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RESEARCH REPORT

# A comparison of DSM-III-R, DSM-IV and ICD-10 substance use disorders diagnoses in 1922 men and women subjects in the COGA study

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**Abstract**

*A research interview was used to evaluate the relationship relationships between DSM-IV, DSM-III-R and ICD-10 diagnostic criteria for substance use disorders. The sample of 1992 subjects, including both men and women, was composed of subjects and their relatives from the Collaborative Study on the Genetics of Alcohoism (COGA) study. With regard to diagnoses of substance dependence, the analyses revealed that the proportions of individuals diagnosed in the three systems were similar, with the highest numbers observed for DSM-III-R, the lowest for ICD-10 and the figures for DSM-IV between the two. The* kappas *for dependence diagnoses ranged from 0.54 to 0.83, with the majority at 0.7 and higher, indicating that the same subjects were being given the same labels in the three systems. However, the criteria for abuse or harmful use resulted in rather disparate proportions labeled across the three systems, with* kappas *that rarely exceeded 0.10.*

## Introduction

One year after the publication of DSM-III-R in 1987, the Substance Use Disorders Work Group for the Fourth Version of the Diagnostic and Statistical Manual (DSM-IV) was formed (Schuckit, 1993; Woody *et al.*, 1992). As described in greater depth elsewhere (Schuckit, 1993), the process began by establishing guidelines including the need to base criteria on the best data available and, reflecting the relatively large changes that occurred in the 1980 and 1987 versions of the diagnostic manuals, the desire to set a high threshold for major changes for DSM-IV (Pincus *et*

Collaborative Study on the Genetics of Alcoholism (H. Begleiter, SUNY HSCB Principal Investigator, T. Reich, Washington University, Co-Principal Investigator) includes six different centers where data collection takes place. The six sites and Principal Investigator and Co-Investigators are: Indiana University (J. Nurnberger, P. M. Conneally); University of Iowa (R. Crowe, S. Kuperman); University of California at San Diego and Scripps Institute (M. Schuckit, F. Bloom); University of Connecticut (V. Hesselbrock); State University of New York, Health Sciences Center at Brooklyn (H. Begleiter, B. Porjesz); Washington University in St. Louis (T. Reich, C. R. Cloninger). This national collaborative study is supported by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) by USPHS grants NIAAA U10AA08401, U10AA08402, U10AA08403.

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*al.*, 1992; Frances, Widiger & Pincus, 1989). The goal of empirically based criteria was achieved through literature reviews, re-analyses of existing data and by collection of new data through a field trial. The latter compared several potential DSM-IV diagnostic approaches to DSM-III-R, DSM-III and the Tenth Version of the International Classification of Diseases (ICD-10) which was scheduled for release in the early 1990s (Cottler *et al.*, 1994; Schuckit, 1993; World Health Organization, 1992; Grant, 1993).

As shown in Table 1, the criteria for dependence are similar across DSM-III-R, DSM-IV and ICD-10. All are based on the broad concept of dependence set forth in DSM-III-R, and each has a threshold of three items for a diagnosis. While DSM-III-R presents criteria for the duration of time over which the diagnostic items occurred, both DSM-IV and ICD-10 emphasize items that cluster during a 12-month period. DSM-III-R lists nine items from which any three can be selected for diagnosis while, in an effort to simplify criteria and avoid redundancy, DSM-IV has reduced the list to seven items, and ICD-10 incorporates six items. DSM-IV criteria are constructed to promote the collection of data on the effect of de-emphasizing tolerance and withdrawal that occurred in DSM-III-R by permitting subtyping by the presence or absence of either tolerance or withdrawal. This step was taken to encourage future evaluators who will gather data on the treatment and prognostic implications of evidence of physiological aspects of a dependence syndrome.

