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Deportation and mental health among migrants who inject drugs along the US-Mexico border

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Objective

This study describes the prevalence and factors of depressive symptoms among a sample of persons who inject drugs (PWID) with a history of deportation from the US in Tijuana, Mexico. In 2014, 132 deported PWID completed a structured questionnaire. Depressive symptoms were measured using the Center for Epidemiologic Studies Short Depression Scale (CESD-10) screening instrument. Eligible participants were 18 years old, injected drugs in the past month, spoke English or Spanish, and resided in Tijuana. Multivariate analyses identified factors associated with depressive symptoms. Among deported PWID, 45% reported current symptoms of depression. Deported PWID who were initially detained in the US for a crime-related reason before being deported (Adjusted Odds Ratio (AOR): 5.27; 95% CI: 1.79–15.52) and who perceived needing help with their drug use (AOR: 2.15; 95% CI: 1.01–4.61) had higher odds of reporting depressive symptoms. Our findings highlight the need for effective strategies targeting deported migrants who inject drugs to treat mental health and drug abuse in Tijuana. Investing in the mental health of deported PWID may also be a viable HIV prevention strategy.

Keywords

deportation; migration; injection drug use; mental health; US-Mexico border

Introduction

Globally, persons who inject drugs (PWID) have an increased likelihood of acquiring HIV infection given the nature of risks associated with injection drug use (Decker et al., 2012; Kuo, Galai, Thomas, & Zafar, 2015; Rhodes et al., 2012; Sarin, Singh, Samson, & Sweat, 2013). A critical predisposing factor to HIV among PWID is poor mental health. Symptoms of depression and poor mental health status have been linked to riskier injection (e.g., sharing syringes, injecting at increased frequencies) and sexual practices (e.g., trading sex, unprotected sex) that facilitate HIV transmission (Crooks et al., 2014; Lemstra, Rogers, Thompson, Moraros, & Buckingham, 2011; Lundgren, Amodeo, & Chassler, 2005; Perdue, Hagan, Thiede, & Valleroy, 2003). Addressing the mental health needs of PWID can be a viable HIV prevention effort to reduce HIV transmission. Among PWID, receiving mental health treatment and having an overall improved mental health status has been associated with a reduction in behaviors that increase susceptibility to HIV infection (e.g., sharing syringes, unprotected sex) and adherence to HIV medications, which can mitigate future transmission of the virus (Khantzian, 2003; Latkin & Mandell, 1993; Lundgren et al., 2005; Qian et al., 2011; Safren et al., 2012; Schonfeld, Rohrer, Dupree, & Thomas, 1989). Understanding the mental health status and needs of PWID is imperative to the design of mental health and HIV prevention efforts, including harm reduction programs and interventions.

Within Latin America, Mexico accounts for the largest proportion of HIV infection resulting from injection drug use (AVERT, 2015). Injection drug use and HIV are especially prevalent along the US-Mexico border; ~10,000 PWID are estimated to be living in the US-bordering city of Tijuana (Iniguez-Stevens et al., 2009). In Tijuana, HIV impacts approximately 4% of male PWID and 10% of female PWID, as compared to 0.3% among the general adult Mexican population aged 15 to 49 (Patterson et al., 2009; Strathdee & Magis-Rodriguez, 2008). Male PWID with a history of deportation from the US are especially at risk: ~6% of deported male PWID in Tijuana are HIV positive (Strathdee, Lozada, Ojeda, et al., 2008). Deported male PWID have four times the independent odds of being HIV positive compared to their non-deported male counterparts (e.g., non-migrants, US-migrants who returned voluntarily) (Strathdee, Lozada, Ojeda, et al., 2008). Deportation from the US has been associated with injecting drugs at higher frequencies, injecting with persons from the US, differential drug use patterns, and underutilization of health services (e.g., primary care, drug treatment, HIV testing) among deported male PWID in Tijuana (Brouwer et al., 2009; Wagner et al., 2011). Deported male PWID may also try and inject new drugs or combination of drugs following deportation and perceive to be at less risk for acquiring HIV despite engaging in high-risk injection and sexual practices (Pinedo, Burgos, Robertson, et al., 2014; Robertson, Rangel, Lozada, Vera, & Ojeda, 2012). Notably, Tijuana is the primary deportee-receiving community; more than 815,000 deported Mexican migrants were displaced to Tijuana between 2008 and 2013 alone (Instituto Nacional de Migracion, 2010–2013). As such, the health of deported migrants in this region is a critical public health issue.

