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Prevalence and predictors of recent temporary psychiatric hold among a cohort of people who inject drugs in Los Angeles and San Francisco, California

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Abstract

California's Welfare and Institutions code 5150 allows for a temporary psychiatric hold (TPH) of individuals who present a danger to themselves or others and/or may be gravely disabled due to mental illness. Little is known about the frequency and predictors of involuntary holds among people who inject drugs (PWID).

Methods: We sought to identify the prevalence and predictors of recent TPHs (within the past 12 months) among a community-recruited sample of PWID in Los Angeles and San Francisco, California during 2017–2018 (N=531). Multivariable logistic regression modeling was used to evaluate demographic (e.g., age), economic (e.g., homelessness), drug use (e.g., types of drugs used), incarceration (e.g., recent arrest history) and mental health (e.g., lifetime mental health diagnosis) variables associated with recent TPH.

Results: Age (40–49 years old vs age 50 or older: AOR=5.85; 95% CI=2.18, 15.67), current homelessness (AOR=3.75; 95% CI=1.28, 11.0), lifetime mental health history (AOR=6.23; 95% CI=2.08, 18.66), and frequency of methamphetamine use (AOR=1.01; 95% CI=1.00, 1.01) were

statistically associated with increased odds of having experienced a TPH, while frequency of past month heroin/opioid use was associated with decreased odds of reporting a TPH (AOR=0.99; 95% CI=0.99, 1.00) in multivariable an lysis.

Conclusions: Diverse factors were associated with TPH among PWID. Our analysis underscores the need for research on PWID with co-occurring substance-use and mental illness disorders and homelessness. There is urgent need for expanding access to lower barrier publicly funded mental health treatment from a harm-reduction approach.

Keywords

people who inject drugs; mental illness; temporary psychiatric hold; involuntary treatment

1. Introduction

Co-morbidity prevalence of mental health disorders and substance use disorders among adults in the United States are substantial; with approximately 9.5 million Americans aged 18 or older meeting diagnostic criteria for both a mental health disorder and substance use disorder in 2019 (Substance Abuse and Mental Health Services Administration, 2020). Meta-analyses of survey data demonstrate higher prevalence of mental health disorders among people who use drugs compared to the general population (Goldner et al., 2014; Rogers et al., 2009). People who inject drugs (PWID) experience excessive burdens of psychological disorders, with estimated prevalence of depression being as high as 81% in this subpopulation, and similarly elevated prevalence of generalized anxiety, schizophrenia spectrum and personality disorders in PWID in both clinical and non-clinical settings (Callaly et al., 2001; Conner et al., 2008; Mackesy-Amiti et al., 2012; Reddon et al., 2018; Springer, 2012). PWID with behavioral health conditions face increased risk for a wide range of social and health-related harms including homelessness, poverty, infectious disease transmission, hyper-policing, hyper-incarceration, and premature mortality (Karandinos and Brurgois, 2019; Nyhlén et al., 2011; O'Brien et al., 2004; Prins, 2014; Swendsen and Merikangas, 2000; Torrey, E.F. et al., 2010) underscoring the need for improved emergency care, treatment strategies, and access to longer-care supportive services. Moreover, adequately responding to this comorbidity has proven challenging for health service experts, leaving significant unmet needs for treatment (Genberg et al., 2019).

Section 5150 of the California Welfare and Institutions Code (Laura's Law, 2002), also called a 72-hour hold, emergency pick-up, temporary detention order, or an emergency petition, allows for the temporary involuntary hospitalization of people for observation/ stabilization in order to prevent harm to self and others and/or to evaluate the eligibility of a patient-in-crisis for grave disability (Appelbaum, 2003; Hedman et al., 2016; Neary-Bremer, 2017; Starks et al., 2020). Across the United States, emergency psychiatric hold procedures are placed on over 1 million individuals each year, with estimates ranging between 1.27 and 1.44 million from 2013 to 2015 (Lee and Cohen, 2021). In theory, temporary psychiatric holds were designed to reduce harm while protecting civil liberties without decreasing treatment access for people with mental illness (Neary-Bremer, 2017). The actual effectiveness of these policies for stabilizing people with acute psychiatric emergencies has not yet been evaluated in adult or adolescent samples, much less in PWID

(Santillanes et al., 2017). In fact, the yearly prevalence of persons placed on TPH of any age group in the U.S. is not reliably known (Hedman et al., 2016). Accordingly, the purpose of this article is to identify the prevalence of TPH among a sample of PWID in Los Angeles and San Francisco, California, and to investigate demographic (e.g., age), economic (e.g., homelessness), drug use (e.g., types of drugs used), incarceration (e.g., recent arrest history) and mental health (e.g., lifetime mental health diagnosis) variables associated with this outcome.

