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# Reasons for assisting with injection initiation: Results from a large survey of people who inject drugs in Los Angeles and San Francisco, California

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## Abstract

Injection drug initiation usually requires assistance by someone who already injects drugs. To develop interventions that prevent people from starting to inject drugs, it is imperative to understand why people who inject drugs (PWID) assist with injection initiation.

**Methods—**Injection initiation history and motives for initiating others were collected from 978 PWID in Los Angeles and San Francisco, CA, from 2016–17. This article documents motivations for providing injection initiation assistance and examines demographic, economic, and health-related factors associated with these motivations using multivariable logistic regression modeling.

**Results—**Among the 405 PWID who ever facilitated injection initiation, motivations for initiating were: injury prevention (66%), skilled at injecting others (65%), to avoid being pestered (41%), in exchange for drugs/money (45%), and for food/shelter/transportation (15%). High frequency initiation (>5 lifetime injection initiations) was associated with all motivations except for being pestered. Initiation to prevent injury was associated with being female. Initiation due to pestering was associated with recycling income and sex work. Being skilled was associated with

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Contributors

Alex H. Kral, Ricky N. Bluthenthal, Carol S. Strike and Lynn Wenger originated the idea and design of this article. Kelsey Simpson and Ricky N. Bluthenthal analyzed the data. Kelsey Simpson synthesized the literature on this topic, created the data tables, and wrote the article. Alex H. Kral, Ricky N. Bluthenthal, Carol S. Strike, Lynn Wenger and Jesse L. Goldshear contributed to various drafts and revisions of the manuscript. All contributing authors have approved the final version of this article.

Conflict of interest statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

age and HIV status, while initiation for money or drugs was associated with age, race, education, social security income, and substance use treatment. Lastly, initiation for food, shelter, or transportation was associated with age, sexual orientation and education level.

**Conclusion—**Diverse factors were associated with reported motivations for assisting someone to initiate injection for the first time. Our analysis underscores the need for prevention strategies focused on improving economic and housing conditions along with implementing drug consumption rooms to disrupt the social processes of injection initiation.

### Keywords

PWID; Injection drug use; Injection initiation; Prevention

## 1. Introduction

The number of people injecting drugs in the United States has been increasing in recent years (Ciccarone, 2019; Jones, 2013; Syvertsen et al., 2017). While accurately enumerating the number people who inject drugs (PWID) is difficult, epidemiological data on ailments related to drug injection all indicate growth in the US (Collier et al., 2018). For instance, injection-related infective endocarditis cases have grown in several states and regions (Fleischauer et al., 2017; Gray et al., 2018; Hartman et al., 2016; Keeshin and Feinberg, 2016; Tung et al., 2015; Wurcel et al., 2016). Regional and nationwide increases in acute and chronic hepatitis C virus (HCV) have also been documented (Powell et al., 2019; Rudd et al., 2016; Zibbell et al., 2018; Zibbell et al., 2015), as have hospitalizations due to skin and soft tissue infections (Ciccarone et al., 2016; Unick et al., 2013). The apparent growth in drug injection as an administration route for opioids and other drugs calls for the development and implementation of prevention interventions and approaches to reduce transitions to injection.

It is well-established that receiving help from a PWID when initiating injection is common among new injectors (Crofts et al., 1996; Rotondi et al., 2014; Strike et al., 2014; Werb et al., 2016). To date, the available quantitative literature concerning injection initiation have primarily focused on factors that influence the transition to injection drug use from the perspective of individuals who received help during their first injection episodes (Bluthenthal et al., 2014; Navarro et al., 2019; Uusküla et al., 2018; Werb et al., 2013; Wurcel et al., 2016). Results from these studies have shown factors such as trauma, being male, race, poverty, sex work, and homelessness to be positively associated with transition to injection initiation (Bluthenthal et al., 2014; Navarro et al., 2019; Uusküla et al., 2018; Werb et al., 2013; Wurcel et al., 2016). However, research on characteristics of established PWID who provide help with injection initiation is less numerous but growing. Previous qualitative studies that have looked at the distinct practice of initiating others into drug injection from the perspective of established initiators have unveiled a range of different narratives and contexts that influence the decision to facilitate injection initiation (Guise et al., 2017; Guise et al., 2018; Mittal et al., 2019; Olding et al., 2019; Small et al., 2009; Wenger et al., 2016). For example, in a study on PWID in San Francisco and Los Angeles, the primary motives for initiating were to protect novice injectors from injuring themselves, to stop or avoid being persistently pestered about injecting by others, due to being highly skilled at injecting,