While dependence criteria are similar in the three diagnostic systems, abuse or harmful use are quite different (Rapaport, Tipp & Schuckit, 1993; Cottler, 1993; Grant *et al.*, 1992; Mellsop *et al.*, 1991; Muthén, Hasin & Wisnicki, 1993). Harmful use requires evidence of physical or psychological harm related to substance use in an individual who does not meet criteria for dependence, while DSM-III-R relies on two specific items indicating evidence of use in hazardous situations or continued intake despite problems in social, occupational, psychological or physical dimensions. DSM-IV criteria for abuse incorporates four items that are orthogonal to dependence, and that focus on social, interpersonal and legal problems.

Several studies have attempted to evaluate the implications of the differences between the three systems. Unfortunately, a number of problems jeopardize the generalizability of some of the conclusions. First, some studies have focused on individuals from the general population, while others have sampled inpatients or outpatients with substance use disorders. As a result of these differences in samples, some papers report the proportions of individuals who had used the substance who meet criteria for diagnoses, while others focus on the entire group sampled. Further complications occur because of the diagnostic criteria used. The ICD-10 diagnostic set changed from the provisional to the final versions, and DSM-IV had published several provisional diagnoses for evaluation in the field trial, with the final criteria representing a modification of both criteria sets. An additional methodological problem rests with the fact that few of the published studies were developed specifically to test the DSM-IV criteria, with most doing their best to extract items that approach the diagnostic criteria from existing surveys, but do not directly replicate the criteria.

Despite these caveats, there are some general trends revealed by the studies to date. First, the DSM-IV field trial applied the final DSM-IV and final ICD-10 as well as DSM-III-R criteria to 1074 men and women from six different sites and included both general population and treatment samples. Comparing the proportion of individuals dependent on various drugs with users of that substance (Schuckit, 1994; Cottler *et al.*, 1994), the results suggest a slightly larger proportion diagnosed dependent in DSM-III-R compared to DSM-IV, with the latter generally equivalent to ICD-10. Rates include a decrease from 57% to 47% and 49% diagnosed dependent on alcohol across the systems, with more modest changes regarding amphetamines (42–37% and 37%), cocaine (81–78% and 80%), cannabinols (47–39% and 41%), and opiates (61–53% and 53%). Looking only at a subset of the field trial data and focusing on DSM-III-R and ICD-10, Rapaport and colleagues (1993) reported *kappas* of 0.74–0.93 for dependence across various drugs. In another study using the provisional diagnosis for DSM-IV and reporting on alcohol, more than 40 000 individuals from the general population the proportion diagnosed dependent dropped only slightly (6.25–5.93%) from DSM-III-R to DSM-IV (Grant *et al.*, 1992). A third investigation

