Published in final edited form as:

AIDS Care. 2018 January ; 30(1): 121–129. doi:10.1080/09540121.2017.1390541.

Fertility Desires and Preferences for Safer Conception Strategies among People Receiving Care for HIV at a Publicly-Funded Clinic in Seattle, WA

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Abstract

Understanding fertility desires and preferences for HIV prevention among individuals living with HIV, including the potential use of pre-exposure prophylaxis (PrEP) by HIV uninfected partners, can inform the delivery of safer conception counselling to reduce the risk of HIV transmission during pregnancy attempts. Men and women, predominantly heterosexual, engaged in HIV care in Seattle, WA, self-administered a questionnaire and we abstracted antiretroviral therapy (ART) status and HIV viral levels from medical records. We summarized participants' sexual behavior, fertility desires, and preferences for safer conception strategies and used log-binomial regression to identify demographic, sexual, and behavioral factors associated with perceived acceptability of PrEP for HIV uninfected partners during pregnancy attempts. 52% of the 150 participants were female and the mean age was 48 years (range 23–74). 94.7% of participants were using ART and 79.3% had HIV viral load < 40 copies/mL. 22.2% of men and 34.6% of women reported that a healthcare provider had initiated discussion about fertility desires. 28.7% of participants were reproductive-age and desired children. Among sexually active reproductive-age participants with fertility desires, 56.3% reported inconsistent condom use and 62.5% did not report using effective

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Disclosures: None.

birth control. 74.4% of reproductive age participants with fertility desires perceived that PrEP would be acceptable to an HIV uninfected partner and there were no significant predictors of PrEP acceptability. Nearly one third of reproductive-aged individuals living with HIV expressed fertility desires, highlighting a need for safer conception counselling in this setting. PrEP and ART were favored safer conception strategies.

Keywords

HIV; safer conception; PrEP; ART; pregnancy

Introduction

Effective management of HIV with antiretroviral therapy has enabled people living with HIV to achieve full life expectancy, including satisfying desires for pregnancy and family (Deeks, Lewin, & Havlir, 2013; Finocchiaro-Kessler et al., 2012; Massad et al., 2004; Mujugira et al., 2013; Oguntibeju, 2012; Pintye et al., 2015; Samji et al., 2013; Sharma et al., 2007). The preconception period, when couples intentionally forgo condoms to achieve pregnancy, can be accompanied by increased HIV transmission risk (Heffron, Pintye, Matthews, Weber, & Mugo, 2016), especially when viremia is not fully suppressed in the partner living with HIV. The majority of people living with HIV in King County, WA are of reproductive age and an estimated 25% of those living with HIV who identify as heterosexual have unsuppressed HIV viremia (Public Health Seattle & King County, 2015), suggesting that there may be prevention gaps for HIV affected individuals and couples who want to attempt pregnancy.

“Safer conception” is a risk reduction approach where individuals affected by HIV use one or more strategy to reduce the risk of HIV transmission and optimize fertility during pregnancy attempts. Antiretroviral treatment (ART) has tremendous clinical and prevention benefits (Cohen et al., 2011; Rodger et al., 2016) and can form the cornerstone of safer conception as it permits conception through sexual intercourse (i.e. “natural” conception) and is safe to use during pregnancy attempts (Ciaranello & Matthews, 2015; Heffron, Pintye, et al., 2016; Matthews, Smit, Cu-Uvin, & Cohan, 2012; United States Department of Health and Human Services Panel on Treatment of HIV-Infected Pregnant Women and Prevention of Perinatal Transmission, 2016; United States Public Health Service, 2014). Additional safer conception strategies that can be used alone or in combination with ART include pre-exposure prophylaxis (PrEP) used by HIV uninfected people, condomless sex timed to days with peak fertility, treatment for sexually transmitted infections, vaginal self-insemination, and medically assisted reproduction (sperm washing in conjunction with intrauterine insemination (IUI), *in vitro* fertilization, or intra-cytoplasmic sperm injection (ICSI)) (Matthews et al., 2012). Since ART initiation is sometimes delayed and adherence to daily ART regimens can be challenging, these conjunctive strategies are important options for couples who desire enhanced HIV prevention during the periconception and pregnancy periods (Ciaranello & Matthews, 2015; Heffron, Pintye, et al., 2016).