and in exchange for material benefits (e.g., drugs, money, food, shelter, and transportation) (Wenger et al., 2016). These justifications for providing first-time injection assistance to novice injectors were also articulated by PWID in Tijuana, Mexico (Mittal et al., 2019) recently.

Accordingly, the primary purpose of this overall study was to build upon the qualitative literature by examining the prevalence of these established reasons, as well as investigate demographic, economic, and health-related factors associated with these reasons. The theoretical rationale for this analysis emerged from the literature on social learning theory and its application to injection initiation (Strike et al., 2014). The social learning theory describes injection initiation as a behavior that is learned and modified through interactions, observations, and reinforcements from others within one's social environment (Strike et al., 2014). From this perspective, the process of initiation is thought to be largely social in most cases. Existing research in support of this theory have found people who transition into drug injection to report being exposed, hearing about, and witnessing drug injection within their social circles prior to injecting for the first time (Crofts et al., 1996; Rotondi et al., 2014; Strike et al., 2014; Werb et al., 2016). Thus, developing a more refined understanding of demographic, economic, and health-related characteristics of those who facilitate initiation for specific purposes is highly warranted. Such information can be used to inform causal models of initiation by providing a more detailed picture of individual-level and environmental characteristics of initiators. These results will help identify people who initiate others and aid in the implementation of efficacious interventions designed to address these specific motivations and prevent future injection initiation.

## 2. Methods

### 2.1 Participants

PWID (N=978) were recruited using targeted sampling methods (Kral et al., 2010; Watters and Biernacki, 1989; Watters et al., 1995) from community settings in Los Angeles and San Francisco, California between 2016 and 2017 as part of a larger randomized-controlled trial testing the 'Change the Cycle' intervention (Strike et al., 2014). The parent study was designed to evaluate the efficacy of a behavioral intervention in reducing injection initiation risk behaviors among PWID. To be included in the study, participants had to be at least 18 years of age, and reported to have injected drugs within the past 30 days (confirmed by visual inspection of recent venipuncture tracks) (Cagle et al., 2002). Written informed consent was obtained from each participant prior to enrollment. Eligible participants completed a 45-minute computer-based quantitative interview administered by trained research assistants using the Questionnaire Development System software (Nova Research, Bethesda, MD). The intervention was delivered after the quantitative interview, avoiding an intervention effect. Participants received US$15 for completing the survey. All study procedures were reviewed and approved by the Institutional Review Board at the University of Southern California.

## 2.2 Measures

There are other means of facilitating injection initiation, such as describing how to inject and injecting in front of non-injectors (Bluthenthal et al., 2014; Strike et al., 2014); however, this analysis was restricted to those who reported ever literally injecting an injection naïve person for their first time. To study motivations for initiating people into injection, we only included study participants who had ever reported having initiated others into injection in our analysis. This eligibility criteria was operationalized based on their response to the single item question: "Have you ever injected someone for their first hit? By this I mean given someone their first hit or injection?" Those responding "yes" were included in this analysis (n=405). To collect information on motivations for providing injection initiation assistance, participants who responded "yes" to ever initiating someone were asked the following set of questions: "Have you ever injected someone for the first time to: 1) to prevent them from hurting themselves?" referred to hereafter as injury prevention; 2) "to stop them from bothering you about injecting them?" referred to hereafter as pestered; 3) "because you are good at injecting other people?" referred to hereafter as skilled; 4) "for money?"; 5) "for drugs?"; 6) "for sex?"; 7) "for food?"; 8) "for shelter?"; and 9) "for transportation?"; and 10) "for something else or a favor not mentioned?" Response options for all questions were "Yes," "No," "Don't know," "Refuse to answer," and "Not applicable."

