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Nosological comparisons of alcohol and drug diagnoses: a multisite, multi-instrument international study

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Abstract

International nosological research was conducted to determine cross-system agreement on alcohol and drug dependence and harmful use (abuse). ICD-10, DSM-IV and DSM-III-R diagnoses were compared in 1811 subjects from a variety of treatment and other types of settings from 12 sites around the world. Three diagnostic instruments were used: the Alcohol Use Disorders and Associated Disabilities Interview Schedule-Alcohol/Drug-Revised (AUDADIS-ADR), the composite international diagnostic interview (CIDI), and the schedules for clinical assessment in neuropsychiatry (SCAN). At seven of the study sites, two or more of these instruments were used. Results for dependence diagnoses showed excellent cross-system agreement across sites and instruments, especially for current diagnoses. Cross-system agreement for harmless use (abuse) was much lower and less consistent. Geographic location or culture appeared to have little influence on the results for either dependence or harmful use.

Keywords: Alcohol dependence; Drug dependence; Alcohol abuse; Drug abuse; Harmful use; Substance use disorders

1. Introduction

In 1992, a study on measurement issues in alcohol and drug disorder research was initiated by the World Health Organization (WHO) in conjunction with the U.S. National Institute on Alcoholism and Alcohol Abuse (NIAAA) and the National Institute on Drug Abuse (NIDA). The aim of the study was to determine whether instruments developed and tested primarily in English were reliable and comparable in a variety of languages and cultures. The instruments focused on diagnoses of alcohol and drug use disorders as defined by the WHO International Classification of Disease (WHO, 1992a) and the U.S. Diagnostic and Statistical Manuals, Third Edition Revised and Fourth Editions (American Psychiatric Association, 1987, 1994). This study on alcohol and drugs was part of a larger WHO/NIH project on diagnosis and measurement in psychiatry.

In 1976, predating this study, a paper describing a 'provisional' formulation of the concept of the alcohol dependence syndrome (ADS; Edwards and Gross,

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1976) was published. The components or symptoms of the ADS in this early paper included withdrawal, drinking to relieve withdrawal, tolerance, subjective compulsion to drink, salience of drinking (indicated by the failure of adverse consequences to deter drinking), narrowing of the drinking repertoire (as indicated by a pattern of drinking that is increasingly unresponsive to the time of day, day of the week, or other external circumstance), and rapid reinstatement of the syndrome after a period of abstinence. The ADS was further explicated in a World Health Organization document (WHO, 1977). This document indicated that the 'leading symptom' of the ADS was impaired control over drinking. In this same WHO document, the idea of the 'bi-axial' concept was introduced, with dependence forming one 'axis' or dimension, and other alcohol-related consequences or disabilities lying on the other axis or dimension. The 'bi-axial' concept can be interpreted as suggesting a dependence/abuse distinction in the classification of alcohol use disorders.

The concept of alcohol dependence as described in the ADS proved to be quite influential. In a subsequent WHO document, the concept of dependence was generalized to drugs. The diagnostic criteria for alcohol and drug dependence in ICD-10 closely reflect the ADS concept as updated by its original principal author (Edwards, 1986). In DSM-III-R and DSM-IV, the criteria for alcohol and drug dependence were also determined to a large extent by the concept of the ADS (Rounsaville et al., 1986). Thus, despite differences in details, the three classification systems share a common conceptual underpinning for diagnoses of dependence. Given this situation, the diagnostic criteria for dependence in ICD-10, DSM-III-R and DSM-IV can all be considered different measures of dependence. According to psychometric theory, if the underlying concept of dependence is valid and if different measures have operationalized the dependence concept validly, then these different measures should agree on case identification. Such agreement should not be influenced by whether the assessment was done in a fully structured or semi-structured format. Consistency in case identification of alcohol and drug dependence across geographic locations and cultures would support the dependence concept as valid and appropriate for international research.

In contrast, definitions of alcohol and drug abuse (harmful use in ICD-10) differ substantially between the classification systems. The concept of alcohol or drug abuse (or harmful use) has not received anywhere near the same level of scrutiny as alcohol or drug dependence. A proposal was made to eliminate abuse entirely in DSM-III-R by collapsing it into the dependence category (Rounsaville et al., 1986). This proposal was rejected for a number of reasons, including longitudinal research showing that abuse could be differentiated from dependence by outcome in a general population sample, (Hasin et al., 1990), a finding that has been replicated recently in a different sample (Hasin et al., in press a). However, whether abuse can be validly differentiated from no diagnosis has not been fully investigated, and no theoretical development of the concept of alcohol abuse or harmful use has been presented.