**Table 1.** *Dependence criteria for DSM-III-R, DSM-IV and ICD-10*[a]

| DSM-IV dependence | DSM-III-R dependence | ICD-10 dependence |
|---|---|---|
| A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three or more of the following occurring at any time in the same 12-month period: | (a) At least three of the following *and* (b) some symptoms of the disturbance have persisted for at least 1 month, or have occurred repeatedly over a longer period of time | A diagnosis of dependence should be made if three or more of the following have been experienced or exhibited at some time during the previous year: |
| 1. tolerance: (a) need for markedly increased amounts of the substance to achieve intoxication or desired affect or (b) markedly diminished effect with continued use of the same amount of the substance | 7. marked tolerance: need for markedly increased amounts of the substance in order to achieve the same effect, or markedly diminished effect with continued use of the same amount | d. evidence of tolerance such that increased doses of the substance are required in order to achieve effects originally produced by lower doses |
| 2. withdrawal: (a) characteristic withdrawal syndrome for the substance or (b) the same substance takes to relieve or avoid withdrawal symptoms. | 8. characteristic withdrawal symptoms<br>9. substance often taken to relieve or avoid withdrawal symptoms | c. a physiological withdrawal state when substance use has ceased or been reduced, as evidenced by: the characteristic withdrawal syndrome for the substance; or use of the same (or a closely related) substance with the intention of relieving or avoiding withdrawal symptoms |
| 3. substance is often taken in larger amounts or over a longer period than was intended | 1. substance often taken in larger amounts or over a longer period than the person intended | a. a strong desire or sense of compulsion to take drugs or alcohol |
| 4. any unsuccessful effort or a persistent desire to cut down or control substance use | 2. persistent desire or one or more unsuccessful efforts to cut down or control substance use | b. difficulties in controlling substance-taking behavior in terms of its onset, termination or levels of use |
| 5. a great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects | 3. a great deal of time spent in activities necessary to get the substance, taking the substance or recovering from its effects | |
| 6. important social, occupational or recreational activities given up or reduced because of substance use | 5. important social, occupational or recreational activities given up or greatly reduced because of substance use | e. progressive neglect of alternative pleasures of interests in favour of substance use |
| 7. continued substance use despite knowledge of having had a persistent or recurrent physical or psychological problem that is likely to be caused or exacerbated by the substance | 6. continued substance use despite knowledge of having a persistent or recurrent social, psychological or physical problem that is caused or exacerbated by the use of the same | f. persisting with drug or alcohol use despite clear evidence of overtly harmful consequences |
| | 4. amount frequent intoxication or withdrawal when expected to fulfill major role obligations at work, school or home, or when substance use is physically hazardous | |

[a]Unique diagnostic criteria in each system are shown in italics.

reported the lifetime prevalence of dependence on alcohol and cocaine among groups of patients, corroborating the general similarity for DSM-III-R and provisional DSM-IV labels (Tracy *et al.*, 1991). Finally, a comparison of provisional DSM-IV and ICD-10 criteria among 521 individuals revealed comparable proportions of subjects with dependence diagnoses, with slightly higher rates in the American system, and *kappas* ranging from 0.63 for cannabinols to 0.95 for opiates (Rounsaville *et al.*, 1993). In summary, data from several surveys using divergent approaches indicate fairly good agreement for dependence across the three diagnostic systems for a variety of substances.

Evidence from several studies is available on the proportion of individuals with abuse or harmful use in the diagnostic systems. While 10% of individuals in the DSM-IV field trial were diagnosed with alcohol abuse using DSM-III-R criteria, this proportion increased to 14% in ICD-10 and 20% in the final version of DSM-IV (Cottler *et al.*, 1994). The proportions of users with amphetamine abuse across the three systems were 33%, 44% and 14%, figures for cocaine were 11%, 13% and 6%, for cannabinols rates were 11%, 13% and 6%, while for opiates figures were 11%, 16% and 10% across DSM-III-R, ICD-10, and DSM-IV (Cottler *et al.*, 1994). These figures indicate that for abuse/harmful use the relative proportion labeled in the diagnostic systems varied depending on the drug involved. The large household survey cited above revealed that while 2.4% of the population (not simply users) met criteria for alcohol abuse in DSM-III-R, less than 1% met provisional criteria for DSM-IV (Grant *et al.*, 1992). *Kappas* computed from the group of 521 individuals from both treatment programs and the general population ranged from 0.08 to 0.35 for DSM-IV (provisional) and ICD-10 criteria, with most below 0.20, indicating substantial disagreement in the systems (Rounsaville *et al.*, 1993).

Finally, several surveys have addressed the impact of subdividing the diagnosis of dependence in DSM-IV into those individuals with and without evidence of tolerance and/or withdrawal. Focusing on 120 people in treatment for substance use disorders (including 76 inpatients), Pettinati and colleagues (1992) reported that 22% of those with alcohol dependence did not meet criteria for either tolerance and/or withdrawal, while the same was true for 44% of individuals who met criteria for dependence on the combination of cocaine and alcohol. Furthermore, if withdrawal alone (not tolerance) was used to establish the physiological subtype, the proportions of individuals so diagnosed dropped by half. Similar findings were reported in an updated and expanded sample (Pettinati *et al.*, 1993). Reports from the DSM-IV field trial, focusing on substance users, indicated that 5–10% of those diagnosed as dependent on alcohol had no physiological component, with proportions somewhere between these two figures for most other substances except for opiates, where only 2% showed this pattern (Cottler *et al.*, 1994). Thus, most studies show that a substantial subgroup of those with substance dependence lack clear evidence of a physiological component. The clinical implication of the presence or absence of physiological symptoms of dependence has not been established.

