



Published in final edited form as:

Drug Alcohol Depend. 2014 September 1; 0: 345–349. doi:10.1016/j.drugalcdep.2014.06.008.

A “refugee paradox” for substance use disorders?

Christopher P. Salas-Wright^a and Michael G. Vaughn^b

Christopher P. Salas-Wright: salaswright@utexas.edu; Michael G. Vaughn: mvaughn9@slu.edu

^aSchool of Social Work, The University of Texas at Austin, 1925 San Jacinto Blvd D3500, Austin, TX 78712-0358, United States

^bSchool of Social Work, College for Public Health and Social Justice, Saint Louis University, Tegeler Hall, 3550 Lindell Blvd., jSt. Louis, MO 63103, United States

Abstract

Background—Few, if any, studies have systematically examined the link between nativity and substance use disorders (SUD) among refugees using national samples. As such, it remains uncertain if the “immigrant paradox” for substance use can be extended to include refugees in the United States.

Methods—Employing data from the National Epidemiologic Survey on Alcohol and Related Conditions, we examine the lifetime prevalence of SUDs among refugees ($n = 428$) in contrast with non-refugee immigrants ($n = 4,955$) and native-born Americans ($n = 29,267$). We also examine the impact of gender and refugee duration on the relationship between nativity, refugee status, and SUDs.

Results—Refugees were between 3–6 times less likely than native-born Americans meet criteria for all SUDs examined, and significantly less likely than non-refugee immigrants to meet criteria for alcohol (AOR = 0.44, 95% CI = 0.41–0.47), cocaine (AOR = 0.54, 95% CI = 0.50–0.59), hallucinogen (AOR = 0.66, 95% CI = 0.58–0.74), and opioid/heroin (AOR = 0.62, 95% CI = 0.58–0.66) use disorders. The refugee-SUD link was significantly moderated by gender. Duration as a refugee was associated with increased risk for alcohol use disorder and decreased risk of cannabis and illicit drug use disorders.

Conclusions—Study findings provide evidence in support of a “refugee paradox” for SUDs among adults in the United States. Refugees are substantially less likely than native-born Americans to meet criteria for all SUDs examined and, albeit with weaker effects, significantly less likely than non-refugee immigrants to meet criteria for a variety of SUDs.

© 2014 Elsevier Ireland Ltd. All rights reserved.

Correspondence to: Christopher P. Salas-Wright, salaswright@utexas.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Contributors: No disclosures to be made.

Conflict of Interest: No conflict declared.

Keywords

refugee; immigrant; substance use disorders; alcohol use; drug abuse

1. INTRODUCTION

A growing body of research has accrued in support of an “immigrant paradox” in which, despite exposure to various sociodemographic risk factors, immigrants tend to use and abuse substances at lower levels than native-born Americans (Almeida et al., 2012; Borges et al., 2012; De La Rosa et al., 2013; Li and Wen, 2013; Ojeda et al., 2008; Schwartz et al., 2013). Evidence for this phenomenon, also referred to as the “healthy immigrant effect”, has been observed among a variety of health outcomes (e.g., chronic disease, obesity) and among immigrants from various global regions and in multiple receiving nations (Kennedy et al., 2014). Several explanations have been put forth to explain this link between nativity and substance use. One is that individuals who are willing and able to uproot their lives and move to a foreign nation tend to be highly capable, motivated, and healthy. That is, immigrants are believed to self-select such that they are less likely to be involved in a variety of health-risk behaviors, including substance use and abuse (Rubalcava et al., 2008). Another potential factor is that immigrants may abstain from substance use due to fears of deportation or involvement in a foreign criminal justice system (Vaughn et al., 2014).

Although the empirical support for an immigrant paradox for substance use is quite compelling, it is unclear whether or not this paradox can be extended to include refugees. Under international law, a refugee is a person who “owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country” (UNHCR, 1951). Given the special characteristics of refugees, it may be that the nativity-substance use/abuse link functions differently for refugees than for non-refugee immigrants. For instance, among refugees the effect of selectivity might be altered given that, by definition, the relocation of refugees is precipitated by life-threatening conditions and is often involuntary (Bloemraad, 2006). Similarly, many refugees are exposed to high levels of trauma, which has been found to have important implications for the initiation and abuse of substances (Ouimette and Brown, 2003). Moreover, many refugees spend substantial periods of time living in exile in socially hazardous and high-risk environments that can expose them to risks for substance use/abuse (Ezard et al., 2011; Luitel et al., 2013).

