Published in final edited form as:

Curr HIV Res. 2018 ; 16(3): 250–255. doi:10.2174/1570162X16666180731143756.

PrEP Eligibility and Interest Among Clinic- and Community- Recruited Young Black Women in Atlanta, Georgia, USA

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Abstract

Background: Atlanta has been identified as an HIV “hot spot” for Black women and ranks 5th in the US with new infections. Yet little is known about PrEP eligibility or interest among young Black women in Atlanta.

Methods: A convenience sample of 1,261 Black women (ages 14–24 years) were recruited from two settings: community venues and sexual health clinics. They provided self-reported sexual behavior data and specimens for laboratory testing for chlamydia (CT) and gonorrhea (GC) infections. For each woman, the number of key self-reported behavioral HIV risk factors was calculated (0–6 factors for the clinic sample, 0–3 factors for the community sample). A single item assessed PrEP interest in the community sample only.

Results: Bacterial STI positivity, an indicator for PrEP eligibility, was 20.5% (17.1% CT, 6.3% GC) and 20.9% (18.8% CT, 5.2% GC) for the clinic and community samples, respectively. Of the 144 STI positive women from the clinic sample, 20.1% reported no behavioral risk indicators and 47.2% reported 2 behavioral indicators. Of the 117 STI positive women from the community sample, 21.4% reported no behavioral risk indicators. 60.7% of the community sample reported they would be likely or very likely to use PrEP if available.

Conclusion: Young Black women in Atlanta, whether sampled from community or sexual health settings, are at substantial risk for HIV infection and meet several PrEP eligibility criteria. Scaling

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ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The Emory University Institutional Review Board approved all study protocols.

HUMAN AND ANIMAL RIGHTS

No animal were used in this research. All humans research procedures followed were in accordance with the standards set forth in the Declaration of Helsinki principles of 1975, as revised in 2008 (<http://www.wma.net/en/20activities/10ethics/10helsinki/>).

CONSENT FOR PUBLICATION

Written informed consent was obtained from all participants of both studies with parental consent waived for those younger than 18 due to the confidential nature of services.

up PrEP among women in Atlanta could have significant implications for HIV in this high burden region.

Keywords

PrEP; women; Black or African American; United States; chlamydia; gonorrhea

1. INTRODUCTION

Overall, individuals in the US have a 1 in 99 chance of being diagnosed with HIV at some point in their life [1]. However, underlying this overall statistic are significant racial and geographic disparities. Women account for 20% of the >40,000 new infections in the US annually [2]. Racial and geographic disparities are magnified in women; while Black men have over 7 times the lifetime risk of an HIV diagnosis of White men, 1 in 48 Black women are diagnosed with HIV over their lifetime, nearly 20 times the risk for White women [1]. Lifetime HIV risk is greatest for people living in the South, with Georgia ranked 3rd overall (1 in 51 chance) [1]. Southern states account for nearly half of new HIV diagnoses despite having only 37% of the population [3], and of all US women diagnosed with HIV in 2015, 56% of new HIV diagnoses were among women living in the South [4]. Atlanta has been identified as an HIV “hot spot” for Black women, and currently ranks 5th in the nation for new HIV infections [5]. Reducing HIV among women, especially Black women in the Southern US, is a public health priority.

Pre-exposure prophylaxis (PrEP) is an effective, female-controlled HIV prevention strategy that is not optimally utilized among women at risk for HIV in the Southern US [6, 7]. The daily fixed dose combination of tenofovir disoproxil fumarate and emtricitabine (TDF/FTC) has been approved for HIV prevention since 2012 [8]. Clinical trials and real-world demonstration projects have demonstrated that daily oral PrEP is effective in preventing HIV in women when taken regularly [9–16]. In the setting of alarming rates of new HIV infections among men who have sex with men (MSM), PrEP promotion for MSM has rapidly escalated, and awareness has increased to as high as 68% among MSM in parts of the US [16]. In contrast, the few available studies among US women report low PrEP awareness; for example, in a multi-site study conducted in 2014, <10% of women at risk for HIV had heard of PrEP, but once informed, most women found the option to be attractive [17–22]. While Centers for Disease Control and Prevention (CDC) estimates that 468,000 US women may benefit from PrEP [23], its use among US women remains strikingly low. Retail pharmacy data indicate that only 18,812 women have initiated PrEP [24], and in the past year, only 11% of new PrEP users were women, with Black women comprising a significantly lower proportion [25].