Deportation from the US may carry unintended health consequences for deported migrants, including for their mental health status. Deportation from the US can be a traumatic experience. Post-deportation, migrants experience multiple social, emotional, and economic

stressors that impact their physical and mental health (Pinedo, Burgos, & Ojeda, 2014). Two recent studies conducted among deported migrants in the US-Mexico border region suggest that deportees display an elevated prevalence of depressive symptoms and mental health problems as compared to the general population and migrants without a history of deportation (Bojorquez, Aguilera, Ramírez, Cerecero, & Mejía, 2014; Bojorquez, Mejia, Aguilar, Cerecero, & Albicker, 2014). Similarly, another study conducted among 9,542 migrants on the US-Mexico border in 2014 that compared voluntary-returned migrants with migrants deported from the US found that deportees had 5.52 the adjusted odds of reporting more than one emotional symptom (Fernández-Niño et al., 2014). However, these studies were not exclusive to deportees who inject drugs, our primary population of interest. In qualitative studies in Tijuana, deported PWID allude to their poor emotional state as influencing their decisions to participate in high-risk activities (e.g., initiating injection drug use, drug relapse, experimenting with new drugs, paying for sex) (Goldenberg et al., 2011; Goldenberg, Strathdee, Gallardo, & Patterson, 2010; Ojeda et al., 2011; Pinedo, Burgos, & Ojeda, 2014; Robertson, Lozada, et al., 2012). Another study among deported male PWID in Tijuana reported that feeling sad following the most recent deportation was independently associated with trying new drugs post-deportation (Robertson, Rangel, R. Lozada, Vera, & Ojeda, 2012). These data suggest that deported PWID's emotional state may influence their engagement in HIV risk behaviors. The mental health of deported PWID has yet to be empirically assessed; these data are greatly needed as they may elucidate critical information to guide prevention efforts aimed at reducing their HIV risk, especially given that sources of vulnerability may differ from PWID without a history of deportation.

To guide our study of mental health among deported PWID in Tijuana we drew from an ecological model of health, which considers the interaction between individuals and their social and physical environments in shaping health status (Dustin, Bricker, & Schwab, 2009; Glanz, Rimer, & Viswanath, 2008). Individual health is largely shaped by the complex interaction between interconnected relationships and experiences occurring at various environmental levels: individual, interpersonal, social, structural, and policy. Using this model we conceptualized four domains that may influence the mental health of deported PWID in Tijuana, including: socio-demographics, individual risk behaviors, social factors, and structural factors. Given the paucity of empirical data examining the relationship between deportation and mental health, our study objective was to: (1) describe the prevalence of depressive symptoms and (2) explore correlates of depressive symptoms among a sample of Mexican deported PWID residing in Tijuana, Mexico.

Methods

Study Design and Participants

Between 2012 and 2014, a cohort of PWID (n=785) residing in Tijuana were enrolled into a longitudinal prospective observational study (parent study) investigating the impact of the 2010 Mexican drug reform law on the drug use behaviors and HIV risk of PWID in Tijuana (A. M. Robertson et al., 2014). Study design and methodological procedures have been previously described in great detail (A. M. Robertson et al., 2014). PWID were recruited via targeted sampling using street-based outreach. Eligible participants were 18 years old,

reported injection drug use in the past month (confirmed through visual inspection of physical markers of injection drug use), spoke English or Spanish, and resided in Tijuana. Those who met eligibility criteria provided written informed consent before being enrolled. Participants completed a structured questionnaire in a private setting administered by a trained interviewer using computer-assisted personal interviewing (CAPI) at baseline and at 6-month follow up visits. All participants received a \$20 USD incentive per visit as compensation for their time.

