Published in final edited form as:

Drug Alcohol Depend. 2008 March 1; 93(3): 227–232. doi:10.1016/j.drugalcdep.2007.09.024.

Assessment of cocaine and other drug dependence in the general population: “gated” vs. “ungated” approaches

Louisa Degenhardt^{1,2}, Kipling M. Bohnert¹, and James C. Anthony¹

¹ Department of Epidemiology, Michigan State University, B601 West Fee Hall, East Lansing MI 48824, UNITED STATES, Ph: +1-517-353-8623 ext. 100, Fax: +1-517-432 -1130

² National Drug and Alcohol Research Centre, University of New South Wales, Sydney NSW 2052, AUSTRALIA

Abstract

Background—There is a need for large scale epidemiological surveys to be a) faithful to diagnostic specifications, and b) constrain time and participant burden associated with each section of a possibly lengthy interview.

Objective—To examine whether one “gating” approach devised for recent large scale international psychiatric surveys results in a reduced number of identified cases of drug dependence, and/or biases in estimated associations with background characteristics.

Design and setting—Data from a recently released cross-sectional, nationally representative household survey, the United States National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) were analysed.

Participants—43,093 English speaking adults aged 18 years and over.

Main outcome measures—Dependence upon cocaine and other illegal drug dependence, defined in two ways: “ungated”, and “gated”. “Ungated” dependence included all persons meeting criteria for DSM-IV dependence, without regard for DSM-IV drug abuse clinical features. “Gated” dependence required at least one feature of DSM-IV drug abuse.

Results—There was no statistically robust decrement in the estimated prevalence of cocaine or other drug dependence using a “gated” assessment. Patterns of association of cocaine dependence with background characteristics were not appreciably different when the gated and ungated approaches were applied.

Conclusions—In panoramic mental health surveys, the inefficiency of an ungated approach must be balanced against the anticipated number of cases of dependence without associated social role impairments or harm. In this study, the reduction in the number of identified cocaine dependence cases appeared to be so small that even in a sample of over 40,000 participants, attenuation in population prevalence would prove difficult to detect.

Keywords

epidemiological research; psychiatric diagnostic interview; cocaine; drug; abuse; dependence

1. Introduction

Large scale epidemiologic field surveys can provide important evidence about psychiatric disorders. They detect cases of psychiatric disorders not seen in clinical research; and cases with unusual features or more “borderline severity” may be detected, case ascertainment biases can be constrained, and the resulting estimates are more free of the influences of treatment provision (or the lack thereof) upon population estimates and the nature of “cases” (Berkson, 1946; Narrow et al., 2002; Robins and Guze, 1970; Robins, 2004).

The mandate for large scale national field surveys has expanded, such that they include the entire list of psychiatric disturbances within the current diagnostic and statistical manuals of our time, or at least a substantial subset. This panoramic perspective is constrained by a need to balance competing time demands within the interview. One way in which such demands can be juggled is to set up conditional skips based on earlier measurements during the assessment session – often termed “gating” of assessment. For drug dependence, the “gate” can be made based upon varying criteria (Hasin and Grant, 2004; Hasin et al., 2005; Narrow et al., 2002). These “gates” can be understood as a special case of mass screening in public health. A gated approach may be less sensitive than an ungated approach, whereas the ungated approach may be less specific and overly inclusive compared to the gated approach.

Those undertaking broad epidemiologic studies of psychiatric disorders must translate the prevailing psychiatric nomenclature into standardised survey assessments that may be administered by lay interviewers, in such a way as to accurately measure the constructs as presently defined (Blazer and Kaplan, 2000; Frances, 1998; Narrow et al., 2002; Pincus et al., 1998; Robins, 2004). Vigorous debate has occurred about how to juggle the time demands of panoramic psychiatric interviews with a need to remain faithful to current alcohol and other drug dependence nomenclature. For example, the issue of “gating” the assessment of drug dependence was raised in discussions in the United States about whether the Epidemiological Catchment Area (ECA) study and National Comorbidity Survey (NCS) might have overestimated the prevalence of mental disorders in the US because they did not “gate” according to a “clinical significance” criterion (Frances, 1998; Narrow et al., 2002; Regier et al., 1998; Spitzer, 1998). More recently, there has been concern about the extent and nature of the impact of a gated assessment of drug dependence upon population prevalence estimates and their correlates in several countries of the World Health Organization’s World Mental Health surveys (Grant et al., 2007; Kessler and Merikangas, 2007).