A number of papers were published on the within-subject agreement of ICD-10, DSM-III-R, and DSM-IV criteria before the DSM-IV and ICD-10 were finalized (Grant, 1992, 1993). However, the most relevant nosological comparisons consist of those employing the final published versions of the criteria. These studies have shown good cross-system agreement on alcohol dependence, although generally only fair to poor agreement between systems on abuse/harmful use (Grant, 1992; Hasin et al., 1996; Schuckit, 1994). However, the generalizeability of these findings is limited by the fact that they used only U.S.-based samples. Data from the DSM-IV field trials show information on rates of disorders by the different diagnostic systems for drugs as well as alcohol, but no within-subject analyses were conducted with these data (Cottler et al., 1995). For international research and other international purposes, information on the consistency of within- subject nosological findings for alcohol and drugs across countries, languages, and measurement methods is essential. Ideally, data from different countries based on multiple instruments per site would be available, to check on whether results were consistent across multiple assessment procedures as opposed to being the idiosyncratic performance of one instrument at a particular national site. Below, we present the results of such a study.

2. Methods

2.1. Study design and procedures

The present report focuses on the agreement between diagnostic systems, one component of this cross-national study. Three different diagnostic interviews were used (see below). Research sites, 12, were designated to achieve geographic diversity. At some sites, all three interviews were administered, while at others, only one or two were used (see Üstün et al., 1997, for more detail). Subjects were recruited from a variety of sources, including medical, psychiatric and substance abuse facilities, and other community settings. All subjects participated in two or three interviews for the study, as part of a test-retest or a comparison study of two or three diagnostic interviews. Among subjects who participated in two administrations of the same interview (for test-retest studies), the data reported below

were derived from the first of each pair of interviews given to the subject. Subjects were interviewed in their own language. All interviews had been translated, back-translated and given final corrections resulting from the back-translation prior to the beginning of the study, as well as being adjusted for cross-cultural applicability (Room et al., 1996).

2.2. Diagnostic procedures

The three diagnostic interviews used in this study were Alcohol Use Disorders and Associated Disabilities Interview Schedule—Alcohol/Drug-Revised (AUDADIS-ADR: WHO, 1992b), the Composite International Diagnostic Interview (CIDI: WHO, 1993) and the Schedules for Clinical Assessment in Neuropsychiatry (SCAN: WHO, 1992c). Each has been used on a widespread basis in studies of alcohol and drug use disorders. Each interview was designed to yield diagnoses of alcohol and drug dependence and abuse (or harmful use) for ICD-10 (WHO, 1992a), DSM-IV (American Psychiatric Association, 1994) and DSM-III-R (American Psychiatric Association, 1987) criteria. The test-retest reliability of the alcohol and drug disorder diagnoses from each interview were established in this study (Chatterji et al., this issue). The AUDADIS-ADR and CIDI are fully structured, designed to be administered by either clinicians or non-clinicians. The SCAN is semi-structured, designed to be administered by clinicians. Systematic training protocols were used for training interviewers at all sites, coordinated by the official training centers for the three interviews. The diagnoses for all three interviews were derived with computer algorithms to assign diagnoses according to the logic of the diagnostic criteria.

2.3. Sample

Approximately 150 subjects were evaluated at each site, yielding a total of 1811. As shown in Üstün et al. (1997) the study was conducted in numerous languages, and subjects were recruited from a wide variety of clinical and non-clinical settings. The proportion of male subjects varied from site to site, but was over half (range, 54–89%, Üstün et al., 1997) at all sites except one. Mean age of the subjects ranged from about 30 years to about 43 years of age. The mean number of years of education was nine or higher for all sites except Bangalore. Table 1 presents the proportion of subjects meeting criteria for alcohol and drug abuse and dependence diagnoses, by instrument and diagnostic system.

2.4. Statistical analyses

In this study, κ was used as a measure of concordance between the diagnoses made according to the three diagnostic systems (ICD-10, DSM-IV and DSM-III-R). κ is defined as a measure of pairwise agreement corrected for chance (Fleiss, 1981). κ ranges from 1.00 (perfect agreement) to -1.00 (total disagreement). A κ of zero indicates agreement no better than chance. κ's of 0.75 and above indicate excellent agreement, from 0.65 to 0.74 indicate good agreement, from 0.40 to 0.64 indicate fair agreement, and below 0.40 indicate poor agreement (Fleiss, 1981). κ's were computed using two-by-two tables, comparing those with and without the disorder of interest. κ's were computed within alcohol and drug categories for two time frames, the past year (current) and lifetime.