Per CDC guidance, PrEP is appropriate for HIV-negative heterosexual women who are at “substantial risk” for contracting HIV, especially when they reside in high HIV burden areas [26]. Substantial risk includes: being in a sexual relationship with a HIV-positive partner, inconsistent or nonuse of condoms during sex, having a high number of sex partners, recently acquired a sexually transmitted infection (STI), engaging in transactional sex, or sharing injection or drug preparation equipment. Currently there is no validated HIV risk

assessment tool for capturing substantial risk for US women [27], but a 2017 study among MSM suggests that CDC guidance for identifying PrEP candidates omits important factors that contribute to substantial HIV risk, such as substance use and partner and relationship attributes (*i.e.*, intimate partner violence (IPV)); when these indicators were included, the enhanced risk assessment better identified new HIV infections [28].

The purpose of our study was to use self-reported behavioral data and results from laboratory STI testing from two samples to approximate PrEP eligibility and describe interest in PrEP among young Black women in Atlanta, a city in which HIV burden among Black women is relatively high. To the extent possible with secondary data, we based behavioral HIV risk index items on existing CDC guidelines [26] for determining if a heterosexual woman is at “substantial risk” of HIV. We also added other indicators cited widely in empirical literature (*e.g.*, substance use during sex; IPV) as contributing to high HIV risk for women [29, 30].

2. METHODS

We conducted a secondary analysis of data from two behavioral HIV prevention trials conducted among young Black women in Atlanta, Georgia. One was conducted among women recruited from sexual health clinics (Sample 1) [31], and one recruited from various community venues (Sample 2) [32]. Neither trial included HIV testing. Written informed consent was obtained from all participants of both studies with parental consent waived for those younger than 18 due to the confidential nature of services. The Emory University Institutional Review Board approved all study protocols.

Procedures from both trials are briefly described below. These analyses are based on data only from baseline assessments (collected prior to randomization and intervention participation).

2.1. Sample 1 Procedures and Measures

From June 2005 to June 2007, 701 African-American adolescent females, 14–20 years of age, were recruited from three sexual health clinics in downtown Atlanta (2 family planning clinics and 1 county health department clinic). Eligibility criteria included: self-identifying as African-American, 14–20 years of age, and reporting vaginal intercourse at least once without a condom in the past 6 months.

Data collection included an audio computer-assisted self-interview (ACASI) survey. Questions on the survey included demographics and sexual history variables. After completing the ACASI, participants provided self-collected vaginal swab specimens which were assayed for *C. trachomatis* (CT) and *N. gonorrhoeae* (GC) using the BDProbeTec ET *C. trachomatis* and *N. gonorrhoeae* Amplified DNA assay (Becton Dickinson and Company, Sparks, MD).

2.1.1. HIV Risk Index—Six items were used from the ACASI survey for inclusion in the risk index: recent (past 90 days) condomless vaginal sex (yes/no), recent (past 90 days) condomless anal sex (yes/no), recent (past 90 days) sex with male partner who has male

partners (yes/no), recent sex while high on drugs/alcohol (self; yes/no), recent sex while high on drugs/alcohol (partner; yes/no), and recent (past 90 days) experience of IPV (yes/no). The IPV item was only asked to participants 18 years and older. Yes was scored 1 and no scored 0, resulting in 0–6 possible risk indicators per person.

2.2. Sample 2 Procedures and Measures

From January 2012 to February 2014, 560 women were recruited through street and community outreach in Atlanta. Women were eligible if they self-identified as African-American, were 18–24 years old, were not married or pregnant, and had consumed alcohol on at least three occasions and had unprotected vaginal sex with a male in the past 90 days. Like Sample 1, data collection at enrollment consisted of a self-collected vaginal swab to assess prevalent STIs and an ACASI survey.