To facilitate analysis and account for low response to some items, we examined the correlations amongst motivations and created two combined variables of highly correlated items. Specifically, using Pearson's correlation coefficients we found that money and drugs were highly correlated, ($r = .512$; $p < .01$.) and that food, shelter and transportation were correlated ($r = .458$ to $.517$; $p < .01$). Due to low frequency of endorsements, and low correlation with other motivations categories, we decided to exclude initiation for sex and for something else or a favor not mentioned from our analyses. No other motivations to assist with injection initiation were highly correlated, leaving us with a total of 5 motivation categories: 1) injury prevention; 2) pestered; 3) skilled; 4) money or drugs; and 5) food, shelter, or transportation.

To explore statistically significant independent factors related to initiation motivation categories, we analyzed bivariate and multivariable associations with sociodemographic characteristics, including age, gender, race/ethnicity, sexual orientation, and sexual partner type (steady, casual, and/or paid sexual partner in the last 6 months); economic variables including monthly income, educational attainment (high school education or higher), and income sources (paid employment, welfare, illegal sources, recycling income, among others); and health items such as self-reported HIV infection, HCV infection, years of injection, and any use of substance use disorder treatment. High versus low frequency of injection initiation was determined based on participants' responses to the total number of lifetime injection assistance episodes. The average number of lifetime initiations was 12.25 (Standard Deviation [SD]=73; median=2; Interquartile Range [IQR]= 1, 5). Due to this highly skewed distribution, high frequency initiators were reclassified in correspondence to percentiles. This classification method has been used in previous studies conducted by this investigative team (Navarro et al., 2019). Thus, the high frequency initiator threshold

number corresponded to the 75th percentile of the total number of lifetime injection initiation episodes reported in the sample. Accordingly, those responding fewer than 5 ever initiates were categorized as low frequency initiators, and those reporting 5 or more were classified as high frequency initiators.

While we collected information on drug use practices, these data were only collected for the last 30 days. Our dependent variable of interest, ever assisting with injection initiation, is a lifetime measure. Because our measures of drug use practices likely post-date injection initiation, we did not include these variables in the analyses. Demographic, economic, and health variables that we used were either not likely to change (e.g., income sources), lifetime measures (e.g., any substance use disorder treatment), or not changeable (e.g., race).

### 2.3 Statistical analysis

All statistical analyses were performed using SAS, version 9.4 (SAS Institute, Cary, NC). Summary statistics (e.g. frequencies, means, standard deviations [SD], medians, interquartile range [IQR]) were generated for all study variables. Bivariate associations between initiation motivation categories and all demographic, economic, and health variables were computed using chi-squared tests for categorical variables, and t-tests for continuous variables as appropriate. Variables significant ($p < .05$) in univariate analysis were then assessed for collinearity using Pearson's correlation coefficients. Collinear variables were removed from the final analysis based on strength of association with the dependent variable. Multivariable logistic regression models were then used to examine factors independently associated with motivations for initiating others into injection. A total of five final models were created using the different motivations for providing injection initiation assistance as the dependent variables in each model. Nonsignificant variables were removed from final multivariable models.

## 3. Results

### 3.1 Study sample

Of the 978 PWID in the sample, having ever initiated someone into injection was reported by 41% of participants (n=405). Among these, sample characteristics were as follows: 81% cis-gender men, 44% white, 22% Latinx, 18% Black, and 23% gay, lesbian, or bisexual (Table 1). Ages ranged from under the age of 30 (22%), to 50+ (30%) years of age. A majority of participants were of low socioeconomic status, with 67% reporting a total monthly income of less than $1,400 a month, and homelessness was reported by 84% of our sample. Income sources in the past 30 days were illegal or possibly illegal activities (48%), panhandling (28%), disability payments (6%), supplementary security income (16%), and recycling (22%).

