



Published in final edited form as:

Drug Alcohol Depend. 2013 January 1; 127(0): 215–219. doi:10.1016/j.drugalcdep.2012.07.009.

Prevalence of DSM-IV and DSM-5 Alcohol, Cocaine, Opioid, and Cannabis Use Disorders in a Largely Substance Dependent Sample

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Abstract

BACKGROUND—The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) will soon replace the DSM-IV, which has existed for nearly two decades. The changes in diagnostic criteria have important implications for research and for the clinical care of individuals with Substance Use Disorders (SUDs).

METHODS—We used the Semi-Structured Assessment for Drug Dependence and Alcoholism to evaluate the lifetime presence of DSM-IV abuse and dependence diagnoses and DSM-5 mild, moderate, or severe SUDs for alcohol, cocaine, opioids, and cannabis in a sample of 7,543 individuals recruited to participate in genetic studies of substance dependence.

RESULTS—Switches between diagnostic systems consistently resulted in a modestly greater prevalence for DSM-5 SUDs, based largely on the assignment of DSM-5 diagnoses to DSM-IV “diagnostic ophans” (i.e., individuals meeting one or two criteria for dependence and none for abuse, and thus not receiving a DSM-IV SUD diagnosis). The vast majority of these diagnostic switches were attributable to the requirement that only two of 11 criteria be met for a DSM-5 SUD diagnosis. We found evidence to support the omission from DSM-5 of the legal criterion due to its limited diagnostic utility. The addition of craving as a criterion in DSM-5 did not substantially affect the likelihood of an SUD diagnosis.

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Disclosure: Kyle Peer, Lior Rennert, and Kevin G. Lynch have no disclosures to make.

CONCLUSION—The greatest advantage of DSM-5 appears to be its ability to capture diagnostic orphans. In this sample, changes reflected in DSM-5 had a minimal impact on the prevalence of SUD diagnoses.

Keywords

DSM-IV; DSM-5; Substance Use Disorders; Substance Abuse; Substance Dependence

1. INTRODUCTION

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) is scheduled for release in May 2013 (www.dsm5.org). It will replace the DSM-IV, which was initially published in 1994. Changes that have been made to the diagnostic criteria for Substance Use Disorders (SUDs) in DSM-5, which are intended to increase their validity and utility, include: 1) omission of the criterion “recurrent legal problems,” 2) addition of a “craving” criterion, and 3) combining abuse and dependence to yield an SUD that is mild (i.e., two or three of the 11 criteria met), moderate (i.e., four or five criteria met) or severe (i.e., six or more criteria met) (O’Brien, 2011; www.dsm5.org).

Hazardous substance use [which is most often endorsed for alcohol and most commonly involves driving while intoxicated (DWI)] is the criterion that most often results in a DSM-IV alcohol abuse diagnosis. However, it has been argued that DWI should not be the sole basis for a psychiatric diagnosis (Hasin et al., 1999) or at the extreme that it should not be a diagnostic criterion at all (Martin et al., 2011). A diagnosis of alcohol abuse based exclusively on hazardous drinking was associated with lower rates of problematic drinking, alcohol dependence, and help-seeking behavior at a 3-year follow up than alcohol abuse diagnosed using the other criteria, suggesting that it represents a less extreme form of Alcohol Use Disorder (AUD) (Agrawal et al., 2010). The requirement in DSM-5 that two criteria be met for a diagnosis of a SUD excludes individuals for whom the only criterion for a SUD is hazardous use.