2.2.1. HIV Risk Index and PrEP Interest—Three items were used from the ACASI survey for inclusion in the risk index: condomless sex at last sex (yes/no), recently (past 90 days) exchanged sex for goods or services (yes/no); and recent (past 90 days) experience of IPV (yes/no). Yes was scored as 1 and no scored as 0, resulting in 0–3 possible risk indicators per person. An additional item captured interest in PrEP: “How likely would you be to use PrEP if it would protect you almost all the time (90% effective)?” Response options were: “very unlikely (1),” “unlikely (2),” “neither likely or unlikely (3),” “likely (4),” or “very likely (5).”

3. RESULTS

3.1. Sample 1 Results

Participants median (IQR) age was 18 (3) years [mean (SD) age was 17.6 (1.7) years]. Most (65.3%) were full-time students; the remaining 34.8% had already graduated from high school or were not in school. At baseline assessment, 20.5% tested positive for CT and/or GC (17.1% CT positive and 6.3% GC positive). Table I presents the HIV Risk Index (mean/SD) and frequencies for each item in the index stratified by STI status. For Sample 1, comparison tests were calculated between STI status groups for all variables and only “Sex while high/drunken (partner)” showed a significant difference between groups (Chi-square = 4.5, $p = .03$), and “Sex while high/drunken (self)” showed borderline evidence of a meaningful difference between groups (Chi-square = 3.15, $p = .08$). Overall (across STI positive and STI negative women), HIV Risk Index totals ranged from 0 to 6; 20.8% reported no risk indicators, 34.2% reported 1, 23.7% reported 2, 14.8% reported 3, and 6.4% reported 4 or more risk indicators.

3.2. Sample 2 Results

Participants median (IQR) age was 20 (3) years [mean (SD) age was 20.6 (1.9) years]. Most (66.1%) had at least graduated from high school or obtained an equivalent degree. At baseline assessment, 20.9% tested positive for CT and/or GC (18.8% CT positive and 5.2% GC positive). Table I presents PrEP interest, the HIV Risk Index (mean/SD) and frequencies for each item in the index stratified by STI status. For Sample 2, comparison tests were calculated between STI status groups for all variables and only HIV Index mean scores

showed borderline evidence of a meaningful difference between groups ($t = -1.64$, $p = .10$). Overall (across STI positive and STI negative women), HIV Risk Index totals ranged from 0 to 3; 27.1% reported no risk indicators, 54.8% reported 1, 14.6% reported 2, and 3.4% reported all 3. Among all participants, interest in using PrEP ranged, with 20.0% reporting they would be very unlikely, 7.0% unlikely, 15.2% neither unlikely or likely, 14.8% likely, and 43.0% reported they would be very likely to use PrEP.

4. DISCUSSION

This is the first study to report PrEP indication and interest among populations of over 1,200 young Black women in the Southern US, a group that is disproportionately affected by HIV and in which PrEP is underutilized [7, 24, 25]. Sexually active young Black women in Atlanta, whether sampled from sexual health clinics or community venues, met several criteria suggesting they are at substantial risk for HIV, thus potential candidates for PrEP. Importantly, the majority of community-recruited young women, mostly enrolled after PrEP was FDA approved for HIV prevention, reported they would be likely or very likely to use PrEP if available.

Notably, many women did not report any behavioral risk factors, including over 20% of women who were STI positive in both samples. This finding highlights the challenge of providers identifying women at substantial risk for HIV infection and the need for HIV risk assessment tools adapted for US women in high HIV prevalence settings [29, 33]. Low self-reported risk behaviors may also reflect low HIV risk perception among some women, which could pose a barrier to PrEP uptake [29, 34]. Women interviewed in the VOICE and FEM-PrEP studies in South Africa and Kenya also found that lack of risk perception was a barrier to PrEP use, along with HIV stigma and uncertainty about efficacy [35, 36].

