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A cross-national examination of differences in classification of lifetime alcohol use disorder between DSM-IV and DSM-5: Findings from the World Mental Health Survey

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Abstract

Aims—To examine the diagnostic overlap in DSM-IV and DSM-5 alcohol use disorder (AUD) and determine the clinical correlates of changing diagnostic status across the two classification systems.

Design—DSM-IV and DSM-5 definitions of AUD were compared using cross-national community survey data.

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Declaration of interest:

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Setting—Nine low-, middle- and high-income countries.

Participants/Cases—31,367 respondents to surveys in the World Health Organization World Mental Health Survey Initiative.

Measures—Composite International Diagnostic Interview, version 3.0 was used to derive DSM-IV and DSM-5 lifetime diagnoses of AUD. Clinical characteristics, also assessed in the surveys, included lifetime DSM-IV anxiety, mood and drug use disorders, lifetime suicidal ideation, plan and attempt, general functional impairment and psychological distress.

Findings—Compared to DSM-IV AUD (12.3%, SE=0.3%), the DSM-5 definition yielded slightly lower prevalence estimates (10.8%, SE=0.2%). Almost one third (n=802) of all DSM-IV Abuse cases switched to sub-threshold according to DSM-5 and one quarter (n=467) of all DSM-IV diagnostic orphans switched to mild AUD according to DSM-5. New cases of DSM-5 AUD were largely similar to those who maintained their AUD across both classifications. Similarly, new DSM-5 *non*-cases were similar to those who were sub-threshold across both classifications. The exception to this was with regards to the prevalence of any lifetime drug use disorder.

Conclusions—In this large cross-national community sample, the prevalence of DSM-5 lifetime AUD was only slightly lower than the prevalence of DSM-IV lifetime AUD. Nonetheless there was considerable diagnostic switching, with a large number of people inconsistently identified across the two DSM classifications.

Introduction

Alcohol use and alcohol use disorder (AUD) account for significant disability globally (1). Epidemiological surveys of the general population demonstrate that AUD has a lifetime prevalence close to 20%, a typical onset in young adulthood, is accompanied by substantial lifetime psychiatric comorbidity and can be associated with significant treatment-seeking delay (2–4).

The symptom criteria used to diagnose alcohol use disorder have undergone significant change in the most recent, fifth revision of the American Psychiatric Association's Diagnostic and Statistical Manual for Mental Disorders (DSM-5) (5). Four major changes occurred (6). Firstly, the distinction between DSM-IV alcohol abuse and DSM-IV alcohol dependence was removed, and DSM-5 AUD is now conceptualized as a unitary disorder. Secondly, the diagnostic criterion reflecting alcohol-related legal problems was removed. Thirdly, a new criterion, reflecting craving or a strong desire to drink alcohol, was added. Arguably the biggest change was to the threshold for a diagnosis of AUD. Instead of separate thresholds for DSM-IV alcohol abuse (one out of four symptom criteria required) and DSM-IV alcohol dependence (three out of seven symptom criteria required) the DSM-5 definition of AUD requires at least two out of a total of eleven symptom criteria. The DSM-5 definition of AUD also specifies severity cut-points with 2–3 symptom criteria indicating mild AUD, 4–5 symptom criteria indicating moderate AUD and 6+ symptom criteria indicating severe AUD.

Even before the official publication of the DSM-5 there was concern that the new criteria would substantially increase the prevalence of AUD in the general population (7). These

concerns have been somewhat realised. While some studies have shown modest (8, 9) or no meaningful (10) differences in prevalence between AUD defined according to DSM-IV versus DSM-5, others have demonstrated more substantial differences (11), with one study suggesting that the prevalence of past-year AUD would increase by just over 60% with the new DSM-5 definition (12). These studies have been conducted primarily within single, high-income countries. Little is known about the impact of definitional changes in the diagnosis of AUD to the prevalence of AUD in middle- and low-income countries.

