Drug and Alcohol Dependence 138 (2014) 244–250

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

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

Short communication

Characteristics of people who initiate injection drug use later in life

Sonya Arreola[a,*], Ricky N. Bluthenthal[b], Lynn Wenger[c], Daniel Chu[b], James Thing[b], Alex H. Kral[c]

[a] Global Forum on MSM and HIV, 436 14th Street, Suite 1500, Oakland, CA 94612, United States
[b] Department of Preventive Medicine, Institute for Prevention Research, Keck School of Medicine, University of Southern California, Los Angeles, CA 90089, United States
[c] Urban Health Program, RTI International, 351 California St., San Francisco, CA 94104, United States

ARTICLE INFO

Article history:
Received 25 October 2013
Received in revised form 11 February 2014
Accepted 12 February 2014
Available online 26 February 2014

Keywords:
People who inject drugs
Injection drug users
Epidemiology
Substance use
Aging
Injection initiation

ABSTRACT

Background: Studies report that among people who inject drugs (PWID), approximately 1 in 7 initiated injection during their thirties or later (referred to hereafter as "late initiates"). However, little is known about individuals who are late initiates. This study aims to describe characteristics of late initiates to drug injection and to examine how they differ from people who initiated drug injection prior to the age of 30 ("typical initiates").
Methods: We recruited 696 active PWID in Los Angeles and San Francisco, California between 2011 and 2013, using targeted sampling and street outreach methods. Participants completed personal interviews that covered items on demographics, drug use history and practices, injection initiation episode, HIV injection- and sex-related risk, health care utilization among others. We used bivariate and multivariate analyses to examine factors associated being a late initiate.
Results: In our sample, 19% of participants who were 30 years or older were classified as late initiates. In multivariate analysis controlling for city, late initiates had higher odds of being female and African American, having been in treatment prior to initiation, initiating illicit drug use at an older age, and being assisted into injection by someone of the same age or younger. Late initiates had lower odds of frequent recent injection, and having a bipolar disorder diagnosis.
Conclusion: Late initiates comprise a significant proportion of active PWIDs. More study on the health consequences of late initiation are needed as are interventions to prevent transition to drug injection among at-risk populations.

1. Introduction

1.1. Health risk of injection drug use

Injection drug use remains an enduring public health problem in the United States. In the United States, injection drug use has been associated with a prevalent hepatitis C virus infections (Alter et al., 1999; Hagan et al., 2008); prevalent AIDS cases (15.9% among men and 26.3% among women) and new HIV infections (Centers for Disease Control and Prevention (CDC), 2012); deaths from overdose from use of street drugs or misuse of prescribed drugs (CDC, 2007); increased hospitalizations (White et al., 2011; Pfeiffer et al., 2011); soft-tissue infections (Binswanger et al., 2008); and elevated mortality (Goedert et al., 2001; Vlahov et al., 2008, 2004).

1.2. Age-related patterns of injection initiation

Because many of the health risks of injection occur rapidly after initiation, studies on injection initiation have focused on people who inject drugs (PWID) under 30 years of age (Abelson et al., 2006; Dunn et al., 2010; Feng et al., 2013; Frajzyngier et al., 2007; Fuller et al., 2001; Goldsamt et al., 2010; Lankenau et al., 2012, 2010; Mackesy-Amiti et al., 2013; Miller et al., 2011; Novelli et al., 2005; Parriott and Auerswald, 2009; Roy et al., 2011). This focus reflects the persistent observation that most PWIDs initiate drug injection in their late teens and early twenties. Indeed, observational epidemiological studies have consistently found the mean age of first injection to range from 19 to 22 (Broz et al., 2013; Carneiro et al., 1999; Chitwood et al., 2000; Des Jarlais et al., 1999). Thus, the focus on younger PWID seems appropriate.