We have previously examined the impact of a “gated” assessment approach upon alcohol and cannabis dependence prevalence estimates in the US, and whether the effect of this “gating” might vary across key background variables (Degenhardt et al., 2007a; Degenhardt et al., 2007b). We found a very modest attenuation of the prevalence of past year cannabis dependence (0.26% compared to 0.32%), but no statistically robust variation in the prevalence estimate for past year cannabis use disorders (DSM-IV abuse and/or dependence) (Degenhardt et al., 2007b). This reduction is difficult to examine in the scale of most population surveys. For 12 month alcohol dependence, the gated approach produced an estimate that was not in the confidence bounds of the ungated approach; gating missed an estimated 129 cases per 10,000 participants (2.5% vs. 3.8%) (Degenhardt et al., 2007a). The relationships with demographic variables of interest remained remarkably consistent across the gated and ungated assessment approaches, however, suggesting that any attenuation of estimated prevalence was not strongly concentrated within certain subpopulations (such as age or sex groups) (Degenhardt et al., 2007a; Degenhardt et al., 2007b).

The empirical findings for other drug dependence may not be the same. Cocaine is the second most common form of illegal drug use in the United States, and its use has, at times, been

highly prevalent according to certain population characteristics such as race-ethnicity (Golub and Johnson, 1994; Johnson et al., 2000; Miech et al., 2005). Alcohol and cannabis, in contrast, are less concentrated within subgroups groups (such as those of a particular age, sex, socioeconomic status or race-ethnicity). The lack of impact of a gated assessment upon associations of dependence with age, sex and other characteristics for alcohol and cannabis may therefore not be true for cocaine and other less commonly used drugs. For these reasons it is prudent to conduct a separate examination of the potential impact of a “gated” approach with respect to cocaine and other drug dependence.

1.1 Aims

The current study aimed to:

1. Make estimates of the prevalence of cocaine dependence, according to “gated” and “ungated” assessments of the syndrome.
2. Examine whether the observed patterns of association of background characteristics with “gated” cocaine dependence are markedly different from those identified using an “ungated” cocaine dependence assessment approach.
3. Make estimates of the prevalence of other drug dependence according to “gated” and “ungated” assessment approaches.

2. Methods

2.1 Sample

This study is based upon US data from NESARC, a population based face-to-face survey of 43,093 participants aged 18 years and older. The sample was recruited from a prior US Census Supplementary Survey sample (C2SS) that had been interviewed in 2000–2001. Participant selection and interviewing were conducted by US Census Bureau interviewers (Stetser et al., 2002). Recruitment for NESARC took place between August 2001 and April 2002, between 5–18 months after the prior C2SS contact (Stetser et al., 2002). The response rate for eligible housing units in the NESARC has been reported as 81%. We have previously summarized the details of the sampling methodology (Degenhardt et al., 2007a; Degenhardt et al., 2007b) (see also (Stetser et al., 2002)); further details on the interview, method and characteristics of the NESARC sample can be found elsewhere (Grant et al., 2001; Grant et al., 2003; Grant et al., 2004).

2.2 Measurements

The main response variable under study was case status with respect to recently active drug dependence defined by DSM-IV-TR criteria, with both drug use and a clustering of at least three manifestations of dependence within the 12 months prior to assessment. The primary focus in this study was upon cocaine, but we have also provided the estimates obtained using “ungated” and “gated” assessment approaches for the prevalence of 12 month dependence upon the following drugs: cannabis (for reference; further details published in (Degenhardt et al., 2007b), opioids (excluding heroin), stimulants (excluding cocaine), hallucinogens, heroin, inhalants, sedatives, and anxiolytics.

NESARC assessments were via computer-assisted personal interviews (CAPI) with the “ungated” approach. We simulated the “gated” approach by recoding drug dependence cases as non-cases if the participant did not also report at least one symptom of DSM-IV “drug abuse”. Sociodemographic characteristics were also assessed via CAPI standardized survey questions. In the NESARC, all participants were asked if they had *ever* used the drugs concerned; those who had were asked if they had used those drugs *in the past 12 months*, and for those who had

used such drugs in the past 12 months, DSM-IV drug dependence and abuse for the past 12 months. For this paper, the following “dependence” categories were generated:

1. *Ungated assessment approach*: this group included all persons meeting criteria for DSM-IV dependence, without regard for drug-related social impairments or other DSM-IV “drug abuse” clinical features.
2. *Gated assessment approach*: this group only included drug dependence cases with at least one clinical feature under the DSM-IV drug abuse rubric.