In order to explore factors that may explain the elevated HIV risk profile of deported PWID, a supplemental questionnaire gathered more detailed data regarding the deportation and post-deportation experiences and mental health of deported PWID. This questionnaire was included as part of follow-up visit 7 (2014–2015). A total of 369 PWID enrolled in the parent study completed the follow-up visit 7 questionnaire, of these, 132 reported a prior history of deportation from the US and completed the supplemental questionnaire. The present analysis is limited to data collected from deported PWID (n=132) and excludes PWID without a history of deportation from the US (n=237). All study protocols were approved by the Institutional Review Board of the University of California, San Diego (UCSD) and the Ethics Board of the *Colegio de la Frontera Norte*, Tijuana.

Measures

Socio-demographics

Socio-demographic characteristics included gender, age, marital status, educational attainment, ability to speak English, and ability to speak Spanish.

Individual risk behaviors

Measures of individual risk behaviors included age of first injection drug use, receptive/distributive needle sharing in the past 6 months, injects drugs more than twice a day in the past 6 months, having used a ‘hit doctor’ (i.e., a person who provides assistance with injections, typically in exchange for goods) in the past 6 months, traded sex in the past 6 months in exchange for anything such as money, drugs, alcohol, shelter, food transportation or protection, and had sex while drunk (or within 2 hours of drinking) or has had sex while on drugs (or within 2 hours of using drugs) in the past 6 months.

Social Factors

Social factors included reasons for initial detainment for most recent deportation was crime related (e.g., caught committing a drug-related crime, robbery, assault), hours spent on the street on a typical day, whether family members had shown contempt/rejection because of their drug use, feelings of concern about personal safety in Tijuana in past 6 months, and currently perceiving needing help with drug use. A variable to account for past 6-month police victimization experiences was also created by combining affirmative responses to the following police encounters in the prior 6 months: asked for a bribe, had money or valuables confiscated, had legal identification documents confiscated, had syringes confiscated, was physically beaten (hit, punched, kicked), had belongings burned or destroyed, was forced to leave place of residency, and asked for a sexual favor to avoid arrest. These variables were

chosen based on previous findings on adverse policing practices among vulnerable populations in Tijuana (Beletsky et al., 2013; Philbin et al., 2008; Pollini et al., 2008; Robertson et al., 2010; Strathdee et al., 2010; Strathdee, Lozada, Pollini, et al., 2008; Volkmann et al., 2011; Pinedo et al., 2015).

Structural Factors

Variables related to structural factors included being a Tijuana native, total years lived in the US, having an official Mexican identification document (e.g., Mexican birth certificate or Electoral Voter Card), homelessness in the past 6 months, having been arrested in the past 6 months, and having been in jail in the past six months.

Deportation and post-deportation characteristics

Participants were asked to report on contextual characteristics of their most recent deportation, including total number of US deportations, years since their last US deportation, state of residence immediately pre-deportation, who initially detained them (e.g., border patrol, local police), and the main reason for their most recent detainment (e.g., immigration raid, apprehended while crossing the border, caught committing a crime). Participants were also asked what Mexican city they were deported to and the main reason for moving or remaining in Tijuana post-deportation. Deportees reported on their post-deportation needs, including places slept in the first month post-deportation (e.g., family/friend's house, rented room or apartment, on the street), and which services would have been most useful following their most recent deportation (e.g., help communicating with family members in the US and/or Mexico, assistance with finding employment).