Innovative approaches are therefore required to optimize awareness and access to PrEP for young women in high HIV prevalence areas. Anchoring PrEP delivery to services that women trust, access routinely, and deem useful for their sexual health is of great appeal [37–40]. In fact, our results demonstrate similarly high STI frequency and HIV risk among women recruited from sexual health clinics, mostly providing family planning services, as those recruited from community venues. Most (60%) young women utilize family planning providers for sexual health and preventative services, and they are viewed with trust among this group [22, 38]. Furthermore, shared decision-making, a framework promoted in the Quality Family Planning (QFP) recommendations used by family planning providers [41], is ideal for identifying women at substantial risk of HIV and offering comprehensive HIV prevention services, including PrEP [40].

The Population Research and Voluntary Family Planning Programs, or Title X, is a federal grant program for providing comprehensive family planning services to low income youth and adults across the US [42]. According to the Office of Population Affairs' Title X Family Planning Annual Report, of the 4 million family planning users served in 2016, 35% (1.4 million) were 18–24-years-old, and 8% (~334,000) were 17 years or younger [43]. Title X grants are given to both public and private non-profit organizations, and serve approximately 4,000 clinics across the US [43]. Given the far-reaching network of health centers, their

commitment to confidentiality, and provision of financial assistance, Title X clinics are well positioned, and often times conveniently located, to address the sexual health needs of adolescent and young adult women, including groups at increased risk for HIV (racial/ethnic minorities, low-income, young women). Unfortunately, similar to reports pertaining to inadequate provider knowledge and training necessary for scaling PrEP in Africa [44], lack of PrEP knowledge and training have been identified as a major barrier to PrEP delivery among family planning providers [37], especially in the South, and virtually nothing is known about processes to best integrate PrEP into current family planning services or Title X clinics. These are important areas for further research.

Family planning clinics alone are insufficient to achieve widespread PrEP awareness among women at substantial risk for HIV. Many women may not be connected to care, thus could be unaware of their HIV risk and/or HIV prevention tools if we rely solely on clinic-based interventions. Women, regardless of their HIV risk status, critically lack knowledge about PrEP [17–22]. This is unacceptable, especially in a high HIV epidemiologic context such as the Southern US. To date, MSM have been the main audience for highly visible PrEP awareness campaigns in the US. Even when exposed to PrEP awareness campaigns, US women do not identify with these campaigns, and often do not associate PrEP as a prevention tool appropriate for women [21]. Only very recently have PrEP campaigns (*e.g.*, “Let’s Talk About PrEP” - nationwide, “PrEP for Her” in Washington, DC, or “PrEP4Love” in Chicago) included messaging directed to or inclusive of women – but the scale of these initiatives are small and have not penetrated the Southern US, where HIV among women remains the highest. Broader public health efforts inclusive of women must be initiated to raise community-wide awareness of PrEP.

In the absence of large-scale media campaigns, community-based public health efforts are needed, particularly in high HIV burden locations, to help raise awareness about PrEP through community dissemination. For instance, public health agencies could consider hosting workshops or sessions at community-based women’s health events focused on PrEP and women. Alternatively, health departments, community centers and other community-based venues could provide brochures or information sheets/materials about PrEP that are accessible for patients to take, as well as display information about PrEP in their waiting rooms and on their website. Women-focused PrEP information tools have been developed, such as the printed palm card on PrEP [33], and could be easily distributed at community events, schools, and in clinics. Though these venues are not providing PrEP, they may still have an important role in increasing PrEP awareness and making it more accessible to women.

This study had limitations: missing data for some variables, no HIV testing, some bacterial STIs were not tested for (*i.e.*, syphilis, though prevalence is low among this age group), trial inclusion criteria included some HIV risk criteria resulting in overestimation of HIV risk if applied to overall population of young Black women in Atlanta, and questionnaires did not capture all items relevant for HIV risk in women. A notable limitation of our study was the sole reliance on already collected data to explore our study questions. This approach resulted in inclusion of only Black women in our analyses. Hispanic/Latina women are also at heightened risk of HIV, yet little is known specifically about their PrEP eligibility in the

South. Despite limitations, to our knowledge, this is one of the first reports on potential PrEP eligibility and interest among young Black women in a high HIV incidence setting in the Southern US. Importantly, future studies of HIV risk among women in the Southern US should include Hispanic/Latina women to better understand their eligibility and interest in PrEP.