The prevalence of motivations for assisting in injection initiation in order of most prevalent to least prevalent were to prevent injury (66%), skilled at injecting others (65%), in exchange for money or drugs (45%), to stop being pestered (41%), and in exchange for food, housing, or transportation (15%). Of the five total possible motivations for providing injection initiation, the mean number of motivations endorsed was 2.85 (SD=1.85,

median=2; IQR=1, 4). Results from unadjusted bivariate analyses revealed sexual orientation, gender, level of education, past 30 day income source, age, race, sexual partner type, homelessness status, years of injection, and high frequency initiation to be significantly associated with injection assistance motivation categories (Table 2).

### 3.2 Multivariable models

Results from multivariable models found females to have twice the odds of reporting assistance due to injury prevention compared to males (adjusted odds ratio [AOR]=2.00; 95% confidence interval [CI]=1.12, 3.57), after adjusting for frequency of initiation. Additionally, high frequency initiators had 84% greater odds of initiating for injury prevention than low frequency initiators (AOR=1.84; 95% CI=1.15, 2.93). PWID who initiated others due to feeling like they had great injection skills had higher odds of being 30 years of age or younger (AOR=2.73, 95% CI=1.50, 4.97), HIV positive (AOR=4.17; 95% CI 1.39, 12.55), and engaging in high frequency initiation (AOR=4.32; 95% CI=2.53, 7.36) as compared to others. PWID who provided injection initiation assistance for drugs or money had lower odds of being white (AOR=0.47; 95% CI= 0.30, 0.73), and having graduated from high school (AOR=0.49; 95% CI=0.30, 0.80). They had higher odds of high frequency initiations (AOR=3.56; 95% CI=2.25, 5.64), receiving supplemental security income (SSI) (AOR=2.38; 95% CI=1.32, 4.29), and having a history of substance use disorder treatment (AOR=2.26; 95% CI=1.26, 4.04).

People who were motivated to initiate people to because of being pestered had higher odds of reporting paid sex partners (AOR=1.93; 95% CI=1.13, 3.31) and income from recycling (AOR=1.77; 95% CI=1.08, 2.90). People initiating people to receive food, shelter, or transportation had lower odds of being high school graduates (AOR=0.41; 95% CI=0.23, 0.73) and of being younger than 40 years of age (AOR=0.54; 95% CI=0.30, 0.97). They had higher odds of having high frequency initiations (AOR=2.76; 95% CI=1.55, 4.89) and being gay, lesbian, or bisexual (AOR=2.31; 95% CI= 1.26; 4.23).

## 4. Discussion

To our knowledge, this is the first study to quantitatively characterize features of PWID according to specific purpose for initiation. Within our sample of street-recruited PWID taken from two California cities, 41% of participants had ever initiated someone into injection drug use. While the motivation categories studied and presented in this paper are described as distinct, many participants reported more than one type of motivation for assisting with injection initiation (average=2.85 reasons). These wide-ranging rationales for providing initiation assistance are consistent with previous qualitative studies elucidating multiple pathways towards injection assistance (Guise et al., 2017; Guise et al., 2018; Kolla et al., 2015; Mittal et al., 2019; Rotondi et al., 2014; Wenger et al., 2016). This evidence sheds light on the idea that injection initiation is a multi-dimensional phenomenon that isn't necessarily driven by a singular motivation. Moreover, it is the result of a combination of interacting individual, environmental, interpersonal, and community-level forces.

Results from multivariable analyses revealed a diverse set of variables to be associated with reasons for providing injection assistance. First, we found that females had significantly

higher odds of initiating others to prevent injury as compared to males. It is likely that this difference in gender can be explained by the fact that this analysis looked at the independent association between gender and initiating others to prevent them from hurting themselves. As this was the first study to empirically examine the relationship between this specific motivation for injection initiation and gender, further examination exploring this relationship is needed.