An important rationale for the changes in DSM-5 is the effort to capture “diagnostic orphans,” i.e., individuals meeting one or two criteria for dependence and none for abuse, and thus not receiving a DSM-IV SUD diagnosis (www.dsm5.org). Population studies show that changes in diagnostic prevalence resulting from the application of DSM-5 criteria are largely attributable to the assignment of a diagnosis to diagnostic orphans (Agrawal et al., 2011; Mewton et al., 2011). Hagman and Cohn (2011) found that 34.1% of 396 college students who reported any alcohol consumption in the past 90 days were DSM-IV diagnostic orphans. These individuals met an average of 1.4 alcohol dependence criteria. In contrast, using DSM-5 criteria, only 15% of individuals were diagnostic orphans, suggesting that, in college populations, DSM-5 provides greater diagnostic coverage for less severely affected individuals than DSM-IV. Combining this with evidence that diagnostic orphans are at increased risk to develop an AUD suggests that diagnostic orphans among college students and other groups could benefit from diagnosis and intervention (Harford et al., 2009). To assign diagnoses to these individuals, DSM-5 combines abuse and dependence criteria and reduces the number of criteria required for a diagnosis.

The decision to remove the recurrent legal problems criterion was informed by studies showing that its prevalence is much lower than that of the other criteria and that it had poor psychometric properties (i.e., low discrimination values, high severity and low factor loadings) (Mewton et al., 2010; Hasin et al., 2012). It has also been argued that legal problems may not be a valid measure of SUD, are heavily influenced by chance, and are not necessarily a clinical indicator (Proctor et al., 2012).

Although craving is likely to be a valid indicator of the presence of an SUD and is a key target of pharmacotherapy for addiction (O'Brien, 2005), there is concern over its potential redundancy with other criteria (Keyes et al., 2011; Mewton et al., 2010). Craving added little information to that provided by the other 10 DSM-5 diagnostic criteria (Mewton et al., 2010) and did not identify additional cases (Hasin et al., 2012; Keyes et al., 2011). Nevertheless, its inclusion increases comparability between DSM-5 and the International Classification of Diseases (Keyes et al., 2011), which in its Tenth Edition (ICD-10) includes craving as a diagnostic criterion (World Health Organization, 1992).

The decision to combine diagnostic criteria for alcohol abuse and dependence was based on studies showing that all of the criteria lay along a latent alcohol use severity continuum (Shmulewitz et al. 2010; Mewton et al., 2010; Hagman and Cohn, 2011). Similar findings have been reported for cannabis, cocaine, heroin, amphetamine and prescription drug use disorders (Saha et al., 2012; Hasin et al., 2012).

Comparisons of diagnostic concordance between DSM-IV and DSM-5 have yielded variable findings. Agrawal et al. (2011) reported an 11.3% greater prevalence of alcohol use disorders (AUDs) using DSM-5 criteria compared with DSM-IV criteria. In contrast, Mewton et al. (2010) reported that the application of DSM-5 criteria resulted in a 61.7% greater prevalence than DSM-IV criteria. A major reason for these discrepant findings appears to be that "hazardous use" was operationalized very differently in the two studies (Agrawal et al., 2011). Diagnostic discordance, particularly that attributable to "diagnostic switching," in which an individual receives a diagnosis in one but not the other system, can yield substantial changes in prevalence and thereby affect treatment decisions (Agrawal et al., 2010). An evaluation of current cocaine use disorders among more than 6,000 state prison inmates showed a 13% lower prevalence for DSM-5 compared with DSM-IV diagnoses (Proctor et al., 2012). Similarly, the application of DSM-5 criteria resulted in a 2% lower prevalence of current opioid use disorders in a sample of chronic pain patients (Boscarino et al., 2011).

The primary aim of the present study was to determine the extent to which the proposed changes in DSM diagnostic criteria and definitions would change the prevalence of cocaine, alcohol, cannabis, and opioid use disorders in a large sample composed principally of individuals with one or more SUDs. A secondary aim was to determine the extent to which the proposed changes were a function of the assignment of a DSM-5 diagnosis to DSM-IV diagnostic orphans.