For the purposes of the present analyses, reliabilities were separately calculated for diagnoses of dependence and harmful use or abuse for each classification system, site and substance with a non-zero or non-unity base rate at test and/or retest. For alcohol and drug disorders with base rates of 1.00 or 0.00 in one or more of the diagnostic systems, κ was undefined. Thus, some κ's could not be derived for some categories at some sites. All subjects tested at each site were included in the analyses. In this report, results are shown for each substance that had high enough prevalences across sites to produce stable κ's. These included alcohol, cannabis, amphetamines, sedatives, opiates and cocaine for the entire study. For site-specific comparisons, results are shown only for alcohol and opiate disorders.

3. Results

3.1. Total sample, dependence diagnoses

Table 2 shows the cross-system comparisons for dependence diagnoses made by ICD-10, DSM-IV and DSM-III-R. These are shown for current and lifetime diagnoses, by drug category, for each of the three assessment instruments used in the WHO study. As shown, the cross-system agreement was generally excellent as defined above. The results did not appear to be greatly influenced by the time frame used, the diagnostic instrument used, or the drug category considered.

3.2. Total sample, abuse diagnoses

Table 3 shows the cross-system comparisons for harmful use/abuse diagnoses. The comparisons involving ICD-10 and DSM-IV were almost entirely in the poor range. Comparisons involving DSM-III-R were also generally low but somewhat more variable. The comparison of DSM-III-R and DSM-IV abuse tended to show greater agreement across the drug categories for SCAN and AUDADIS-ADR diagnoses, although not when the CIDI diagnoses were considered.

Table 1
Prevalence of substance diagnoses by diagnostic instrument and timeframe, all sites combined

		Diagnosis					
		ICD-10		DSM-IV		DSM-IIIR	
		Dependence	Harmful use	Dependence	Abuse	Dependence	Abuse
Alcohol							
CIDI	Past year	30.4	8.6	35.9	16.8	34.7	6.8
	Lifetime	54.7	10.0	58.4	34.1	57.3	8.7
SCAN	Past year	44.1	3.3	42.5	12.9	45.8	10.4
	Lifetime	57.2	6.9	55.5	20.9	58.1	18.0
AUDADIS	Past year	56.7	2.0	54.6	8.3	59.7	3.7
	Lifetime	70.4	2.2	68.5	13.2	72.6	8.6
Cannabis							
CIDI	Past year	8.4	2.8	8.1	11.7	9.9	2.2
	Lifetime	19.7	4.7	19.4	22.1	25.4	4.3
SCAN	Past year	13.8	2.9	12.6	6.9	14.3	5.3
	Lifetime	18.7	6.6	17.0	12.5	19.1	10.4
AUDADIS	Past year	12.1	2.9	11.9	9.6	12.9	8.0
	Lifetime	20.2	4.9	17.4	16.0	22.0	11.5
Amphetamines							
CIDI	Past year	1.6	0.5	1.7	1.2	1.9	0.3
	Lifetime	7.4	2.1	6.8	6.8	9.1	1.4
SCAN	Past year	1.8	0.4	1.7	0.7	2.0	0.4
	Lifetime	4.4	2.5	4.3	2.9	4.6	2.7
AUDADIS	Past year	5.8	1.2	4.4	3.0	6.0	1.7
	Lifetime	10.5	2.3	9.3	5.3	10.9	4.4
Sedatives							
CIDI	Past year	7.9	1.2	6.7	1.8	8.8	1.1
	Lifetime	14.0	1.4	13.9	7.6	15.9	1.6
SCAN	Past year	10.7	0.5	10.0	1.7	10.6	1.2
	Lifetime	13.8	1.5	12.6	3.6	13.7	2.7
AUDADIS	Past year	9.5	2.6	6.7	1.8	10.3	3.5
	Lifetime	14.7	3.3	13.3	7.6	15.7	5.3
Opiates							
CIDI	Past year	26.0	1.2	29.7	3.3	26.7	1.6
	Lifetime	35.1	0.8	38.9	2.1	35.9	0.7
SCAN	Past year	28.0	1.0	27.2	1.4	28.4	0.9
	Lifetime	31.6	1.2	31.0	1.9	32.2	1.3
AUDADIS	Past year	19.8	0.9	19.2	1.0	19.4	1.3
	Lifetime	24.8	1.3	24.2	2.0	24.9	1.8
Cocaine							
CIDI	Past year	19.6	1.6	22.9	5.3	20.4	2.0
	Lifetime	30.1	2.2	35.1	5.6	32.2	2.1
SCAN	Past year	20.6	1.6	20.5	1.5	21.2	1.3
	Lifetime	26.0	2.4	25.9	2.1	26.5	2.4
AUDADIS	Past year	10.0	1.6	9.7	2.0	10.5	1.6
	Lifetime	13.9	1.7	13.8	3.2	14.2	2.8