However, there are several published studies that indicate that substantial proportions of active PWID actually initiated drug injection at older ages. Three studies from the 1990s found that new injectors (having initiated injection drug use within the last 6 years)

* Corresponding author. Tel.: +1 415 613 4174.
E-mail address: ArreolaResearch@gmail.com (S. Arreola).

http://dx.doi.org/10.1016/j.drugalcdep.2014.02.026
0376-8716/

had a mean age of first injection in the range of 25–30 (Carneiro et al., 1999; Chitwood et al., 2000; Des Jarlais et al., 1999). Unpublished data from the National Institute for Drug Abuse's (NIDA) 23-city Cooperative Agreement for AIDS Community-based Outreach/Intervention 1990s (Kral et al., 1998; Stephens et al., 2000), indicate that approximately 16% of PWIDs initiated drug injection at age 30 or later in this multi-site US study. Similarly, in a statewide sample of PWIDs in California, 17% initiated drug injection at age 30 or later (Bluthenthal et al., 2009; Kral et al., 2009). Finally, in a regional, longitudinal cross-sectional study of PWIDs in the San Francisco Bay area, the proportion of PWIDs who initiated injected at the age of 30 or older ranged from 10% to 20% between 1989 and 2005 (Kral et al., 2009).

PWID who initiate injection drug use at age 30 or later (hereafter referred to as "late initiates"), have received little research attention. Among published studies, there is only one quantitative study that compared older late initiates (initiators who were 40 years of age and older) to PWIDs who initiate prior to 40 (Carneiro et al., 1999). In that study, older initiators were found to have lower HIV seroprevalence, better syringe hygiene, and lower injection frequency. Aside from the different classification of older initiators, Carneiro and colleagues solely examined HIV-related variables. Other socio-demographic, health, and life histories factors that might distinguish late initiators from younger initiators were not considered. Another study from Australia focused on differences between what they called early onset initiates (aged 12–16) versus later onset initiates (aged 17–24; Abelson et al., 2006). That study did not consider any PWIDs over the age of 24. There is another set of studies that has considered older or aging PWIDs (Boeri et al., 2008; Boeri and Tyndall, 2012; Hartel et al., 2006; Rosen et al., 2011), but these studies do not address the specific characteristics, risk and needs of PWID who start injecting at older ages.

The health consequences of drug injection are many and severe, even for those who inject for only a short time. Efforts to prevent transition to drug injection are critically needed. Focusing on late injection initiates is one promising area for intervention. Late initiation itself is somewhat counter-initiative since these individuals have passed the highest-risk developmental stages (adolescence and early adulthood). As a consequence, their pathways to initiation, health risk, and recovery may differ significantly from 'typical' PWIDs who initiate injection during adolescence and early adulthood. Given this reasoning and the paucity of empirical research on this population, our goal in this paper is to describe characteristics of late initiates and to compare their injection initiation and other demographic and drug use characteristics to "typical initiates" (those who initiate before age 30).

2. Methods

2.1. Procedures

We present data from a cross sectional study that used targeted sampling and community outreach methods (Bluthenthal and Watters, 1995; Watters and Biernacki, 1989) to identify and recruit PWIDs in Los Angeles and San Francisco, California. The overall goal was to conduct an exploratory qualitative and quantitative study of late initiation to injection drugs to better understand the circumstances, motivations, and social environments of injection initiation later in life (after turning 30 years old). Eligibility criteria for the study were being 18 years of age or older and having physical evidence of recent drug injection (at least one injection episode in the last 30 days and visible signs of recent venipuncture; Cagle et al., 2002). For this analysis, we only include participants aged 30 or older. After obtaining informed consent, risk behavior and demographic data were collected during a 30-min computer assisted personal interview (QDS™, NOVA Research Company, Bethesda, Maryland, USA) involving a standardized questionnaire administered in a one-on-one interview session. Participants were paid $20.00 for taking part in the study. The Institutional Review Boards at University of Southern California and at RTI International approved all study procedures.