2. Methods

2.1 Participants and Procedure

PWID were originally recruited from community settings in Los Angeles and San Francisco, CA using targeted sampling methods (Bluthenthal and Watters, 1995; Kral et al., 2010; Watters and Biernacki, 1989) during 2016–2017. To be included in the study, participants had to be at least 18 years of age, report drug injection in the past 30 days, and be able to provide informed consent. Data was drawn from an intervention study about reducing injection initiation (Strike et al., 2014), an d we added items to the questionnaire on the 12-month follow-up survey for purposes of documenting mental health service utilization in this population. The analysis utilized data from individuals who completed their 12-month follow-up interview during 2017–18 and provided complete data for key variables of interest (N=531). Data was collected through ~45-minute computer-assisted personal interviews administered by trained research assistants. Participants received US$20 for completing the survey. Study procedures were approved by the Institutional Review Board at the University of Southern California.

2.2 Measures

For the current analysis, our primary outcome variable of interest, recent TPH, was operationalized based on subjects' responses to the single item question, "In the last 12 months, have you been detained under a 5150 order or hospitalized due to a mental health problem?" Those who responded "yes" were classified as having had a TPH. Based on the current literature, we selected a set of explanatory variables found to be associated with mental health disorders in previous studies of PWID (Karandinos and Bourgois, 2019; Nyhlén et al., 2011; O'Brien et al., 2004; Prins, 2014; Swendsen et al., 2010; Swendsen and Merikangas, 2000; Torrey, E.F. et al., 2010). Demographic variables included: age (categorized into 4 groups: less than 30 years old, 30–39 years old, 40–49 years old, age 50 or older), race/ethnicity (Latinx, Black/African American, white, Native American, mixed-race/other), gender (male, female, transgender), and sexual orientation (heterosexual or gay/lesbian/bisexual). Economic characteristics included: past 30-day income amount (federal poverty level of less than $1401), educational attainment (high school education or higher), and current homelessness status (yes/no).

We also examined drug use variables including: years of drug injection (<10 years, 10–19 years, 20 or more years), past 30-day injection frequency (less than once a day, once or twice a day, three or more times a day), past 30-day times used any methamphetamine product (continuous), past 30-day times used any heroin/opioid products

(continuous), past 6-month non-fatal overdose history (yes/no), and any (injection or non-injection) past 30-day use of heroin (yes/no), methamphetamine (yes/no), speedball [heroin/cocaine admixture] (yes/no), cocaine (yes/no), crack cocaine (yes/no), goofball [heroin/methamphetamine admixture] (yes/no), cannabis (yes/no), and non-prescribed opioid medication use (yes/no). We also assessed use of fentanyl or use of drug(s) mixed with fentanyl in the last 6 months using the single item question," In the last 6 months, have you used fentanyl or other drugs that you believe had fentanyl in it?" Responses were recorded as a binary outcome variable (yes/no). Other social and structural variables included: any jail or prison in the past 6-months (yes/no), current probation status (currently on probation, not currently on probation), current parole status (currently on parole, not currently on parole), any past 6-month alcohol or drug treatment (including methadone or alcohol treatment but excluding NA, AA, or other self-help program; yes/no), and type of past 6-month substance use treatment (including methadone detoxification, methadone maintenance, buprenorphine, outpatient treatment, inpatient hospital, and residential treatment). Any lifetime diagnosis for a mental health problem (yes/no), and current enrollment in mental health care services (yes/no) were also considered.