Demand for information and access to safer conception strategies is growing among individuals affected by HIV and providers frequently lack experience or knowledge about these services (Aaron & Cohan, 2013; Burr, Fry, Weber, Armas-Kolostroubis, & Lampe, 2009; Finocchiaro-Kessler et al., 2016; Matthews et al., 2016; Weber, Waldura, & Cohan, 2013). The purpose of the current study was to describe fertility desires and preferences for safer conception strategies among individuals living with HIV in Seattle, WA and to consider whether PrEP would be an acceptable strategy to offer to their uninfected partners.

Methods

Data collection

We conducted a cross-sectional study at the largest HIV clinic in Seattle, WA (Madison Clinic, University of Washington Harborview Medical Center). As a publicly funded institution, the Madison Clinic provides comprehensive care for all individuals, regardless of their insurance status or ability to pay. PrEP for HIV uninfected individuals has been available at the clinic since October 2014.

In 1992 the Madison Clinic established a research referral registry that includes patients who consent to be contacted by clinic-affiliated researchers for recruitment into research. For the current study, English-speaking, HIV-infected patients aged ≥ 21 who completed at least one HIV care visit in the previous 12 months and did not self-identify in the registry as men who have sex with men (MSM) were eligible to participate. The clinic generated a preliminary list of potentially eligible patients from the research registry and a research nurse contacted patients via phone to confirm eligibility. Demographic information was available for all potentially eligible patients included on this initial list, allowing for a comparison between patients who enrolled in the current study and those who did not. Three attempts were made to contact each potentially eligible patient, screen for eligibility criteria, and schedule an interview time. For patients who were unreachable by phone, the research nurse attempted to recruit them in person on the day of an already scheduled clinic visit. Eligible participants were given basic information about the study, and were scheduled for study visits if they expressed interest in participating.

Between July 2015 and June 2016, participants self-administered a computer-based questionnaire hosted through REDCap (Research Electronic Data Capture), a secure web-based application for data capture (University of Washington Institute of Translational Health Sciences) in a confidential clinic room. The questionnaire consisted of 70 items to assess: 1) demographics; 2) relationship and partner characteristics; 3) sexual behavior; 4) HIV diagnosis, ART use and adherence; 5) fertility history and desires; and 6) awareness of, willingness to use, and barriers to using safer conception strategies. Participants were asked about their preferences regarding six specific safer conceptions strategies: antiretrovirals (ART and PrEP), medically assisted reproduction, vaginal self-insemination, timed condomless sex, and treatment for sexually transmitted infections. An information sheet that explained these safer conception strategies in layperson language was available to participants while completing the questionnaire. Participants were asked to report on their perceived acceptability of PrEP as a safer conception strategy to either a current or future HIV negative partner. Participants rank-ordered their top three preferred strategies to use for

safer conception in response to a scenario in which they were attempting pregnancy with an HIV uninfected partner and all potential barriers to these strategies (e.g. knowledge, cost, access) were removed. Following the survey, medical record abstraction was done to capture participants' most recent HIV viral load and CD4 count results and to verify self-reported ART use.

Protocols for the current study and the clinic registry were approved by the Human Subjects Division at the University of Washington. All participants provided written informed consent and Health Insurance Portability and Accountability Act (HIPAA) authorization to access their medical records.

Statistical Methods

We used descriptive methods to compare demographic characteristics between eligible patients who did and did not enroll in the current study, and then summarized demographics, clinical characteristics, sexual behavior, and fertility desires among those who enrolled. Further analyses were restricted to a subset of participants who were categorized as reproductive age and expressed the desire to have at least one child in the future. In this subset, we used descriptive methods to describe knowledge of, willingness to use, and preferences for safer conception strategies and log binomial regression to determine factors associated with perceived acceptability of PrEP as a safer conception strategy to HIV uninfected partners. We adjusted the multivariable model for HIV serodiscordant relationship status (yes = currently in a relationship with a known HIV uninfected partner, no = not currently in a relationship or in a relationship with a partner of unknown or HIV infected status) based on *a priori* decisions. In addition, we included any factor that was statistically significant in univariate analyses ($p \leq 0.05$). Men of any age and women less than 45 years were categorized as reproductive age (Martinez, Daniels, & Chandra, 2012). Effective contraception included oral contraceptive pills, injectable, rings, implant, IUD, or permanent methods. Undetectable HIV viral load was defined as <40 copies/ml. SAS 9.4 (Cary, North Carolina) was used for all analyses.