One further issue that has received relatively little attention is the impact of different AUD definitions on movements in and out of AUD “caseness” (i.e. whether a person meets criteria for a diagnosis of AUD or not). There has been considerable interest in the group of people who endorse one or two DSM-IV dependence criteria and no DSM-IV abuse criteria. Known as diagnostic orphans (13) these individuals share similar characteristics to diagnosed cases with alcohol abuse or alcohol dependence (14). A certain proportion of these DSM-IV diagnostic orphans, i.e. those who endorse two dependence criteria, become new cases with the application of the DSM-5 definition of AUD. At the same time, because DSM-IV abuse could be diagnosed with the endorsement of only one criterion yet DSM-5 AUD requires endorsement of at least two criteria, a certain proportion of DSM-IV abuse cases become new non-cases with the application of DSM-5. It is reasonable to assume that these new cases of DSM-5 AUD should be similar in clinical profile to those who maintain their caseness across both DSM-IV and DSM-5 classification systems. Similarly, the new non-cases according to DSM-5 should be similar in clinical profile to DSM-IV diagnostic orphans. However, in practice, this remains to be seen.

With this in mind, the aims of the current study are:

1. To examine the overlap between DSM-IV and DSM-5 categories of AUD;
2. To quantify the rates of conversion from sub-threshold DSM-IV AUD to threshold DSM-5 AUD and from threshold DSM-IV to sub-threshold DSM-5 AUD;
3. To characterize the AUD symptom criteria profiles of subgroups who change their diagnostic status between the two classification systems; and
4. To investigate the clinical correlates of changing diagnostic status between the two classification systems.

Methods

Sample

Data came from nine countries that participated in the World Health Organization’s (WHO) World Mental Health Survey (WMHS) Initiative, a global initiative designed to collect nationally or regionally representative survey data using a consistent survey instrument. While the WMHS Initiative includes more than nine countries, we only included in the analysis those countries that assessed alcohol dependence regardless of whether or not respondents met criteria for DSM-IV alcohol abuse. Data came from adults in four lower- and middle-income countries and five upper-income countries, as classified by the World

Bank (see Table 1). The average response rate across surveys was 64.7% and the total sample size was 44,341. The specific sample characteristics for each of the nine surveys are shown in Table 1. Interviews were carried out by trained lay-interviewers using standardized procedures. In the majority of surveys (except Australia, Iraq and Romania) the interview was carried out in two parts: Part 1 involved the assessment of a set of core mental disorders and Part 2 involved assessment of all associated correlates of these disorders. Part 2 was administered to all respondents who met criteria for at least one core mental disorder as well as a probability sub-sample of all others. Data from Part 2 were weighted to account for the under-representation of non-cases. Part 1 data were used for four countries (Australia, Brazil, Iraq and Romania) and Part 2 data were used for the remaining five countries (Colombia, Northern Ireland, Poland, Portugal and Spain).

Diagnostic Instrument

Diagnoses of DSM-IV disorders over lifetime were assessed using the World Health Organization's Composite International Diagnostic Interview Version 3.0 (15), a fully structured interview with questions designed to operationalize the DSM-IV diagnostic criteria for each mental disorder. Substance use disorders assessed were alcohol abuse, alcohol dependence, drug abuse and drug dependence. Anxiety disorders assessed were panic disorder (with or without agoraphobia), agoraphobia without a history of panic disorder, generalized anxiety disorder, posttraumatic stress disorder, separation anxiety disorder, social phobia, specific phobia and obsessive compulsive disorder. Mood disorders included major depressive disorder, dysthymia and bipolar disorder.

A series of 16 questions were used to operationalize the DSM-IV and DSM-5 symptom criteria for AUD. These were asked of people who had consumed alcohol at or above a certain quantity/frequency threshold. In all countries except Australia respondents had to drink at least one to two days per week or, if drinking less often, then they had to consume at least three drinks per drinking day. The threshold was slightly higher in the Australian survey (either drinking three to four days per week or, if drinking less often then consuming at least three drinks per drinking day). To assess the new DSM-5 craving criterion, respondents needed to indicate that there was a time when they felt such a strong desire or urge to drink that they could not keep from drinking, or that they had wanted to drink so badly they could not think of anything else. The DSM-5 clustering criterion, two or more symptoms in the same year, could not be assessed. Therefore, to keep comparisons consistent we also did not apply the clustering criterion to DSM-IV diagnoses.