2.3   Statistical Analysis

First, we calculated summary statistics (e.g., frequencies, means, standard deviations [SD], medians, interquartile range [IQR]) for all study variables. Summary statistics were then compared between those who did and did not report TPH. To determine statistically significant factors related to TPH, univariate analyses between predictor variables and our outcome variable were conducted using Pearson's chi-squared tests. Predictor variables associated with the outcome variable of interest ($p < 0.25$) were then evaluated for potential collinearity. Collinear variables (Pearson correlation coefficient > 0.30) were removed from the final analysis based on strength of association with the dependent variable. Results from collinearity diagnostics revealed potential collinearity between past 30-day heroin use and past 30-day non-prescribed opioid use [variance inflation factor > 4 (Pardoe, 2012)], which was to be expected given that the terms are likely to have considerable overlap in response values. Thus, we selected past 30-day heroin use as a candidate predictor variable and dropped non-prescribed opioid use for our final main effects model.

Lastly, we used multivariable logistic regression modeling to determine significant demographic, economic, drug use, and treatment factors associated with TPH. This process involved first constructing a model with all explanatory variables that were significant at the bivariate level, and then refining our model by selectively removing variables that were not significant ($p > .05$), as well as assessing all possible two-way interactions. To further refine our final main effects model, we assessed goodness of fit using Pearson's Chi-Square and Hosmer-Lemeshow tests as well as model influence diagnostics. There were a handful of variables that varied between participants across follow-up assessments. These variables included race/ethnicity, income, age, distributive and receptive syringe sharing, public injection, times used heroin/opioid product past 30 days, and times used methamphetamine product past 30 days. To account for potential biases due to participant attrition, we controlled for these variables in our final multivariable model. All statistical

analyses were performed using SPSS Version 27. Adjusted odds ratios (AORs) and 95% confidence intervals (95% CIs) were reported.

3. Results

3.1 Sample Characteristics

The analytic sample (M[*SD*] age =43.8[11.5] years; 73% male) was socio-demographically diverse with the following characteristics: 73% male, 41% white, 22% Latinx, 24% Black/ African American, 7% Native American, and 19% gay, lesbian, or bisexual (Table 1). Homelessness was high (67%) and monthly income was low, with 77% of participants reporting less than $1,401 in monthly income.

A major mental health disorder was reported by 59% of participants. Among our total sample, 38 participants (7%) reported experiencing a TPH in the prior 12 months. Results from bivariate unadjusted analyses revealed the following variables to be significantly associated with TPH: age, lifetime diagnosis of any mental health problem, any mental health diagnosis within the previous 12 months, current homelessness, any past 30-day methamphetamine use, any past 30-day heroin use, any past 30-day non-prescribed opioid medication use, and recent incarceration (past 6 months).

3.2 Multivariable Results

Multivariable analysis (Table 2) revealed PWID aged 40–49 years old (versus persons age 50 or older) had significantly increased odds of reporting a TPH (adjusted odds ratio [AOR]=5.85;95% confidence interval [CI]=2.18, 15.67; *P*-value [*P*]<.0001). PWID with lifetime diagnoses of mental health disorders had greater odds of reporting a recent TPH compared to those with no previous mental health problem in our sample (AOR=6.23; 95% CI=2.08, 18.66; *P*=.001). Current homelessness (past 30 days) increased odds of TPH compared to PWID who were housed (AOR=3.75; 95% CI=1.28, 11.00; *P*=.02). Finally, frequency of methamphetamine use (past month) was associated with greater odds of TPHs (AOR=1.01; 95% CI=1.00, 1.01; *P*=.02), and frequency of heroin/opioid use was associated with decreased odds of reporting TPHs (AOR=0.99; 95% CI=0.99, 1.00; *P*=.03).

4. Discussion

Within our sample of community-recruited PWID recruited in two California cities, recent TPH appears to be disproportionately high (7% in this sample). That translates to 715 per 10,000 in our sample, which is much higher than general population estimates of TPHs among adults in San Francisco (67.8 adults per 10,000) and in Los Angeles County (27.1 adults per 10,000) between 2015 and 2016 (Services and Division, 2017). Further, we found elevated rates of mental health disorders in our sample, with over 56% of participants reporting a lifetime mental health disorder diagnosis; exceeding the general population prevalence of 46% (Substance Abuse and Mental Health Services Administration, 2020). This high burden of psychiatric illness is congruent with existing studies of similar drug-using populations (Conner et al., 2008; Kessler et al., 1994; Mackesy-Amiti et al., 2012; Springer, 2012), indicating a clear need for the development of optimal treatment strategies

tailored to accommodate co-morbid mental health and substance use disorders among PWID.

