquiring HIV (Anderson et al., 2012). Uptake of PrEP is low in general among populations who could benefit from biobehavioral prevention, but is especially low among people who inject drugs (Guise et al., 2017; Shrestha et al., 2020; Shrestha & Copenhaver, 2018).

Medications for opioid use disorder (MOUD) treatment settings represent an opportunity to engage PWUD in HIV prevention efforts, specifically PrEP initiation. Studies have found that providers in substance use care settings have relatively little awareness of PrEP (Shrestha, Altice, et al., 2017; Shrestha, Karki, et al., 2017; Spector et al., 2015). Moreover, any prescribing clinician can offer PrEP, as PrEP does not require an infectious disease specialist or any regulated approval to prescribe (CDC Center for Disease Control and Prevention, 2020). Yet previous research has found that infectious disease and primary care physicians were not comfortable recommending PrEP to people who inject drugs (Krakower, Oldenburg, et al., 2015; Adams & Balderson, 2016; Edelman et al., 2017). Levels of PrEP awareness are also low among patients on MOUD, thereby limiting patient-initiated provider education. A recent study among MOUD patients found that only 18% had ever heard of PrEP but once educated about PrEP, 62.7% were willing to initiate it (Shrestha, Altice, et al., 2017; Shrestha, Karki, et al., 2017). Recent studies, however, suggest that these programs are suitable for providing PrEP-related services to people who inject drugs (Des Jarlais et al., 2016; Shrestha, Altice, et al., 2017; Shrestha, Karki, et al., 2017). Shrestha

and colleagues found that HIV-negative patients in MOUD programs were willing to initiate PrEP, anticipated engaging in safer sex and drug practices while on PrEP (Shrestha, Altice, et al., 2017; Shrestha, Karki, et al., 2017), and were able to adhere to PrEP (Shrestha et al., 2018), suggesting a missed opportunity to enhance HIV prevention among this population. Furthermore, the rich history of antiretroviral therapy initiation among HIV-positive PWUD (Uhlmann et al., 2010) as well as HIV prevention efforts in syringe exchange programs (Abdul-Quader et al., 2013; Des Jarlais et al., 2013) and outpatient substance use facilities (Spector et al., 2015) suggests that patients and providers may find PrEP services acceptable in these settings.

The persistent stigma around HIV and HIV prevention underlies many of these challenges. While numerous studies have identified stigma as a barrier to PrEP use in other PrEP-eligible populations (e.g., sexual minority men and transgender women; Eaton et al., 2017, Jaiswal et al., 2018, Meanley et al., 2020), limited literature exists on PrEP stigma among PWUD or are engaged in MOUD treatment. The limited extant literature on PrEP and HIV stigma among methadone patients shows that PrEP stigma may be a barrier to PrEP uptake and adherence and HIV-related stigma may be a barrier to ART adherence (Shrestha & Copenhaver, 2018). As such, more research should study what PrEP stigma looks like in the MOUD treatment setting and how it may affect biobehavioral HIV prevention methods, such as PrEP and treatment as prevention (TasP).

Overall, HIV prevention is needed among PWUD and in MOUD settings, and the literature suggests that MOUD patients are interested and capable of adhering to PrEP. How MOUD treatment providers and staff think about PrEP as a tool for HIV prevention, as well as how they perceive their patient populations' HIV vulnerability, is important. Thus, the purpose of this analysis was to explore PrEP-related awareness, knowledge, and perceptions among methadone clinic staff, including both medical and nonmedical staff.

2. Methods

2.1. Sample study population and recruitment

The research team compiled a list of all methadone clinics in two neighboring counties in northern New Jersey. The team contacted fifteen clinics in this geographic area by phone, email, and in-person visits, which occurred between January 2019 and April 2019. Research staff provided each potential clinic site with an IRB-approved one-page sheet detailing the aims of the study. Four clinics initially expressed interest in participating in the study; of these, one ultimately declined due to its private owners expressing wariness about participating in research, and one clinic agreed to participate and expressed enthusiasm but then had to withdraw due to unforeseen circumstances. The final sample included 30 participants among two clinic settings. For the purpose of this analysis presented here, we excluded one participant's transcript due to noncompletion of the final portion of the interview guide on HIV prevention. Thus, this analysis presents a sample of 29 medical and non-medical clinic staff. The study used convenience sampling to recruit staff members in both clinic settings.

2.2. Data collection

The study conducted semistructured interviews between May 2019 and August 2019. Prior to the qualitative interview, a five- to eight-minute interviewer-administered questionnaire collected participants' sociodemographic data. After the questionnaire, interviewers trained in qualitative methodology conducted the interviews using a semi-structured interview guide. The guide included questions about methadone clinic patient populations; clinic logistics; models of substance use treatment (i.e., abstinence versus harm reduction); perception of HIV risk; and awareness, knowledge of, and perceptions around HIV pre-exposure prophylaxis (PrEP). Examples of PrEP-related questions include the following: *What have you heard about PrEP? What do you think PrEP does? Who do you think PrEP is for? What do you think about PrEP for people who use drugs?* At the time of data collection, Truvada was the only FDA-approved PrEP.