Results

A total of 481 patients were identified from the research registry as eligible, of which 150 (31.2%) enrolled in the study, 259 (53.8%) could not be contacted to confirm eligibility, and 72 refused to participate (15.0%). The most common reasons for refusal were disinterest in the study (52.8%) and the time required to participate (19.4%). Based on registry data, a higher proportion of participants who enrolled in the study were born in the USA, but otherwise there were no differences between those that enrolled and those that did not enroll with regard to sex, age, race, or ethnicity.

Participant characteristics

Approximately half (52%) of enrolled participants were female and the mean age for men and women was 49.2 (range 25–74) and 47.7 (range 23–68), respectively (Table 1). One third of all women (35.9%) were categorized as being within reproductive age. A quarter of participants did not graduate from high school and 64.7% reported having difficulty paying

their monthly bills. The mean number of years since HIV diagnosis was 14 (range 0–31), almost all participants (94.7%) were on ART, and 79.3% had undetectable HIV viral load. About half (42%) of all participants were in a committed heterosexual relationship and of these, 71.4% were in an HIV serodiscordant relationship. Less than half of participants (43.6% of women and 36.1% of men) reported sexual activity in the 30 days prior to completing the survey. Sexually active participants reported a mean of 8.5 sex acts in the past 30 days (range 1–25), 53.3% reported inconsistent condom use during sex, and 28.3% reported using effective contraception.

Fertility history and desires

Twenty nine percent of all participants and 34.9% of reproductive age participants with fertility desires reported that a healthcare provider (HIV, gynecologist, or primary care) had ever initiated a conversation about fertility desires (Table 1). More than half of participants (66.0%) reported having one or more biological child. Fourteen percent of all participants, and 25.6% of participants of reproductive age with fertility desires, reported a previous pregnancy attempt with an HIV uninfected partner and 51.7% of all female participants with a history of pregnancy reported that their most recent pregnancy was mistimed or unwanted. Forty percent of reproductive age participants with fertility desires perceived that they were unable to have children; reasons included the perception that HIV or ART affect fertility (50.0%), age-related factors (44.4%), and history of unprotected sex that did not result in pregnancy (27.8%). Almost one third of participants (28.7%) were of reproductive age and had a desire to have one or more biological child at some point in the future (Figure 1).

Awareness of and preferences for safer conception strategies

Participants of reproductive age with fertility desires (n=43) were generally aware of and willing to use safer conception strategies (Table 2). ART was the most commonly recognized strategy (79.1%), followed by medically assisted reproductive health technologies (55.8%), PrEP (48.8%), and timed condomless sex (44.2%). Willingness followed a similar pattern with high willingness for ART (90.1%), followed by PrEP (74.4%), medically assisted reproductive health technologies (67.4%), and timed condomless sex (60.5%). When responding to a hypothetical scenario where all barriers to accessing safer conception strategies were removed and participants could rank their top three choices, participants favored ART (76.7%), PrEP (60.4%), and medically assisted reproductive health technologies (44.1%).

Acceptability of PrEP for safer conception

Univariate regression analysis did not identify any demographic, fertility history, sexual behavior, or HIV clinical characteristics that were significantly associated with perceived acceptability of PrEP (Table 3). The majority of reproductive age participants with fertility desires (62.8%) reported at least one barrier to PrEP utilization by a current or future HIV uninfected partner including not having heard of PrEP (20.9%), perceived side-effects (18.6%), concerns about the influence of PrEP on pregnancy or birth outcomes (14.0%), and cost (14.0%). Participants who anticipated one or more barrier to PrEP use were 33% less likely to perceive that a current or future partner would be willing to use PrEP during pregnancy attempts (prevalence ratio (PR): 0.67, 95% CI: 0.49, 0.92, p=0.01), although this

association was no longer significant after adjusting for current status in an HIV serodiscordant relationship (aPR: 0.75, 95% CI: 0.54, 1.06, $p=0.11$).