Having received a lifetime diagnosis for a mental health disorder was a strong predictor of TPH. Mental health, substance use, homelessness, and incarceration are currently among the most important public health challenges in the US (Karandinos and Bourgois, 2019; O'Brien et al., 2004; Swendsen et al., 2010; Von Wachter, Till. et al., 2019), and this snapshot of co-occurring conditions among PWID highlights that these comorbidities are intertwined (Bronson and Berzofsky, 2017; Prins, 2014; Torrey, E. et al., 2010). While more than half (52%) of PWID placed on TPHs reported receiving current mental health services in our sample, our findings suggest that current modalities of care may not be effectively identifying or treating PWID with serious mental health disorders prior to acute psychiatric emergencies. Given the salience of mental health comorbidities among PWID, future efforts to reduce emergency hospitalizations may benefit by adopting brief screening measures to identify PWID who present more severe symptomatology. Such measures could be easily incorporated in settings where PWID physically congregate such as syringe service programs, substance use treatment programs, or soup kitchens.

We also found that age was a significant predictor of TPH such that PWID aged 40–49 years were more likely to be hospitalized than PWID aged 50 or older. As this was the first study to empirically examine the relationship between age and TPH among PWID, further examination exploring this relationship is needed. Additionally, we discovered homelessness to be a predictor of TPH in our sample. This finding can likely be explained by the large percentage of poverty, and unstable access to resources experienced by the majority of participants in our sample. Violence, aggressive policing, and physical and subsistence insecurity are prevalent in street settings with narcotics salespoints (Farmer, 2010; Neary-Bremer, 2017; Stuart, 2016). Accordingly, it should come as no surprise that people who have less income or earning potential have higher odds of experiencing psychological distress. Homelessness exposes people to more contact with law enforcement, and the TPH procedure is one of the only tools police have to handle mental health crises as an alternative to direct incarceration (Braslow and Messac, 2018; Von Wachter, Till et al., 2019). This temporary emergency mitigation approach to handling mental illness is inadequate and highlights the need for more resources such as psychiatric crisis mobile response teams, 24-hour drop-in counseling centers, and improved trainings of police forces on how to recognize mental illness and de-escalate crises. In 2020, San Francisco implemented a Street Crisis Response Team whereby 911 calls-for-service related to mental health or drug use are responded to by social workers instead of law enforcement, which may be a viable approach to addressing these issues (Breed, November 30, 2020). Given the well-documented harms associated with homelessness and drug injection including increased risk of infectious diseases, non-fatal overdose, skin and soft tissue infections, sexual and/or physical violence and premature mortality (Uusküla et al., 2018; Werb et al., 2013; Wurcel et al., 2016), efforts to reduce harm, mitigate trauma, and improve the mental well-being of PWID would likely benefit from improving economic conditions and increasing access to harm-reduction informed low-barrier mental health treatment for PWID.

Frequency of methamphetamine use was positively associated with recent TPHs, while heroin/opioid use was inversely associated. The pharmacologic differences between these substances likely explains these findings. High-potency crystal methamphetamine can precipitate psychosis, including persecutory delusions and hallucinations akin to schizophrenia-spectrum disorders (McKetin et al., 2017). Further, repeated use of methamphetamine can exacerbate vulnerability to psychotic episodes related to neurological alterations in stress and reward pathways over time (Sinha, 2001). While there is evidence that opioid-induced withdrawal can produce anxiety and agitation (Nunes et al., 2004), our results suggest that overall chronic use of heroin/opioids is less likely to prompt psychiatric emergencies that precipitate authority-level hospitalization responses. Nevertheless, disentangling the degree to which serious psychological distress may be prompted by drug effects is challenging, especially in the context of poverty, homelessness, and violence insecurities (Prins, 2014).