2.2. Measures

A wide range of domains were measured in the survey including socio-demographic characteristics, family history of alcohol and drug use, injection initiation episode, history of injection and non-injection drugs including age at initiation and frequency of recent use, sexual behaviors and risk, health history including self-report of ever having been diagnosed with a mental health and experience with common PWID ailments such as overdose, abscesses, and STIs, utilization of preventive services, and food insecurity. Key variables considered by domain are described below.

2.2.1. Socio-demographic measures. *Socio-demographic measures* included self-reported race/ethnicity (White, Black, Latino, Asian, Pacific Islander, Native American, Mixed and Other), gender (male, female, transgender), high school graduation or equivalent (yes or no), employment status (full, part-time, disabled, retired, student), income and income sources (paid employment, welfare, illegal sources among others), military service (yes or no), and history of gang involvement among other items. We also considered family history of alcohol and drug use and whether the participant had been a victim of sexual abuse (measured by reported sex with a person 5 years or older at the age of 15 or younger). To facilitate analysis, we grouped Asian American, Pacific Islanders, Native Americans, Mixed and Others into one group. We also had three transgendered participants, however, we dropped them from the analysis to facilitate examining gender differences in late and typical initiates.

2.2.2. Injection initiation episode items. *Injection initiation episode items* were assessed including age at first injection, drug first injected (crack cocaine, powder cocaine, heroin, methamphetamine, prescription opiates, stimulants, sedatives or tranquilizers among others), whether the participant self-injected the first time and if they received assistance, characteristics of that person (gender, relative age, relationship to participant), and whether the first injected drug had been used through some other route of administration prior to injection (yes or no). We classified participants whose age at first injection was 30 years or older as "late initiates." Those who first injected any drug prior to age 30 were classified as "typical initiates."

2.2.3. Comprehensive items of illicit drugs and nonmedical use of prescription drugs. *Comprehensive items of illicit drugs and nonmedical use of prescription drugs* were asked. The following types of substances were assessed: crack cocaine, powder cocaine, heroin, methamphetamine prescription opiates, stimulants, sedatives or tranquilizers; speedball (heroin and cocaine mixed) and goofball (heroin and methamphetamine); and methadone, buprenorphine, and some other drug not mentioned. For each substance, participants provided age at first use, age at first injection, and times of injection and non-injection use in the last 30 days. We also assessed marijuana use, including age at first use and times used in the last 30 days. Alcohol quantity and frequency was collected by asking for number of days used alcohol in the last 30 days and number of standard drinks on a typical day. Binge drinking was assessed by asking for the most drinks consumed on any single day in the last 30 days.

2.2.4. Health related items. *Health related items included* recent HIV-related (and other blood borne infection-related) injection risk (distributive and receptive syringe sharing among others in last 30 days) and sex risk (number of sex partners, unprotected sex, any sex partner is an injection drug user in last 6 months), any overdose or abscess in the last 6 months, need for and utilization of urgent (emergency), chronic, or dental care. Utilization of preventive health services (in the last 30 days) such as drug treatment (methadone detoxification, maintenance, outpatient, residential, and self-help), syringe exchange use and other syringe sources (including pharmacy, street purchase, and indirect exchange), and HIV and HCV testing was also collected.

2.3. Analysis

For this analysis, we excluded from the overall sample of 813 participants those who were 29 years of age or younger ($n = 83$), those reporting no drug injection in the last 30 days ($n = 32$), and those who were transgendered ($n = 3$), leaving us with an analytic sample of 696 participants. We conducted bivariate and multivariate analyses to determine factors associated with late initiation. We compared participants based on their injection drug initiation status (typical = initiation before age 30 vs. late = initiation at age 30 or older). All bivariate analyses tested differences used the chi-square test or Fisher's exact test, with $p < 0.1$ as the criterion for statistical significance. Variables significant in bivariate analysis were examined for collinearity using a correlation matrix. Collinear variables with the strongest association with the dependent variable were examined in multivariate analysis. We only retained variables in the final multivariate model that were significant at the $p < 0.05$ level. All statistics were computed using SPSS/PASW Statistics 18.0 (released July 30, 2009).