2.3 Analysis

Weighted prevalence estimates and their 95% confidence intervals were derived using Taylor series linearisation with SUDAAN Version 9.0, which accommodates field survey samples with self-representing PSUs and accounts for other features of the complex survey sampling design (Research Triangle Institute, 2005). Prevalence estimates (and their 95% confidence intervals) were made according to sex, age group (18–24 years, 25–34 years, 35–44 years and 45 years and older), and race-ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, and other); and annual personal income (<USD\$20,000; USD\$20,000–34,999; USD\$35,000 and above). Note that some group categories had to be collapsed due to the very small raw sample sizes for older age groups and some race-ethnicity sub-groups. Multiple logistic regressions, which included all background variables in the models, were run using SUDAAN 9.0, to derive estimates of strength of association (odds ratios). The agreement of estimates produced using gated vs. ungated assessments was compared statistically using a simple Kappa coefficient.

3. Results

Table 1 shows the prevalence and 95% confidence intervals of cocaine dependence according to “ungated” and “gated” assessment approaches. There was no statistically robust difference in the estimated prevalence of dependence using the two approaches: 0.13% vs. 0.12%, with very broadly overlapping confidence intervals.

The direction and strength of association with background variables was remarkably similar for the “gated” and “ungated” assessment approaches (Table 1). In other words, the gated approach did not distort estimated relationships with background variables according to whether cocaine-related social role impairments or other abuse criteria were required.

Figure 1 shows the prevalence estimates for other drug dependence using gated and ungated assessment approaches. No reliable prevalence estimates could be obtained for heroin or inhalant dependence due to very small raw numbers meeting diagnostic criteria ($n = 4$ and 2 , respectively, with no impact of gating of assessment). As can be seen, estimates for each drug dependence category were very similar (95% confidence intervals overlapped in all cases) regardless of whether an ungated or gated assessment approach was simulated.

The Kappa coefficients produced for each pair of drug dependence estimates are also presented in Table 2. As can be seen, there was good agreement between the gated and ungated assessment methods for all drugs examined; the lowest kappa was for sedative dependence but the upper limit of the 95% confidence interval for the kappa value was in the range commonly accepted for good agreement (0.53; 0.33, 0.72).

4. Discussion

In this contrast of ungated versus gated methods of assessing cocaine dependence (whereby participants are assessed for dependence only if they have exhibited “clinically significant”

manifestations of maladaptive use of drugs, or drug-related social role impairments) there appears to be no appreciable reduction of population prevalence estimates. The estimated prevalence of dependence upon other drug types was even smaller than that for cocaine, and there was insufficient power to detect any difference at a general population level, even with this sample of over 40,000 persons.

The relationship of cocaine dependence with background characteristics did not differ appreciably when a gated assessment of cocaine dependence was simulated compared to the ungated assessment method. With the other drugs examined here, the number of cases of drug dependence was too small to warrant detailed probing into the background associations.

There has been considerable discussion of the meaning, utility and importance of the concept of “clinical significance” within the current DSM-IV classification system (Beals et al., 2004; Blazer and Kaplan, 2000; Frances, 1998; Narrow et al., 2002). There has also been debate about whether data from some of the surveys conducted as part of the World Mental Health Surveys may have resulted in attenuated or biased estimates of prevalence and associations of drug dependence because they used a gating criterion as was used in this study (Grant et al., 2007; Kessler and Merikangas, 2007). This study is unlikely to resolve what appears to be significant disagreement about how and why to use different assessment approaches in large scale survey research on the epidemiology of psychiatric disorders, but it certainly appears to be the case that the prevalence estimates of dependence for most drug types will not be appreciably attenuated when a gated assessment approach is used. Moreover, a gated approach may be preferable when the focus of enquiry requires balancing the competing time demands for assessment of a large number of psychiatric disorders. There is not the need for such balancing, of course, when surveys are more highly focused upon drug dependence specifically. Further, panoramic studies may also be used to inform further development of the classification system; for this purpose, gating should often be minimised.