Recent incarceration, probation, or parole were not significant predictors of TPH in our analyses. At present, people with mental health disorders are overrepresented in the criminal legal system, with many people with severe mental struggles being confined in jails or prisons due to a scarcity of medical facilities for care (Braslow and Messac, 2018; Karandinos and Bourgois, 2019; Torrey, E.F. et al., 2010). In California, there are 17.7 acute psychiatric beds available per 100,000 people, and 38% of those beds are located in State hospitals, providing care primarily to people who are incarcerated (Neary-Bremer, 2017). Further, LA county jail has become one of the nation's—and likely the world's—largest mental health treatment facilities, with over 33% of inmates identified as having mental health disorders while incarcerated (Holliday, 2020; Neary-Bremer, 2017). For PWID with mental health disorders simultaneously experiencing unemployment, trauma, homelessness, poverty, physical health problems, and stigma, contact with the criminal legal system is likely to be traumatic, worsening ongoing social marginalization, social insecurity, and distress (Prins, 2014). It also likely alienates individuals from voluntarily seeking care in the future. Although insurance coverage for mental health care has increased in recent years, resources are grossly inadequate and policy changes permitting the use of Medicaid funds for structural interventions including long-term supportive housing as well as medical interventions (e.g., buprenorphine), temporary detox, and accessible talk therapy treatment to expand access to care of persons with mental health disorders and co-occurring substance use disorders are urgently needed.

The processes and socio-structural contexts that exacerbate onset and progression of acute psychiatric hospitalization for mental illness among PWID as well as other larger substance-using populations deserve more rigorous systematic exploration. Understanding the dearth of public access to mental healthcare among PWID is critical for developing effective responses to prevent harms associated with comorbid conditions.

Future research studies purposefully designed to incorporate multiple levels of contextual determinants of health (Galea et al., 2003) are needed. Further Studies identifying structural factors contributing to acute psychiatric crises among PWID are necessary, such as: 1) availability of long- and short-term mental health beds and social services; 2) War on Drugs and mass-incarceration policies; 3) socio-economic insecurity; 4) social stigma

against both mental illness and PWID (including both police attitudes, and population-level social hostilities); and 5) other environmental infrastructural- and neighborhood-level factors (including inferior public-sector infrastructure, exposure to interpersonal violence, and isolation within drug user networks). Documenting these complexities is necessary for improving emergency hold conditions, prevention care, and decreasing negative health outcomes among this highly marginalized population.

Our study results should be considered in light of several potential limitations. First, all of our data was obtained using self-report measures and therefore our results may have been influenced by reporting biases such as social desirability. However, existing studies have demonstrated that self-report methods provide adequate reliability and validity among similar samples of PWID (Dyal et al., 2015; Goldstein et al., 1995; Weatherby et al., 1994). Second, because of inconsistencies in time frames asked in key questionnaire items (e.g., past 30-day drug use, past 6-month drug treatment), biases due to recall cannot be ruled out. Additionally, this project was not primarily focused on untreated mental illness and involuntary hospitalization, consequently we did not perform a complete psychiatric assessment and were unable to identify any potential undiagnosed mental health disorders in the study sample which may have introduced a source of error and threatened the validity of this measurement. Nonetheless, the size of the association we found with our two psychiatric treatment queries suggests the importance of reporting these preliminary findings on excessive burdens of untreated mental health disorders and behavioral health support services among PWID. Furthermore, given the structural and socioeconomic vulnerabilities experienced by the majority of participants in our sample (67% unhoused, 77% making less than $1401 per month), it is likely that the prevalence of mental health diagnoses was underreported due to the fact that PWID are less likely to seek or access health and social services treatment for mental health given the limited availability of publicly-funded community-based services for PWID (Genberg et al., 2019; Vermani et al., 2011). Additionally, our analyses were unable to distinguish whether participants were hospitalized voluntarily or involuntarily. Information regarding circumstances and contexts that lead up to the progression of acute psychiatric emergencies and their relationship to substances used by distinct subgroups of PWID could be integral to developing appropriate prevention responses. Finally, this data was collected as part of a 12-month follow-up of an intervention study which potentially opens the door to biases due to retention. While neither experimental intervention (focused on reducing assisted injection initiation) nor attention control (focused on improving water and protein intake) administered in the parent study covered any aspects of mental health, the prevalence of TPHs may have been underestimated in our sample due to difficulty in retaining individuals with severe psychological conditions in longitudinal research studies (our follow-up rate for the 12-month interview was 54% [531/979]). Nevertheless, these results provide valuable information characterizing high levels of treatment disengaged PWID who are placed on emergency psychiatric holds within community settings that have not been sufficiently explored quantitatively.