Discussion

Our study describes the fertility desires and preferences for safer conception strategies among a racially diverse and economically vulnerable population of men and women engaged in HIV care at a publicly funded clinic in Seattle, WA. While the majority of participants were older and already have children, 28.7% of reproductive age participants reported that they desire one or more child in the future. Among this subset of reproductive age men and women with fertility desires, HIV serodiscordant partnerships were common, inconsistent condom use was high, and use of effective contraception was low. Only a third of patients reported that a healthcare provider had initiated conversation about fertility desires, suggesting that there are missed opportunities for providers to discuss pregnancy planning and to recommend prevention interventions to their patients.

The ability to decide the number, timing, and spacing of children is recognized as a basic human right (The United Nations, 2014). For individuals and couples affected by HIV, intentionally planning or preventing pregnancy is a critical step in reducing the risk of sexual and perinatal HIV transmission. Fertility desires may fluctuate over time based on a variety of factors, such as age, partnership status, health status, and financial security. Frequent assessment of sexual partnerships and fertility desires is an opportunity for medical providers to assist patients in planning and achieving their fertility goals, whether that is effective contraception or intended pregnancy, preconception health, and/or safer conception strategies. A recent study among women living with HIV in Florida found that approval from a healthcare provider was the second most important factor influencing a woman's decisions around childbearing (Jones et al., 2016). In our study, only a third of patients reported that a healthcare provider had initiated a conversation with them about fertility desires. This finding is similar to a cross-sectional assessment among women receiving HIV care at two urban clinics in the US; 40% of 181 women reported a desire for a child, however 23% of these women were identified as having an unmet need for safer conception counselling (Finocchiaro-Kessler et al., 2010). Almost half of the reproductive age participants with fertility desires in the current study reported that they did not perceive themselves as fertile, and of these the majority perceived that their HIV status and/or taking ART affected their fertility. In many cases, participants were willing to use safer conception strategies but lacked awareness of them. These results highlight important knowledge gaps that can be addressed by primary care, gynecology, and HIV providers.

Among participants of reproductive age with fertility desires, willingness to use safer conception strategies was highest for ART, PrEP, and medically assisted reproduction, and these three strategies, respectively, were the most preferred strategies when participants were asked to select their top three safer conception strategies. Medically assisted reproduction, as sperm washing combined with IUI, ICSI, or IVF, require specialty care, is limited to one fertilization attempt per ovulatory cycle, and may be accompanied by high out of pocket expenses (Crawford et al., 2016; Lampe, Smith, Anderson, Edwards, & Nesheim, 2011). The majority of patients at the Madison Clinic are covered by Medicaid and a high

proportion of reproductive age participants with fertility desires reported that they have difficulty paying their monthly bills, suggesting that these patients may need alternative safer conception strategies that are less expensive than medically assisted reproduction.

Almost all participants in our study population were on ART, the majority of whom had undetectable HIV viral load and high self-reported adherence to ART. A recent mathematical model estimated that PrEP confers very little additive benefit (0.1% –0.2%) for HIV prevention when used in addition to suppressive ART (Hoffman et al., 2015). However, this model was based on data from mutually disclosed HIV serodiscordant couples and assumed consistent adherence to ART with condomless sex restricted to peak fertility days (Ciaranello & Matthews, 2015). ART use alone may be insufficient as a safer conception strategy, including instances when the person living with HIV is unable to achieve high adherence to ART and HIV viral suppression or in circumstances when the HIV status of a sexual partner is unknown (Ciaranello & Matthews, 2015). Multiple clinical guidelines, including those from World Health Organization (2012), the American College of Obstetrics and Gynecologists (2014), and the US Panel on the Treatment of HIV Infected Pregnant Women and Prevention of Perinatal Transmission (2016), recommend PrEP as a safer conception strategy for individuals at high risk of HIV, and previous studies have demonstrated that couples affected by HIV welcome the opportunity to augment ART use with PrEP during pregnancy attempts. (Heffron, Mugo, et al., 2016; Matthews et al., 2014; Ngure et al., 2014; Ngure et al., 2016; Pintye et al., 2015; Seidman et al., 2016) Reported experience with PrEP was low among participants in our study with an HIV uninfected partner. Awareness of PrEP as a safer conception strategy was moderate among reproductive age participants with fertility desires and many identified potential barriers to HIV uninfected partners using PrEP during pregnancy attempts. These results highlight the need and opportunity to increase knowledge of and address barriers to PrEP utilization among populations that may have HIV uninfected sexual partners.