4.1 Limitations

The NESARC data upon which this study was based are subject to limitations. It is possible that the NESARC underestimated illegal drug use and DSM-IV use disorders. This has been suggested in a recent comparison of NESARC data with that from the US National Survey on Drug Use and Health (NSDUH) (Gruza et al., 2007). This could have been related to the way in which the study was conducted – the NESARC was conducted face to face, compared to a self-complete method as used in the NSDUH (Gruza et al., 2007). Previous research has been consistent with the possibility that concerns about anonymity result in lower levels of disclosure of drug use (Aquilino and LoSciuto, 1990).

A further possibility might be related to the NESARC recruitment and sample identification method: the sample was recruited from a prior US Census Supplementary Survey sample (C2SS) that had been interviewed in 2000–2001, and participant and interviewing were conducted by the US Census Bureau (Stetser et al., 2002). It is possible that participants in the NESARC had greater concerns for privacy and anonymity, given that the interviews were conducted by government employees and identifying details from the Census interviews had been used to target them for the NESARC in the first place.

4.2 Conclusions

When time, cost, participant burden and loss of attention are immaterial, a gated approach may not be useful in surveys of drug dependence. However, when such limits do exist, a gated approach to assessment of drug dependence may serve well, according to the findings of the present empirical study. Here, the gated approach did not result in a robust reduction in the population prevalence estimates for dependence, and there appeared to be no differential

distribution across the background variables examined here. It would appear that most cocaine dependent individuals will also have features of cocaine abuse. In a general population survey even of the size of the NESARC (over 40,000 individuals), there was insufficient power to detect and/or investigate the nature of the relatively fewer cases who do not. This was even more markedly the case for dependence upon other illegal drugs, where numbers were even smaller. Similar work examining this issue in other countries would provide important additional information on the extent to which gating affects dependence prevalence estimates in other settings.

Acknowledgments

The work was supported by NIH/NIDA research project award R01DA016558 and a NIDA KO5 Senior Scientist award (K05DA015799) to the last author (JCA), as well as funds from Michigan State University and the Australian Government Department of Health and Ageing. KM's apprenticeship is supported under an NIH/NIDA institutional training program award, T32DA021129. Data reported herein come from national survey data collected under the auspices of the US National Institute on Alcohol Abuse and Alcoholism under the direction of Dr. Bridget Grant and colleagues. We are grateful for the public use dataset created by the NIAAA research.

References

- Aquilino W, LoSciuto L. Effect of interview mode on self-reported drug use. *Public Opinion Quarterly* 1990;54:362–395.
- Beals J, Novins D, Spicer P, Orton H, Mitchell C, Baron A, Manson S. the AI-SUPERPFP Team. Challenges in operationalising the DSM-IV clinical significance criterion. *Archives of General Psychiatry* 2004;61:1197–1207. [PubMed: 15583111]
- Berkson J. Limitations of the application of fourfold table analysis to hospital data. *Biometrics Bulletin* 1946;2:47–53.
- Blazer DG, Kaplan B. Controversies in community-based psychiatric epidemiology. *Archives of General Psychiatry* 2000;57:227–228. [PubMed: 10711908]
- Degenhardt L, Bohnert KM, Anthony J. Case ascertainment of alcohol dependence in general population surveys: “gated” versus “ungated” approaches. *International Journal of Methods in Psychiatric Research* 2007a;16
- Degenhardt L, Cheng H, Anthony J. Assessing cannabis dependence in community surveys: Methodological issues. *International Journal of Methods in Psychiatric Research* 2007b;16:43–51. [PubMed: 17623384]
- Frances A. Problems in defining clinical significance in epidemiological studies. *Archives of General Psychiatry* 1998;55:119. [PubMed: 9477923]
- Golub A, Johnson B. A recent decline in cocaine use among youthful arrestees in Manhattan, 1987 through 1993. *American Journal of Public Health* 1994;84:1250–1254. [PubMed: 8059880]
- Grant BF, Compton W, Crowley T, Hasin D, Helzer J, Li TK, Rounsaville B, Volkow N, Woody GE. Errors in assessing DSM-IV substance use disorders. *Archives of General Psychiatry* 2007;64:379–380. [PubMed: 17339528]
- Grant, BF.; Dawson, D.; Hasin, D. The Alcohol Use Disorder and Associated Disabilities Interview Schedule-DSM-IV version (AUDADIS-IV). National Institute on Alcohol Abuse and Alcoholism; Bethesda, MD: 2001.
- Grant, BF.; Moore, T.; Kaplan, K. Source and accuracy statement: Wave 1 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). 2003. <http://niaaa.census.gov>. accessed on July 2nd 2006>
- Grant BF, Stinson FS, Dawson D, Chou S, Dufour M, Compton W, Pickering R, 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 (NESARC). *Archives of General Psychiatry* 2004;61
- Gruzca R, Abbacchi A, Przybeck T, Gfroerer J. Discrepancies in estimates of prevalence and correlates of substance use and disorders between two national surveys. *Addiction* 2007;102:623–629. [PubMed: 17309538]