2. METHODS

2.1 Sample

A total of 7,543 subjects were aggregated from family-based and case-control genetic studies of substance dependence (primarily cocaine and opioid dependence and, to a lesser extent, alcohol dependence). Affected subjects were recruited following telephone screening that indicated the presence of a cocaine, opioid, or alcohol dependence diagnosis. Controls were recruited after screening indicated the absence of a major psychiatric or substance use disorder diagnosis. Subjects were recruited at five sites: Yale University School of Medicine (n=3,223), the University of Connecticut Health Center (n=2,996), the University of Pennsylvania School of Medicine (n=726), the Medical University of South Carolina (n=475), and McLean Hospital (n=122). Only probands from the small nuclear families that participated in the genetic studies were included in the present analyses.

The sample included 6,532 subjects (86.6% of the total) with one or more SUDs and 1,011 (13.4% of the total) control subjects from the case-control studies. Participants' mean age

was 39.9 (SD = 11.2) years; 55% were men; 44% were black, 40% were white, 8% were Hispanic, and 8% were of other races/ethnicities. They reported a median of 12 years of education. Because analyses conducted separately by race/ethnicity and sex yielded results that were very similar in all respects to those for the whole sample, we present data only for the entire sample. In addition, analyses limited to individuals with an SUD yielded findings that were similar to those for the full sample, so data from only the full sample are presented in this manuscript.

The institutional review board at each institution approved the protocol and informed consent forms. The National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism each provided a Certificate of Confidentiality for the conduct of the study. Subjects were paid for their participation.

2.2 Assessment

Subjects were interviewed with the Semi-Structured Assessment for Drug Dependence and Alcoholism (SSADDA), a computer-assisted interview that yields lifetime DSM-IV diagnoses of SUDs (Pierucci-Lagha et al., 2005; 2007). For each substance, the SSADDA also includes questions that elicit information regarding craving (e.g., “In situations where you couldn’t drink, did you ever have such a strong desire for it that you couldn’t think of anything else?”). Although clustering of criteria within a 12-month period was required for a diagnosis of both DSM-IV dependence and DSM-5 SUD, the clustering of craving or abuse criteria with the other criteria in DSM-5 was not assessed in the SSADDA.

Hazardous substance use was assessed with the following two questions: (1) “Have you ever been under the effects of (substance) when it increased your chances of getting hurt, for instance, when driving a car or boat, using knives, machinery or guns, crossing against traffic, climbing or swimming?” (2) “Have you accidentally injured yourself when you were using (substance); that is, had a bad fall, cut or burned yourself badly, got hurt in a traffic accident, or anything like that?”

2.3 Statistical Analysis

For each subject, we determined the lifetime presence of the 12 combined DSM-IV and DSM-5 criteria for each of four substances: alcohol, cocaine, opioids, and cannabis. We applied the DSM-IV and DSM-5 algorithms to classify subjects in terms of DSM-IV abuse (without dependence) and dependence diagnoses and DSM-5 mild, moderate or severe SUD. For each substance, our primary comparisons were between binary classifications of 1) neither abuse nor dependence versus either abuse or dependence under DSM-IV, and 2) no SUD versus any SUD (mild, moderate, or severe) under DSM-5. We used the kappa statistic (Agresti, 2002) to measure chance-corrected levels of agreement between the two classifications and conditional odds ratios (Agresti, 2002) to indicate the direction and magnitude of discordance among the participants whose diagnosis changed between the two systems. We also compared the three-level DSM-IV diagnosis to three- and four-level DSM-5 diagnoses.

3. RESULTS

3.1 Prevalence and Concordance of SUD Criteria and Diagnoses

With the exception of legal problems, the prevalence rates of the 12 criteria were high, ranging from 0.25 to 0.59 for alcohol, cocaine, and opioids (Table 1). The corresponding range for cannabis was lower, ranging from 0.12 to 0.29. The distributions of the total number of criteria endorsed for cocaine and opioid disorders were bimodal: for cocaine, 36% of individuals endorsed no criteria and 33% endorsed at least 10 criteria, while for

opioids the percentages were 64% and 23%, respectively. For alcohol, 30% of individuals endorsed no criteria, with an average count of 7 criteria among those who endorsed at least one criterion. For cannabis, 50% of participants endorsed no criteria, with an average count of 5 among those who endorsed at least one criterion.