Statistical Analysis

Cross-tabulations were used to compare and contrast different categories of DSM-IV and DSM-5 AUD. Respondents were grouped into mutually exclusive diagnostic groups which, for DSM-IV, comprised of: 1. No AUD symptom criteria, 2. One or two dependence symptom criteria and no abuse symptom criteria ("Orphans"), 3. Abuse without Dependence, and 4. Dependence with or without Abuse. For DSM-5, these comprised of 1. No AUD symptom criteria, 2. Sub-threshold AUD (1 symptom criterion), 3. Mild AUD (2–3 symptom criteria), 4. Moderate AUD (4–5 symptom criteria) and 5. Severe AUD (6+ symptom criteria).

Specific attention was given to the sub-groups of respondents who moved in and out of caseness across the two classification systems. New DSM-5 cases (i.e. cases that were diagnostic orphans according to DSM-IV but switched to meeting criteria for Mild AUD in DSM-5) were directly compared, on clinical characteristics, to respondents who remained cases across both classification systems. Similarly, new DSM-5 *non*-cases (i.e. cases that met criteria for DSM-IV Abuse but switched to sub-threshold in DSM-5) were directly compared, on clinical characteristics, to respondents who remained as non-cases across both classification systems.

The clinical characteristics of interest were divided into four categories. Firstly, lifetime comorbid psychopathology was defined separately as DSM-IV any mood, any anxiety or any drug use disorders. Secondly, lifetime suicidality was defined separately as any suicidal ideation, suicide plan or suicide attempt. Thirdly, functional impairment was assessed by the WMHS version of the WHO Disability Assessment Schedule (WHODAS; (16)). This instrument assesses disability over the 30 days prior to interview across the following domains: role impairment, mobility, self-care, social functioning and cognitive functioning. Psychological distress was measured over the 30 days prior to interview by the 6-item version of the Kessler Psychological Distress Scale (K6; (17)).

Comorbid mental disorders and suicidality were treated as binary outcome variables and WHODAS and K6 scores as continuous outcome variables in all regression analyses. Univariate logistic regression was used for all binary variables with coefficients exponentiated and reported as odds ratios with associated 95% confidence intervals. Odds ratios represented the odds of having the clinical characteristic among those who switched their diagnostic caseness compared to those who maintained their diagnostic caseness (the reference group). Univariate linear regression was used to evaluate group differences for all continuous variables with results reported as beta coefficients and associated standard errors. Beta coefficients represented the mean difference in the clinical characteristic among those who switched compared to those who maintained their diagnostic caseness. In order to take into account the complex sampling designs of the individual surveys and accurately estimate error around estimates, data were analyzed using SAS-callable SUDAAN.

Results

In the pooled sample, the lifetime prevalence of DSM-IV AUD was 12.3% (8.0% for abuse and 4.3% for dependence, see Table 2). DSM-IV diagnostic orphans made up a further 5.3% of the total sample. The prevalence of DSM-5 AUD was 10.8% (5.6% mild, 2.3% moderate and 2.8% severe) with a further 6.5% being sub-threshold according to DSM-5.

Almost one third (n=802) of all DSM-IV Abuse cases switched to sub-threshold according to DSM-5, and one quarter (n=467) of all DSM-IV diagnostic orphans switched to mild AUD according to DSM-5 (see Table 3). The net effect was a relative reduction of 12% in the lifetime prevalence of AUD when diagnosed by DSM-5 compared to DSM-IV.

The overall prevalence of AUD differed across the nine countries from a low of 0.8% for DSM-IV and 0.9% for DSM-5 AUD in Iraq to a high of 23.2% for DSM-IV and 19.9% for

DSM-5 AUD in Australia. In six out of the nine countries (Australia, Spain, Romania, Northern Ireland, Poland and Portugal) the prevalence of AUD was lower in DSM-5 compared to DSM-IV, in two countries (Iraq and Brazil) the prevalence was higher in DSM-5 compared to DSM-IV and in one country (Colombia) the prevalence was identical across the two classification systems (data available on request).