In concordance with existing research documenting the relationship between high frequency initiation and injection initiation among established PWID (Bluthenthal et al., 2014; Bryant and Treloar, 2008; Navarro et al., 2019), we found high frequency initiation to be a significant predictor of four out of five of our motivations categories. Specifically, high frequency initiation was associated with twice the odds of reporting assistance for purposes of injury prevention, 4 times the odds of assisting due to skills, 3.5 times the odds of assisting in exchange for money or drugs, and 2.76 times the odds of assisting for food, shelter, or transportation (Table 3). To get a better understanding of differences in motivations for initiation between high and low frequency initiators, we conducted exploratory analyses examining the average number of motivations endorsed in each group. We found that high frequency initiators reported an overall higher average number of motivations compared to low frequency initiators in our sample (2.4 vs. 3.8). This finding underscores the importance of considering high frequency initiation when developing and adapting future strategies to preventing injection initiation. Thus, interventions that target this sub-population of PWID are worthy of further attention given their role in accounting for the majority of initiation episodes. Additionally, longitudinal research examining the prospective associations between high frequency initiation and motivations for initiation are needed to provide more detailed information regarding the causal or potentially bidirectional relationship between these important aspects of initiation.

Over one-third of participants reported assisting with first-time injection to avoid being pestered or bothered about injecting by others. Facilitating initiation for this purpose has been documented in previous studies (Kolla et al., 2015; Rhodes et al., 2011; Simmons et al., 2012; Wenger et al., 2016; Zule, 1992), where initiation is described as the result of succumbing to repeated requests from injection naïve individuals over time. As noted by Wenger et al. (2016), these narratives are often driven by the fact that most new initiates actively decide that they want to be initiated, and proceed to bother others within their communities in order to achieve that goal (Barnes et al., 2018; Wenger et al., 2016). Thus, despite potential moral apprehension and reluctance, experienced PWID succumb to repeated requests and assist in initiation (Barnes et al., 2018; Wenger et al., 2016). This idea sheds light to the importance of considering the unique social environment of PWID as an important component of initiation. One potential approach to minimizing these types of initiations are drug consumption rooms (e.g. supervised injection facilities). Drug consumption rooms are places where PWID can consume their own drugs under trained supervision. A main aim of these programs is to reduce overdose deaths and HIV/HCV transmission. By removing PWID from public injecting situations, they could also interrupt what Strike and others have called the social process of injection initiation (Khobzi et al., 2009; Strike et al., 2014) by reducing the number of opportunities for injection-naïve people to pester PWID into assisting with initiation.

In our sample, PWID who assisted for money or drugs were less likely to have graduated from high school, and more likely to receive SSI income. It is likely that this relationship is due to the large percentage of homelessness, poverty, and unequal access to resources experienced by the majority of participants in our sample. Accordingly, it should come as no surprise that people who have less income or earning potential have higher odds of selling their injection skills in the illicit drug marketplace. Thus, efforts to reduce injection initiation assistance might benefit from improving economic conditions among PWID. Structural interventions including increased housing availability and improved economic support could reduce injection initiation assistance for these purposes and have significant benefits for initiators beyond initiation.

Over two-thirds of people who assist others with initiation in our sample reported assistance in first time injection for injury prevention (66%), as well as positive perceptions of one's own injection skills (65%). The intentions of these initiations appear to reflect a desire to protect novice injectors from harm. Qualitative studies have described narratives of PWID who initiate others as an attempt to mitigate the harms that novice injectors may inflict upon themselves due to improper injection techniques (Barnes et al., 2018; Guise et al., 2017; Kolla et al., 2015; Wenger et al., 2016). Further, people's portrayals of assistance in these cases can be viewed as an expression of altruism, where intervention was provided for the sole purpose of avoiding potential harms and health consequences that would likely have occurred without their assistance. The altruistic motivation to prevent harm has been shown to be common across community-based samples of PWID (Barnes et al., 2018; Friedman et al., 2004; Friedman et al., 2015). For example, in a sample of PWID in New York City, HIV-seropositive people were shown to exhibit decreased rates of transmission risk behaviors over time (Des Jarlais et al., 2004). Additionally, PWID who shared needles or syringes were found to restrict their sharing to small social networks in order to curtail HIV risk (Des Jarlais et al., 2004). Thus, initiation for altruistic purposes may not be inherently harmful, and instead may serve as a protective factor for further injection-related disease risk, including soft tissue infections from missed injections (Binswanger et al., 2000). Given the salience of altruism and the way in which it guides actions and social relations in communities of PWID, measures such as the altruism and solidarity scales (Friedman et al., 2015) may be useful screening tools to identify such individuals in hopes of developing more targeted strategies and interventions to respond with. For example, peer-assisted education programs on safe injection practices may be a viable harm reduction solution to offer to PWID in these cases (Gagnon, 2017; Small et al., 2012; Wood et al., 2008).