Table 2 shows the prevalence rates of DSM-IV abuse or dependence for alcohol, cocaine, opioids and cannabis and the corresponding prevalence rates for SUD under DSM-5. The prevalence rates for DSM-5 consistently exceed those for DSM-IV, but the differences are modest. The percent agreement between the diagnoses under DSM-IV and DSM-5 was very high, ranging from 92.9% to 99.0%. The corresponding kappa statistics ranged from 0.85 to 0.97, indicating a very high level of chance-corrected agreement between the presence or absence of DSM-IV vs. DSM-5 diagnoses.

3.2 Diagnostic Switching

Although the concordance rates were high for all four substances, some patterns are discernible when examining the conditional odds ratios for the discordant cases, which describe the relative rates of the two possible types of discordance. For example, the conditional odds ratio for alcohol (see Table 2) indicates that, among discordant subjects, the odds of switching from no diagnosis under DSM-IV to a diagnosis under DSM-5 are 1.26 times the odds of switching in the opposite direction. For all four substances, the odds ratios exceed 1 and, with the exception of opioids, the corresponding 95% confidence intervals exclude 1. Thus, with the exception of opioids, among discordant subjects, switching from no diagnosis under DSM-IV to a diagnosis under DSM-5 is significantly more likely than a switch in the opposite direction. This means that the application of DSM-5 criteria should lead to a higher prevalence of SUD diagnoses than with DSM-IV criteria, although the differences will be small.

A switch from having no DSM-IV diagnosis to having a DSM-5 diagnosis can occur only for people who endorsed no DSM-IV abuse criteria and no more than two DSM-IV dependence criteria. For these people, a switch could occur in two ways: (a) people who endorsed only one DSM-IV dependence criterion could endorse the new craving criterion or (b) people who endorsed two DSM-IV dependence criteria qualify for a DSM-5 diagnosis due to the lower threshold, irrespective of whether they endorse craving. For our sample, the vast majority of switches from no DSM-IV diagnosis to a DSM-5 diagnosis were due to the lower threshold: 99% for alcohol, 90% for cocaine, 93% for opioids, and 85% for cannabis.

The most common reason for subjects to switch from a diagnosis in DSM-IV to no diagnosis in DSM-5 was that they met only one abuse criterion and no DSM-IV dependence criteria. This accounted for 99% of the 160 such switches for alcohol, 94% of the 34 such switches for cocaine, 100% of the 32 such switches for opioids, and 98% of the 204 such switches for cannabis. The remaining switches involved individuals who met two DSM-IV criteria, one of which was the legal criterion and the other of which was one of the seven dependence criteria.

Endorsement rates for the legal criterion were substantially lower than those for the other criteria: for alcohol, the rate was 6% compared to an average rate of 42% for the other criteria, with similar patterns of 12% versus 49%, 8% versus 29%, and 3% versus 20% for cocaine, opioids, and cannabis, respectively. Moreover, removal of the legal criterion resulted in negligible diagnostic switching, across all four substances.

In contrast, endorsement rates for the craving criterion were similar to those for the other criteria (excluding the legal criterion). The largest difference was for alcohol, where the rate of craving was 26% compared with an average rate of 43% for the other criteria, with 45%

versus 50%, 29% versus 30%, and 18% versus 20% for cocaine, opioids, and cannabis, respectively. Nonetheless, inclusion of the craving criterion had very little impact on the likelihood of diagnostic switching between the two DSM versions.

3.3 Multi-level Diagnoses

We also compared the two diagnostic systems on the basis of three- and four-level diagnoses. For DSM-IV, the levels were (I) neither abuse nor dependence, (II) abuse without dependence, and (III) dependence with or without abuse. For DSM-5, the levels were (I) no SUD, (II) mild SUD, (III) moderate SUD, and (IV) severe SUD. Collapsing levels III and IV of the DSM-5 classification yields a three-level diagnosis, which showed a high rate of agreement with the DSM-IV three-level diagnosis: the kappa statistics for alcohol, cocaine, opioids, and cannabis were 0.84, 0.94, 0.97, and 0.80, respectively.