Focusing specifically on the diagnostic switchers, cases of DSM-IV Abuse that switched to sub-threshold under DSM-5 (i.e. new non-cases) were most likely to endorse the use of alcohol in hazardous situations symptom criterion (58.2%; see Table 4). DSM-IV diagnostic orphans who switched to DSM-5 mild AUD (i.e. new cases) were most likely to endorse the larger amount/longer period symptom criterion (92.2%), followed by craving (25.8%), unsuccessful efforts to cut down (25.1%) and tolerance (24.3%).

The clinical correlates of switching diagnostic status between the two classification systems are presented in Table 5. New non-cases were similar in many respects to those who remained sub-threshold on both classification systems (“consistent non-cases”). The exception to this was in the likelihood of any DSM-IV drug use disorder where new non-cases were more likely to meet criteria for any drug use disorder compared to consistent non-cases. These two diagnostic groups were no different to each other with regards to lifetime suicidality and past 30-day general functional impairment and psychological distress.

New cases were also similar in most clinical variables to those who remained as cases on both classification systems (“consistent cases”). Again, the exception to this was in the likelihood of any DSM-IV drug use disorder, where new cases were *less* likely to meet criteria for any drug use disorder compared to consistent cases. New cases were also at greater odds of meeting criteria for a lifetime anxiety disorder compared to consistent cases. However, these two groups shared similar profiles with regards to suicidality, general functional impairment and psychological distress.

Discussion

The current study provides information on the diagnostic overlap between DSM-IV and DSM-5 AUD using data from a large, cross-national dataset. The novelty of this large cross-national study comes from its careful examination of the cases that fall on either side of the diagnostic threshold, particularly when those thresholds change, as they did between DSM-IV and DSM-5. As Wakefield (18) has recently commented, AUD is not an all-or-none phenomenon but instead exists along a continuum and any diagnostic demarcation along that continuum is likely to be somewhat arbitrary. For this reason, it becomes vital to examine those cases that sit just below or just above the suggested diagnostic threshold. The results indicate that overall, the prevalence declines slightly when cases are defined by DSM-5 compared to DSM-IV. Use of alcohol in hazardous situations is the symptom criterion endorsed most by those cases who changed from DSM-IV Abuse to sub-threshold according to DSM-5. New cases (i.e. those who were sub-threshold according to DSM-IV but became cases according to DSM-5) were largely similar to cases according to both DSM-IV and

DSM-5. The same was true for new versus existing non-cases. The exception to this was with regards to the odds of a drug use disorder.

Contrary to previous research (12) in which the prevalence of past-year DSM-5 AUD was around 60% *higher* than the prevalence of DSM-IV AUD, we found the prevalence of DSM-5 AUD was 12% *lower* than the prevalence of DSM-IV AUD. While it is difficult to know the exact cause of this discrepancy it is possible that differences between these studies in the ratio of total number of DSM-IV Abuse cases to total number of diagnostic orphans may have driven these opposing findings. In the Mewton et al. study, there were over six times as many diagnostic orphans as there were Abuse cases, affording a greater opportunity for diagnostic switches to result in new DSM-5 cases rather than new DSM-5 *non*-cases. In the current study the opposite was true, albeit to a lesser extent, with around 1.3 times as many Abuse cases as there were diagnostic orphans. Another explanation for the difference between the current findings and those of Mewton et al. may be the timeframe used to diagnose AUD. The Mewton et al study assessed each and every symptom criterion in the 12 months prior to interview and showed an increase in the prevalence of AUD under DSM-5 compared to DSM-IV, whereas the current study employed a lifetime timeframe and showed a slight decrease. It is notable that this pattern of findings is similar to that shown in a recent nosologic comparison of DSM-IV and DSM-5 alcohol and drug use disorders using data from the National Epidemiologic Survey on Alcohol and Related Conditions-III (19).