The present report applies the final criteria for substance use disorders from DSM-IV and ICD-10 to a large population of individuals. Percentages of users of each substance who qualify for a diagnosis are presented, along with *kappas* reflecting the agreement between the systems. The sample includes both men and women, individuals from a variety of ethnic groups, as well as subjects from inpatient or outpatient treatment facilities and their family members.

## Methods

The sample of 1922 people is from the ongoing Collaborative Study on the Genetics of Alcoholism (COGA) using data collected from January 1991 to July 1993. The individuals include 200 male and 59 female alcohol dependent probands selected from consecutive admissions to alcohol or substance use disorders inpatient, outpatient or aftercare treatment who met both DSM-III-R Alcohol Dependence and Feighner criteria for definite alcohoism (American Psychiatric Association 1987; Feighner *et al.*, 1972). The remaining subjects are blood relatives of the probands or married to a relative of an original subject ($n = 1373$; 41% male), or controls selected from a variety of sources including general medical and dental clinics, and random population surveys ($n = 290$; 52% male). The overall sample consists of 48% men. Seventy-six per

cent are Caucasian, 13% African American, 7% Hispanic, 1% Asian and 3% other ethnic backgrounds. At the time of evaluation, 50% of the subjects were married, 17% were separated or divorced, 3% widowed and 29% had never been married, while 80% were employed at the time of interview. The mean age of the subjects was $39.4 \pm 14.68$ years ($38.7 \pm 14.37$ years for men and $40.0 \pm 14.94$ years for women), with an average years of education completed of $12.96 \pm 2.41$ overall ($12.99 \pm 2.54$ and $12.93 \pm 2.31$ for women).

The probands were identified from treatment programs in San Diego, St. Louis, Iowa City, Hartford, New York, and Indianapolis. The initial screening of subjects included the exclusion of individuals who could not cooperate in the interview (e.g. did not speak English), and those whose family size was small enough so that they would not be appropriate for a genetic study (e.g. fewer than three relatives available for interview in the area).

Evaluations of probands, controls and relatives were carried out by trained interviewers using the Semi-Structured Assessment for the Genetics of Alcoholism (SSAGA) interview. As described (Bucholz *et al.*, 1994; Schuckit *et al.*, 1994), the SSAGA is a detailed research instrument that gathers information applicable to multiple diagnostic systems including DSM-III, DSM-III-R, DSM-IV and ICD-10. Interviewers from all centers were originally trained at a central site and studies of intra-rater and test-retest reliability were completed with resulting good levels of reliability (presented in detail elsewhere, Bucholz *et al.*, 1994). The criteria used for the substance use disorders are given in Tables 1 and 2. Additional diagnostic entities evaluated as part of this interview included the major anxiety disorders (with the exception of posttraumatic stress and generalized anxiety disorders), all of the major affective disorders, antisocial personality disorder and substance use disorders related to all illicit drugs as well as alcohol.

Among the 1922 people interviewed, 83% had ever consumed alcohol, 14% had used amphetamines, 20% had used cocaine, 6% admitted to illegal exposure to opiates, 31% had used marijuana and 9% admitted to experience with sedatives/hypnotics. In addition, 8% of the individuals interviewed had used hallucinogens, and 2% had used PCP at least 11 times in their lifetime. However, for the present analyses an emphasis was placed on symptoms related to the use of alcohol, amphetamines, cannabis, cocaine, opiates and sedative/hypnotics.