While previous studies have examined substance use/abuse among refugee populations, several gaps remain. Foremost, few studies have looked systematically at substance use/abuse among refugee populations in the United States (USA). Those that have are hampered by the use of relatively small and geographically-circumscribed samples focused on refugees from one or two particular nations (D’Avanzo and Barab, 2000; D’Avanzo and Frye, 1992; Eaton, 1992; Jenkins et al., 1990; Lee et al., 2008; Marshall et al., 2005). While such studies allow for the incorporation of specific culture and events into analyses, they are nevertheless limited in terms of scope and generalizability. As such, research with nationally representative samples is needed.

The present study addresses the aforementioned gaps by employing data from a population-based study (i.e. the National Epidemiologic Survey of Alcohol and Related Conditions [NESARC]) of adults in the USA. Specifically, we examine the prevalence of SUDs among refugees in contrast with native-born Americans and non-refugee immigrants. Additionally, based on evidence from prior research with refugee and displaced populations (Ezard, 2012; Weaver and Roberts, 2010), we examine the impact of gender and duration as a refugee on the relationship between nativity, refugee status, and SUDs.

2. METHOD

2.1 Sample and Procedures

Study findings are based on data from Wave II (2004–2005) of the NESARC (Grant et al., 2003). The NESARC is a nationally representative sample of non-institutionalized U.S. residents aged 18 years and older. Utilizing multistage cluster sampling design and oversampling minority populations, the study gathered extensive information about SUDs from individuals living in all 50 states and Washington, DC. Participants had the option of completing the NESARC interview in English, Spanish, or one of four Asian languages (Mandarin, Cantonese, Korean and Vietnamese).

2.2 Measures

2.2.1 Refugee/immigrant status—Respondents were asked, “Were you ever a refugee—that is, did you flee from your home to a foreign country or place to escape danger or persecution?” Those who responded affirmatively ($n = 428$) were classified as refugees. Non-refugee immigrants were born outside of the United States, but were never refugees ($n = 4,955$). Respondents born in the USA were considered native-born Americans ($n = 29,267$). We also examined refugee duration—which is distinct from duration of being in the USA—on the basis of the following question, “How long were you a refugee?”

2.2.2 Substance use disorders—Using the AUDADIS-IV, lifetime SUDs (abuse or dependence) with a prevalence of at least 1.5% in the general population were examined. These include alcohol use disorder, cannabis use disorder, and four additional illicit drug disorders (i.e., cocaine, hallucinogens, amphetamines, and opioids/heroin).

2.2.3 Sociodemographic and behavioral controls—Demographic variables frequently used as control variables in substance abuse research with the NESARC (Grant et al., 2004) were included: age, gender, race/ethnicity, household income, education level, marital status, region of the USA, and urbanicity. We also controlled for parental antisocial influence, parental substance use problems, and lifetime diagnoses of major depressive and posttraumatic stress disorders.

2.3 Analysis

Logistic regression analyses were conducted to compare the prevalence of SUDs among refugees, non-refugee immigrants, and native-born Americans. Weighted prevalence estimates and standard errors were computed using Stata 13.1 SE software (StataCorp, 2013).

3. RESULTS

Table 1 provides information on the comparative distribution of age, gender, race/ethnicity, income, and lifetime major depressive and posttraumatic stress disorders among native-born Americans, non-refugee immigrants, and refugees. Supplemental analyses revealed that the mean value for total duration in the USA was slightly greater among non-refugee immigrants ($M = 22.38$, $SD = 14.68$) than refugees ($M = 21.54$, $SD = 14.56$).

Table 2 compares the prevalence of lifetime SUDs among refugees in contrast with native-born Americans and non-refugee immigrants. Controlling for sociodemographic, parental, and psychiatric factors, refugees were roughly three to six times less likely than native-born Americans to have met criteria for all SUDs examined in this study. Controlling for the same list of confounds, refugees were also significantly less likely than non-refugee immigrants to meet criteria for alcohol (AOR = 0.44, 95% CI = 0.41–0.47, $p < .001$), cocaine (AOR = 0.54, 95% CI = 0.50–0.59, $p < .001$), hallucinogen (AOR = 0.66, 95% CI = 0.58–0.74, $p < .001$), and opioids/heroin (AOR = 0.62, 95% CI = 0.58–0.66, $p < .001$) use disorders. Supplementary analyses contrasting refugees and native-born Americans across gender revealed a significantly more robust refugee-SUD relationship among men than among women. Refugee men were more than seven times less likely (AOR = 0.13, 95% CI = 0.12–0.15, $p < .001$) and refugee women roughly four times less likely than their native-born counterparts to meet criteria for alcohol use disorder (AOR = 0.26, 95% CI = 0.23–0.28, $p < .001$). A similar pattern was observed for illicit drug use as the refugee-SUD link was significantly greater among men (AOR = 0.23, 95% CI = 0.20–0.26, $p < .001$) than among women (AOR = 0.40, 95% CI = 0.36–0.45, $p < .001$).