Interviews lasted between 15 and 25 min, with an average of approximately 25 min. The study audio recorded in-depth interviews and a professional transcription service transcribed them. The study interviewed more than 85% of staff at each site and the study achieved saturation at 30 interviews.

2.3. Data analysis

Qualitative methods are useful for enabling participants to attribute meaning to their own daily, lived experiences (Guba & Lincoln, 1985). Of the 29 transcripts, the study randomly selected 20% for quality control and accuracy purposes. The researchers implemented a multi-step method of identifying, contextualizing, and analyzing the themes. This method included developing a coding scheme; applying it to the data; and using it to discern patterns, themes, and subcategories. The scheme was a hierarchically organized tool that ranged from the general and abstract to the more specific. After the team coded all transcripts, they organized text segments by codes/subcodes and extracted and closely read the segments to begin to identify a higher level of abstraction related to themes, and to discern the relationship among codes. Using the same set of initial transcripts, three of the authors developed and refined the codebook and participated in the coding processes. All authors closely reviewed analyses to address any differences in interpretation and confirm themes, with the lead author resolving any disputes. The study coded all qualitative data using Atlas.ti. The study assigned participants pseudonyms to protect their confidentiality. The study divided participants into two categories—medical and non-medical staff—to further protect confidentiality. This categorization is not intended to obscure the critical roles that non-medical staff have in a methadone clinic setting; rather, this dichotomization protects participants' confidentiality and highlights the significant role that non-medical staff have in patients' lives.

3. Results

Of the 29 participants, 62% were women ($n = 18$), and 38% were men ($n = 11$). The sample was approximately 79% non-Hispanic Black and 21% Latinx. Methadone counselors composed a little over one third of the sample ($n = 11$, 40%). The majority of the participants were non-medical providers, including methadone counselors ($n = 11$, 40%), and other staff

members (e.g., administrative staff, receptionists, intake coordinators, lab technicians, and security guards, $n = 13$, 44.8%). Medical providers comprised 17.2% ($n = 5$) and included nurses, doctors of nursing, and physicians. Due to concerns over maintaining participants' confidentiality, the study did not break down the sample further by clinic role.

The study identified three main themes: 1) *Methadone patients are in need of HIV prevention*. Staff strongly expressed the need for HIV prevention among methadone clinic patients due to related behaviors, including drug use–related and sexual behaviors, such as sharing needles, mixing drugs and sex, selling or trading sex, and what some staff referred to as “promiscuity”; 2) *Low awareness and knowledge*. Most participants were unaware that a medication exists that prevents HIV acquisition. Many were familiar with the brand name “Truvada” but identified it as an HIV treatment medication, as it was the only FDA-approved PrEP at the time of the study. Many had “heard of” it from television commercials, but were unaware of how the medication works; and 3) *PrEP perceptions and acceptability*. Approximately half of participants expressed acceptability of PrEP for patients, while others expressed negative perceptions, including potentially stigmatizing attitudes around sexual behaviors. A minority of participants expressed concern and mistrust of PrEP.

3.1. Theme 1: methadone patients are in need of HIV prevention for a variety of reasons related to substance use and sexual behaviors

All participants believed that their clinic's patient population was in need of HIV prevention. Many participants mentioned the overlap between drug use and sex, attributing sexual behavior to altered states of mind or inhibited decision-making. Mark, a methadone counselor quoted next, described the patient population as a community in need of HIV prevention due to both sexual and drug use–related behaviors:

Any kind of education, information definitely would help [our patients]. You know any kind of HIV, Hep C information, prevention. Definitely...Our people that are actively using, may be sharing [needles with] people. You know, people, some of our women, and even men, may be prostituting for their drugs... [or] they may substitute sex instead of drugs so they're still looking for that like high, you know. [Mark, methadone counselor]

Daniel, a non–medical staff member, added that individuals who are actively using drugs are placed at greater risk for HIV:

Interviewer: Do you think this patient population would benefit from HIV prevention?

Daniel: Absolutely...Because they're addicts. You know, I just think, you know, ... just from being an addict you're – you're not responsible. You're probably not in your – your – your right mindset so you probably doing things that you wouldn't normally do if you were in your right mindset. Again, I don't know what those things are, but I think that some of those things would probably entail maybe unprotected sex, maybe, you know, sharing needles. However, you can get, you know, HIV, or whatever. And I – I think that some of them definitely probably put themselves in some of those positions that they can be exposed to something like that because of their addiction. So, I think any education that could be

provided to, you know, bring some attention to, you know, what AIDS is, or whatever, would probably help. It may – it may get them to think about. [Daniel, non-medical staff].