For the analyses presented in the table, computer algorithms were developed to meet criteria for each of the three major systems. *Kappa* statistics were generated using BDMP Statistical Software's 4F program for analysis of multiway tables (Dixon, 1990).

## Results

Table 3 presents the proportion of individuals who have used alcohol or five illicit substances who met criteria for dependence, abuse/harmful use, or no diagnosis across DSM-III-R, DSM-IV and ICD-10. These data were used to generate *kappa* statistics for levels of overall agreement across the systems, and for a comparison of each of the three systems with the others.

Focusing on dependence, the proportion of individuals diagnosed with this syndrome at some time in their life in DSM-IV is lower than that observed in DSM-III-R, but usually higher than the proportion of individuals similarly diagnosed in ICD-10. For abuse/harmful use, DSM-IV appears to be the most generous of the three systems in assigning a label of abuse, with DSM-III-R indicating the diagnosis for a relatively small percentage of individuals, and ICD-10 resulting in proportions midway between these two. Comparing DSM-III-R with DSM-IV reveals that 2% of the subjects with dependence on alcohol in the earlier manual were called abuse in DSM-IV.

The *kappa* statistics indicate that, overall for most drugs, the levels of agreement between DSM-III-R, DSM-IV and ICD-10 are fairly good for dependence diagnoses. However, the *kappas* indicate low agreement across the three systems for the diagnosis of abuse/harmful use. While not shown in the tables, the data offer information about the proportion of dependent individuals for each drug who were diagnosed as having tolerance and/or withdrawal. In this sample, 15% of those with cannabis dependence met criteria for dependence in the absence of either tolerance or withdrawal. The same was true for 7% of alcohol dependent individuals, 4% of those with cocaine dependence, but 2% or less of those with dependence on sedative/hypnotics, opiates or amphetamines.

**Table 2.** *Abuse/harmful use criteria in DSM-IV, DSM-III-R and ICD-10*[a]

| DSM-IV abuse | DSM-III-R abuse | ICD-10 harmful use |
|---|---|---|
| A. A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by one or more of the following: | A. A maladaptive pattern of psychoactive substance use indicated by at least one of the following: | The diagnosis requires that actual damage should have been caused to the mental or physical health of the user<br>Harmful patterns of use are often criticized by others and are often associated with adverse social consequences of various kinds |
| 1. recurrent substance use resulting in a failure to fulfill major role obligations at work, school or home | | |
| 2. recurrent substance use in situations in which it is physically hazardous | 2. recurrent use in situations in which use is physically hazardous | |
| 3. recurrent substance-related legal problems | | |
| 4. continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance | 1. continued use despite knowledge of having a persistent or recurrent social, occupational, psychological or physical problem that is caused or exacerbated by use of the psychoactive substance | |
| | B. Some symptoms of the disturbance have persisted for at least one month, or have occurred repeatedly over a longer period of time | |
| B. Never meets the criteria for Substance Dependence for this substance | C. Never met the criteria for Psychoactive Substance Dependence for this substance | Harmful use should not be diagnosed if the dependence syndrome, a psychotic disorder or other specific forms of drug or alcohol-related disorders are present |

[a]Unique diagnostic criteria in each system are shown in italics.