The symptom profiles of the different diagnostic groups highlight the symptom criteria that are highly endorsed by those who switch diagnostic status across the diagnostic classification systems. Among new DSM-5 *non*-cases, the drinking in hazardous situations symptom criterion was highly endorsed. This group of diagnostic switchers, by definition, can only endorse one symptom criterion. Therefore, a significant proportion of cases previously defined as having DSM-IV Abuse solely due to the drinking in hazardous situations are now excluded from a diagnosis of AUD. This finding is consistent with previous research (12, 20). The drinking in hazardous situations symptom criterion remains a contentious criterion. While some studies have suggested that a diagnosis of AUD based solely on the drinking in hazardous situations symptom criterion is unlikely to represent a true AUD (21) other research has demonstrated that diagnoses of DSM-IV Abuse with and without this criterion do not differ substantially with regards to key psychiatric predictors and sequelae such as childhood adversities, parental psychopathology and subsequent onset of other psychiatric disorders (22). In removing the legal problems criterion and adding a craving criterion, DSM-5 construes AUD as being less characterized by continued drinking despite social consequences and more defined by dependence symptoms. This shift may reduce earlier problem recognition, diagnosis, and earlier treatment all of which are typically related to alcohol-related legal, job, and relationship problems (23, 24). In addition, workplace and legal system interventions that influence entry into treatment are more likely to be associated with the behavioral consequences of heavy drinking as opposed to the severity of dependence (25).

Drinking larger amounts, or for longer periods of time, was highly endorsed by those who converted from DSM-IV diagnostic orphan status to DSM-5 AUD. In this context, it is important to note that the larger/longer, tolerance and hazardous use criteria are prone to

misinterpretation, particularly by young adults, relatively early in their drinking careers (26). As found in the current study, previous research has shown a very high endorsement of symptom criteria reflecting impaired control over alcohol use (including the larger amount/longer period criterion) (27). Inherent in the definition of both DSM-IV and DSM-5 AUD is the notion that impaired control occurs as a result of a compulsive desire to drink. When probed as to why they drink more or for longer periods than intended a substantial proportion of young adults fail to cite compulsion-based reasons, as defined in the DSM (28). Instead, young adults cite social reasons for drinking more than intended or for longer periods than intended. Given that alcohol use disorders have their peak in young adulthood it is possible that a significant proportion of the new lifetime DSM-5 AUD cases seen in the current study result from such symptom misinterpretations.

The results of Table 4 demonstrate that changing the diagnostic algorithms does not appear to have a significant impact on the clinical characteristics of the cases. In other words new non-cases were relatively similar to consistent non-cases and new cases were similar to consistent cases. The exception to this is with respect to the likelihood of meeting criteria for a drug use disorder where the odds of any drug use disorder was higher in new compared to consistent non-cases, and lower among new compared to consistent cases. Thus, the new diagnostic algorithm is failing to diagnose a sub-group with relatively high odds of any drug use disorder and, at the same time, including a sub-group of people with relatively low odds of meeting criteria for any drug use disorder. Although not fully explored in this study, the net effect of this might be to reduce the overall comorbidity between DSM-5 alcohol use disorders and drug use disorders.

A strengths of the current study include the large cross-national data set. While the prevalence of AUD according to either DSM-IV or DSM-5 differed across the nine countries included in the study, the pattern of results were largely the same. A further strength was the comprehensive, structured diagnostic assessment of both DSM-IV and DSM-5 AUD. These strengths need to be interpreted in the light of a number of limitations. The clustering criterion was not operationalized as we did not have information for all DSM-5 cases on whether the required number of symptoms occurred together in the same year. However, prior research has demonstrated that the clustering criterion may in fact increase the chances of false negative diagnoses (29). It should be noted that the current study, in essence, compared like with like by not operationalizing the clustering criterion for both the DSM-IV and the DSM-5 definition of AUD. By comparing DSM-5 diagnoses to DSM-IV diagnoses the current study makes the assumption that the DSM-IV definition of AUD is the gold standard. As noted previously, both DSM-IV and DSM-5 diagnostic definitions of AUD have been criticized for being over-inclusive (7). Our analytic approach, however, was most appropriate as we were interested not in the diagnostic validity of DSM-5 AUD per se but in the impact of changing definitions on cases defined according to the previous and current diagnostic systems.