CONCLUSION

In conclusion, we demonstrate that a large proportion of sexually active, young Black women in Atlanta are interested in PrEP and eligible per CDC guidelines. PrEP requires innovative screening and delivery approaches to optimize its benefit among women in high HIV-burden areas across the Southern US. Yet, to date, few efforts have occurred to improve Southern women's knowledge or access to PrEP. Interventions are urgently needed to increase PrEP awareness and delivery for this population.

ACKNOWLEDGEMENTS

CONFLICT OF INTEREST

J. Sales is currently receiving a grant (CO-US-276–4060) from Gilead Sciences, Inc. Support for the data used in this study was provided by grants from the National Institutes of Health (R01 MH070537 & R01 AA018096) to Ralph J. Di-Clemente. A. Sheth receives funding from the National Institutes of Health (1K23AI114407).

REFERENCES

- [1]. Hess KL, Hu X, Lansky A, Mermin J, Hall HI. Lifetime risk of a diagnosis of HIV infection in the United States. *Annals Epidemiol* 2017; 1; 27(4): 238–43.
- [2]. Centers for Disease Control and Prevention (CDC). Diagnoses of HIV infection in the United States and dependent areas, 2016 [Internet]. HIV Surveillance Report; 2017 [cited 2018 Jul 23]. Report No.: 28. Available from: <http://www.cdc.gov/hiv/library/reports/surveillance/>
- [3]. Centers for Disease Control and Prevention (CDC). Diagnoses of HIV infection in the United States and dependent areas, 2014 [Internet]. HIV Surveillance Report; 2015 [cited 2018 Jul 23]. Report No.: 26. Available from: <http://www.cdc.gov/hiv/library/reports/surveillance/>
- [4]. Centers for Disease Control and Prevention (CDC). CDC Issue Brief: HIV in the Southern United States [Internet]. 2016 [cited 2018 Jul 23]. Available from: <https://www.cdc.gov/hiv/pdf/policies/cdc-hiv-in-the-south-issue-brief.pdf>
- [5]. AIDSvu. AIDSvu Annual Release of New Maps and Resources Emory University, Rollins School of Public Health; 2017 6 20 [cited 2018 Jul 23]. Available from: <https://aidsvu.org/launch2017/>
- [6]. Sheth AN, Rolle CP, Gandhi M. HIV pre-exposure prophylaxis for women. *Journal of virus eradication*. 2016; 2(3): 149. [PubMed: 27482454]
- [7]. Siegler AJ, Mouhanna F, Giler RM, et al. Distribution of active PrEP prescriptions and the PrEP-to-need ratio, US, Q2 2017 Abstract presented at 25th Conference on Retroviruses and Opportunistic Infections (CROI 2018); Boston, MA 2018.
- [8]. U.S. Department of Health and Human Services. FDA approves first drug for reducing the risk of sexually acquired HIV infection. 2012 Available from: (<https://aidsinfo.nih.gov/news/1254/fda-approves-first-drug-for-reducing-the-risk-of-sexually-acquired-hiv-infection>).
- [9]. Grant RM, Lama JR, Anderson PL, et al. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. *N Engl J Med* 2010; 363(27): 2587–99. [PubMed: 21091279]
- [10]. Baeten JM, Donnell D, Ndase P, et al. Antiretroviral prophylaxis for HIV prevention in heterosexual men and women. *N Engl J Med* 2012; 367(5): 399–410. [PubMed: 22784037]