Although the current findings advance the nascent literature on the contribution of PWID in injection initiation, they need to be considered in light of a few potential study limitations. First, our analysis was limited by its cross-sectional study design. While we recognize the inherent downfall of cross-sectional analysis is its limited ability to determine causality, the independent variables chosen in this analysis were selected given their known associations with initiation in prior research (Bluthenthal et al., 2014; Navarro et al., 2019). Thus, we hope to advance the literature by providing further information on factors that could influence the act of initiation. Additionally, all of our measures were self-report, which impose the inherent risk for self-report biases that can influence the data. For example, participants' desire to be viewed positively may have resulted in an artificially low

prevalence of reporting initiation assistance episodes. Additionally, due to the quantitative nature of our questions, it is possible that PWID may have reported assistance for other altruistic purposes that were not assessed in the survey. Additionally, our results may have been influenced by recall biases due to inconsistencies in time frames asked in key questionnaire survey items (e.g. lifetime behaviors, past 6 month behaviors, and past 30 day behaviors). To improve the reliability of these results, future research studies should incorporate methods such as the timeline follow-back method (Hjorthøj et al., 2012) to cue memory and improve accuracy of recalling initiation episodes and related behaviors within a specific calendar point of reference. Lastly, because this study was the first to examine sociodemographic characteristics related to individual-level motivations for initiation assistance, more research is needed to substantiate these potential associations.

## 5. Conclusion

The substantial rise in the nonmedical use of opioids in the past decade has resulted in an escalating crisis of injection-related morbidity and mortality in the United States (CDC, 2018). The prevention of injection initiation assistance by established PWID is a public health priority. Our analysis revealed a diverse range of demographic, economic, and social factors associated with injection initiation assistance motivations. Such diversity imposes challenges to addressing this issue at large. Our analysis underscores the need for combined prevention strategies focused on high-frequency initiators, safe injection education, and increased economic opportunities for PWID. Structural interventions including increased housing availability and more economic support, along with supervised injection facilities could reduce initiation risk within these subgroups. Intervention development related to attenuating circumstances leading to motivations for assisting with injection initiation are also warranted.

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## Highlights

- People who inject drugs (PWID) report a range of different motivations for injection initiation.
- The relationship between initiation motivations and demographic, economic, and health-related variables was examined.
- Initiation to prevent injury was associated with being female. Initiation due to pestering was related to recycling income and sex work. Initiation due to skills was associated with age and HIV status, and initiation in exchange for material purposes was related to age, race, education, SSI income, being gay, lesbian, or bisexual, and substance use treatment history.

**Table 1.**

Demographic, economic, and health characteristics of overall sample of people who inject drugs who have ever facilitated injection initiation (n = 405).

| Characteristic | n (%) |
|---|---|
| **Demographic** | |
| Biological sex | |
| Male | 321 (81%) |
| Female | 76 (19%) |
| Race/ethnicity | |
| White | 180 (44%) |
| Latinx | 91 (22%) |
| Black | 74 (18%) |
| Asian/Pacific Islander | 8 (2%) |
| Native American | 28 (7%) |
| Mixed Race | 41 (10%) |
| Age (years) | |
| < 30 | 88 (22%) |
| 30–39 | 101 (25%) |
| 40–49 | 96 (24%) |
| 50 or more | 120 (30%) |
| Gay, lesbian, or bisexual | |
| Yes | 94 (23%) |
| Casual sex partner[a] | |
| Yes | 166 (41%) |
| Paying sex partner[a] | |
| Yes | 66 (16%) |
| **Economic** | |
| Income[b] | |
| Less than $1,000 | 203 (50%) |
| $1,000 to $1,400 | 67 (17%) |
| $1,401 to $2,100 | 56 (14%) |
| $2,101 or more | 78 (19%) |
| High school education or higher | |
| Yes | 300 (74%) |
| Currently homeless | |
| Yes | 339 (84%) |
| SSI retirement payment[b] | |
| Yes | 67 (17%) |