To our knowledge, this is the first assessment of fertility desires among men and women living with HIV in the Pacific Northwest region and we captured a sample of both men and women representative of the clinic population. Our study was limited to people living with HIV with sufficient literacy to complete a computer-based interview in English. Self-administered interviews may have reduced social desirability bias in the reporting of sensitive information and we were able to collect and verify clinical HIV data through medical chart review. Recruitment attempts were made via phone and in-person at clinic visits. Potentially eligible participants who could not be contacted are likely disengaged from care. Our final study population reflects active patients able to engage in continued safer conception counseling. Reassuringly, we did not find any demographic differences between individuals who did and did not enroll in the current study. Our study population included a small number of participants who self-reported sexual activity with same-sex partners for whom conception may not be achievable without medically assisted reproductive health technologies, gamete donation, or adoption. Future studies could target greater numbers of people living with HIV in same-sex partnerships to assess their fertility desires, preferences, and experiences with these methods to achieve their family goals. Our results describe the fertility desires of an older population engaged in HIV care, however women may still be fecund beyond the standard categorization of reproductive age and men

can continue reproducing into advanced age. Delayed childbearing is becoming more common in the US; the mean age of a woman's first birth has been steadily rising among the general population and from 2000 to 2014 and the proportion of first births to women age 35 or older increased by 23% (Mathews, 2016). Future studies should seek to include populations that may have different fertility desires and preferences for safe conception strategies than what we have captured here, including younger individuals, non-English speakers, who likely include foreign-born individuals living in this area of the US, members of same-sex couples, and the HIV uninfected members of HIV serodiscordant couples.

Many of the men and women living with HIV in our study desire children and are interested in receiving education on safer conception strategies, however conversations on fertility desires between patients and HIV providers appear to be limited. Routinely engaging patients living with HIV in discussions about fertility desires and sexual behaviors is an opportunity for providers to address patient needs for preventing or planning pregnancy and engage them in discussion about their preferred safer conception strategies to minimize the risk of onward HIV transmission during pregnancy attempts.

Acknowledgments:

We thank the participants for their time and contributions to this study, as well as the efforts of the study team who facilitated the interview process.

Funding: This research was funded by the University of Washington Center for AIDS Research (CFAR), an NIH-funded program under (AI027757). KT and REDCap were supported by the National Center for Advancing Translational Sciences (TL1TR000422, UL1TR000423). The content is solely the responsibility of the authors and does not necessarily represent the official views of the funders.

Location: Seattle, Washington, USA

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Figure 1:
Fertility desire and pregnancy timing among men and women living with HIV in Seattle,
WA, N=150, frequency, %

Table 1:

Participant Characteristics, N=150, frequency (%) or mean (range)