- [11]. Thigpen MC, Kebaabetswe PM, Paxton LA et al. Antiretroviral preexposure prophylaxis for heterosexual HIV transmission in Botswana. *N Engl J Med* 2012; 367(5): 423–34. [PubMed: 22784038]
- [12]. Choopanya K, Martin M, Suntharasamai P, et al. Antiretroviral prophylaxis for HIV infection in injecting drug users in Bangkok, Thailand (the Bangkok Tenofovir Study): a randomised, double-blind, placebo-controlled phase 3 trial. *Lancet* 2013 15; 381(9883): 2083–90. [PubMed: 23769234]
- [13]. Baeten J, Heffron R, Kidoguchi L, et al. Near elimination of HIV transmission in a demonstration project of PrEP and ART Abstract #24 presented at Conference on Retroviruses and Opportunistic Infections; 2015 2 23-26; Seattle, WA, USA.
- [14]. Volk JE, Marcus JL, Phengrasamy T, et al. No new HIV infections with increasing use of HIV preexposure prophylaxis in a clinical practice setting. *Clin Infect Dis* 2015 1; 61(10): 1601–3. [PubMed: 26334052]
- [15]. Liu AY, Cohen SE, Vittinghoff E, et al. Preexposure prophylaxis for HIV infection integrated with municipal-and community-based sexual health services. *JAMA Intern Med* 2016; 1 76(1): 75–84.
- [16]. Delaney KP, Sanchez T, Bowles K, Oraka E, DiNenno E, Sullivan P. Awareness and use of PrEP appear to be increasing among internet samples of US MSM Abstract #889 presented at: Conference on Retroviruses and Opportunistic Infections; 2016 2 22-25; Boston, MA, USA.
- [17]. Young I, McDaid L. How acceptable are antiretrovirals for the prevention of sexually transmitted HIV?: A review of research on the acceptability of oral pre-exposure prophylaxis and treatment as prevention. *AIDS Behav* 2014; 18(2): 195–216. [PubMed: 23897125]
- [18]. Edelstein Z, Mensah N, Scanlin K, Cutler B, Myers J. Awareness of HIV prevention innovations among women of color in NYC: HIV self-tests and pre-exposure prophylaxis (PrEP) Presented at 142nd APHA Annual Meeting and Exposition; 15-19 11 2014; New Orleans, LA, USA.
- [19]. Doblecki-Lewis S, Lester L, Schwartz B, Collins C, Johnson R, Kobetz E. HIV risk and awareness and interest in pre-exposure and post-exposure prophylaxis among sheltered women in Miami. *Int J STD AIDS* 2016; 27(10): 873–81. [PubMed: 26384947]
- [20]. Walters SM, Reilly KH, Neaigus A, Braunstein S. Awareness of pre-exposure prophylaxis (PrEP) among women who inject drugs in NYC: the importance of networks and syringe exchange programs for HIV prevention. *Harm Reduct J* 2017; 14(1): 40. [PubMed: 28662716]
- [21]. Collier KL, Colarossi LG, Sanders K. Raising awareness of pre-exposure prophylaxis (PrEP) among women in New York City: community and provider perspectives. *J Health commun* 2017; 22(3): 183–9. [PubMed: 28248625]
- [22]. Auerbach JD, Kinsky S, Brown G, Charles V. Knowledge, attitudes and likelihood of pre-exposure prophylaxis (PrEP) use among US women at risk of acquiring HIV. *AIDS Patient Care and STDs*. 2015; 29(2): 102–10. [PubMed: 25513954]
- [23]. Smith DK, Van Handel M, Wolitski RJ, et al. Vital signs: estimated percentages and numbers of adults with indications for pre-exposure prophylaxis to prevent HIV acquisition—United States, 2015. *MMWR Morb Mortal Wkly Rep* 2015; 64(46): 1291–5. [PubMed: 26606148]
- [24]. Mera R, McCallister S, Palmer B, Mayer G, Magnuson D, Rawlings K. Truvada for HIV pre-exposure prophylaxis (PrEP) utilization in the United States: 2013–2015 Abstract TUAX0105LB presented at the 21st International AIDS Conference; 2016 7 18-22; Durban, South Africa.
- [25]. Bush S, Magnuson D, Rawlings M, Hawkins T, McCallister S, Mera Giler R. Racial characteristics of ftc/tdf for pre-exposure prophylaxis users in the us Abstract 2651 presented at the American Society for Microbiology (ASM Microbe) 2016; 2016 6 16-20, 2016. Boston, MA, USA.
- [26]. Centers for Disease Control and Prevention (CDC). US Public Health Service Preexposure prophylaxis for the prevention of HIV infection in the United States-2014: A clinical practice guideline [Internet]. 2014 5 31 [cited 2018 Jul 23]. Available from: <https://www.cdc.gov/hiv/pdf/guidelines/PrEPguidelines2014.pdf>
- [27]. Adimora A, et al. New approaches for HIV prevention trials. *Clin Infect Dis* 2017; 65: 324. [PubMed: 28383649]