Dependent variable: Current depressive symptoms

Our dependent variable was determined by the Center for Epidemiologic Studies Short Depression Scale (Andresen's Short Form; CESD-10) (Andresen, Malmgren, Carter, & Patrick, 1994). This is a 10-item screening instrument that has demonstrated high reliability and validity for identifying current (past week) depressive symptomology related to major or clinical depression in adults, including Latino populations, Mexican/Latino migrants, and PWID (Grzywacz et al., 2010; Grzywacz, Hovey, Seligman, Arcury, & Quandt, 2006; Heimer, Barbour, Palacios, Nichols, & Grau, 2014; Lum & Vanderaa, 2010; Ulibarri et al., 2013). Notably, the Spanish version of this scale has been validated and utilized among diverse populations, including rural populations, deported migrants, and PWID (Bojorquez Chapela & Salgado de Snyder, 2009; Salgado-De Snyder & Maldonado, 2013; Ulibarri et al., 2013). Thus, the CESD-10 was an appropriate screening instrument to measure depressive symptoms among deported PWID. While the CESD-10 is a screening measure, it is not intended to be utilized to diagnose depression, especially at the population level, but it can be utilized to identify the presence of symptoms of depression which may require further medical attention. Question items refer to past week feelings of depressive mood and behaviors, including feelings of guilt, worthlessness and helplessness, depressive mood, psychomotor impairment, and loss of appetite and sleep difficulties. A summary score ranging from 0 to 30 points is calculated with a cut off score of 10 points or higher indicating the presence of depressive symptoms that may require further medical attention. (Grzywacz et al., 2006). Cronbach's alpha for the CESD-10 items used in this study was

0.79. We dichotomized our dependent variable ‘current depressive symptoms’ (yes vs. no); participants who scored ≥ 10 points on the CESD-10 were characterized as having current symptoms of depression.

Analysis

We generated descriptive statistics for independent variables within our four domains (socio-demographics, individual risk behaviors, social factors, and structural factors) stratified by depressive symptoms. Associations between independent variables and our dependent variable were explored using Pearson Chi-square and Wilcoxon Rank Sum tests for dichotomous and continuous variables, respectively. We conducted logistic regression models in univariate analyses to compare participants with depressive symptoms to participants with no depressive symptoms. In building our final multivariate logistic regression model we considered independent variables that were associated with our dependent variable at $p < 0.05$ in univariate logistic regression models. Variables being considered were tested for collinearity and interaction; no evidence of collinearity or interaction was found. The final model was built using a manual selection process, retaining statistically significantly associated variables. We controlled for gender as a possible confounder. Descriptive frequencies were also generated to describe the deportation and post-deportation characteristics of PWID in our study. Additionally, we compared socio-demographic characteristics of deported PWID lost to follow up ($n = 167$) and deported PWID in our sample ($n = 132$; data not shown); no statistical differences were observed.

Results

Sample characteristics

Deported PWID were primarily male (80%) with a median age of 41 years; 42% were married or had a common law partner (Table 1). Education attainment was low; only 45% completed middle school or higher, 31% spoke English and 84% spoke Spanish. The majority of PWID were non-Tijuana natives (67%) and had lived in the US a median total of 13 years (Inter-Quartile Range (IQR): 0–50 years). Half had been homeless in the past 6 months and 57% currently had consistent work to cover their basic daily needs. Deported PWID in our study reported initiating injection drug use at a median age of 14 years (IQR: 5–36 years). A high proportion of deportees reported past 6-month risk behaviors including receptive/distributive needle sharing (63%), injecting drugs more than twice a day (62%), and having sex while drunk or on drugs (52%). PWID spent a median of 10 hours (IQR: 0–24 hours) on the street on a typical day and 39% had experienced police victimization in the past 6 months.

Univariate associations with current depressive symptoms among deported PWID

Almost half (45%, $n = 60$) of deported PWID met eligibility criteria for current depressive symptoms associated with clinical depression as based on the CESD-10 threshold (Table 1). Univariate analyses identified factors associated with depressive symptoms. Within our *individual risk* behaviors domain, deported PWID who engaged in receptive/distributive needle sharing in the past 6 months had increased odds of currently experiencing symptoms of depression (Odds Ratio (OR): 2.68; 95% Confidence Interval (CI): 1.27–5.65). *Social*

factors positively associated with current depressive symptoms included being initially detained for a crime-related reason before being deported (OR: 2.97; 95% CI: 1.45–6.06) and currently perceiving needing help with drug use (OR: 6.21; 95% CI: 2.21–17.49). In the context of *structural factors*, deportees had higher odds of reporting depressive symptoms if they were homeless within the past 6 months (OR: 2.39; 95% CI: 1.18–4.81).