| Characteristic | n (%) |
|---|---|
| Recycling income[b] | |
| Yes | 82 (20%) |
| **Health** | |
| Any SUD treatment[c] | |
| Yes | 331 (82%) |
| HIV positive | |
| Yes | 30 (7%) |
| Years of injection | |
| <10 years | 115 (28%) |
| 10–19 years | 97 (24%) |
| 20 or more | 193 (48%) |
| High frequency initiation[d] | |
| Yes | 135 (33%) |

[a] In the past 6 months

[b] In the past 30 days

[c] SUD, Substance Use Disorder

[d] High frequency initiation defined as 5 or more lifetime injection initiation episodes.

**Table 2.**

Bivariate associations between motivations for assisting with injection initiation and selected variables.

| Characteristic | Injury prevention (n=267) | Pestered (*n*=168) | Skills (n=265) | Drugs or money (n=183) | Food, shelter, transportation (*n* = 61) |
|---|---|---|---|---|---|
| **Demographic** | | | | | |
| Biological sex * | | | | | |
| Male | 203 (63%) | 129 (40%) | 205 (64%) | 141 (44%) | 46 14%) |
| Female | 58 (67%) | 34 (44%) | 52 (68%) | 38 (49%) | 13 (17%) |
| Race/ethnicity * | | | | | |
| White | 113 (63%) | 65 (36%) | 117 (65%) | 61 (34%) | 23 (13%) |
| Latinx | 62 (67%) | 44 (48%) | 60 (65%) | 53 (58%) | 19 (29%) |
| Black | 54 (73%) | 35 (47%) | 47 (64%) | 39 (53%) | 9 (12%) |
| Asian/Pacific Islander | 5 (63%) | 4 (57%) | 5 (71%) | 3 (42%) | 0 (0%) |
| Native American | 16 (60%) | 11 (41%) | 17 (63%) | 12 (50%) | 5 (19%) |
| Mixed Race | 17 (71%) | 8 (33%) | 19 (79%) | 14 (52%) | 5 (21%) |
| Age (years) * | | | | | |
| < 30 | 60 (68%) | 30 (34%) | 71 (81%) | 32 (36%) | 10 (11%) |
| 30–39 | 73 (72%) | 38 (37%) | 65 (64%) | 40 (39%) | 11 (11%) |
| 40–49 | 62 (65%) | 43 (45%) | 51 (53%) | 47 (50%) | 18 (19%) |
| 50 or more | 72 (60%) | 57 (48%) | 78 (65%) | 64 (53%) | 22 (18%) |
| Gay, lesbian, or bisexual | | | | | |
| Yes * | 65 (69%) | 41 (44%) | 68 (72%) | 51 (55%) | 23 (25%) |
| Casual sex partner[a] | | | | | |
| Yes * | 108 (65%) | 72 (43%) | 108 (65%) | 80 (48%) | 32 (19%) |
| Paying sex partner[a] | | | | | |
| Yes * | 48 (73%) | 37 (56%) | 46 (70%) | 38 (58%) | 14 (21%) |
| **Economic** | | | | | |
| Income[b] | | | | | |
| Less than $1,000 | 137 (67%) | 86 (42%) | 129 (63%) | 96 (47%) | 32 (16%) |
| $1,000 to $1,400 | 44 (66%) | 25 (37%) | 42 (63%) | 31 (46%) | 12 (18%) |
| $1,401 to $2,100 | 36 (64%) | 28 (50%) | 41 (73%) | 21 (38%) | 10 (18%) |
| $2,101 or more | 49 (63%) | 28 (36%) | 52 (66%) | 34 (44%) | 7 (9%) |
| High school education or higher | | | | | |
| Yes * | 196 (65%) | 119 (40%) | 194 (65%) | 120 (40%) | 35 (12%) |
| Currently homeless | | | | | |
| Yes * | 222 (65%) | 140 (41%) | 228 (67%) | 151 (45%) | 50 (15%) |
| SSI retirement payment[b] | | | | | |

