#### G Model DAD-5972; No. of Pages 6

## **ARTICLE IN PRESS**

Drug and Alcohol Dependence xxx (2016) xxx-xxx

Contents lists available at ScienceDirect

## **Drug and Alcohol Dependence**

journal homepage: www.elsevier.com/locate/drugalcdep



Full length article

Willingness to use HIV pre-exposure prophylaxis among community-recruited, older people who inject drugs in Washington, DC

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#### ARTICLE INFO

#### Article history: Received 10 July 2015 Received in revised form 26 February 2016 Accepted 27 February 2016 Available online xxx

Keywords: Injection drug use People who inject drugs Pre-exposure prophylaxis Behavioral surveillance

#### ABSTRACT

*Introduction:* Use of pre-exposure prophylaxis (PrEP) among people who inject drugs (PWID) has been shown to be effective in preventing HIV transmission. We examined correlates of the willingness to use PrEP among community-recruited older PWID in Washington, DC.

Methods: PWID were recruited using respondent-driven sampling (RDS) and completed a behavioral interview for the National HIV Behavioral Surveillance system in 2012. Participants reported on willingness to use PrEP and how it might affect their drug use and sexual behaviors. We reported RDS-weighted proportions and multivariable correlates of being willing to use PrEP.

Results: Among 304 participants, 69% were male, and the majority was aged ≥50 and black. Only 13.4% had ever heard of using anti-HIV medication to prevent HIV; none had ever used PrEP or knew anyone who used it in the past year. Forty-seven percent were very likely and 24% were somewhat likely to take PrEP if it were available without cost; 13% agreed they would not need to sterilize/clean needles or use condoms if taking PrEP. Correlates of being very likely to use PrEP included being younger (<50 years), sharing cookers, cotton or water in the past year, and believing they would no longer need to use clean needles.

Conclusion: Nearly half of PWID reported being very willing to use PrEP if it were available without cost. Younger PWID and those at higher risk of sharing cookers, cotton or water were more willing to use PrEP, suggesting a focus on these groups to explore PrEP use among PWID.

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#### 1. Introduction

It is estimated that 13% of all people who inject drugs (PWID) worldwide are infected with HIV (United Nations Office on Drugs and Crime, 2014). In the United States, the overall HIV prevalence in a recent national sample of PWID was 11% (Spiller et al., 2015). The District of Columbia also continues to be severely affected by the HIV epidemic. An estimated 2.3% of residents are living with HIV, of whom 13.1% were thought to be infected through injecting drugs

 $\label{eq:http://dx.doi.org/10.1016/j.drugalcdep.2016.02.044} http://dx.doi.org/10.1016/j.drugalcdep.2016.02.044 0376-8716/© 2016 Elsevier Ireland Ltd. All rights reserved.$ 

and another 3.3% were among men who had sex with men (MSM) and who also injected drugs (District of Columbia Department of Health HIV/AIDS Hepatitis STDs and Tuberculosis Administration, 2014), demonstrating that injection drug use has been a key driver of HIV infection in Washington, DC.

Only within the last several years has the use of pre-exposure prophylaxis (PrEP) been identified as an effective HIV prevention strategy, estimating a minimum of 44% transmission reduction among men who have sex with men (MSM) on PrEP compared with MSM who were taking placebo in the iPrEX study. PrEP has also been found to effective among PWID, as described by a study in Thailand (Choopanya et al., 2013). Using an intention-to-treat analysis, the Bangkok Tenofovir Study demonstrated a 49% risk reduction in HIV incidence among PWID enrolled in

Please cite this article in press as: Kuo, I., et al., Willingness to use HIV pre-exposure prophylaxis among community-recruited, older people who inject drugs in Washington, DC. Drug Alcohol Depend. (2016), http://dx.doi.org/10.1016/j.drugalcdep.2016.02.044

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a drug treatment program in Thailand, and a 74% decrease for participants who had detectable levels of tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) in their blood (Choopanya et al., 2013). In light of these findings, the 2014 Centers for Disease Control and Prevention (CDC) released clinical practice guidelines on the use of PrEP for HIV prevention, identifying PWID as one of the key populations that could benefit from the use of PrEP (CDC, 2014). Indications for using PrEP among PWID include recent sharing of injection equipment and condomless sex (CDC, 2014). Furthermore, using data from the 2013 National Survey on Drug Use and Health, the CDC recently estimated that 18.5% (or approximately 115,000) of PWID overall were at substantial risk for HIV infection and therefore indicated for PrEP use (Smith et al., 2015).

With PrEP now shown to be efficacious and potentially cost-effective (Alistar et al., 2014) and with increased interest in using PrEP to prevent HIV among PWID, it is important to further explore the willingness of PWID to initiate PrEP. An early study in a Massachusetts detoxification program found that 47% of drug users reported being willing to use PrEP and that participants with a higher perception of HIV susceptibility and greater presumed medication effectiveness were associated with an increased willingness to initiate therapy (Stein et al., 2014). Conversely, HIV-negative PWID from a long-term cohort study in Vancouver, Canada reported a lower willingness to use PrEP; these differences may be a result in geographic variability as well as differences in the sample composition.