Additional supplementary analyses also suggest a nuanced relationship between duration as a refugee and lifetime SUDs. In particular, controlling for core sociodemographic factors (age, gender, race/ethnicity, income, and education level), individuals who were a refugee for one year or longer were significantly more likely to meet criteria for alcohol use disorder compared to those who were a refugee for less than one year (AOR = 2.65, 95% CI = 1.77–3.98, $p = .009$). In contrast, individuals who were a refugee for one year or more were significantly less likely to have met criteria for cannabis (AOR = 0.24, 95% CI = 0.22–0.27, $p < .001$) or any other illicit drug use disorder (AOR = 0.26, 95% CI = 0.25–0.28, $p < .001$).

4. DISCUSSION

Evidence from this study suggests a “refugee paradox” for SUDs in the USA. Compared to native-born Americans, refugees were substantially less likely to meet criteria for all disorders examined in this study. Consistent with previous research examining gender differences related to refugee substance use/abuse (Weaver and Roberts, 2010), this effect was stronger among refugee men than among refugee women; however, the refugee-SUD link was found to be quite robust for both gender groups.

We found that refugees were also significantly less likely than non-refugee immigrants to meet criteria for alcohol, cocaine, hallucinogen, and opioid/heroin use disorders. While these effects were substantially smaller than the effects observed in contrasting refugees with native-born Americans, refugees were nevertheless approximately 1.5–2 times less likely to

meet criteria for the aforementioned disorders. While this finding is perhaps paradoxical, it may be that—despite the stress and trauma experienced by many refugees—the benefit of various institutional and contextual factors may be protective for refugees once situated in the USA. For instance, although the scope of assistance provided to refugees in the USA has been limited over time, refugees receive transitional support upon arrival to the USA and benefit from legal status, social welfare benefits, and the beneficence of refugee service organizations (Bloemraad, 2006). Such factors may help refugees to transition successfully and, in turn, avoid substance initiation and abuse.

We also identified a relationship between duration as a refugee and SUDs. That is, individuals who spent more than a year as refugees were significantly more likely to have met criteria for an alcohol use disorder and, somewhat paradoxically, significantly less likely to have met criteria for cannabis or any other illicit drug use disorder. Several factors might help to explain these divergent results. First, compared to the illicit substances examined in this study, the use of alcohol is both legal and socially normative in the majority of countries in the world, including many with sizable refugee populations (World Health Organization, 2011). As such, individuals living in refugee camps may be more likely to turn to alcohol than to other substances in an effort to cope with their forced relocation and the stressors of prolonged displacement. Moreover, in light of evidence suggesting that the prevalence of hazardous drinking is disproportionately elevated among individuals in refugee camps (Ezard et al., 2011, 2012; Luitel et al., 2013), it is reasonable to suspect that longer duration in such environments may place individuals at risk of developing SUDs.

4.1 Study Limitations

Study findings should be interpreted in light of several limitations. First, the NESARC is not a true longitudinal study. As such, the temporal ordering of refugee status and SUDs is less than ideal. Second, refugees in this analysis are self-reported; refugee status is not the official reason for entry and our definition is less precise than definitions used in international law. Third, while the categorization of study respondents as refugees, non-refugee immigrants, and native-born Americans provides important information, the observed differences between these groups may be influenced by other factors that are obscured by this categorization. Additionally, the relatively limited number of refugees in the sample precluded analyses based on refugee/immigrant country of origin and the exploration of differences among the refugee subsample.