- Hasin D, Grant BF. The co-occurrence of DSM-IV alcohol abuse in DSM-IV alcohol dependence: Results of the National Epidemiologic Survey on Alcohol and Related Conditions on heterogeneity that differ by population subgroup. *Archives of General Psychiatry* 2004;61:891–896. [PubMed: 15351767]
- Hasin D, Hatzenbuehler M, Smith S, Grant BF. Co-occurring DSM-IV drug abuse in DSM-IV drug dependence: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Drug and Alcohol Dependence* 2005;80:117–123. [PubMed: 16157234]
- Johnson, B.; Golub, A.; Dunlap, E. The rise and decline of hard drugs, drug markets, and violence in inner-city New York. In: Blumstein, A.; Wallman, J., editors. *The crime drop in America*. Cambridge University Press; New York: 2000. p. 164–206.
- Kessler RC, Merikangas KR. In reply. *Archives of General Psychiatry* 2007;64:381–382.
- Miech R, Chilcoat H, Harder V. The increase in the association of education and cocaine use over the 1980s and 1990s: Evidence for a ‘historical period’ effect. *Drug & Alcohol Dependence* 2005;79:311–320. [PubMed: 16102375]
- Narrow W, Rae D, Robins L, Regier DA. Revised prevalence estimates of mental disorders: Using a clinical significance criterion to reconcile two surveys’ estimates. *Archives of General Psychiatry* 2002;59:115–123. [PubMed: 11825131]
- Pincus HA, Zarin D, First M. “Clinical significance” and DSM-IV. *Archives of General Psychiatry* 1998;55:1145. [PubMed: 9862559]
- Regier DA, Kaelber CT, Rae DS, Farmer ME, Knauper B, Kessler RC, Norquist GS. Limitations of diagnostic criteria and assessment instruments for mental disorders. Implications for research and policy [see comments]. *Archives of General Psychiatry* 1998;55:109–115. [PubMed: 9477922]
- Research Triangle Institute. SUDAAN Version 9.0. Research Triangle Institute; Research Triangle Park, NC: 2005.
- Robins E, Guze S. Establishment of diagnostic validity in psychiatric illness: Its application to schizophrenia. *American Journal of Psychiatry* 1970;126:983–987. [PubMed: 5409569]
- Robins L. Using survey results to improve the validity of the standard psychiatric nomenclature. *Archives of General Psychiatry* 2004;61:1188–1194. [PubMed: 15583110]
- Spitzer R. Diagnosis and need for treatment are not the same. *Archives of General Psychiatry* 1998;55:120. [PubMed: 9477924]
- Stetser, M.; Shepherd, J.; Moore, T. Using the Census 2000/2001 Supplementary Survey as a sampling frame for the National Epidemiological Survey on Alcohol and Related Conditions. 2002. <http://www.amstat.org/sections/srms/proceedings/y2002/Files/JSM2002-000531.pdf>. accessed on 1st July 2006>

Figure 1.

Estimated prevalence of 12 month drug dependence according to “ungated” and “gated” assessment approaches. Data from the NESARC surveys, United States, 2001–2002 (Unweighted sample size, $n = 43,093$). Gating refers to the situation where dependence is only assessed if the participant endorses one or more clinical features of abuse.

Table 1

Estimated prevalence of 12 month cocaine dependence by background characteristics, according to “gated” and “ungated” approaches.
Data from the NESARC surveys, United States, 2001–2002 (Unweighted sample size, n =43,093).