5. Conclusions

Results from the current study identified disproportionately high TPHs among PWID. Current homelessness, age, recent substance use, and mental health history all independently

associated with recent TPH. These findings suggest that PWID may benefit from screening and referral for unmet behavioral health and care by low barrier harm reduction services providers. Our analysis underscores need for focused research on mental health among treatment-disengaged individuals with substance use disorders. Lastly, given the known negative impacts of comorbid mental health conditions, improved strategies for expanding and rendering accessible harm-reduction-informed mental health care and access to both treatment and allied social-service support are urgently needed.

Acknowledgements

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Highlights

- 7% of people who inject drugs (PWID) reported temporary psychiatric holds (TPHs).

- Mental health diagnosis and age were associated with greater odds of recent TPHs.

- Frequency of methamphetamine use increased odds of TPH in the last year.

- There is a need for expanded mental health treatment for PWID in community settings

Table 1.

Characteristics of PWID with and without recent temporary psychiatric hold (TPH) [1]

	PWID without recent TPH N=493 N(col%)	PWID with recent TPH N=38 N(col%)	*P*-value
Gender			
Male	358 (72.6%)	27 (71.1%)	0.71
Female	129 (26.2%)	11 (28.9%)	
Transgender/other	6 (1.2%)	0 (0.0%)	
Age			
Less than 30 years old	72 (14.6%)	2 (5.3%)	<.0001
30–39 years old	115 (23.3%)	10 (26.3%)	
40–49 years old	124 (25.2%)	22 (57.9%)	
Age 50 or older	182 (36.9%)	4 (10.5%)	
Race/ethnicity			
Latinx	113 (22.9%)	3 (7.9%)	0.20
Black/African American	118 (23.9%)	8 (21.1%)	
White	198 (40.16%)	20 (52.6%)	
Native American	32 (6.5%)	3 (7.9%)	
Mixed race/other [2]	32 (6.5%)	4 (10.5%)	
Income, past 30 days			
Less than $1401	377 (77.1%)	30 (78.9%)	0.79
$1401 or more	112 (22.9%)	8 (21.1%)	
Gay, lesbian, or bisexual [3]			
Yes	90 (18.4)	12'31.6%)	0.05
No	400 (81.6%)	26 (68.4%)	
Any lifetime diagnosis for mental health problem			
Yes	277 (56.2%)	34 (89.5%)	<0.0001
No	216 (43.8%)	4 (10.5%)	
Currently receiving mental health services			
Yes	107 (38.5%)	17 (51.5%)	0.15
No	171 (61.5%)	16 (48.5%)	
Overdosed, last 6 months			
Yes	76 (.5.5%)	8 (21.1%)	0.37
No	(84.5%)	30 (79.0%)	
Currently homeless			
Yes	324 (65.7%)	32 (84.2%)	0.02
No	169 (34.3%)	6 (15.8%)	
High school education or better			
Yes	362 (73.4%)	28 (73.7%)	0.97
No	131 (26.6%)	10 (26.3%)	
Receptive syringe sharing, last 12 months			

	PWID without recent TPH N=493 N(col%)	PWID with recent TPH N=38 N(col%)	*P*-value
Yes	64 (13.0%)	8 (21.6%)	0.14
No	429 (87.0%)	29 (78.4%)	
Distributive syring. sharing, last 12 months			
Yes	55 (11.2%)	5 (13.5%)	0.66
No	438 (88.8%)	32 (86.5%)	
Any public injection, last 12 months			
Yes	289 (58.6%)	26 (70.3%)	0.16
No	204 (41.4%)	11 (29.7%)	
Past 30-day heroin/opioid use			
Yes	331 (67.1%)	18 (47.4%)	0.01
No	162 (32.9%)	20 (52.6%)	
Times used heroin/opioid product, last 30 days—mean (SD)	65.14 (100.40)	49.22 (82.22)	0.27
Past 30-day methamphetamine use			
Yes	266 (54.0%)	28 (73.7%)	0.02
No	227 (46.0%)	10 (26.3%)	
Times used methamphetamine product, last 30 days—mean (SD)	34.23 (75.14)	59.59 (96.71)	0.05
Past 30-day speedball use			
Yes	118 (23.9%)	9 (23.7%)	0.97
No	375 (76.1%)	29 (76.3%)	
Past 30-day goofball use			
Yes	184 (37.3%)	17 (44.7%)	0.36
No	309 (62.7%)	21 (55.3%)	
Past 30-day non-prescribed opioid medication use			
Yes	58 (11.8%)	9 (23.7%)	0.03
No	435 (88.2%)	29 (76.3%)	
Past 30-day crack cocaine use			
Yes	160 (32.5%)	11 (29.0%)	0.67
No	333 (67.6%)	27 (71.0%)	
Past 30-day powder cocaine use			
Yes	75 (15.2%)	6 (5.8%)	0.92
No	418 (84.8%)	32 (84.2%)	
Past 30-day cannabis use			
Yes	288 (58.4%)	30 (79.0%)	0.01
No	205 (41.6%)	8 (21.0%)	
Any fentanyl use or use of drug(s) mixed with fentanyl, last 6 months			
Yes	198 (42.6%)	18 (51.4%)	0.31
No	267 (57.4%)	17 (48.6%)	
Injection years			
<10 years	135 (27.4%)	11 (29.1%)	0.72
10–19 years	106 (21.5%)	10 (26.3%)	