4.2 Conclusions

To our knowledge, ours is the first study to systematically examine the relationships between nativity, refugee status, and SUDs in a national sample of adults in the USA. Refugees are substantially less likely than native-born Americans to meet criteria for all SUDs examined and, albeit with weaker effects, significantly less likely than non-refugee immigrants to meet criteria for several SUDs. Gender and duration as a refugee were also found to play an important role in the relationship between refugee status and SUDs. In all, while study limitations suggest that caution should be exercised in the interpretation of

results, findings from the current study nevertheless point to a “refugee paradox” for SUDs among adults in the USA.

Acknowledgments

None.

Role of Funding Source: This research was supported in part by Grant Number R25 DA026401 from the National Institute on Drug Abuse at the National Institutes of Health.

References

- Almeida J, Johnson RM, Matsumoto A, Godette DC. Substance use, generation and time in the United States: the modifying role of gender for immigrant urban adolescents. *Soc Sci Med*. 2012; 75:2069–2075. [PubMed: 22727651]
- Bloemraad, I. *Becoming A Citizen: Incorporating Immigrants And Refugees In The United States And Canada*. University of California Press; Berkeley, CA: 2006.
- Borges G, Rafful C, Benjet C, Tancredi DJ, Saito N, Aguilar-Gaxiola S, Medina-Mora ME, Breslau J. Mexican immigration to the US and alcohol and drug use opportunities: does it make a difference in alcohol and/or drug use? *Drug Alcohol Depend*. 2012; 125:S4–S11. [PubMed: 22658285]
- De La Rosa M. Acculturation and Latino adolescents’ substance use: a research agenda for the future. *Subst. Use Misuse*. 2002; 37:429–456.
- De La Rosa M, Dillon FR, Sastre F, Babino R. Alcohol use among recent Latino immigrants before and after immigration to the United States. *Am J Addict*. 2013; 22:162–168. [PubMed: 23414503]
- Ezard N. Substance use among populations displaced by conflict: literature review. *Disasters*. 2012; 36:533–557. [PubMed: 22066703]
- Ezard N, Oppenheimer E, Burton A, Schilperoord M, Macdonald D, Adelekan M, Sakarati A, van Ommeren M. Six rapid assessments of alcohol and other substance use in populations displaced by conflict. *Confl Health*. 2011; 5:1. [PubMed: 21310092]
- Ezard N, Thiptharakun S, Nosten F, Rhodes T, McGready R. Risky alcohol use among reproductive-age men, not women, in Mae La refugee camp, Thailand, 2009. *Conflict Health*. 2012; 6:7. [PubMed: 22963719]
- Grant BF, Stinson FS, Dawson DA, Chou SP, Dufour MC, Compton W, Pickering RP, Kaplan K. Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Arch Gen Psychiatry*. 2004; 61:807–816. [PubMed: 15289279]
- Jenkins CNH, McPhee SJ, Bird JA, Bonilla NH. Cancer risks and prevention practices among Vietnamese refugees. *West J Med*. 1990; 153:34–39. [PubMed: 2389574]
- Kennedy S, Kidd MP, McDonald JT, Biddle N. The healthy immigrant effect: patterns and evidence from four countries. *J Int Migr Integr*. 2014 Advance online publication. 10.1007/s12134-014-0340-x
- Lee JP, Battle RS, Antin TMJ, Lipton R. Alcohol use among two generations of Southeast Asians in the United States. *J Ethn Subst Abuse*. 2008; 7:357–375. [PubMed: 19064436]
- Li K, Wen M. Substance use, age at migration, and length of residence among adult immigrants in the United States. *J Immigr Minor Health*. 2013 epub ahead of print.
- Luitel NP, Jordans M, Murphy A, Roberts B, McCambridge J. Prevalence and patterns of hazardous and harmful alcohol consumption assessed using the AUDIT among Bhutanese refugees in Nepal. *Alcohol Alcohol*. 2013; 48:349–355. [PubMed: 23443987]
- Marshall GN, Schell TL, Elliott MN, Berthold SM, Chun CA. Mental health of Cambodian refugees 2 decades after resettlement in the United States. *JAMA*. 2005; 294:571–579. [PubMed: 16077051]
- Quimette, PE.; Brown, PJ. *Trauma And Substance Abuse: Causes, Consequences, And Treatment Of Comorbid Disorders*. American Psychological Association; Washington, DC: 2003.