Angela, a medical staff member, noted how despite decades of HIV education messaging, people are “at risk”, especially when their decision-making is affected:

If you’re still using drugs, you’re not in your full right mind. So, you are not always thinking about protection. We’ve been trumping protection for 30-plus years, since the AIDS epidemic came out. Lots of these patients are young, so their whole sexual lives have been dealt around HIV. And the older patients were there to see the ravages of what HIV did in the 1980s. So, they are still aware. But when you’re not in your full mind, you’re not using condoms, and you’re not taking sexual precautions. And so, they’re all at-risk. And even when you’re stable, most people are sexually active. You still have to be responsible. You still have to understand that your partner – you can’t just trust your partner. You can’t trust what your partner looks like. They look healthy. So, you have to educate them about that. So, everybody who is sexually active is potentially at-risk for HIV. So, that’s everybody here. [Angela, medical staff]

Nina, a non-medical staff member, emphasized the monetary component necessary to acquire drugs. She highlighted that one way to purchase drugs was to sell or exchange sex. She also viewed problematic substance use as “undisciplined behavior” that leads to decisions one will “regret”, but noted that people “do what [they] have to do” to obtain drugs:

They’re in the world of drugs. And they make bad decisions. Undisciplined behavior equals the bad decision. Or not bad decision, but decisions that you might eventually regret... Having sex to get money to buy cocaine. Maybe the wrong person. Because some of those urges come and ... you do what you have to do. If you go out there, you boost, you go to jail. You come out, you do what you got to do to get the money to do what you got to do. [Nina, non-medical staff]

Although all participants mentioned sexual behavior, some explicitly noted the importance of acknowledging injection-related HIV prevention needs. Janay, a medical provider at a clinic and quoted next, noted how certain routes of drug administration put patients at increased risk for HIV. She also noted that even patients who do not participate in injection drug use are still in need of HIV prevention due to other interrelated behaviors:

...They’re a risk population. Drug use, in and of itself, certain drug use and certain routes of administration increase your risk. But certainly, even for people who inhale their drugs, they may never touch a needle, but they may engage in other behaviors because of their drug activity, or because they are not thinking clearly, that put them at risk... Sexual activity. Illegal activity. Not being able to parent. So, it’s just a snowball effect of that. So, HIV prevention is needed in every community, not just the drug community, but everywhere. [Janay, medical provider]

James, a medical provider quoted next, differed from his peers in his response in that he seemed to allude to the structural aspects of “risk factors”, explaining that the patient

population “liv[es] in poverty”, and that their “very poor self-control” was rooted in mental health challenges:

[Our patients] have a lot of risk factors. They are – they have mental conditions. They are living in poverty. They have very poor self-control because of their mental condition. So, the risk factors are plenty. And the best we can do is to decrease their risks by giving them the questions and screening them and providing them any kind of support that we can. If we have – perhaps here and there, we can use that. [James, medical provider]

3.2. Theme 2: low awareness and low knowledge

Approximately half of participants were unaware of PrEP (i.e., answering “no” to the question, “Have you heard of a pill called PrEP?”, including follow-up questions describing PrEP and its purpose; or having heard the word “PrEP” but not being aware of its purpose as HIV prevention). About a third had never heard of PrEP at all, while the remaining participants had heard of PrEP or Truvada but were unaware of its purpose or how it works. Medical providers (physicians, DNPs, nurse practitioners, and RNs) were all aware of and at least somewhat knowledgeable about PrEP to varying degrees. For example, all medical providers knew PrEP was a pill for HIV prevention, but none had experience prescribing it, and some were not certain how it works. Non-medical staff were largely unaware of PrEP, and very few reported that they suggested PrEP to their clients or referred them to learn more about it. Overall, methadone counselors and other clinic staff, who spend significantly more time with patients than medical staff, were much less likely to be familiar with PrEP. Notably, among both methadone counselors and other staff, some had heard the word “Truvada”, but did not know it was a medication for HIV prevention specifically; rather, they recognized the brand name as a medication to treat HIV.

3.2.1. Subtheme 1: few familiar with PrEP—Most participants were not familiar or minimally familiar with PrEP; therefore, very few had working knowledge of the purpose of the medication. The medical providers had more familiarity with PrEP compared to non-medical staff, but the former did not necessarily have in-depth knowledge. James, quoted next, was a prescribing clinician and was aware of PrEP, but unsure of how it works and its level of effectiveness:

Well, PrEP, from my understanding, is Truvada. I’m not sure it’s mixed with anything [another medication] but it’s really for patients who have a high risk of contracting HIV. And from my understanding, if you do PrEP, you probably decrease your risk to a reasonable extent. [James, medical provider]

Mark, a methadone counselor, was the only counselor who had educated a patient about PrEP:

Basically, it’s for the partner. I’m pretty sure. For them to take so that- that two people or a person that has HIV can’t pass it to their partner... I think that [PrEP is] great... I think that a lot of our clients would be interested because, like, I have a client and he was- his significant other was- is HIV-positive, and he was- he was pretty much like, and you know, we were talking about it, because we were talking

about it, and he was like, “Look, like I am having unprotected sex. If I get it, so be it. I love her.” ... I told him about PrEP because [colleague] and I went to the HIV Conference at [location]... And they were telling us about it. So, I told him about it. He didn’t get on it, but just giving him the information, maybe he will someday, you know. And... he was like, he was like surprised. Like, wow. I didn’t think something like that, that you could come up with something like that, you know. [Mark, methadone counselor]

Ana, quoted next, was one of the very few non-medical staff who was familiar with PrEP and had discussed it with a patient:

So, I had one client, she was HIV positive. She was in a relationship with this – with her husband. They’re living together. And I actually referred her and also educated her about this pill that he can take in order to avoid [becoming positive]. Because even though she’s saying they’re protected, it might be that one time... [Ana, methadone counselor]

Like Ana, Michelle, a non-medical staff member, was very knowledgeable about PrEP, which was in stark contrast to the majority of participants:

Michelle: The young ladies that comes in, Kendra and Leena, they’re coming from [town name] City Hall. And they come and talk to [patients] about [PrEP]. They explain –

Interviewer: The public health department?