Given the need to explore willingness for the uptake of these effective interventions in PWID populations in different settings, we sought to assess the self-reported willingness to use PrEP among a sample of community-recruited, urban PWID in Washington, DC, who represent an older and mostly African-American population. We also assessed drug use and sexual behaviors and how those behaviors might change with the use of PrEP, as well as correlates of being willing to use PrEP in order to identify demographic, health care, and sexual and drug using characteristics of PWID who might be open to initiating PrEP as HIV prevention.

#### 2. Methods

#### 2.1. Study population

Data from the third round of data collection of the CDCsponsored National HIV Behavioral Surveillance (NHBS) System among PWID (known as IDU-3) in Washington, DC were used for this research. Between August and November 2012, a communitybased sample of PWID was recruited using respondent-driven sampling (RDS). Methods for NHBS have been described elsewhere (Lansky et al., 2007; Magnus et al., 2013). In brief, recruitment chains were initiated by "seeds," purposively-selected individuals who started the recruitment chain and who met the basic study eligibility criteria with the exception that they could not identify as transgender, per the CDC NHBS protocol. Seeds were identified through ethnographic formative work, including focus groups and referrals from key informants, were enthusiastic and engaged about the study, and reported having network members they could refer. Five eligible seeds completed a behavioral interview, were offered HIV testing, and were allowed to refer between three to five individuals to participate in the study. Individuals who were referred to the study (i.e., non-seeds) were then screened for eligibility, and eligible individuals who completed their study visit were then also allowed to refer three to five members of their injecting networks and so on, until the planned sample size was reached (N = 518).

Eligibility criteria for inclusion in NHBS IDU-3 included 1) having injected drugs in the past 12 months; 2) being 18 years old or older; 3) being able to complete the survey in English or Spanish; and, 4)

residing in the Washington, DC metropolitan statistical area. All study participants needed to demonstrate physical marks of recent injection or be able to clearly describe their process for preparing drugs for injection. As per the CDC NHBS protocol, individuals who reported injecting in covered areas (e.g., groin or feet area) were not eligible for the study because of the inability for study interviewers to confirm physical marks. Individuals who had old track marks and/or no obvious physical signs of injection were considered eligible if they were able to clearly describe their process for preparing drugs for injection. For this analysis, eligible PWID who responded to questions about willingness to use PrEP and tested HIV-negative (n = 304) were included.

#### 2.2. Data collection and measures

All study participants completed a structured, intervieweradministered behavioral questionnaire containing items on demographic characteristics and institutional/criminal justice history; types and frequency of drugs used; needle, syringe, and cooker, cotton or water sharing (separately and combined); and sexual risk behaviors (e.g., number of partners and condomless sex) in the past 12 months. Depressive symptoms were assessed using a shortened version of the Center for Epidemiologic Studies Depression Scale (CES-D; Andresen et al., 1994). Engagement in drug treatment and healthcare utilization in the past 12 months were also assessed. Our research outcome, willingness to use PrEP among PWID, was measured by asking, "If a daily HIV pill to prevent you from getting HIV was available in DC for free or was covered by your health insurance, how likely would you be to take it?" Potential responses were "very likely," "somewhat likely," and "not at all likely." Because we wished to assess the willingness to use PrEP itself, we presented a scenario in which PrEP would be freely available in order to avoid any biased reporting resulting from potential issues of affordability and access. PWID who responded that they would be "very likely" to use PrEP were considered to be willing to use PrEP, while those reporting being "somewhat likely" or "not likely at all" were classified as being less willing to use PrEP. Participants were also asked about whether or not they would need to engage in other HIV prevention behaviors if they were taking PrEP by asking: (1) "I will no longer need to sterilize or use clean needles if I am taking pills to prevent HIV infection", and (2) "I will no longer need to use condoms or practice safe sex if I am taking pills to prevent HIV infection." Possible responses were "strongly disagree," "disagree," "agree," and "strongly agree." These responses were dichotomized as strongly disagree/disagree versus strongly agree/agree.

#### 2.3. Data analysis

All variables were dichotomized or categorized based on the distribution of the data (i.e., using the mean or median) or using categorization from previous literature. Respondent-Driven Sampling Analysis Tool (RDSAT, v. 7.1.38) was used to generate univariate weights for all variables in this analysis and also bivariate weights for all bivariable relationships. These weights were exported from RDSAT and applied to our dataset using SAS v9.3. Frequencies were reported for all variables, and the Chi-square test was used to examine differences in the distribution of variables by willingness to use PrEP. Logistic regression was used to generate unadjusted and adjusted odds ratios using univariate weights applied to all variables included in the models. Because this is a descriptive analysis, variables were considered for model inclusion and retention if they achieved a p < 0.1 threshold.

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