- Ojeda VD, Patterson TL, Strathdee SA. The influence of perceived risk to health and immigration-related characteristics on substance use among Latino and other immigrants. *Am J Public Health*. 2008; 98:862–868. [PubMed: 18382009]
- Ortega AN, Rosenheck R, Alegria M, Desai RA. Acculturation and the lifetime risk of psychiatric and substance use disorders among Hispanics. *J Nerv Ment Dis*. 2000; 188:728–735. [PubMed: 11093374]
- Rubalcava LN, Teruel GM, Thomas D, Goldman N. The healthy migrant effect: new findings from the Mexican Family Life Survey. *Am J Journal Public Health*. 2008; 98:78–84.
- Schwartz SJ, Unger JB, Des Rosiers SE, Lorenzo-Blanco EI, Zamboanga BL, Huang S, Baezconde-Garbanati L, Villamar JA, Soto DW, Pattarroyo M, Szapocznik J. Domains of acculturation and their effects on substance use and sexual behavior in recent Hispanic immigrant adolescents. *Prev Sci*. 2013; 15:385–396. [PubMed: 23828449]
- Schwartz SJ, Unger JB, Zamboanga BL, Szapocznik J. Rethinking the concept of acculturation: implications for theory and research. *Am Psychol*. 2010; 65:237. [PubMed: 20455618]
- Singer, A.; Wilson, JH. *From ‘There’ to ‘Here’: Refugee Resettlement in Metropolitan America*. Brookings Institution Press; Washington, DC: 2006.
- Vaughn MG, Salas-Wright CP, DeLisi M, Maynard BR. The immigrant paradox: immigrants are less antisocial than native-born. *Americans Soc Psychiatry Psychiatr Epidemiol*. 2014 Epub ahead of print. 10.1007/s00127-013-0799-3
- Weaver H, Roberts B. Drinking and displacement: a systematic review of the influence of forced displacement on harmful alcohol use. *Subst Use Misuse*. 2010; 45:2340–2355. [PubMed: 20469970]
- World Health Organization. *Global Status Report On Alcohol And Health*. World Health Organization; Geneva, Switzerland: 2011.

Table 1

Sociodemographic characteristics of native-born American, non-refugee immigrant and refugee adults in the United States

	Native-Born Americans (n = 29,267)		Non-Refugee Immigrants (n = 4,955)		Refugees (n = 428)	
	N (%)	95% CI	N (%)	95% CI	N (%)	95% CI
Sociodemographic Characteristics						
Age						
18–34 years	6693 (24.81)	(24.4–25.2)	1263 (29.59)	(29.1–30.0)	73 (25.92)	(25.9–26.8)
35–49 years	9028 (30.48)	(30.1–30.8)	1869 (35.24)	(34.7–35.7)	145 (32.73)	(31.2–34.3)
50–64 years	7215 (24.45)	(24.1–24.8)	1099 (22.45)	(22.2–22.7)	88 (19.76)	(18.9–20.6)
65+ years	6331 (20.26)	(19.9–20.5)	724 (12.73)	(12.3–13.1)	122 (21.16)	(20.8–21.5)
Gender						
Female	17,000 (52.33)	(51.9–52.7)	2886 (51.5)	(50.9–52.0)	200 (40.41)	(39.0–41.8)
Male	12,267 (47.67)	(47.3–48.0)	2069 (48.5)	(48.0–49.0)	228 (59.59)	(58.2–60.9)
Race/Ethnicity						
White	19,233 (78.75)	(78.2–79.3)	824 (21.74)	(21.2–22.2)	102 (29.24)	(28.4–30.1)
Black	6082 (11.58)	(11.1–12.1)	465 (7.72)	(7.5–7.9)	39 (8.18)	(8.0–8.3)
Other	8027 (3.67)	(3.4–3.9)	629 (22.95)	(22.3–23.6)	90 (31.53)	(31.0–32.0)
Hispanic	3125 (5.99)	(5.8–6.1)	3037 (47.60)	(46.9–48.3)	197 (31.05)	(30.1–32.0)
Household Income						
< \$20,000	6917 (19.12)	(18.8–19.4)	1314 (22.56)	(22.1–23.0)	121 (23.05)	(21.6–24.6)
\$20,000–\$34,999	5739 (18.35)	(18.0–18.7)	1159 (22.27)	(21.9–22.7)	92 (21.35)	(20.1–22.6)
\$35,000–69,999	9007 (32.23)	(31.9–32.6)	1517 (32.19)	(31.7–32.7)	126 (29.77)	(29.3–30.2)