	All Men 72 (48.0)	All Women 78 (52.0)	Reproductive Age * and Desire 1 Child 43 (28.7)
Demographics			
Age (years)	49.2 (25–74)	47.7 (23–68)	41.1 (25–62)
Race / Ethnicity			
American Indian or Alaska Native	5 (6.9)	10 (12.8)	2 (4.7)
Asian	1 (1.4)	5 (6.4)	2 (4.7)
Black or African American	26 (36.1)	33 (42.3)	17 (39.5)
Hispanic or Latino/a	9 (12.5)	4 (5.1)	4 (9.3)
Native Hawaiian or other Pacific Islander	1 (1.3)	2 (2.6)	2 (4.7)
White / Caucasian	36 (50.0)	32 (41.0)	20 (46.5)
Born in USA	63 (87.5)	69 (88.5)	35 (81.4)
Highest level of education			
<i>Less than high school</i>	13 (18.1)	22 (28.2)	8 (18.6)
<i>High school graduate / GED</i>	23 (31.9)	19 (24.3)	11 (25.6)
<i>Post-secondary schooling</i>	36 (50.0)	37 (47.4)	24 (55.8)
Have difficulty paying monthly bills and expenses	44 (61.1)	53 (68.0)	34 (79.1)
Clinical Characteristics			
Years since HIV diagnosis	12.9 (0–31)	15.0 (1–30)	10.6 (0–31)
CD4 Count	517.6 (48–1,774)	583.6 (17–1,604)	489.2 (102–1,361)
Undetectable HIV RNA viral load (< 40 copies / ml)	61 (85.9)	58 (74.4)	35 (83.3)
HIV viral load for those with virus 40 Log₁₀ copies / ml	3.59 (2.25–4.21)	2.19 (1.90–3.50)	2.94 (1.97–3.64)
Currently on antiretroviral therapy (ART)	71 (98.6)	71 (91.0)	39 (90.7)
Self-reported adherence to ART			
<i>All or most of the time</i>	66 (94.3)	70 (98.6)	38 (97.4)
<i>About half of the time</i>	3 (4.3)	1 (1.4)	1 (2.6)
<i>Never</i>	1 (1.4)	--	--
Healthcare provider has initiated discussion on fertility desires ‡	16 (22.2)	27 (34.6)	15 (34.9)
Partnerships and Sexual Activity			
Heterosexual or bisexual sexual partnerships	63 (87.5)	72 (92.3)	37 (86.1)
In committed heterosexual relationship	26 (36.1)	37 (47.4)	17 (39.5)
Respondent has disclosed HIV status to partner	25 (96.2)	34 (91.9)	17 (100.0)
Partner HIV Uninfected	18 (69.2)	27 (73.0)	12 (70.1)
Partner has used HIV pre-exposure prophylaxis	2 (11.1)	3 (11.1)	3 (25.0)
Discussed fertility desires with current partner	22 (84.6)	29 (78.4)	17 (100.0)
Sexually active past 30 days †	26 (36.1)	34 (43.6)	16 (37.2)

	All Men 72 (48.0)	All Women 78 (52.0)	Reproductive Age * and Desire 1 Child 43 (28.7)
Number of sexual partners in past 30 days	1.1 (1–3)	1.1 (1–3)	1 (1–1)
Number of sex acts in past 30 days	8.1 (1–25)	8.8 (1–25)	12.4 (1–25)
Number of condomless sex acts past 30 days	4.3 (0–25)	6.0 (0–25)	9.2 (0–25)
Inconsistent condom use past 30 days	10 (38.5)	22 (64.7)	9 (56.3)
Currently using effective contraception **	4 (15.4)	13 (38.2)	6 (37.5)
Perceived risk of HIV transmission is 'moderate' or 'high'	6 (23.1)	2 (5.9)	2 (12.5)

* Reproductive age included male participants of any age and female participants < 45 years of age

‡ Healthcare provider includes HIV specialist, gynecologist, or primary care provider

† Sexual activity defined as penile-vaginal sex

** Effective contraception includes pills, IUD, implants, ring, injectable, female hysterectomy / tubal, male vasectomy. No participant of reproductive age with fertility desires reported female hysterectomy / tubal or male vasectomy.

Table 2:

Awareness, willingness, and preferences for safer conception strategies when attempting pregnancy within an HIV serodiscordant relationship as reported by HIV-infected participants of reproductive age * with any fertility desire, N=43, frequency, (%)

	Antiretroviral Therapy (ART)	Pre-Exposure Prophylaxis (PrEP)	Medically Assisted Reproduction **	Timed Condomless Sex	Treatment of STIs	Vaginal Self-Insemination
Aware of strategy for safer conception	34 (79.1)	21 (48.8)	24 (55.8)	19 (44.2)	9 (20.9)	11 (25.6)
Willing to use strategy for safer conception	39 (90.1)	32 (74.4)	29 (67.4)	26 (60.5)	13 (30.2)	13 (30.2)
Strategy ranked in top 3 preferences for safer conception	33 (76.7)	26 (60.4)	19 (44.1)	13 (30.2)	3 (7.0)	8 (18.6)