	PWID without recent TPH N=493 N(col%)	PWID with recent TPH N=38 N(col%)	*P*-value
20 or more years	251 (51.0%)	17 (44.7%)	
Injection frequency, last 30 days			
Less than once a day (<30 times)	25 (31.0%)	11 (36.7%)	0.80
Once or twice a day (30–89 injections)	125 (31.0%)	9 (30.0%)	
Three times or more a day (90 or more injections)	153 (38.0%)	10 (33.3%)	
Any alcohol or drug treatment, last 6 months [4]			
Yes	162 (32.9%)	14 (36.8%)	0.62
No	331 (67.1%)	24 (63.2%)	
Drug treatment type, last 6 months **Methadone detoxification**			
Yes	17 (3.4%)	2 (5.4%)	0.54
No	477 (96.6%)	35 (94.6%)	
Methadone maintenance			
Yes	124 (25.1%)	7 (18.9%)	0.40
No	370 (74.9%)	30 (81.1%)	
Buprenorphine			
Yes	15 (3.0%)	2 (5.4%)	0.43
No	479 (97.0%)	35 (94.6%)	
Outpatient			
Yes	28 (5.7%)	2 (5.4%)	0.95
No	466 (94.3%)	35 (94.6%)	
Inpatient hospital			
Yes	9 (1.8%)	1 (2.7%)	0.70
No	485 (98.2%)	36 (97.3%)	
Residential treatment			
Yes	27 (5.5%)	2 (5.4%)	0.99
No	467 (94.5%)	35 (94.6%)	
Currently on probation			
Yes	112 (23.8%)	10 (27.0%)	0.66
No	359 (76.2%)	27 (73.0%)	
Currently on parole			
Yes	17 (3.6%)	1 (2.7%)	0.78
No	455 (96.4%)	36 (97.3%)	
Any jail, last 6 months			
Yes	142 (29.2%)	16 (42.1%)	0.09
No	345 (70.8%)	22 (57.9%)	

Notes:

[1] Available (nonmissing) data Ns range based on missing responses for each variable

[2] Other race/ethnicity includes multiracial/multiethnic, American Indian, Native Hawaiian or Pacific Islander, and other races

*3*Participants who did not respond to the survey question or who marked "Don't Know" were included in the "No" category

*4*Drug treatment types included methadone or alcohol treatment, but excluded NA, AA, or other self-help programs.

Table 2.

Multivariable logistic regression model of factors associated with recent TPH

Variable	AOR (95% CI)	*P*-value
Age		
Less than 30 years old	0.45 (0.05, 4.12)	0.48
30–39 years old	2.07 (.68, 6.33)	0.20
40–49 years old	5.85 (2.18, 15.67)	<0.0001
Age 50 or older	Ref	Ref
Any lifetime diagnosis for mental health problem	6.23 (2.08, 18.66)	0.001
Currently homeless	3.75 (1.28, 11.00)	.02
Times used heroin/opioid product, last 30 days	0.99 (0.99, 1.00)	.03
Times used methamphetamine product, last 30 days	1.01 (1.00, 1.01)	.02

Notes:

Abbreviations: AOR, Adjusted Odds Ratio; CI, Confidence Interval

Model adjusted for race/ethnicity, income, distributive and receptive syringe sharing, and public injection.