	Dependence - ungated approach					Dependence – gated approach ¹				
	%	95%CI ³	Adjusted OR	95%CI ⁴	p	%	95%CI ³	Adjusted OR	95%CI ⁴	p
<i>Cocaine dependence</i>	0.13	0.09, 0.19	--	--	--	0.12	0.08, 0.17	--	--	--
Males (n=18,518)	0.21	0.13, 0.34	4.40	2.00, 9.67	0.0004	0.18	0.11, 0.29	3.92	1.73, 8.87	0.0014
Females (n= 24,575)	0.06	0.04, 0.11	1			0.06	0.03, 0.11	1		
18–24 years (n= 5,199)	0.33	0.17, 0.65	5.30	2.01, 13.94	0.0010	0.27	0.13, 0.53	5.37	1.79, 16.06	0.0032
25–34 years (n= 7,759)	0.18	0.08, 0.42	4.71	1.42, 15.60	0.0121	0.18	0.07, 0.41	5.49	1.56, 19.26	0.0086
35–44 years (n= 9,090)	0.19	0.12, 0.31	6.24	2.29, 17.00	0.0005	0.18	0.11, 0.30	7.29	2.52, 21.06	0.0004
45+ years (n= 21,045)	0.04	0.02, 0.08	1			0.03	0.01, 0.07	1		
Non-Hispanic white (n=24,507)	0.10	0.06, 0.17	1			0.09	0.05, 0.15	1		
Non-Hispanic Black (n= 8,245)	0.25	0.14, 0.44	1.74	0.81, 3.78	0.1554	0.21	0.12, 0.38	1.68	0.75, 3.79	0.2056
Hispanic (n= 8,308)	0.19	0.08, 0.45	0.98	0.35, 2.72	0.9700	0.19	0.08, 0.45	1.14	0.41, 3.12	0.7993
Other ² (n= 2,033)	0.16	0.04, 0.75	1.25	0.26, 6.04	0.7760	0.16	0.04, 0.75	1.47	0.31, 7.05	0.6259
Annual Personal Income										
US\$0–19 999	0.20	0.13, 0.31	14.06	4.30, 45.97	0.0001	0.17	0.11, 0.26	19.97	4.32, 92.26	0.0002
US\$20 000–34 999	0.16	0.08, 0.33	8.84	2.41, 32.44	0.0014	0.16	0.08, 0.33	14.43	2.94, 70.80	0.0013
US\$35 000+	0.02	0.01, 0.06	1			0.01	0.00, 0.05	1		

Note: Gating refers to the situation where dependence is only assessed if the participant endorses one or more clinical features of abuse.

²Note that due to very small numbers, the categories of “Asian”, “Native American” and other racial groups were combined into “Other”.

³Confidence intervals calculated using Taylor series linearization, adjusting for clustering using sampling strata and primary sampling units.

⁴Confidence intervals calculated using Taylor series linearization, adjusting for clustering using sampling strata and primary sampling units, and including all background variables in the model.

Table 2

Estimated prevalence of 12 month drug dependence using the simulated ungated and gated assessment approaches. Data from the NESARC surveys, United States, 2001–2002 (Unweighted sample size, $n = 43,093$).¹

	Ungated dependence		Gated dependence		Ungated dependence		Gated dependence		Kappa (95%CI) [Z, p value]
	n		n		%	95%CI	%	95%CI	
Any drug (excluding cannabis) ²	139		104	0.36	0.29, 0.45		0.28	0.22, 0.36	0.86 (0.81, 0.90) [179.49, <.0001]
Cannabis	133		110	0.32	0.25, 0.41		0.26	0.21, 0.33	0.91 (0.87, 0.94) [188.74, <.0001]
Cocaine	49		44	0.13	0.09, 0.19		0.12	0.08, 0.17	0.95 (0.90, 0.99) [196.7, <.0001]
Opioids (excluding heroin)	41		27	0.11	0.07, 0.18		0.08	0.05, 0.13	0.79 (0.69, 0.90) [168.4, <.0001]
Stimulants (excluding cocaine)	27		24	0.07	0.05, 0.11		0.06	0.04, 0.10	0.94 (0.87, 1.00) [195.7, <.0001]
Sedatives	28		10	0.07	0.05, 0.10		0.03	0.01, 0.05	0.53 (0.33, 0.72) [124.03, <.0001]
Anxiolytics	19		10	0.05	0.03, 0.08		0.03	0.02, 0.06	0.69 (0.50, 0.88) [150.6, <.0001]
Hallucinogens	8		7	0.02	0.01, 0.04		0.01	0.01, 0.04	0.93 (0.80, 1.00) [194.2, <.0001]

¹ Gating refers to the situation where dependence is only assessed if the participant endorses one or more features of abuse.

² Includes cocaine, opioids, heroin, stimulants, sedatives, anxiolytics, hallucinogens, and inhalants.