Deportation and post-deportation characteristics of deported PWID

Table 2 displays deportation and post-deportation characteristics of deported PWID in our sample. Participants experienced a median of 1 deportation (IQR: 1–20) with their last deportation occurring a median of 10 years prior (IQR: 1–34). The majority lived in California (94%) before being deported. Before being deported, most common reasons for initially being detained included drug (38%) or crime-related offenses (16%); 12% were apprehended at the border. Deportees were most frequently returned to Mexican cities on the US-Mexico border; Tijuana (64%) was the primary deportee receiving community.

Regarding the post-deportation context, deportees most commonly slept in a family/friend's house (48%) or rented room or apartment (27%) in the first month post-deportation. A small minority reported sleeping in the Tijuana River Canal (9%), a hotel (7%), or on the street (5%). Most frequently reported reasons for staying in Tijuana included: originally from Tijuana (31%), not having family or friends in other areas of Mexico (21%), and intentions to cross the border back to the US (18%). Deportees identified services that would have been useful following deportation; common responses included: help communicating with family members in the US and/or Mexico (69%), assistance with finding employment (29%), occupational training programs (28%), health services and health access (e.g., *Seguro Popular*) (21%), and assistance with obtaining legal Mexican identification documents (17%).

Factors independently associated with depressive symptoms among deported PWID

In multivariate logistic regression analyses (Table 3), which controlled for gender, only two variables within our social factors domain were independently associated with experiencing current symptoms of depression: being initially detained for a crime-related reason before being deported (Adjusted odds ratio (AOR): 5.27; 95% CI: 1.79–15.52) and currently perceiving needing help with drug use (AOR: 2.15; 95% CI: 1.01–4.61).

Discussion

This study reports on the prevalence and correlates of depressive symptoms among Mexican PWID who have been deported from the United States. We found that among 132 deported PWID in our sample, 45% reported meeting CESD-10 criteria for current depressive symptoms. To our knowledge, this is the first study to explore the mental health of deported migrants who inject drugs in Mexico and provides an important contribution to the scant data regarding health vulnerabilities of deportees, including mental health and drivers of HIV. The prevalence of depressive symptoms in this study agrees with findings from a recent study of homeless migrants (n=802) in Tijuana, Mexico that found that 59% of deported migrants met criteria for clinical depression using the same CESD-10 screening instrument

as used in this study (Bojorquez, Mejia, et al., 2014). However, our study population of deportees differs from Bojorquez and colleagues' study in that all participants were PWID. Importantly, the high prevalence of depressive symptoms in our study significantly exceeds the national prevalence of depression among the general Mexican population 18 to 65 years of age, which ranges from 12% to 20% (Belló, Puentes-Rosas, Medina-Mora, & Lozano, 2013; Dawes et al., 2010; Mexico, 2014; Slone et al., 2006), but is consistent with other studies among PWID in Mexico and international settings (Golub et al., 2004; Lundgren et al., 2005; Perdue et al., 2003; Ulibarri et al., 2013).

Our study identified two social factors associated with experiencing current symptoms of depression. Deported PWID who were initially detained for a crime-related activity before their most recent deportation and those who currently perceived needing help with their drug use had significantly higher odds of reporting current depressive symptoms. US-deportation policies increasingly target migrants with drug and criminal histories (Simanski, 2011). A 2010 study that recruited a convenience sample of 3,457 male deportees in Tijuana found that deportation for alcohol- and drug-related activities was common (Alarcón & Becerra, 2012). Similarly, deportation stemming from criminal and drug use offenses was high in our study. Persons suffering from mental disorders and minorities, including Latinos, are overrepresented in the US criminal justice system (Brewer & Heitzeg, 2008; James & Glaze, 2006; Small, 2001; Wakefield & Uggen, 2010). Deportees with criminal backgrounds represent a vulnerable segment of the Latino population in the US who are at increased risk for poor mental health outcomes even before deportation. Further research is warranted to better understand the relationship between pre-deportation contexts and mental health in post-deportation settings.