In conclusion, the current study has shown that the prevalence of AUD in the general population decreased by a modest amount with the application of the new DSM-5 diagnostic classification system. Despite this decrease in prevalence, the clinical characteristics of those

who switched diagnostic status remained largely similar to those who maintained their diagnostic status across the two classification systems.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

WMH sample characteristics by World Bank income categories^a

Country by income category	Survey ^b	Sample characteristics ^c	Field dates	Age range		Sample Size		Response rate ^d
				Part 1	Part 2	Part 1	Part 2	
I. Low and lower middle income countries								
Iraq	IMHS	Nationally representative.	2006–7	18–96	4,332	4,332	4,332	95.2
TOTAL					(4,332)	(4,332)	(4,332)	95.2
II. Upper-middle income countries								
Brazil - São Paulo	São Paulo Megacity	São Paulo metropolitan area.	2005–7	18–93	5,037	2,942	2,942	81.3
Colombia – Medellín ^f	MMHHS	Medellin metropolitan area	2011–12	19–65	3,261	1,673	1,673	97.2
Romania	RMHS	Nationally representative.	2005–6	18–96	2,357	2,357	2,357	70.9
TOTAL					(10,655)	(6,972)	(6,972)	82.8
III. High-income countries								
Australia ^e	NSMHWB	Nationally representative.	2007	18–85	8,463	8,463	8,463	60
N. Ireland	NISHS	Nationally representative.	2004–7	18–97	4,340	1,986	1,986	68.4
Poland	EZOP	Nationally representative	2010–11	18–64	10,081	4,000	4,000	50.4
Portugal	NMHS	Nationally representative.	2008–9	18–81	3,849	2,060	2,060	57.3
Spain - Murcia	PEGASUS-Murcia		2010–12	18–64	2,621	1,459	1,459	67.4
IV. TOTAL					(29,354)	(17,968)	(17,968)	56.8
TOTAL					(44,341)	(29,272)	(29,272)	64.7

^aThe World Bank (2012) Data. Accessed May 12, 2012 at: <http://data.worldbank.org/country>. Some of the WMH countries have moved into new income categories since the surveys were conducted. The income groupings above reflect the status of each country at the time of data collection. The current income category of each country is available at the preceding URL.

^bIMHS (Iraq Mental Health Survey); MMHHS (Medellin Mental Health Household Study); RMHS (Romania Mental Health Survey); NSMHWB (National Survey of Mental Health and Wellbeing); NISHS (Northern Ireland Study of Health and Stress); EZOP (Epidemiology of Mental Disorders and Access to Care Survey); NMHS (Portugal National Mental Health Survey); PEGASUS-Murcia (Psychiatric Enquiry to General Population in Southeast Spain-Murcia).

^cMost WMH surveys are based on stratified multistage clustered area probability household samples in which samples of areas equivalent to counties or municipalities in the US were selected in the first stage followed by one or more subsequent stages of geographic sampling (e.g., towns within counties, blocks within towns, households within blocks) to arrive at a sample of households, in each of which a listing of household members was created and one or two people were selected from this listing to be interviewed. No substitution was allowed when the originally sampled household resident could not be interviewed. These household samples were selected from Census area data in all countries. 6 of the 9 surveys are based on nationally representative household samples.

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^dThe response rate is calculated as the ratio of the number of households in which an interview was completed to the number of households originally sampled, excluding from the denominator households known not to be eligible either because of being vacant at the time of initial contact or because the residents were unable to speak the designated languages of the survey. The weighted average response rate is 64.7%.

^eFor the purposes of cross-national comparisons we limit the sample to those 18+. The NSMHWB surveyed respondents aged 16–85 with a total sample size of 8841. The response rate reported here refers to the full survey sample response rate.

^fColombia moved from the “lower and lower-middle income” to the “upper-middle income” category between 2003 (when the Colombian National Study of Mental Health was conducted) and 2010 (when the Medellin Mental Health Household Study was conducted), hence Colombia’s appearance in both income categories. For more information, please see footnote *a*.

Table 2

Prevalence of alcohol use disorders according to DSM-IV and DSM-5 definitions (N=31,367)

	N	Weighted %	SE
No alcohol use	7,361	23.2	0.4
DSM-IV			
Alcohol use, but no DSM-IV alcohol use disorder	18,361	59.2	0.5
DSM-IV AUD diagnostic orphans ¹	1,778	5.3	0.2
DSM-IV alcohol abuse ²	2,394	8.0	0.2
DSM-IV alcohol dependence ³	1,473	4.3	0.2
Any DSM-IV alcohol use disorder	3,867	12.3	0.3
DSM-5			
Alcohol use, but no DSM-5 alcohol use disorder	18,415	59.5	0.5
No DSM-5 alcohol use disorder (1 criterion)	2,150	6.5	0.2
Mild DSM-5 alcohol use disorder (2–3 criteria)	1,730	5.6	0.2
Moderate DSM-5 alcohol use disorder (4–5 criteria)	710	2.3	0.1
Severe DSM-5 alcohol use disorder (6+ criteria)	1,001	2.8	0.1
Any DSM-5 alcohol use disorder	3,441	10.8	0.2