Michelle: Yeah. And they do HIV. So, they come in on the end of the month of every Tuesday. And they see whoever wants to get tested, whoever wants to come in for the group. We all sit, and we talk about it. They have mentioned [PrEP] to them. They’ve explained that even though you take the pill, it’s still not a guarantee as of right now that the pill will keep you safe. So, you still have to get tested every three to six months without the pill. [Michelle, non-medical staff member].

3.2.2. Subtheme 2: awareness due to television commercials, but unsure of how PrEP works—Of the participants who were aware of a medication referred to as “PrEP” and/or “Truvada”, most reported that they had heard about it from commercials on television. However, most were still unfamiliar with exactly how PrEP works as a prevention strategy, suggesting that the commercials, although common, are not sufficient to educate people about PrEP. Andre, a methadone counselor, reported that he had seen the commercials, but was unsure of the purpose of the medication:

Andre: Yeah. I’ve seen the commercials...I haven’t seen anybody that takes [PrEP]. I’ve just seen the commercials. I mean, I guess it’s a good thing.

Interviewer: Why do you say that?

Andre: I mean, if it’s a medication that can – what does the medication do exactly? [Andre, methadone counselor].

Mae, also a methadone counselor, had seen commercials as well but did not know any details about PrEP:

Interviewer: What have you heard about PrEP?

Mae: I haven't heard the full test results on it. But I have heard the commercial basically. And that's it. That's all I've gotten. [Mae, methadone counselor].

Although many participants reported seeing the commercials, very few linked it to HIV prevention specifically. Nina, a non-medical staff member quoted next, was the exception. She reported that she had seen a commercial and appeared to be aware that Truvada is a medication for HIV prevention:

I saw [PrEP] on television—I saw an advertisement. And on the advertisement, it had people who were happy that this medication was available that would allow them to be protected for a period of time with this particular drug. [Nina, non-medical staff]

3.2.3. Subtheme 3: confusion with medication to treat HIV—Although PrEP awareness and knowledge was generally low, many participants recognized PrEP's brand name, Truvada (the only FDA-approved medication for PrEP during the study period). However, participants appeared to be familiar with Truvada as a medication used for HIV treatment. This may be due to the fact that both clinics had large proportions of patients living with HIV. In these cases, many participants did not recognize the term “pre-exposure prophylaxis” or PrEP, but were familiar with “Truvada”:

I think I may have heard of it, maybe... you take this medicine and you become undetectable. Is that the one? [Charles, non-medical staff]

Similarly, Reg adds that Truvada helps people manage their HIV:

I heard everybody says [Truvada is] great. It's working and it's helping people get their HIV stable. [Reg, non-medical staff].

Jackie, a non-medical staff member quoted next, appeared to be aware of PrEP (Truvada, specifically) as an HIV prevention medication as well as a medication that has been used in HIV treatment regimens. She was the only non-medical staff member who was aware of the dual uses for Truvada:

That's the one that helps them not contract it if they're gonna have it or if they're gonna have it, not to become re-infected even if they have it. [Jackie, non-medical staff]

3.3. Theme 3: PrEP perceptions and acceptability

Participants largely viewed PrEP as a potentially useful component of HIV prevention, with approximately half endorsing positive views, and approximately 50% expressing negative and/or mixed views (strictly negative 10%, mixed response 40%). While very few participants expressed solely negative attitudes, approximately half of the sample expressed mixed perceptions that suggest stigmatizing attitudes around sexual behavior.

3.3.1. Subtheme 1: positive perceptions about PrEP—Despite low awareness about PrEP in the overall sample, many expressed positive perceptions upon learning more from the interviewer about PrEP and its purpose. About half of participants viewed PrEP as a positive strategy to reduce patients' odds of acquiring HIV. Janay, a medical provider, praised PrEP:

I think that it's a wonderful thing... when I did case management, I was talking to them about the fact that for people who might be engaged in risky behaviors, they would need it. Again, you're reducing the risk, reducing possible transmission. For our healthcare workers, they may need that because there are still gonna be exposure possibilities. So, I think that everything along the way is going to help to address what I still consider an epidemic. [Janay, medical provider]

Reg, a non-medical staff member, noted that many individuals do not know their HIV status or are uncomfortable talking about their status with others. He expresses that a pill, such as PrEP, can serve as a "safety net" for those who are HIV-negative:

... A lot of people are not talking about they got HIV, and then they can expose somebody else, so. And 80% of the people that's in this program deals with people that's just coming off the drugs. And they might never got tested yet and stuff like that or they don't wanna get tested and they might have it and not tell anybody. So, it's best to have that than not to have it. It's like being safe [rather] than sorry, a good safety net. [Reg, non-medical staff]

Charles added that PrEP would be beneficial for people who are using drugs as well as to society broadly:

I would say anybody who's actively using drugs because drugs impair your judgment. You may be more promiscuous if you're using drugs. If you're not, you may say, "hey wait a second. That's a little reckless". But if you're under the influence, you're a go. Not necessarily, but you're more susceptible to do things that are irrational because you're under the influence... [PrEP's] a great breakthrough. That's a great thing. That's a great tool for society. They keep everybody sort of healthy. [Charles, non-medical staff]