**Table 3.** *Percentage of users with dependence or abuse/harmful use and kappa comparisons across three systems*

| Substance and diagnosis | % of users with diagnosis by | | | Kappa values for comparisons | | |
|---|---|---|---|---|---|---|
| | DSM-III-R | DSM-IV | ICD-10 | IIIR vs. IV | IV vs. 10 | IIIR vs. 10 |
| Alcohol ($n = 1604$) | | | | | | |
| Dependence | 50.5 | 40.2 | 27.6 | 0.79† | 0.71† | 0.54† |
| Abuse or harmful use | 1.3 | 25.8 | 12.4 | 0.07‡ | 0.05‡ | 0.03‡ |
| No diagnosis | 48.3 | 33.9 | 59.9 | 0.71† | 0.44† | 0.65† |
| Overall kappa | | | | 0.61† | 0.44† | 0.53† |
| Amphetamines ($n = 269$) | | | | | | |
| Dependence | 42.8 | 30.5 | 28.6 | 0.74† | 0.83† | 0.69† |
| Abuse or harmful use | 1.1 | 32.3 | 12.3 | 0.05‡ | 0.07 | − 0.02 |
| No diagnosis | 56.1 | 37.2 | 59.1 | 0.56† | 0.44† | 0.71† |
| Overall kappa | | | | 0.49† | 0.46† | 0.62† |
| Cannabis ($n = 541$) | | | | | | |
| Dependence | 52.1 | 35.9 | 42.14 | 0.68† | 0.78† | 0.79† |
| Abuse or harmful use | 2.6 | 35.7 | 8.7 | 0.09† | 0.05 | 0.13† |
| No diagnosis | 45.3 | 28.5 | 49.2 | 0.59† | 0.39† | 0.72† |
| Overall kappa | | | | 0.49† | 0.44† | 0.69† |
| Cocaine ($n = 392$) | | | | | | |
| Dependence | 64.5 | 55.4 | 45.4 | 0.81† | 0.76† | 0.63† |
| Abuse or harmful use | 1.0 | 20.7 | 10.9 | 0.08† | 0.04 | 0.02 |
| No diagnosis | 34.3 | 23.9 | 43.6 | 0.74† | 0.51† | 0.75† |
| Overall kappa | | | | 0.64† | 0.51† | 0.61† |
| Opiates ($n = 123$) | | | | | | |
| Dependence | 56.1 | 45.5 | 39.8 | 0.79† | 0.75† | 0.68† |
| Abuse or harmful use | 0.8 | 18.7 | 17.9 | 0.07‡ | 0.16 | 0.07‡ |
| No diagnosis | 43.1 | 35.8 | 42.3 | 0.71† | 0.59† | 0.78† |
| Overall kappa | | | | 0.64† | 0.55† | 0.63† |
| Sedatives ($n = 182$) | | | | | | |
| Dependence | 40.7 | 26.4 | 24.7 | 0.69† | 0.76† | 0.65† |
| Abuse or harmful use | 2.8 | 27.5 | 17.0 | 0.13† | 0.29† | 0.13‡ |
| No diagnosis | 56.6 | 46.2 | 58.2 | 0.66† | 0.57† | 0.76† |
| Overall kappa | | | | 0.55† | 0.55† | 0.61† |

†Kappa value is significant at $p > 0.001$ using a 2-tailed $t$ test; ‡kappa value is significant at $p > 0.05$ using a 2-tailed $t$ test.

**Discussion**

The diagnostic criteria for substance use disorders have changed dramatically since 1979. In the past 15 years, three new diagnostic systems have appeared with important similarities and differences. All three diagnostic approaches recommend that individuals with substance use disorders be subdivided into those demonstrating a more severe and pervasive syndrome, called dependence, and those with less severe conditions, called abuse or harmful use. All three use an expanded concept of dependence that incorporates tolerance or withdrawal, but which does not require these items for a diagnosis. At the same time, no two systems agree on the number of items for dependence that must be documented before a diagnosis is appropriate, and each offers alternative versions of the less intense substance use disorder (abuse or harmful use). While all three emphasize repetitive problems occurring together, the duration or clustering approaches are not identical. DSM-IV requires items to occur in any 12-month period, ICD-10 focuses on problems occurring in the prior year, and DSM-III-R uses a more complex approach based on the duration of time over which the multiple conditions occurred.