3.3. Site-specific comparisons, dependence

Presenting the results of all nosological comparisons for every drug, with every instrument, at every site would be too much material for a single paper. Therefore, we present material on substances assessed at the largest number of sites. Table 4 shows cross-system comparisons for current alcohol dependence diagnoses at the individual sites of the study, while Table 5 provides the corresponding information for opiate dependence diagnoses. As shown, excellent cross-system agreement was found for alcohol dependence diagnoses, regardless of the site, instrument or particular cross-system comparison. Excellent agreement was also found for opiate dependence, although these were not used with equal frequencies at all sites and hence, agreement levels between systems are not available at the sites where none of the subjects used opiates. Re-

Table 2
Concordance between dependence diagnoses within each instrument, κ (S.E.), all sites combined

		Diagnosis		
		ICD-10 vs. DSM-IV	DSM-IV vs. DSM-IIIR	DSM-IIIR vs. ICD-10
Alcohol				
CIDI	Past year	0.90 (0.02)	0.80 (0.02)	0.82 (0.02)
	Lifetime	0.87 (0.02)	0.69 (0.03)	0.79 (0.02)
SCAN	Past year	0.92 (0.01)	0.91 (0.01)	0.92 (0.01)
	Lifetime	0.92 (0.01)	0.93 (0.01)	0.93 (0.01)
AUDADIS	Past year	0.90 (0.01)	0.90 (0.01)	0.91 (0.01)
	Lifetime	0.90 (0.02)	0.90 (0.02)	0.92 (0.02)
Cannabis				
CIDI	Past year	0.84 (0.04)	0.84 (0.03)	0.86 (0.03)
	Lifetime	0.90 (0.02)	0.81 (0.03)	0.82 (0.02)
SCAN	Past year	0.88 (0.02)	0.90 (0.02)	0.88 (0.02)
	Lifetime	0.90 (0.02)	0.89 (0.02)	0.89 (0.02
AUDADIS	Past year	0.86 (0.03)	0.84 (0.03)	0.93 (0.02)
	Lifetime	0.89 (0.02)	0.86 (0.02)	0.92 (0.02)
Amphetamines				
CIDI	Past year	1.00 (0.00)	0.93 (0.05)	0.92 (0.05)
	Lifetime	0.92 (0.03)	0.82 (0.04)	0.87 (0.03)
SCAN	Past year	0.93 (0.04)	0.93 (0.04)	0.96 (0.03)
	Lifetime	0.95 (0.02)	0.94 (0.02)	0.93 (0.03)
AUDADIS	Past year	0.86 (0.04)	0.84 (0.04)	0.88 (0.03)
	Lifetime	0.93 (0.02)	0.91 (0.02)	0.92 (0.02)
Sedatives				
CIDI	Past year	0.98 (0.02)	0.88 (0.03)	0.88 (0.03)
	Lifetime	0.46 (0.01)	0.88 (0.02)	0.88 (0.02)
SCAN	Past year	0.89 (0.02)	0.93 (0.02)	0.91 (0.02)
	Lifetime	0.91 (0.02)	0.93 (0.02)	0.93 (0.02)
AUDADIS	Past year	0.92 (0.02)	0.88 (0.03)	0.87 (0.03)
	Lifetime	0.93 (0.02)	0.90 (0.02)	0.92 (0.02)
Opiates				
CIDI	Past year	0.96 (0.01)	0.95 (0.01)	0.96 (0.01)
	Lifetime	0.98 (0.01)	0.98 (0.01)	0.98 (0.00)
SCAN	Past year	0.98 (0.01)	0.97 (0.01)	0.99 (0.00)
	Lifetime	0.98 (0.01)	0.97 (0.01)	0.99 (0.01)
AUDADIS	Past year	0.98 (0.01)	0.99 (0.01)	0.99 (0.01)
	Lifetime	0.98 (0.01)	0.98 (0.01)	0.99 (0.01)
Cocaine				
CIDI	Past year	0.96 (0.01)	0.94 (0.02)	0.94 (0.01)
	Lifetime	0.96 (0.01)	0.94 (0.01)	0.93 (0.01)
SCAN	Past year	0.97 (0.01)	0.97 (0.01)	0.96 (0.01)
	Lifetime	0.98 (0.01)	0.98 (0.01)	0.97 (0.01)
AUDADIS	Past year	0.98 (0.01)	0.96 (0.02)	0.97 (0.01)
	Lifetime	1.00 (0.00)	0.98 (0.01)	0.98 (0.01)