Comparisons between the three-level DSM-IV and the four-level DSM-5 diagnoses showed clear patterns of correspondence between a dependence diagnosis under DSM-IV and a severe SUD diagnosis under DSM-5. For alcohol, cocaine, and opioids, the rates of severe DSM-5 SUD among individuals with a DSM-IV dependence diagnosis were 85%, 91%, and 98%, respectively. For cannabis, 67% of subjects with a DSM-IV dependence diagnosis met criteria for a DSM-5 severe SUD, with 28% meeting criteria for a DSM-5 moderate SUD.

There was greater variability in the DSM-5 diagnosis level among individuals with a DSM-IV abuse diagnosis, with the majority receiving a diagnosis of DSM-5 moderate SUD (i.e., 56%, 55%, 51%, and 56% for alcohol, cocaine, opioids, and cannabis, respectively). The rates of participants with DSM-IV abuse diagnoses receiving DSM-5 mild SUD diagnoses were 17%, 20%, 28%, and 23% for alcohol, cocaine, opioids, and cannabis, respectively, and 25%, 25%, 21%, and 21%, respectively received DSM-5 severe SUD diagnoses.

4. DISCUSSION

Other inquiries into the impact of the changes in DSM criteria have shown an 11–67% greater prevalence of DSM-5 AUDs compared with DSM-IV AUDs (Mewton et al., 2011; Agrawal et al., 2011) and a modest decrease in cocaine use disorders (Proctor et al., 2012) and opioid use disorders (Boscarino et al., 2011). In the present sample, the prevalence of disorders was only negligibly greater in DSM-5 for all four substances examined. The greater number of diagnoses in DSM-5 was due almost entirely to the assignment of a diagnosis to individuals who under DSM-IV received no SUD diagnosis despite meeting one or two dependence criteria (i.e., diagnostic orphans).

The newly added criterion of craving was endorsed as often as the other criteria, supporting its construct validity. Nonetheless, consistent with findings from other studies (Keyes et al., 2011; Mewton et al., 2011), the addition of a craving criterion did not identify a significant number of new cases, suggesting that it is redundant with the other criteria.

Also consistent with the findings from other studies (Shmulewitz et al., 2010; Hasin et al., 2012), we found that the legal criterion was endorsed far less often than the other 11 criteria, demonstrating its limited diagnostic utility. This was the case here, despite the fact that the study sample had an overrepresentation of substance-dependent individuals. Moreover, omission of the legal criterion resulted in a negligible amount of diagnostic switching. Thus, the findings presented here support the decision to omit this criterion.

Subjects in the present study had lower rates of endorsement of cannabis use disorders than of alcohol, cocaine, and opioid use disorders. This is likely because the participants were ascertained primarily for genetic studies of opioid, cocaine, and alcohol dependence.

Although the composition of our sample was similar to that of Hasin et al. (2012), the prevalence rate of AUDs in our sample was much higher than that in the epidemiologic samples of Shmulewitz et al. (2010), Keyes et al. (2011), and Mewton et al. (2011). Thus, findings from the present study complement the findings from studies that compared DSM-IV and DSM-5 using epidemiologic samples in the United States (Agrawal et al. 2011) and Australia (Mewton et al. 2011). Because our study sample was comprised predominantly of individuals with a lifetime SUD, our findings cannot be generalized to the general population.

Differences in the way the hazardous use criterion was operationalized led to a substantial discrepancy between the results of two population studies of the impact of DSM-5 criteria on the prevalence of alcohol abuse (Agrawal et al., 2011; Mewton et al. 2011). Taking the differences in definition of the criterion into account resulted in similar prevalence differences in these studies (Agrawal et al., 2011). The two SSADDA questions used to identify the presence of hazardous use in the present study differ slightly from the questions used to ascertain hazardous use in other studies. This limits the comparison of the results reported here with those from previous studies.