Ana, quoted next, expressed some concern about potential side effects, but noted she has not thoroughly researched PrEP yet. Overall, she felt that PrEP is "a plus, not a negative":

I don't think that [PrEP is] something will hurt... well, I don't know all the side effects to it yet because I haven't read through the whole thing. I know it's a very new drug that came out a couple of years ago. Right?... I always do a lot of research. But I don't know all the side effects. And I don't think they all – anybody knows all the side effects yet. But I sure do think that it's a plus, not a negative. Just to help to prevent the spread of any more of the HIV. [Ana, non-medical staff]

3.3.2. Subtheme 2: negative perceptions about PrEP—While most participants expressed positive perceptions of PrEP, more than half of the sample ($n = 14$, 52%) had negative and mixed perceptions as well (of these, approximately 10% of participants expressed strictly negative views and approximately 40% expressed mixed views, which

included similarly negative perceptions). The majority of the negative perceptions were related to participants' hesitation that PrEP use would increase or excuse patients' "promiscuous" sexual behavior. About a quarter of these participants mentioned potential side effects as a negative concern (two medical providers and the rest counselors and staff), and a few expressed mistrust in the medication from a pharmaceutical perspective.

Tara, a medical provider, reported that she had heard "bad things" about side effects, suggesting mistrust of the medication:

Yes, I have [heard of PrEP]. I've been hearing a lot of bad things about that on the news...they're saying it's full of liver issues and – yeah. [Tara, medical staff]

Louis, a non-medical staff member quoted next, was supportive of PrEP for PWUD or have condomless sex, but expressed potential mistrust in pharmaceuticals, providing an analogy to contracting the flu from the flu vaccine:

... Because things do happen, like condoms do break. And sometimes people get blood, and people are handling blood. And you never know. So, it is a good thing, I believe. But it sounds like it's a little risky at the same time... Because, just the idea of having – it may be just a conspiracy thing...you know how they say when you get the flu vaccine, it's sort of like then you get the flu? [Louis, non-medical staff]

Anita, a non-medical staff member, was extremely against vaccines and other "preventative" medications, stating that she does not believe that they are effective, in addition to being dangerous and causing adverse reactions, even death:

Anita: I don't believe into that, number one. To take that pills. I don't believe in- what do you give for the cough and cold? That vaccination? I don't believe in none of those vaccination[s]...I believe it's a bunch of bullcrap hype and a bunch of bullshit...I don't believe in either one...You can't prevent nothing. These pills prevent nothing. Absolutely nothing. The cold, the flu...I know several people [have] died from getting the flu shot...I don't believe in none of those preventative medicine. I don't believe in it. If you want to prevent, use prevention, period.

Interviewer: Like what?

Anita: Condom[s]...Use a condom and pray.

When the interviewer clarified that PrEP is not a vaccine, Anita responded:

No, I know, but it's...the same pills. The same vaccine. The same strain... all fall under the same umbrella. Preventative stuff...I have seen too many adverse reactions... I don't think the medication works. Period... I don't believe in none of them. [Anita, non-medical staff]

Many of the participants who had negative and mixed perceptions about PrEP articulated stigmatizing or judgmental beliefs related to participants' sexual behaviors, particularly the concern that PrEP use would enable, excuse, or even increase sexual "risk behaviors". For example, Diedre, a non-medical staff member, expressed that using PrEP will likely lead to more condomless sex, highlighting exposure to other STIs. She also expressed mistrust in

the effectiveness of PrEP, equating it to playing “Russian roulette” and being a “test guinea [pig]”:

Why would you be fucking and having unprotected sex? Like why? Do you all realize?...There's just too many diseases...[people who have sex without condoms] aren't thinking, they just don't care, they wanna say, Oh I wanna feel flesh!...they just don't care. It's more and more with the younger generation. And I'm just like, y'all gotta get it together.... [they say] “you makin' a big deal out of it, it's not that serious”. Well ok, you land in the morgue and then let me know if you think it's not that serious. I had a [friend] who died of AIDS and it wasn't pretty...they decided they wanted to go out here and just randomly do stupid stuff... [With PrEP], I also think people are gonna live like, not use precautions when it comes to sex...if you takin' this pill and stick it in someone who's HIV positive, well, let me know what the results are, cause I don't know, I don't know if that's gonna [work]...that's like playing Russian roulette with your life, I can't do that. I couldn't be the test guinea [pig] for that. [Deidre, non-medical staff]

Pamela, a non-medical staff member quoted next, expressed that condoms were a safe enough choice for protection. She also mentioned that people who are not monogamous and did not want to use condoms should abstain from sex altogether:

I think it's good and it's bad because I think sometimes when people have things like that to help them, they still sometimes participate in risky behaviors because “oh I got this to take”. That's just like a woman going out here having unprotected sex. Oh, if I get pregnant, I can take the after- morning pill, I'll go to the drug store and get a pill. I don't think it reduces the behavior that much, they still may be indulging in risky behavior because of that...Why should I have to take [PrEP]? Why am I gonna expose myself, [if] all I have to do is practice safe sex, don't expose myself, don't put myself in those unsafe situations where I don't have to take a pill. That's all...If you feel as though [your partner] may not be monogamous, then you need to wear a condom, make them wear a condom, or you just need to abstain from sex. That's my opinion, abstain from sex. Like I said, I'm not gonna put myself in any unsafe situation. But everybody don't think like that. [Pamela, non-medical staff]

Donny, a methadone counselor quoted next, expressed a similar attitude toward PrEP. Unaware of PrEP prior to the interview, he did not believe that PrEP is an effective medication in preventing HIV acquisition. Additionally, like many other participants, he felt that such a medication would condone behavior with which he disagrees.