Nine Countries were included: Iraq, Brazil, Medellin, Romania, Australia, Murcia, Northern Ireland, Poland and Portugal.

¹Those who meet 1 or 2 DSM-IV dependence criteria and no abuse criteria.

²Those who meet DSM-IV abuse criteria but not dependence criteria.

³Those who meet DSM-IV dependence criteria regardless of whether they meet criteria for abuse or not.

Table 3
Cross-classification of specific DSM-IV and DSM-5 AUD diagnostic subgroups (N=31,367)

	No DSM-IV alcohol use disorder			DSM-IV diagnostic orphans ²			DSM-IV alcohol abuse ³			DSM-IV alcohol dependence ⁴			Total	
	N	% ¹	SE	N	% ¹	SE	N	% ¹	SE	N	% ¹	SE	N	% ¹
No DSM-5 AUD	25,685	99.8	0	0	0	0	91	4.8	0.7				25,776	
No DSM-5 AUD (1 criterion)	37	0.2	0	1,311	74.3	1.3	802	31	1.3				2,150	
Mild DSM-5 AUD (2–3 criteria)				467	25.7	1.3	1,156	49.1	1.6	107	8.2	1	1,730	
Moderate DSM-5 AUD (4–5 criteria)							325	14	1.1	385	28.2	1.8	710	
Severe DSM-5 AUD (6+ criteria)							20	1.1	0.3	981	63.7	1.9	1,001	
Total	25,722	100	0	1,778	100	0	2,394	100	0	1,473	100	0	31,367	

Nine Countries were included: Iraq, Brazil, Medellin, Romania, Australia, Murcia, Northern Ireland, Poland and Portugal.

¹% shown in the table is column percent, so the sum of each column is 100%.

²Those who meet 1 or 2 dependence criteria and no abuse criteria.

³Those who meet abuse criteria but not dependence criteria.

⁴Those who meet dependence criteria regardless of whether they meet criteria for abuse or not.

Table 4

Weighted prevalence of lifetime DSM-IV and DSM-V symptom criteria by alcohol use disorder diagnostic subgroups (N=31,367)

DSM criterion	DSM-IV diagnosis	DSM-5 diagnosis	Description	Prevalence in the total sample (N=31367)		Prevalence among new DSM-5 AUD non-cases (N=802) ¹		Prevalence among new DSM-5 AUD cases (N=467) ²	
				%	SE	%	SE	%	SE
Major role	Abuse	AUD	Recurrent use despite the inability to fulfil role obligations	5.8	0.2	29.0	2.1	0.0	-
Hazardous	Abuse	AUD	Recurrent use in physically dangerous situations	7.2	0.2	58.2	2.3	0.0	-
Social	Abuse	AUD	Recurrent use despite substance-related social problems	4.4	0.2	7.9	1.1	0.0	-
Legal	Abuse	N/A	Recurrent use despite substance-related legal problems	2.6	0.1	14.1	1.5	0.0	-
Tolerance	Dependence	AUD	Tolerance	3.8	0.1	0.1	0.1	24.3	2.5
Withdrawal	Dependence	AUD	Withdrawal	3.2	0.1	0.3	0.2	14.4	2.1
Larger/longer	Dependence	AUD	Drinking larger amounts or for longer than intended	12.8	0.3	4.1	1.0	92.2	1.4
Cut down	Dependence	AUD	Desire or unsuccessful efforts to cut down	4.0	0.1	0.2	0.1	25.1	2.4
Time spent	Dependence	AUD	Great deal of time spent drinking or recovering from effects	3.1	0.1	0.1	0.1	16	2.2
Give up	Dependence	AUD	Reduction in important activities because of drinking	1.9	0.1	0.0	-	2.2	0.7
Continue	Dependence	AUD	Continued use despite significant problems	3.3	0.1	0.1	0.1	12.2	1.9
Craving	N/A	AUD	Craving or strong desire for alcohol	3.7	0.1	0.0	-	25.8	2.5

Nine countries were included: Iraq, Brazil, Medellin, Romania, Australia, Murcia, Northern Ireland, Poland and Portugal.