sults were similar for current dependence diagnoses for sedatives, amphetamines, and cocaine, and only slightly lower for cannabis (not shown). Regardless of the location, language, diagnostic instrument, ICD-10, DSM-IV and DSM-III-R agreed well on diagnoses of current alcohol and drug dependence. Very similar results were found for lifetime dependence diagnoses using the SCAN. In general, excellent agreement between ICD-10, DSM-IV and DSM-III-R was obtained for lifetime alcohol and drug dependence diagnoses with the AUDADIS-ADR and CIDI, although comparisons involving DSM-III-R with these two instruments were somewhat lower (range, 0.41–0.80).

3.4. Site-specific comparisons, harmful use/abuse

Table 6 and Table 7 show site-specific cross-system agreement for current diagnoses of alcohol and opiate harmful use/abuse under ICD-10, DSM-IV and DSM-III-R. In contrast to the results for dependence, lower concordance and greater variation in prevalence were found. In addition, low prevalences led to some cross-

Table 3
Concordance between abuse diagnoses within each instrument, κ (S.E.), all sites combined

		Diagnosis		
		ICD-10 vs. DSM-IV	DSM-IV vs. DSM-IIIR	DSM-IIIR vs. ICD-10
Alcohol				
CIDI	Past year	0.40 (0.16)	0.21 (0.03)	0.18 (0.03)
	Lifetime	0.31 (0.05)	0.35 (0.05)	0.26 (0.05)
SCAN	Past year	0.27 (0.04)	0.71 (0.03)	0.18 (0.04)
	Lifetime	0.38 (0.03)	0.83 (0.02)	0.32 (0.07)
AUDADIS	Past year	0.24 (0.06)	0.41 (0.06)	0.70 (0.07)
	Lifetime	0.23 (0.04)	0.71 (0.04)	0.03 (0.06)
Cannabis				
CIDI	Past year	0.22 (0.05)	0.30 (0.10)	0.10 (0.04)
	Lifetime	0.28 (0.04)	0.45 (0.09)	0.14 (0.03)
SCAN	Past year	0.38 (0.06)	0.70 (0.04)	0.30 (0.06)
	Lifetime	0.49 (0.04)	0.79 (0.03)	0.45 (0.05)
AUDADIS	Past year	0.26 (0.05)	0.68 (0.04)	0.45 (0.06)
	Lifetime	0.34 (0.04)	0.74 (0.03)	0.44 (0.05)
Amphetamines				
CIDI	Past year	—	—	—
	Lifetime	0.34 (0.07)	0.49 (0.13)	0.24 (0.07)
SCAN	Past year	0.61 (0.16)	0.24 (0.05)	0.20 (0.17)
	Lifetime	0.45 (0.08)	0.79 (0.06)	0.46 (0.08)
AUDADIS	Past year	0.46 (0.09)	0.51 (0.09)	0.44 (0.11)
	Lifetime	0.37 (0.07)	0.69 (0.05)	0.49 (0.08)
Sedatives				
CIDI	Past year	—	—	0.49 (0.13)
	Lifetime	0.24 (0.07)	0.34 (0.97)	0.30 (0.11)
SCAN	Past year	0.29 (0.11)	0.74 (0.08)	0.30 (0.13)
	Lifetime	0.31 (0.08)	0.69 (0.06)	0.42 (0.09)
AUDADIS	Past year	0.45 (0.07)	0.61 (0.06)	0.44 (0.08)
	Lifetime	0.44 (0.06)	0.68 (0.05)	0.55 (0.07)
Opiates				
CIDI	Past year	0.42 (0.10)	0.24 (0.06)	0.15 (0.08)
	Lifetime	0.34 (0.13)	0.48 (0.12)	0.08 (0.08)
SCAN	Past year	0.27 (0.11)	0.42 (0.12)	0.61 (0.12)
	Lifetime	0.30 (0.10)	0.66 (0.09)	0.44 (0.11)
AUDADIS	Past year	0.42 (0.14)	0.52 (0.13)	0.82 (0.09)
	Lifetime	0.54 (0.11)	0.68 (0.09)	0.84 (0.07)
Cocaine				
CIDI	Past year	0.01 (0.04)	0.42 (0.08)	0.41 (0.10)
	Lifetime	0.09 (0.06)	0.42 (0.08)	0.34 (0.09)
SCAN	Past year	0.48 (0.10)	0.40 (0.11)	0.45 (0.10)
	Lifetime	0.43 (0.07)	0.55 (0.08)	0.53 (0.08)
AUDADIS	Past year	0.60 (0.10)	0.60 (0.10)	0.87 (0.06)
	Lifetime	0.51 (0.09)	0.78 (0.06)	0.71 (0.08)