I think [PrEP] is just a way for the government... I don't wanna say getting what they want but basically controlling the population... so if you're giving this person a pill- and it's still not stopping the HIV! So I don't even understand the concept behind the whole pill. You can't stop [HIV]. If someone has the disease and you're having unprotected [sex with them], they're gonna transmit it to you, but they're looking at it as, because they're taking this pill, that they're basically clear from all types of diseases and...that message is just not right. A lot of the times we hear want what we wanna hear instead of just reading and learning about what you put

inside your body...[PrEP is] also sending the message that's just not right...I just think the whole pill thing is more of a "it's ok to do this and here look, we've done given you a better way to do what you do". [Donny, counselor]

Anita, a non-medical staff member, expressed concerns similar to Donny's:

It'd give them a false sense of security. And they might say, "Oh, I'm taking it and let me go do whatever I want to do outside and there." So the cautiousness or the precaution goes out the window and they give you more freedom or leisure which in the human mind you should be cautious or protective of whatever you do in life. If you see the red light/green light, you know when to cross the street. Even if you have the green light and you see somebody, you know, you need to take caution. [Anita, non-medical staff member]

4. Discussion

PrEP appears to be a severely underutilized HIV prevention strategy among PWUD and people in MOUD, and the findings presented here suggest that all clinic staff should pursue PrEP education, but especially non-medical staff. All staff members in a treatment setting should be aware of, knowledgeable about, and comfortable discussing HIV prevention, not only medical personnel. Methadone counselors spend the most structured time with patients, and other staff members, such as front desk staff, security guards, and lab technicians, also closely interact with patients for prolonged periods, such as while patients are in the waiting rooms, and in between appointments with their medical providers and counselors. The spatial organization of most methadone clinics entails waiting rooms and areas to line up to receive medication, and is thus conducive to significant patient-staff interactions. These informal interactions were common, as staff knew their patients very well and were often friendly and talkative with them. Thus, providing non-medical staff with a working knowledge of PrEP would help to expand biobehavioral HIV prevention in MOUD settings.

4.1. People in methadone treatment are in need of HIV prevention

All participants expressed that their patient populations were in need of HIV prevention. Although not all were in agreement about the utility or even trustworthiness of PrEP, all staff members felt that their patients would benefit from HIV prevention efforts, and most agreed that PrEP specifically would be beneficial. Clinic staff outlined various subpopulations who they thought should be offered PrEP, including people engaged in intravenous (IV) drug use, those who engage in condomless sex or have multiple sex partners, those who sell or trade sex, and to a much lesser extent, LGBTQ people.

While existing literature highlights the acceptability of PrEP use primarily among sexual minority men, the results presented here indicate that substance use treatment staff also view PWUD as an important population to consider for PrEP. Staff noted the often-overlapping nature of behaviors such as condomless sex, IV drug use, and selling or trading sex. These various behaviors highlight the need to broadly include PWUD in PrEP priority populations, not only among people who inject. These findings reflect previous research that has called for PrEP as a necessary strategy to reduce HIV among PWUD, particularly those who inject,

alongside other harm reduction strategies such as needle and syringe exchange programs and supervised consumption sites (Reddon et al., 2019).

Indeed, Calabrese and colleagues also recently noted that PrEP's potential impact has been hindered by health care providers' hesitations to adopt PrEP counseling and prescribe it in their clinical practices, resulting in limited and inequitable PrEP uptake. They called on health care providers to integrate PrEP as part of routine preventive and primary care treatment (Calabrese et al., 2017). In the case of methadone treatment settings, clinics should coordinate with primary care clinicians to prescribe PrEP if they are unable to offer PrEP onsite (Mayer et al., 2018; Spector et al., 2015). The study presented here suggests that non-medical staff are a particularly critical group in which to engage in PrEP and HIV prevention education. Non-medical staff may have higher engagement with patients in methadone clinics due to their spatial organization, and thus have the potential to influence patients' perceptions about and future uptake of PrEP. When considering our findings of low PrEP awareness and prevalent negative perceptions, however, the need for education about PrEP and HIV prevention for both medical and non-medical staff is clear.