We found that deportees who currently perceive needing help with their drug use were more likely to report depressive symptoms; this stage of interest in drug treatment services represents a critical point of intervention and interest in adopting health promoting behaviors. Substance abuse and mental health disorders often co-occur; persons with drug use histories are at increased risk for depression and other mental health disorders (Ulibarri et al., 2013; Vega et al., 1998; Vega, Sribney, Aguilar-Gaxiola, & Kolody, 2004). Individuals with insight into their health status may be more apt and open to receiving mental health treatment (DiClemente, Schlundt, & Gemmell, 2004). In such cases, treatment may be more successful (Simpson & Broome, 1998). However, notably, deportees frequently lack access to mental health and drug treatment services in Tijuana (Brouwer et al., 2009; Robertson, Lozada, et al., 2012). Among PWID in Tijuana, past experiences of mistreatment (e.g., verbal abuse, physical violence) by drug treatment program personnel may further discourage service utilization (Syvertsen et al., 2010). Increased efforts aimed at addressing the mental health needs, including substance abuse treatment, of deportees in Tijuana and other deportee-receiving Mexican communities are warranted.

Some limitations should be considered when interpreting our findings. The cross-sectional analysis of our study does not allow for causal inferences among variables associated with depressive symptoms. Our small sample size of deported PWID may not have given us enough power to identify other factors that may have been independently associated with depressive symptoms. Given that the parent study was not designed to specifically study

mental health and depression, data was limited to follow up visit 7, which limits our understanding of how the mental health of deported PWID evolves with increasing time spent in Mexico. Mental health questions were only asked to PWID with a history of deportation; consequently, we were limited in our ability to compare the mental health of deported and non-deported PWID. Our findings may also be biased towards established deportees and may not be generalizable to recent deportees, given that deportees in our sample had experienced their last deportation approximately 10 years prior. Increased efforts to engage recent deportees in health related research is warranted to better understand the health of deported migrants throughout the re-settlement period. A study with a larger and diverse sample of deportees (i.e., recent, established, non-drug using, drug using, HIV+) should be explored to better understand the mental health of migrants post-deportation. Studies that include both deported and non-deported PWID are also warranted to better understand the relationship between mental health and deportation and if deported PWID are more vulnerable to poor mental health than PWID who have never been deported from the US. Non-random sampling techniques were employed to recruit participants; findings may not be generalizable to all deported PWID in Tijuana or in other deportee receiving communities. Despite these limitations, our findings provide a vital contribution to the paucity of research focused on the health vulnerabilities of deported PWID and provide data for formulating hypotheses that can be explored in a broader and larger context, especially in the US-Mexico border context.

Conclusion

Our study provides new data regarding the relationship between migration and mental health and indicates that deported PWID in Tijuana may be at high risk for poor mental health. Over the past decade, the US has engaged in an important effort to remove migrants from the US and the significant proportion of PWID with a history of deportation and justice involvement highlight the need to better research the link between deportation and health (Pinedo, Burgos, & Ojeda, 2014; Strathdee, Lozada, Ojeda, et al., 2008). Findings from our study point to the great need for research aimed at exploring the implications of deportation on the mental health of migrants, especially those who engage in drug use and injection drug use—such research is severely lacking (Pinedo, Burgos, & Ojeda, 2014). The elevated prevalence of depressive symptoms among deported PWID, as evident in our sample, may contribute to their HIV risk (Pinedo, Burgos, & Ojeda, 2014; Strathdee, Lozada, Ojeda, et al., 2008).