- [28]. Beymer MR, Weiss RE, Sugar CA, et al. Are centers for disease control and prevention guidelines for preexposure prophylaxis specific enough? formulation of a personalized hiv risk score for pre-exposure prophylaxis initiation. *Sex Trans Dis* 2017; 44(1): 48–56.
- [29]. Aaron E, Blum C, Seidman D, et al. Delivery of HIV preexposure prophylaxis for women in the United States. *AIDS Patient Care STDs* 2018; 32(1): 16–23. [PubMed: 29323558]
- [30]. Willie TC, Stockman JK, Overstreet NM, Kershaw TS. Examining the impact of intimate partner violence type and timing on pre-exposure prophylaxis awareness, interest, and coercion. *AIDS Behav* 2018; 22(4): 1190–200. [PubMed: 28887703]
- [31]. DiClemente RJ, Wingood GM, Sales JM, et al. Efficacy of a telephone-delivered sexually transmitted infection/human immunodeficiency virus prevention maintenance intervention for adolescents: a randomized clinical trial. *JAMA Pediatr* 2014; 168(10): 938–46. [PubMed: 25155070]
- [32]. Curran TM, Monahan JL, Samp JA, Coles VB, DiClemente RJ, Sales J. Sexual risk among African American women: Psychological factors and the mediating role of social skills. *Commun Q* 2016; 64(5): 536–52. [PubMed: 28490827]
- [33]. Collier KL, Colarossi LG, Sanders K. A PrEP information and self-screening tool for women. *AIDS Educ Prev* 2018; 30(1): 13–25. [PubMed: 29481302]
- [34]. Patel A, Goparaju L, Sales JM, et al. Predictors of PrEP eligibility among at-risk women in the Southern United States. Poster presented at: Annual CROI meeting; 2018 3; Boston, MA, USA.
- [35]. Corneli A, Perry B, Agot K, Ahmed K, Malamatsho F, Van Damme L. Facilitators of adherence to the study pill in the FEM-PrEP clinical trial. *PloS One* 2015; 10(4): e0125458. [PubMed: 25867624]
- [36]. van der Straten A, Stadler J, Luecke E, et al. Perspectives on use of oral and vaginal antiretrovirals for HIV prevention: the VOICE-C qualitative study in Johannesburg, South Africa. *J Intl AIDS Soc* 2014; 17: 19146.
- [37]. Seidman D, Carlson K, Weber S, Witt J, Kelly PJ. United States family planning providers' knowledge of and attitudes towards pre-exposure prophylaxis for HIV prevention: a national survey. *Contraception* 2016; 93(5): 463–9. [PubMed: 26772906]
- [38]. Frost JJ, Gold RB, Bucek A. Specialized family planning clinics in the United States: why women choose them and their role in meeting women's health care needs. *Women's Health Issues* 2012; 22(6): e519–25. [PubMed: 23122212]
- [39]. US women & PrEP working group position statement [Internet]. Sister Love; 2015 [cited 2018 Jul 23]. Available from: <http://www.sisterlove.org/wp-content/uploads/2015/11/US-Women-and-PrEP-Updated-Statement-Final2-1.pdf>; 2015
- [40]. Seidman D, Weber S. Integrating preexposure prophylaxis for human immunodeficiency virus prevention into women's health care in the United States. *Obstet Gynecol* 2016; 128(1): 37–43. [PubMed: 27275793]
- [41]. Gavin L, Pazol K. Update: providing quality family planning services - recommendations from cdc and the u.s. office of population affairs. *MMWR Morb Mortal Wkly Rep* 2016; 65(9): 231–4. [PubMed: 26963363]
- [42]. Office of Population Affairs (OPA). Funding History [Internet]. U.S. Department of Health and Human Services; 2017 2 21 [cited 2018 Jul 23]. Available from <https://www.hhs.gov/opa/title-x-family-planning/about-title-x-grants/funding-history/index.html>
- [43]. Fowler CI, Gable J, Wang J, Lasater B. Family planning annual report: 2016 national summary. Research Triangle Park, NC: RTI International, 2017 8 <https://www.hhs.gov/opa/sites/default/files/title-x-fpar-2016-national.pdf>. Accessed June 18, 2018.
- [44]. Mugo NR, Ngure K, Kiragu M, Irungu E, Kilonzo N. PrEP for Africa: What we have learnt and what is needed to move to program implementation. *Curr Opin HIV AIDS* 2016; 11(1): 80. [PubMed: 26575147]