4.2. PrEP awareness and knowledge

The findings presented here suggest that methadone treatment settings are underutilized spaces in the active promotion of HIV prevention and offer direct PrEP access, or at minimum, provide proactive referrals to PrEP prescribers. Among this sample, PrEP awareness and knowledge were generally quite low, particularly among non-medical staff, who notably have the most interaction with patients. This lack of knowledge is potentially problematic since in addition to providing much needed counseling services, counselors in substance use treatment centers are also supposed to be sources of information and resources that provide patients with a well-rounded health experience, thereby promoting health-seeking behaviors and disease prevention strategies. Although some of the medical staff were aware of PrEP, most did not have in-depth knowledge or experience prescribing it or providing referrals. Indeed, previous studies have found that PrEP is largely under-prescribed and underutilized in various clinical settings (Krakower, Oldenburg, et al., 2015; Seidman et al., 2016). For example, in a large, multi-year study assessing primary care clinicians' perceptions of PrEP, researchers found that clinicians are increasingly willing to learn more about PrEP and prescribe it (Smith et al., 2016). However, PrEP awareness and acceptability remains generally low, as demonstrated by a recent survey of 18,265 health care providers that found that 68% were aware, 66% expressed willingness to prescribe, and only 24% had prescribed (Zhang et al., 2019). More research is necessary to explore barriers to and facilitators of providers' willingness to prescribe PrEP in various clinical settings, but more importantly in AOT settings, especially among providers with patient's who inject drugs. This population is particularly susceptible and could benefit from knowledge of and access to PrEP. Limited literature exists on PrEP awareness and knowledge among substance use treatment providers in particular, but the available studies suggest somewhat low PrEP awareness among this population. For example, in a qualitative study of clinicians' perspectives concerning PrEP, researchers found limited knowledge and ambivalence around PrEP (Spector et al., 2015). Moreover, a recent systematic review of PrEP and substance

use disorder research revealed a lack of research on PrEP implementation in substance use treatment settings (Goldstein et al., 2018).

To maximize the uptake and use of this extremely effective biomedical prevention strategy, MOUD clinic staff—from front desk staff to counselors to medical providers—need to be familiar with PrEP, supportive of its goals, and comfortable with prescribing/referring. This is perhaps particularly important for non-medical staff such as counselors and other staff (e.g., receptionists, intake coordinators, lab techs, etc.), as they are ones with whom patients interact most frequently and intimately. Indeed, in this study patients frequently sought advice from staff other than their counselors, suggesting that all staff, not only clinicians, must be aware of and offer nonstigmatizing information about PrEP.

4.3. PrEP perceptions and acceptability

Approximately half of the sample expressed positive attitudes toward PrEP, with the remaining expressing mixed perceptions or mostly negative perceptions. Potentially stigmatizing attitudes were underlying many of the perceptions, particularly the negatives ones, but also some of the more positive attitudes. Thus, PrEP education should address sexual stigma broadly, even among audiences that are initially receptive and supportive of PrEP. Participants' concerns about enabling condomless sex and "promiscuity" resonates with other research that has found that clinicians are concerned about risk disinhibition or risk compensation (Krakower et al., 2014). Indeed, the stigmatizing attitudes around sex and sexuality (e.g., notions of "promiscuity") present in the positive and negative perceptions found in this study echo the same concern in the literature pertaining to sexual minority populations (Calabrese & Underhill, 2015). Studies suggest, however, that PrEP use likely does not significantly contribute to increased engagement in condomless sex, greater number of sexual partners, or other behaviors associated with risk of HIV acquisition (Beymer et al., 2018; Calabrese et al., 2016), and even if it does, clinicians can recognize the benefits of PrEP use as harm reduction (Calabrese et al., 2016). Moreover, clinicians themselves recognize the stigmatizing attitudes that many health care providers have toward PrEP, as well as "negative judgements" of patients, and how these attitudes impact patient care (e.g., offering PrEP) (Calabrese et al., 2016). Identifying and addressing clinicians' stigmatizing and negative perceptions is critical to successfully moving forward with expanding PrEP access among communities most in need. In a review of PrEP-related stigma, Golub notes that although PrEP stigma is often experienced at the community level (i.e., by potential and current users), it can be reinforced and even amplified by public health programs, policy, and research. PrEP stigma disproportionately impacts disadvantaged groups and impedes scalability by influencing behavior of both patients and providers. Reducing PrEP stigma and its negative impact on the epidemic requires a significant shift in perspective, language, and programs. Such a shift is necessary to ensure broader reach of PrEP as a prevention strategy and improve its utilization by the individuals who need it most. (Golub, 2018).

Thus, clinic staff must reframe PrEP as a highly effective prevention tool that can benefit many subpopulations, with an emphasis on decreasing stigma at the interpersonal, community, and institutional levels. Reframing PrEP to decrease stigma at the interpersonal level will require increased familiarity and acceptance of PrEP among methadone clinic

staff. Moreover, PWUD broadly must be included in these conversations, not only those who inject drugs. Educational programming that engages MOUD providers and non-medical staff and addresses these perceptions are foundational in increasing awareness, acceptability, and likelihood that patients have an opportunity to consider PrEP.