	Native-Born Americans (<i>n</i> = 29,267)		Non-Refugee Immigrants (<i>n</i> = 4,955)		Refugees (<i>n</i> = 428)	
	N (%)	95% CI	N (%)	95% CI	N (%)	95% CI
> \$70,000	7604 (30.30)	(30.0–30.6)	965 (22.98)	(22.6–23.4)	89 (25.83)	(24.3–27.4)
Lifetime DSM Mental Disorders						
Major Depressive Disorder						
No	22,268 (77.02)	(76.7–77.3)	4088 (84.69)	(84.1–85.3)	354 (84.39)	(82.7–85.9)
Yes	6999 (22.98)	(22.6–23.3)	867 (15.31)	(14.7–15.9)	74 (15.61)	(14.1–17.3)
Posttraumatic Stress Disorder						
No	26,070 (90.08)	(89.8–90.3)	4598 (93.95)	(93.8–94.1)	361 (85.68)	(85.4–85.9)
Yes	3197 (9.92)	(9.7–10.1)	357 (6.05)	(5.9–6.2)	67 (14.32)	(14.1–14.6)

Table 2
Lifetime substance use disorders among refugees compared to native-born American and immigrant adults in the United States

		Were you ever a refugee?										
		Refugees / Native-Born Americans			Refugees / Non-Refugee Immigrants							
		("Did you flee from your home to a foreign country or place to escape danger or persecution?")										
		No		Yes		No		Yes				
		(n = 29,267; 98.56%)		(n = 428; 1.44%)		(n = 4,955; 91.04%)		(n = 428; 8.96%)				
		%	95% CI	AOR	95% CI	%	95% CI	AOR	95% CI			
Lifetime Substance Use Disorder (Abuse/Dependence)												
Alcohol												
No	62.41	(61.9–62.9)	89.32	(88.9–89.8)	1.00	83.80	(83.4–84.2)	89.32	(88.9–89.7)	1.00		
Yes	37.59	(37.1–38.1)	10.68	(10.2–11.1)	0.16	(0.15–0.17)	16.20	(15.8–60.6)	10.68	(10.3–11.0)	0.44	(0.41–0.47)
Cannabis												
No	89.25	(89.0–89.5)	96.03	(95.9–96.1)	1.00	97.32	(96.9–97.6)	96.03	(95.9–96.1)	1.00		
Yes	10.75	(10.5–11.0)	3.97	(3.8–4.1)	0.29	(0.26–0.32)	2.68	(2.4–3.0)	3.97	(3.9–4.0)	1.10	(0.93–1.31)
Cocaine												
No	96.47	(96.3–96.6)	99.26	(99.2–99.3)	1.00	99.11	(99.0–99.2)	99.26	(99.2–99.3)	1.00		
Yes	3.53	(3.4–3.6)	0.74	(0.72–0.76)	0.15	(0.14–0.17)	0.89	(0.79–1.00)	0.74	(0.73–0.75)	0.54	(0.50–0.59)
Hallucinogens												
No	97.91	(97.8–98.0)	99.35	(99.3–99.4)	1.00	99.39	(99.3–99.5)	99.35	(99.3–99.4)	1.00		
Yes	2.09	(2.0–2.2)	0.65	(0.63–0.67)	0.25	(0.23–0.28)	0.61	(0.51–0.71)	0.65	(0.64–0.66)	0.66	(0.58–0.74)
Amphetamines												
No	97.57	(97.4–97.7)	99.48	(99.5–99.5)	1.00	99.53	(99.4–89.6)	99.48	(99.5–99.5)	1.00		
Yes	2.43	(2.3–2.5)	0.52	(0.51–0.54)	0.20	(0.18–0.22)	0.47	(0.37–0.58)	0.52	(0.51–0.53)	0.87	(0.74–1.03)
Opioids/Heroin												
No	97.73	(97.6–97.9)	99.40	(99.4–99.4)	1.00	99.38	(99.3–89.4)	99.40	(99.4–99.4)	1.00		
Yes	2.27	(2.1–2.4)	0.60	(0.58–0.62)	0.21	(0.19–0.24)	0.61	(0.58–0.65)	0.60	(0.59–0.61)	0.62	(0.58–0.66)

Note: Odds ratios adjusted for age, gender, race/ethnicity, household income, education level, marital status, region of the United States, urbanicity, parental antisociality and substance use history, and lifetime major depressive disorder and posttraumatic stress disorder. Odds ratios and confidence intervals in bold are significant at p < .001.