| Characteristic | Injury prevention (n=267) | Pestered (*n*=168) | Skills (n=265) | Drugs or money (n=183) | Food, shelter, transportation (*n* = 61) |
|---|---|---|---|---|---|
| Yes * | 46 (69%) | 30 (45%) | 46 (69%) | 41 (62%) | 9 (13%) |
| Recycling income[b] | | | | | |
| Yes * | 55 (67%) | 44 (54%) | 55 (67%) | 39 (48%) | 13 (16%) |
| **Health** | | | | | |
| Any SUD treatment[c] | | | | | |
| Yes * | 220 (67%) | 139 (42%) | 217 (65%) | 159 (48%) | 54 (16%) |
| HIV positive | | | | | |
| Yes * | 24 (80%) | 10 (33%) | 26 (87%) | 17 (57%) | 5 (17%) |
| Years of injection * | | | | | |
| <10 years | 83 (72%) | 43 (37%) | 79 (69%) | 41 (36%) | 14 (12%) |
| 10–19 years | 67 (69%) | 37 (38%) | 66 (68%) | 41 (42%) | 10 (10%) |
| 20 or more | 117 (60%) | 88 (45%) | 120 (62%) | 101 (52%) | 37 (19%) |
| High frequency initiation[d] | | | | | |
| Yes * | 100 (74%) | 64 (47%) | 114 (83%) | 87 (64%) | 33 (24%) |

[a] In the past 6 months

[b] In the past 30 days

[c] SUD, Substance Use Disorder

[d] High frequency initiation defined as 5 or more lifetime injection initiation episodes

* Chi-square *p*-value < .05.

**Table 3.**

Multivariable logistic regression models of factors associated with reasons for initiating others into injection drug use (N=405).

| Variable | *β* | *SE* | *AOR* (95% *CI*) | P-Value |
|---|---|---|---|---|
| **Injury prevention** | | | | |
| Female | .69 | .30 | 2.00 (1.12, 3.57) | .02 |
| High frequency initiation[a] | .61 | .24 | 1.84 (1.15, 2.93) | .01 |
| **Pestered** | | | | |
| Paying sex partner[b] | .33 | .14 | 1.93 (1.13, 3.31) | .02 |
| Recycling income[c] | .29 | .13 | 1.77 (1.08, 2.90) | .02 |
| **Skills** | | | | |
| < 30 years old | 1.00 | .31 | 2.73 (1.50, 4.97) | .001 |
| HIV positive | 1.43 | .56 | 4.17 (1.39, 12.55) | .011 |
| High frequency initiation[a] | 1.46 | .27 | 4.32 (2.53, 7.36) | <.0001 |
| **Money or drugs** | | | | |
| High frequency initiation[a] | .64 | .12 | 3.56 (2.25, 5.64) | <.0001 |
| White | −.38 | .11 | 0.47 (0.30, 0.73) | .0008 |
| High school education or higher | −.36 | .13 | 0.49 (0.30, 0.80) | .0045 |
| SSI retirement payment[c] | .43 | .15 | 2.38 (1.32, 4.29) | .004 |
| Any SUD treatment[d] | .41 | .15 | 2.26 (1.26, 4.04) | .01 |
| **Food, housing, transportation** | | | | |
| < 40 years old | −.31 | .15 | 0.54 (0.30, 0.97) | .04 |
| High school education or higher | −.45 | .15 | 0.41 (0.23, 0.73) | .003 |
| Gay, lesbian, bisexual | .42 | .15 | 2.31 (1.26, 4.23) | .007 |
| High frequency initiation[a] | .51 | .15 | 2.76 (1.55, 4.89) | .0005 |

Abbreviations: AOR, adjusted odds ratio; 95% CI, 95% Confidence Interval; SE, standard error

[a] High frequency initiation defined as 5 or more lifetime injection initiation episodes

[b] In the past 6 months

[c] In the past 30 days

[d] SUD, Substance Use Disorder.