Table 1.

Sample 1 (Clinic-recruited) and Sample 2 (Community-recruited) HIV Risk Index Totals and frequency/percentages per item; stratified by sexually transmitted infection (STI) status (STI negative, STI positive).

Variable	Sample 1		Sample 2	
	STI Negative (n=557) Frequency (%)	STI Positive (n=144) Frequency (%)	STI Negative (n=443) Frequency (%)	STI Positive (n=117) Frequency (%)
HIV Risk Index, median (IQR) ^{ab}	1.00 (1.00)	1.00 (1.75)	1.00 (1.00)	1.00 (0)
0 indicators	117 (21%)	29 (20.1%)	127 (28.7%)	25 (21.4%)
1 indicator	193 (34.6%)	47 (32.6%)	240 (54.2%)	67 (57.3%)
2 indicators	134 (24%)	32 (22.2%)	62 (14%)	20 (17.1%)
3 indicators	78 (14%)	26 (18.1%)	14 (3.2%)	5 (4.3%)
4 indicators	30 (5.4%)	8 (5.6%)		
5 indicators	3 (0.5%)	2 (1.4%)		
6 indicators	2 (0.4%)	0 (0%)		
Condomless vaginal sex (90 days)	318 (57.1%)	81 (56.3%)		
Condomless vaginal sex at last sex			283 (63.9%)	83 (70.9%)
Condomless anal sex (90 days) ^c	57 (50.9%)	13 (48.1%)		
Male partner has male partners	24 (4.3%)	5 (3.5%)		
Sex while high/drunken (self)	148 (26.6%)	49 (34%)		
Sex while high/drunken (partner)	239 (42.9%)	76 (52.8%)		
Intimate partner violence ^{de}	56 (23.1%)	7 (13.2%)	72 (19.5%)	24 (23.8%)
Exchanged sex for goods/money			51 (11.5%)	15 (12.8%)
PrEP interest, Median (IQR)			4 (3)	4 (2)
Very unlikely (1)			94 (21.2%)	18 (15.4%)
Unlikely (2)			30 (6.8%)	9 (7.7%)
Neither likely or unlikely (3)			66 (14.9%)	19 (16.2%)
Likely (4)			64 (14.4%)	19 (16.2%)
Very likely (5)			189 (42.7%)	52 (44.4%)

Note: STI status determined by nucleic acid testing of vaginal swabs for chlamydia and gonorrhea. Data presented as frequency (%) except as noted.

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Observed range for Sample 1, 0–6 (STI negative) and 0–5 (STI positive)
 g
Observed range for Sample 2, 0–3 for both STI negative and STI positive groups
 q
Data available for Sample 1 for n=112 (STI negative) and n=27 (STI positive)
 c
Data available for Sample 1 for n=242 (STI negative) and n=53 (STI positive)
 d
Data available for Sample 2, n=370 (STI negative) and n=101 (STI positive)
 e