The present study takes advantage of information gathered from a large and diverse population of patients, controls and their relatives selected at six centers across the United States. Questions specific for the criteria relevant to the three systems were used in a face to face standardized interview. Information is reported using only those who have had exposure to the drug in question.

In this data set, the proportion of individuals diagnosed with dependence in DSM-IV are consistently lower than those similarly labeled in DSM-III-R, but higher than the proportion with dependence diagnoses assigned in ICD-10. These results are similar to those related by Rounsaville *et al.* (1993), and differ only slightly from those of Cottler *et al.* (1994). This level of similarity appears to reflect aspects of the criteria themselves. The lowest threshold for diagnosis of dependence, requiring three of nine items, is seen for DSM-III-R, while the use of any three of seven items for DSM-IV is a little more restrictive, and the need for three of six items by ICD-10 is still more difficult to meet. The *kappa* statistics reported in Table 3 indicate that it is usually the same individuals who receive the dependence labels for each of the drugs across the three systems. While figures are high, differences probably reflect some divergence in how specific items are worded and on clustering versus duration criteria. The present results, interpreted in light of the literature, indicate that clinicians and researchers using DSM-IV will not experience large changes regarding the clinical meaning of dependence criteria compared to the two other major diagnostic systems.

Also consistent with the literature, the present results document differences in the meaning of abuse or harmful use across the three systems. These differences appear to relate to divergence in the actual criteria themselves. ICD-10 focuses only on psychological and physical harm occurring in the context of substance use, deliberately excluding social, interpersonal and legal problems. In contrast, in addition to these physical and psychological problems, DSM-III-R and DSM-IV criteria for abuse specifically list the psychosocial items. However, criteria for DSM-III-R and DSM-IV also differ. Two of the items used in DSM-IV are similar to those from DSM-III-R, and the threshold for both systems is an endorsement of any one item, but unlike DSM-III-R, DSM-IV uses an expanded criteria list, with no abuse item incorporated into dependence. Reflecting the fact that few of the published comparisons of abuse in DSM-III-R and DSM-IV used the final diagnostic criteria, it is not possible to compare definitively the present results to those available from other samples. However, despite some similarities between DSM-III-R and DSM-IV on the specific criteria for abuse, the levels of *kappas* are quite low. This appears to be a result of the movement of some symptoms of DSM-III-R dependence to DSM-IV abuse, and the reclassification of people from dependence in DSM-III-R to abuse in DSM-IV. In addition, the expanded criteria for abuse in DSM-IV appears to identify cases left undiagnosed by DSM-III-R.

Finally, with regard to Table 3, for most drugs it does appear as if a substantial minority of individuals who meet criteria for dependence on at least several of the drugs do so in the absence of evidence of tolerance and withdrawal. In DSM-III none of these men and women would have been labeled as dependent, while all three of the diagnostic systems evaluated here broadened the concept to include these individuals. The last-minute decision to include abuse cri-

teria in DSM-III-R did not allow for an adequate evaluation of potential clinical impact of the absence of an emphasis on tolerance and withdrawal in the criteria developed in 1980. Therefore, at present the prognostic and treatment implications of the presence or absence of physiological aspects of dependence are not known. Thus, it is hoped that the requirement that dependence syndromes be further classified will, in the decade or so before the publication of DSM-V, be used to generate additional information about the most appropriate treatment settings, the need for active detoxification with medications, the optimal length of treatment and the need for formal relapse prevention programs for different subgroups of individuals with substance use disorders.

Finally, as is true of any of the studies cited here, the present results must be interpreted in light of the methods used. The sample represents alcohol-dependent individuals who have been in treatment and their relatives, subjects chosen as part of a genetic study. Thus, it is not certain that identical results would be observed in fully non-treatment-related samples, individuals who entered care for drugs without evidence of alcohol-related problems, and so on. Also analyses across subgroups of probands and relatives were not possible because of the relatively small number of subjects who would be involved. However, in general the present results are similar to those reported by other investigators.

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