Mental health, injection drug use, and HIV risk are inextricably linked. Investing in the mental health needs of deported PWID may be a viable HIV prevention strategy to reduce associated risks with HIV and other health damaging behaviors. Among PWID, mental health treatment and improved mental health status can help reduce PWIDs' engagement in high-risk injection behaviors (e.g., sharing needles) (Khantzian, 2003; Latkin & Mandell, 1993; Lundgren et al., 2005; Schonfeld et al., 1989). Improved adherence to HIV medication among HIV positive PWID has also been linked to mental health treatment (Qian et al., 2011; Safren et al., 2012). Thus, interventions aimed at improving the mental health of deported PWID may reduce HIV risk and transmission in this region. The collaborative care approach model, which integrates mental health services into primary care settings, has

successfully increased access and utilization of mental health services and this strategy may be applied to this context, especially in clinics and other health and social service agencies that cater to deported migrants in Tijuana (Pinedo, Burgos, Ojeda, FitzGerald, & Ojeda, 2015; Pomerantz et al., 2010; Unützer, Harbin, & Druss, 2013).

Our study focused on deported PWID but conclusions and recommendations may also extend to PWID without a deportation history and this merits further study. Potentially, the sources of vulnerability that may impact the mental health of deported and non-deported PWID in Tijuana may differ (future research is needed to determine this, as previously discussed). Identifying factors that impact the mental health status of deported PWID is critical to the design of HIV prevention and mental health interventions in this region. Services aimed at improving deportees' reincorporation (e.g., housing, employment) have been previously recommended and may be linked to mental health status (Pinedo, Burgos, & Ojeda, 2014). Our study indicates that interest in such services (e.g., access to health insurance, occupational training programs, and help obtaining legal identification documents) among deported PWID exists and may influence and benefit the mental health of this high-risk population.

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Table 1

Factors and characteristics associated with depressive symptoms among deportees who inject drugs in Tijuana, Mexico, N=132, 2014–2015.

Variable	Total (n=132)	Depressive Symptoms		P-value	Odds Ratio	95% Confidence Interval
		No (72, 55%)	Yes (60, 45%)			
Socio-demographics						
Gender (male)	105 (80%)	56 (78%)	49 (82%)	0.581	1.27	0.53–3.00
Median age (IQR)	41 (21–63)	41 (21–63)	41 (27–59)	0.555	1.01	0.97–1.05
Married/Common law	55 (42%)	34 (47%)	21 (35%)	0.156	0.60	0.29–1.21
Completed secondary school or higher	60 (45%)	37 (51%)	23 (38%)	0.134	0.58	0.29–1.18
Speaks English	41 (31%)	27 (38%)	14 (23%)	0.080	0.50	0.46–3.34
Speaks Spanish	112 (84%)	62 (86%)	50 (83%)	0.658	0.81	0.311–2.09
Individual Risk Behaviors						
Median age of first injection drug use (IQR)	14 (5–36)	14 (9–32)	14 (5–36)	0.665	1.00	0.92–1.08
Receptive/distributive needle sharing ^a	83 (63%)	38 (53%)	45 (75%)	0.009	2.68	1.27–5.65
Injects drugs more than twice a day ^a	82 (62%)	40 (56%)	42 (70%)	0.088	1.86	0.91–3.84
Has used a hit doctor to inject drugs ^a	34 (26%)	14 (19%)	20 (33%)	0.069	2.07	0.94–4.58
Has traded sex ^a	21 (16%)	11 (15%)	10 (17%)	0.828	1.10	0.44–2.82
Has had sex while drunk or on drugs ^a	69 (52%)	41 (57%)	28 (47%)	0.239	0.66	0.33–1.32
Social Factors						
Initial detainment for most recent deportation was crime related	69 (52%)	29 (40%)	40 (67%)	0.003	2.97	1.45–6.06
Median hours spent on the street on a typical day (IQR)	10 (0–24)	9 (0–24)	10 (1–24)	0.404	1.03	0.96–1.10
Has experienced police victimization ^a	51 (39%)	23 (32%)	28 (47%)	0.084	1.86	0.92–3.79
Family has shown contempt/rejection because of drug use	31 (23%)	19 (26%)	12 (20%)	0.389	0.70	0.31–1.59
Concerned about personal safety in Tijuana ^a	99 (75%)	52 (72%)	47 (78%)	0.419	1.39	0.62–3.10
Currently perceives needing help with drug use	101 (77%)	46 (64%)	55 (92%)	<0.001	6.21	2.21–17.49
Structural Factors						
Non-Tijuana native	86 (65%)	42 (58%)	44 (73%)	0.072	1.96	0.93–4.12
Median total years lived in the US (IQR)	13 (0–50)	12 (0–50)	15 (0–48)	0.812	0.99	0.91–1.02
Median number of US deportations (IQR)	1 (1–20)	2 (1–20)	1 (1–20)	0.467	1.00	0.90–1.11