* Reproductive age included male participants of any age and female participants < 45 years of age

** Medically assisted reproduction defined as sperm washing in conjunction with intrauterine insemination (IUI), in vitro fertilization, or intra-cytoplasmic sperm injection (ICSI)

Table 3:

Correlates of perceived willingness to for a HIV uninfected partner to use pre-exposure prophylaxis (PrEP) as a safer conception strategy, as reported by reproductive age* persons living with HIV and want to have a child in the future, N=43, frequency, (%)

	Yes N=32 (74.4)	No or Not Sure N = 11 (26.2)	Prevalence Ratio (95% CI)	P-value
Demographics				
<i>Age</i>				
21–29	4 (12.9)	3 (27.3)	0.74 (0.37, 1.50)	0.41
30–39	14 (45.2)	4 (36.4)	1.01 (0.71, 1.46)	0.93
40 and older (reference group)	13 (41.9)	4 (36.4)	--	--
Female (versus male)	12 (37.5)	2 (18.2)	1.25 (0.90, 1.72)	0.19
Born in USA (versus foreign born)	26 (81.3)	9 (81.8)	0.99 (0.63, 1.55)	0.97
Has education higher than high school (versus high school graduate or less)	19 (59.4)	5 (45.5)	1.16 (0.80, 1.67)	0.45
Has difficulty paying monthly bills and expenses	25 (78.1)	9 (81.8)	0.95 (0.63, 1.42)	0.78
Fertility History and Intentions				
Has at least one biological child (versus no biological children)	13 (40.6)	4 (36.4)	1.05 (0.74, 1.49)	0.80
Using effective birth control (versus infective or no birth control)	6 (18.8)	2 (18.2)	1.01 (0.65, 1.58)	0.97
Fertility intent is within 3 years (versus fertility intent greater than three years or unsure)	19 (59.4)	5 (45.5)	1.16 (0.81, 1.67)	0.44
Has discussed fertility desires with healthcare provider	12 (37.5)	3 (27.3)	1.12 (0.79, 1.58)	0.52
Has had at least one previous pregnancy attempt with an HIV uninfected partner	7 (21.9)	4 (36.4)	0.81 (0.50, 1.32)	0.41
Sexual Behavior and HIV Transmission Risk				
Sexually active past 30 days	13 (40.6)	3 (27.7)	1.15 (0.82, 1.62)	0.41
Any condomless sex in past 30 days	7 (21.9)	2 (18.2)	1.06 (0.71, 1.58)	0.79
Perceive high or moderate HIV transmission risk (versus low, no, or unclear risk)	5 (16.7)	5 (50.0)	0.60 (0.32, 1.14)	0.12
Currently in known HIV serodiscordant relationship (versus. no relationship or partner HIV status is infected or unknown)	10 (31.3)	2 (18.2)	1.17 (0.84, 1.65)	0.35
HIV Clinical Characteristics				
On ART (self-report)	29 (90.6)	10 (90.9)	1.01 (0.56, 1.83)	0.98
Self-reported ART adherence is "all the time" (versus adherence less than all of the time)	24 (77.4)	8 (72.7)	0.87 (0.58, 1.32)	0.52
Undetectable HIV viral load (<40 copies/ml)	24 (75.0)	8 (72.7)	1.07 (0.68, 1.68)	0.77
CD4 count 500 vs. 499 cells/mm ³	15 (48.4)	4 (36.4)	1.13 (0.79, 1.62)	0.49
Barriers to PrEP Use**				
Reported at least one barrier to PrEP use	17 (53.1)	10 (90.9)	0.67 (0.49, 0.92)	0.01

* Reproductive age included male participants of any age and female participants < 45 years of age

** Options for perceived barriers included: No prior knowledge of PrEP, not knowing where to obtain PrEP, taking a daily pill, side effects for HIV-1 uninfected partner, harmful effects on an infant, concerns about drug resistance, and cost.

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