system agreement estimates that were quite unstable. However, site appeared to have little effect on cross-system agreement. ICD-10 harmful use agreed poorly with DSM-IV abuse regardless of location or instrument. The same was true for cross-system comparisons when the CIDI was used. DSM-IV versus DSM-III-R comparisons showed higher agreement in general across sites when the SCAN was used, as was the case for DSM-III-R versus ICD-10 diagnoses when using the AUDADIS-ADR. Results for other drugs (not shown) indicated a similar lack of geographic effect on the somewhat low and uneven level of cross-system agreement for diagnoses of abuse/harmful use.

4. Discussion

The results presented above extend previous research on within-subject nosological comparisons in several important ways. First, the final published versions of the diagnostic criteria were used for drugs as well as alcohol, in clinical samples as well as general popula-

Table 4
Concordance between alcohol dependence diagnoses, current (past year) within each instrument, by site, κ (S.E.)

Interview site	Diagnosis		
	ICD-10 vs. DSM-IV	DSM-IV vs. DSM-IIIR	DSM-IIIR vs. ICD-10
CIDI			
Amsterdam	0.80 (0.06)	0.80 (0.06)	0.78 (0.07)
Athens	0.88 (0.04)	0.80 (0.05)	0.89 (0.04)
Ibadan	0.91 (0.04)	0.79 (0.06)	0.80 (0.05)
Luxemburg	0.97(0.02)	0.82 (0.05)	0.82 (0.05)
Puerto Rico	—	—	0.64 (0.09)
St. Louis	0.87 (0.04)	0.78 (0.05)	0.78 (0.05)
Sydney (1)	—	—	0.83 (0.08)
SCAN			
Amsterdam	0.87 (0.05)	0.84 (0.05)	0.97 (0.02)
Ankara	0.93 (0.03)	0.93 (0.03)	0.97 (0.02)
Athens	0.90 (0.04)	0.85 (0.04)	0.82 (0.05)
Bangalore	0.93 (0.03)	0.93 (0.03)	0.95 (0.02)
Farmington	0.94 (0.03)	0.92 (0.03)	0.89 (0.04)
Ibadan	0.85 (0.04)	0.88 (0.04)	0.84 (0.05)
Luxemburg	0.95 (0.03)	0.91 (0.04)	0.95 (0.03)
St. Louis	0.97 (0.02)	0.97 (0.02)	0.95 (0.03)
AUDADIS			
Athens	0.88 (0.04)	0.89 (0.04)	0.87 (0.04)
Bangalore	0.90 (0.03)	0.90 (0.03)	0.92 (0.03)
Jebel	0.93 (0.03)	0.89 (0.04)	0.91 (0.04)
Luxemburg	0.90 (0.04)	0.96 (0.06)	0.94 (0.03)
St. Louis	0.92 (0.03)	0.96 (0.03)	0.90 (0.04)
Sydney (2)	0.85 (0.04)	0.79 (0.05)	0.83 (0.04)

tion samples. The diagnostic assessments were made in numerous countries and in numerous languages. This involved translation and adjustment for differences in cultural understanding of terminology. Second, the procedures were administered in Western and non-Western settings. This allowed for the effects of culture on cross-system agreement to emerge, if such effects were present. Third, multiple assessment procedures were used at some of the sites, providing a check on whether a result was the idiosyncratic combination of a particular assessment procedure at a particular location, or was a finding that could be taken as more general.