An additional limitation in the present study is that our ascertainment of craving was based on a single question: "Have you ever had such a strong desire for (substance) that you couldn't think of anything else?" This question may capture only severe craving, in contrast to a more general question such as: "Have you ever had a strong desire or craving for (substance)?" Different questions designed to elicit the presence of craving have yielded different endorsement rates (Agrawal, 2011). As with hazardous use, it remains to be determined how best to elicit these criteria to ensure comparability across studies.

Other limitations in the present study include the fact that, although the SSADDA measured craving, it did not assess whether craving clustered within the same 12-month period as other criteria. Similarly, clustering of DSM-IV abuse criteria could not be incorporated in the DSM-5 diagnoses. To ensure that this did not inflate our estimates of the prevalence of DSM-5 SUDs, we assessed the impact of clustering of the dependence symptoms on the rate of DSM-IV diagnoses. The results showed a very modest effect of the clustering requirement, suggesting that the lack of information on clustering for DSM-5 is unlikely to have confounded the results reported here. Because only lifetime SUD diagnoses were measured with the SSADDA, we were unable to examine the impact of the changes in DSM-5 on current SUDs. We also lacked a "gold standard" against which to evaluate the modest differences in the prevalence of SUD diagnoses between DSM-IV and DSM-5. The identification of valid biomarkers for SUD disorders would potentially enhance both the reliability and validity of SUD diagnoses, although to date, all DSM diagnoses have depended on self-reported information. Finally, the presence of control subjects reduced the prevalence of SUDs in our sample. However, analysis of the subsample recruited as affected cases showed that, as for the full sample, the rates of switching for alcohol and opioids between diagnoses from one system to the other were nearly equal, while the tendency to switch from no diagnosis under DSM-IV to a diagnosis under DSM-5 was more significant for cocaine and cannabis. The sample was comprised predominantly of individuals at the extremes of the diagnostic continuum, which could have limited the extent of diagnostic switching. A sample with a different distribution of criterion endorsement could show more diagnostic switching.

Despite these limitations, we found that the two diagnostic systems agreed to a great extent on the absence of a diagnosis and there was good correspondence between DSM-IV dependence and DSM-5 severe SUD. The DSM-IV abuse diagnosis tended to correspond to the DSM-5 moderate SUD diagnosis, in that half of the DSM-IV abuse diagnoses were

moderate SUD under DSM-5. However, the other half split about equally into mild and severe SUD, so that DSM-IV abuse did not consistently map onto a single severity level in DSM-5.

The findings obtained here have important implications for both clinical care and research. The diagnosis of moderate or severe DSM-5 SUD could result in more intensive treatments being provided to individuals than would be justified by a diagnosis of substance abuse in DSM-IV. In research settings, the emphasis on dependence in, for example, pharmacotherapy trials and genetic studies, is likely to be replaced by an emphasis on severe SUDs.

In summary, the greatest advantage of DSM-5 appears to be its ability to capture diagnostic orphans. We found that other changes from DSM-IV had a minimal impact on the prevalence of SUD diagnoses. The validity of a single diagnostic category with levels of severity warrants further study, as do the implications of these changes for clinical practice and research.

Acknowledgments

Supported by NIH grants DA12690, DA12849, DA18432, AA11330, AA017535, and VISN1 and VISN4 Veterans Affairs Mental Illness Research, Education, and Clinical Centers. Kathleen Brady, M.D., Ph.D. and Raymond Anton, M.D. of the Medical University of South Carolina, Roger Weiss, M.D. of McLean Hospital, and David Oslin, M.D. of the University of Pennsylvania oversaw study recruitment at their respective sites.