N/A – not applicable.

¹ Individuals who were DSM-IV Abuse cases and switched to DSM-5 sub-threshold AUD

² Individuals who were DSM-IV diagnostic orphans and switched to DSM-5 mild AUD

Table 5

Clinical correlates of alcohol use disorder diagnostic subgroups (n=29,307)

	No AUD symptoms ¹ (N=23,973)		Consistent non-cases ² (N=1,215)		New non-cases ³ (N=745)		New cases ⁴ (N=444)		Consistent cases ⁵ (N=1,187)		New non-cases vs consistent non-cases ⁶		New cases versus consistent cases ⁷	
	%	SE	%	SE	%	SE	%	SE	%	SE	OR	95%CI	OR	95%CI
Anxiety disorder ⁸	15.4	0.3	20.0	1.3	16.3	1.8	31.7	2.5	25.9	1.8	0.8	0.6-1.1	1.4*	1.0-1.9
Mood disorder ⁹	11.1	0.3	13.1	1.1	11.9	1.5	22.4	2.5	18.8	1.4	1.0	0.7-1.4	1.3	0.9-1.9
Drug use disorder ¹⁰	1.1	0.1	4.7	0.7	7.6	1.1	8.4	1.7	16.4	1.6	1.7*	1.1-2.7	0.5*	0.3-0.7
Suicidal ideation	6.6	0.2	10.6	1.0	12.0	1.6	17.5	2.0	16.9	1.6	1.2	0.9-1.8	1.1	0.8-1.6
Suicide plan	2.1	0.1	3.3	0.6	3.8	1.0	4.3	0.8	3.1	0.5	1.2	0.6-2.5	1.4	0.8-2.4
Suicide attempt	1.3	0.1	1.9	0.5	2.0	0.4	3.3	0.8	3.4	0.8	1.2	0.6-2.5	0.9	0.4-1.7
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Beta	95%CI	Beta	95%CI
Impairment ¹¹	2.8	0.1	1.9	0.3	3.0	1.0	4.0	0.8	2.4	0.3	1.8	-0.6-4.2	1.4	-0.3-3.1
Distress ¹²	2.6	0.0	2.9	0.1	3.1	0.2	3.9	0.2	3.3	0.2	0.0	-0.5-0.5	0.4	-0.1-1.0

Eight Countries were included: Iraq, Brazil, Medellin, Romania, Australia, Murcia, Northern Ireland, and Poland. Portugal was excluded as substance use data were not collected.

¹ Individuals who have DSM-IV or DSM-5 AUD symptoms

² Individuals who are orphans in DSM-IV and Sub-threshold in DSM-5

³ Individuals with abuse (w/o dependence) in DSM-IV and Sub-threshold AUD in DSM-5

⁴ Individuals who are orphans in DSM-IV and Mild AUD (2-3 criteria) in DSM-5

⁵ Individuals with abuse or dependence in DSM-IV who convert to Mild AUD (2-3 criteria) in DSM-5

⁶ Odds ratios (OR) comparing consistent non-cases and new non-cases. Consistent non-cases used as the reference group.

⁷ Odds ratios (OR) comparing new cases and consistent cases. Consistent cases used as the reference group.

⁸ Anxiety disorder includes panic disorder, agoraphobia, specific phobia, social phobia, generalized anxiety disorder, posttraumatic stress disorder, separation anxiety disorder/adult separation anxiety and obsessive compulsive disorder. Note: not all individual anxiety disorders were assessed in all countries.

⁹ Mood disorder includes major depressive episode, dysthymia and bipolar I, II and subthreshold.

¹⁰ Drug use disorder includes drug abuse and dependence.

1/1 Measured using the Global WHODAS instrument (except for Australia where it was not assessed).

1/1 Measured using the K6 instrument.

* p<0.05

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