All three diagnostic instruments were used in Athens, Luxembourg and St. Louis. Several sites tested two instruments. In Amsterdam and Ibadan, the CIDI and SCAN were used; in the two sites in Sydney, the CIDI and the AUDADIS-ADR were used; and in Bangalore, the AUDADIS-ADR and the SCAN were used. Hence, several locations provided data on nosological comparisons with more than one instrument. These comparisons indicated that the instruments were not a primary determinant of nosological concordance (or lack thereof). Even in Bangalore, where the SCAN and AUDADIS-ADR were used, the results from nosological comparisons were very similar using the two instruments.

Few previous studies have presented nosological comparisons of alcohol and drug use disorders that included both dependence and harmful use/abuse as separate categories. Of those that have (Hasin et al., 1996; Grant, 1992; Schuckit, 1994), results were quite similar to the present paper: a high level of agreement was obtained between diagnostic systems for dependence diagnoses, but not for abuse. Studies on nosology that combine dependence and harmful use/abuse into a single category obscure this very consistent result.

As noted above, we included all subjects at each site in the analyses for this paper. At times, however, the research question involves determining the concordance between measures among only users of a particular drug. Thus, all analyses reported above were also run within subsamples of subjects identified by the instrument as users of a particular drug. In general, the kappas indicating the level of cross-system agreement were slightly lower when only users were included in the sample. In practical terms, however, the meaning of the results did not change, since most of the differences were less than 0.05, a few were around 0.10, and none were at a level that changed the meaning of the conclusions that could be drawn on cross-system concordance from the data.

Given the consistency of the findings for dependence diagnoses across instruments, drugs and geographical

Table 5
Concordance between opiate dependence diagnoses, current (past year) within each instrument, by site, κ (S.E.)

Interview site	Diagnosis		
	ICD-10 vs. DSM-IV	DSM-IV vs. DSM-IIIR	DSM-IIIR vs. ICD-10
CIDI			
Amsterdam	0.94 (0.03)	0.94 (0.03)	0.94 (0.03)
Athens	0.96 (0.02)	0.94 (0.03)	0.97 (0.02)
Ibadan	0.96 (0.02)	0.95 (0.03)	0.96 (0.02)
Luxemburg	0.98 (0.03)	0.98 (0.02)	0.96 (0.03)
Puerto Rico	—	—	1.00 (0.00)
St. Louis	0.93 (0.05)	0.93 (0.05)	0.94 (0.04)
Sydney (1)	—	—	0.95 (0.04)
SCAN			
Amsterdam	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Ankara	0.97 (0.02)	0.97 (0.02)	1.00 (0.00)
Athens	0.97 (0.02)	0.97 (0.02)	1.00 (0.00)
Bangalore	0.79 (0.12)	0.77 (0.11)	0.83 (0.09)
Farmington	0.96 (0.04)	0.96 (0.04)	1.00 (0.00)
Ibadan	0.97 (0.02)	0.96 (0.02)	0.99 (0.01)
Luxemburg	0.95 (0.04)	0.95 (0.04)	1.00 (0.00)
St. Louis	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
AUDADIS			
Athens	0.96 (0.02)	1.00 (0.00)	0.96 (0.02)
Bangalore	1.00 (0.00)	1.00 (0.00)	1.00 (0.00)
Jebel	—	—	—
Luxemburg	0.98 (0.02)	0.98 (0.02)	1.00 (0.00)
St. Louis	0.97 (0.03)	1.00 (0.00)	0.97 (0.03)
Sydney (2)	0.97 (0.02)	0.97 (0.02)	1.00 (0.00)

settings, further nosological comparisons do not appear warranted unless a future diagnostic system (e.g. DSM-V, ICD-11) greatly changes the definition of dependence. Thus far, no evidence has been presented that such a change is warranted. The concept of the dependence syndrome, introduced 20 years ago, appears robust against many potential influences on its case identification properties under a wide variety of situations.

In contrast, the results for harmful use/abuse were quite different. This condition, as defined in all three nomenclatures, suffers from a number of factors that would lead to poor cross-system concordance: (1) poor reliability (Hasin et al., 1996; Hasin et al., in press b); (2) a hierarchical relationship to dependence that makes the abuse diagnosis conditional on the diagnosis of another condition, dependence, that is measured well, but not perfectly; (3) a variety of views on the proper definition and role of abuse in the nomenclatures; and (4) a prevalence that is often low because the dependence category is fairly broad and pre-emits the abuse diagnosis when both are present. Given all these considerations, the harmful use/abuse category requires further conceptual as well as psychometric work, either to improve the category or to accumulate enough evidence to support its elimination from the nomenclature. In the meantime, harmful use/abuse should be used cautiously in international research, without assumptions that assessments of abuse and harmful use necessarily measure the same condition.