Variable	Total (n=132)	Depressive Symptoms		P-value	Odds Ratio	95% Confidence Interval
		No (72, 55%)	Yes (60, 45%)			
Median years since last US deportation ^b (IQR)	10 (1–34)	10 (1–31)	10 (2–34)	0.663	0.99	0.95–1.04
Deported to Tijuana ^b	85 (64%)	47 (65%)	38 (63%)	0.816	0.92	0.45–1.88
Has a Mexican official identification document	73 (55%)	44 (61%)	29 (48%)	0.141	0.60	0.30–1.20
Homeless ^a	66 (50%)	29 (40%)	37 (62%)	0.014	2.39	1.18–4.81
Has been arrested ^a	48 (36%)	25 (35%)	23 (38%)	0.668	1.17	0.57–2.38
Has been in jail ^a	25 (19%)	16 (22%)	9 (15%)	0.292	0.61	0.25–1.52
Currently has consistent work to cover basic daily needs	75 (57%)	42 (58%)	33 (55%)	0.700	0.87	0.44–1.74

Table 2

Deportation and post-deportation characteristics among Mexican deportees who inject drugs in Tijuana, Mexico, N=132, 2014–2015.

Deportation Characteristics^a	
Median total years lived in the US	13 (0–50)
Median number of US deportations (IQR)	1 (1–20)
Median years since last deportation (IQR)	10 (1–34)
Lived in California before being deported	124 (94%)
Enforcement agency of initial detainment	
Local law enforcement	96 (73%)
Border patrol/immigration officer	32 (24%)
Main reason for initial detainment	
Drug related (e.g., using, selling)	49 (38%)
Crime, non-drug related (e.g., robbery, assault)	20 (16%)
Apprehended at the border	16 (12%)
Immigration raid	9 (7%)
Traffic violation (e.g., speeding, running a red light)	9 (7%)
Mexican city of deportation	
Tijuana, Baja California	85 (64%)
Mexicali, Baja California	15 (11%)
Nogales, Sonora	10 (8%)
Nuevo Laredo, Tamaulipas	7 (5%)
Ciudad Juarez, Chihuahua	4 (3%)
Post-deportation Characteristics^{a, b}	
Places slept during the first month of being deported	
Family/friend's house	64 (48%)
Rented room or apartment	36 (27%)
Tijuana River Canal	12 (9%)
A hotel	9 (7%)
On the street	6 (5%)
Main reason for staying in Tijuana post-deportation	
Originally from Tijuana	41 (31%)
Does not have family or friends in other areas of Mexico	28 (21%)
Intentions to cross the border to the US	24 (18%)
Does not have money to return to home community	10 (8%)
For work/economic opportunities	10 (8%)
For access to drugs	7 (5%)
Services that would have been useful following deportation ^c	
Help communicating with family members in the US and/or Mexico	52 (69%)

Assistance with finding employment	22 (29%)
Occupational training programs	21 (28%)
Health services and health care access (e.g., Seguro Popular)	16 (21%)
Assistance with obtaining legal Mexican identification documents	13 (17%)

^aRefers to most recent deportation

^bParticipants could indicate multiple responses

^cN=75

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Table 3

Factors independently associated with depressive symptoms among deportees who inject drugs in Tijuana, Mexico, N=132, 2014–2015.

Variable	Adjusted Odds Ratio	95% Confidence Interval
Socio-demographics		
Gender (male)	1.72	0.68–4.29
Social Factors		
Initial detainment for most recent deportation was crime related *	5.27	1.79–15.52
Perceives needing help with drug use *	2.15	1.01–4.61

*
p<0.05 for all variables