Henry Kranzler reports consulting arrangements with Alkermes, Lilly, Lundbeck, Pfizer, and Roche. He also has received support from the Alcohol Clinical Trials Initiative (ACTIVE) of the American College of Neuropsychopharmacology, which has received support from Eli Lilly, Janssen, Schering Plough, Lundbeck, Alkermes, GlaxoSmithKline, Abbott, and Johnson & Johnson.

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Table 1Lifetime Rates of Endorsement of DSM Criteria¹

	Alcohol	Cocaine	Opioids	Cannabis
Neglect Roles	0.39	0.42	0.25	0.15
Hazardous Use	0.49	0.37	0.24	0.25
Legal Problem	0.06	0.12	0.08	0.03
Social/Interpersonal	0.51	0.54	0.30	0.17
Larger/Longer	0.59	0.55	0.30	0.26
Time Spent	0.33	0.52	0.31	0.29
Quit/Control	0.52	0.59	0.33	0.12
Tolerance	0.46	0.43	0.30	0.22
Activities Given Up	0.39	0.49	0.28	0.19
Withdrawal	0.30	0.48	0.33	0.18
Health Problems	0.34	0.56	0.31	0.16
Craving	0.26	0.45	0.29	0.18

¹ Neglect roles, hazardous use, legal problems and social/interpersonal problems are the four DSM-IV abuse criteria. Legal problems are not included in DSM-5. Larger/longer, time spent, quit/control, tolerance, activities given up, withdrawal, and health problems are the DSM-IV dependence criteria. Craving is the criterion that was added for DSM-5.

Table 2
Prevalence of Diagnoses and the Rate of Concordance between DSM-IV and DSM-5

	% DSM-IV	% DSM-5	% Agreement	Kappa	Conditional Odds Ratio (95% CI)
Alcohol	63.0	63.5	95.2	.90	1.26 (1.03, 1.55)
Cocaine	61.5	62.2	98.4	.97	2.56 (1.72, 3.80)
Opioids	34.7	34.8	99.0	.98	1.34 (0.85, 2.12)
Cannabis	39.4	41.0	92.9	.85	1.61 (1.35, 1.92)

Table 3

Comparison of DSM-5 and DSM-IV Diagnosis Levels

DSM-5	Alcohol n (%)			Cocaine n (%)			Opioids n (%)			Cannabis n (%)		
	DSM-IV			DSM-IV			DSM-IV			DSM-IV		
	None	Abuse only	Dependence	None	Abuse only	Dependence	None	Abuse only	Dependence	None	Abuse only	Dependence
None	2592 (34.5)	160 (2.1)	0 (0.0)	2820 (37.4)	34 (0.5)	0 (0.0)	4885 (64.8)	32 (0.4)	0 (0.0)	4246 (56.3)	204 (2.7)	0 (0.0)
Mild	202 (2.7)	532 (7.1)	86 (1.1)	87 (1.2)	94 (1.3)	72 (1.0)	43 (0.6)	59 (0.8)	22 (0.3)	329 (4.4)	491 (6.5)	117 (1.6)
Moderate	0 (0.0)	239 (3.2)	483 (6.4)	0 (0.0)	43 (0.6)	350 (4.6)	0 (0.0)	24 (0.3)	146 (1.9)	0 (0.0)	181 (2.4)	575 (7.6)
Severe	0 (0.0)	11 (0.2)	3238 (42.9)	0 (0.0)	1 (0.0)	4042 (53.6)	0 (0.0)	0 (0.0)	2332 (30.9)	0 (0.0)	5 (0.1)	1395 (18.5)

Note: Each sub-table comprises 7543 participants, cross-classified by DSM-5 and DSM-IV diagnosis level for a given substance. The primary binary comparison described in Sections 3.1 and 3.2 is given by collapsing the rows of DSM-5 diagnoses into {None} and {Mild, Moderate, Severe} and the columns into {None} and {Abuse Only, Dependence}. The three-level comparison described in Section 3.3 is obtained by collapsing the rows into {None}, {Mild}, and {Moderate, Severe}