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Table 6
Concordance between alcohol abuse diagnoses, current (past year) within each instrument, by site, κ (S.E.)

Interview site	Diagnosis		
	ICD-10 vs. DSM-IV	DSM-IV vs. DSM-IIIR	DSM-IIIR vs. ICD-10
CIDI			
Amsterdam	0.05 (0.06)	0.09 (0.04)	0.36 (0.14)
Athens	0.29 (0.08)	0.27 (0.08)	0.45 (0.11)
Ibadan	0.21 (0.06)	0.23 (0.07)	0.37 (0.10)
Luxemburg	0.23 (0.08)	0.32 (0.09)	0.34 (0.16)
St. Louis	0.12 (0.07)	0.17 (0.06)	0.17 (0.13)
San Juan	—	—	0.30 (0.10)
Sydney (1)	—	—	0.20 (0.19)
SCAN			
Amsterdam	0.13 (0.08)	0.69 (0.09)	−0.02 (0.02)
Ankara	0.47 (0.14)	0.69 (0.10)	0.30 (0.14)
Athens	0.18 (0.10)	0.49 (0.10)	0.22 (0.11)
Bangalore	0.55 (0.13)	0.64 (0.11)	0.37 (0.14)
Farmington	0.14 (0.07)	0.89 (0.05)	0.11 (0.07)
Ibadan	0.22 (0.13)	0.67 (0.11)	0.23 (0.16)
Luxemburg	0.48 (0.15)	0.64 (0.13)	0.12 (0.14)
St. Louis	0.27 (0.15)	0.87 (0.07)	0.25 (0.14)
AUDADIS			
Athens	0.15 (0.12)	0.32 (0.14)	0.77 (0.11)
Bangalore	0.06 (0.07)	0.25 (0.11)	0.66 (0.18)
Jebel	0.38 (0.16)	0.14 (0.13)	0.50 (0.31)
Luxemburg	0.48 (0.18)	0.65 (0.16)	0.79 (0.14)
St. Louis	0.37 (0.16)	0.72 (0.12)	0.70 (0.14)
Sydney (2)	0.22 (0.11)	0.46 (0.12)	0.59 (0.19)

Table 7
Concordance between opiate abuse diagnoses, current (past year) within each instrument, by site, κ (S.E.)

Interview site	Diagnosis		
	ICD-10 vs. DSM-IV	DSM-IV vs. DSM-IIIR	DSM-IIIR vs. ICD-10
CIDI			
Amsterdam	−0.02 (0.01)	0.17 (0.17)	0.66 (0.18)
Athens	0.15 (0.16)	0.38 (0.20)	0.66 (0.19)
Ibadan	0.19 (0.16)	0.60 (0.16)	0.39 (0.28)
Luxemburg	−0.01 (0.01)	0.66 (0.32)	−0.01 (0.01)
St. Louis	0.39 (0.28)	0.39 (0.28)	−0.01 (0.01)
San Juan	—	—	—
Sydney (1)	—	—	0.01 (0.01)
SCAN			
Amsterdam	—	1.00 (0.00)	—
Ankara	—	—	—
Athens	0.49 (0.22)	0.27 (0.23)	0.85 (0.14)
Bangalore	0.50 (0.31)	−0.01 (0.01)	0.50 (0.31)
Farmington	−0.01 (0.01)	0.66 (0.32)	−0.01 (0.01)
Ibadan	−0.01 (0.10)	—	—
Luxemburg	—	—	—
St. Louis	0.32 (0.25)	0.74 (0.17)	0.74 (0.17)
AUDADIS			
Athens	0.66 (0.32)	0.80 (0.20)	0.50 (0.31)
Bangalore	0.50 (0.31)	0.50 (0.31)	1.00 (0.00)
Jebel	—	—	—
Luxemburg	0.66 (0.32)	0.66 (0.32)	1.00 (0.00)
St. Louis	0.50 (0.31)	0.39 (0.28)	0.85 (0.14)
Sydney (2)	−0.01 (0.01)	0.32 (0.25)	0.66 (0.32)

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