As we noted, clinics must address sexual behavior-related stigma to maximize the uptake of this biomedical strategy. Without doing so, PrEP may be under-offered if staff think of PrEP as mostly for people who engage in “promiscuous” behavior. However, some staff also seemed to express that PrEP could benefit “everyone”, thus suggesting that there is a basis for building on this notion and fostering the belief that PrEP is a highly effective prevention tool that can offer protection for many subgroups of PWUD. Reframing staff’s beliefs surrounding HIV transmission behaviors and the effectiveness of biomedical strategies serve as a possible route for mitigating the impact of stigmatizing beliefs on patients’ perceptions around HIV prevention and their own HIV vulnerability. One specific way to address PrEP is to frame PrEP as part of a treatment continuum in which both HIV positive and HIV negative people are offered preventative services and treatment. The New York City Department of Health developed the “New York City HIV Status Neutral Prevention and Treatment Cycle” in which public health and medicine are encouraged to view all patients as potential candidates for either HIV prevention or HIV treatment (Myers et al., 2018), thus normalizing sexual health care. A “status neutral” approach also highlights the importance of the U=U (undetectable equals untransmittable) campaign in helping clinicians reframe HIV risk and encourage patients to consider PrEP (Calabrese & Mayer, 2019). Finally, Bazzi and colleagues suggest that providers frame PrEP as a tool to reduce community transmission rather than overemphasizing individual behaviors (Bazzi et al., 2018); this reframing may be a useful approach to reduce HIV and sexual-related stigma among providers and MOUD setting staff.

5. Conclusion

5.1. Limitations

There are important limitations to note. This study had two data collection sites (two methadone clinics) in northern New Jersey, and thus the results may not be generalizable to other parts of the country. However, the research team deliberately conducted this study in New Jersey, rather than New York City, as the latter has significantly more resources devoted to both substance use treatment and HIV prevention efforts. Thus, data collected in northern New Jersey enabled the research team to explore the experiences of people who are more likely to closely approximate the experiences of people living in the rest of the country. Additionally, staff interviews were brief, ranging from 15 min to about 30 min, with an average of approximately 20–25 min (staff participants spent as much time as they were able to with the interviewers before having to resume work). Thus, the interviewers had to cover several topics in a short amount of time, and interviewers did not fully probe some topics. Finally, “PWID”, “PWUD” and “people engaged in MOUD treatment” are not mutually exclusive categories, as individuals may be engaged in substance use treatment and still be using drugs (Valente et al., 2020). This study used the term PWUD to attempt to

broadly include people's diverse experiences, but the study team acknowledges that these research-driven distinctions are imprecise and may even further obscure vulnerable groups.

5.2. Clinical recommendations

Increased PrEP awareness and knowledge are important among staff in methadone treatment settings. Through either in-house training or continuing education, clinical staff in methadone treatment settings should endeavor to receive up-to-date training on HIV pre-exposure prophylaxis, particularly in relation to HIV risk among PWUD, including those who inject. Nonetheless, research should examine barriers to and facilitators of this progressive transition to care, particularly among MOUD providers. Understanding these factors is foundational in building consensus and advocacy for uptake of PrEP in these settings. Staff need to recognize and understand the difference between PrEP, a strategy for HIV prevention, versus/compared to medications taken by those who are HIV-positive (e.g., Truvada). During regular clinical visits, staff should initiate conversations with clients about their potential for HIV acquisition or transmission, through both sexual behaviors and substance using behaviors. Thus, clinics should explore strategies that increase staffs comfort levels to discuss these issues with their patients. Should clients be appropriate candidates, staff should provide information about PrEP in an open and nonjudgmental manner, and clinical staff should be prepared to talk with client's realistically about side effects. Clinic staff should also be open to discussing client's concern's about PrEP; by listening to patient's concerns, clinical staff may be able to dismantle PrEP-related stigma instead of reinforcing it. If connections to PrEP are not available in the methadone treatment setting, clinic staff should be knowledgeable about how patients might get connected to PrEP via primary care providers or other community-based resources.

5.3. Future research recommendations

Previous studies suggest that PrEP may be acceptable to people who inject drugs (Bazzi et al., 2018; Shrestha, Altice, et al., 2017; Shrestha, Karki, et al., 2017), but more research should examines HIV prevention and PrEP from the perspectives of individuals on MOUD specifically. Future research should also explore and identify the processes by which PrEP can be effectively and widely made available in MOUD treatment settings, and rigorously develop and assess programs that will be effective in diverse real world (and often under-funded) settings. Explore these PrEP inequalities in less urban areas may be especially important, particularly in historically and presently underserved regions such as the U. S. Deep South. Newark, while urban, is in some ways more similar to nonurban regions of the country, where public health infrastructure and funding are not as robust as in cities such as New York City and San Francisco. Future research should elucidate how these preventable and actionable disparities play out in culturally and geographically diverse areas in the United States.

Methadone clinics and other MOUD settings are underutilized sites in advancing HIV prevention among populations most in need of prevention efforts. Although the methadone clinics sampled here had large proportions of patients living with HIV, few staff members were knowledgeable about PrEP. Non-medical staff in particular must be well-informed and comfortable talking about HIV prevention, as non-medical staff usually have the most

interactions with patients due to how methadone clinics typically operate (e.g., waiting in lines and spending time in waiting rooms, frequent appointments with counselors, prolonged interactions with lab technicians, intimate familiarity with staff due to requirements that most patients come daily for their medication). In this study, staff members were largely passionate about providing high quality care to their patient populations, suggesting a missed opportunity to offer an extremely effective HIV prevention strategy. Non-medical staff in particular, with whom patients may have greater formal and informal contact, may be an especially important source of information for patients. Patients could benefit from education about PrEP and other methods of HIV prevention. Non-medical staff should receive adequate training to facilitate that outreach.

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