

White, W. (2007). Substance abuse versus substance dependence: Implications for management of the DUI offender. Briefing Paper for the Administrative Office of the Illinois Courts and the Illinois Secretary of State.

Substance Abuse vs. Substance Dependence: Implications for the Management of the DUI Offender

William L. White, MA

Introduction

Over the past three decades, the author has provided ongoing training to key stakeholders involved in the management of DUI offenders in the State of Illinois. Included among those key stakeholders are traffic court judges, states attorneys, probation officers, court social service workers, DUI evaluators, treatment specialists, and DUI hearing officers. One of the most consistent areas of interest expressed by these professionals is the distinction between substance use and substance dependence and whether placement in one or the other diagnostic category influences risk of DUI recidivism or approaches to management and treatment. The purpose of this paper is to provide answers to such questions that are brief and as clear as current research will allow.

How were the diagnoses of substance abuse and substance dependence developed?

Internationally, there are two major systems for classifying psychiatric illnesses: the *Diagnostic and Statistical Manual of Mental Disorders* (fourth edition; DSM-IV) of the American Psychiatric Association and the *International Classification of Diseases* (tenth edition, ICD-10) of the World Health Organization. DSM-IV is the primary system of diagnostic classification used in the United States.

In the first and second editions of DSM published in 1952 and 1968, addiction was classified as a personality disorder—a classification reflecting the view that addiction was not a disease in its own right but a symptom of a disordered personality (Saunders, 2006). In the third edition of DSM

published in 1980, substance use disorders were listed as separate disorders under the headings substance abuse and substance dependence. (The term substance dependence won out over the term addiction by one committee member vote)(O'Brien, Volkow, & Li, 2006). In two subsequent revisions—DSM-III-R (1987) and DSM-IV (1994)—the criteria for abuse and dependence were refined based on the work of Edwards and Gross (1976). In DSM-IV, the criteria for substance abuse reflect a less severe disorder than substance dependence such that one can only be diagnosed with substance abuse in the absence of substance dependence.

Research reviews and expert panels for a planned DSM-V began in 2004 and are expected to be completed in 2012-2014. The ICD will be undergoing revision during this same time period.

What are the differences in criteria for substance abuse versus substance dependence?

The DSM-IV defines the diagnostic criteria for substance abuse as *a maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one or more of the following, occurring within a 12-month period:*

1. *Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children or household).*
2. *Recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use).*
3. *Recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct).*
4. *Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights).*

The DSM-IV defines substance dependence as *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:

- 1. Tolerance, as defined by either of the following:
 - a. A need for markedly increased amounts of the substance to achieve intoxication or desired effect.*
 - b. Markedly diminished effect with continued use of the same amount of the substance.**
- 2. Withdrawal, as manifested by either of the following:
 - a. The characteristic withdrawal syndrome for the substance (refer to criteria A and B of the criteria sets for Withdrawal from the specific substances).*
 - b. The same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms.**
- 3. The substance is often taken in larger amounts or over a longer period than was intended.*
- 4. There is a persistent desire or unsuccessful efforts to cut down or control substance use.*
- 5. A great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distances), use the substance (e.g., chain smoking), or recover from its effects.*
- 6. Important social, occupational, or recreational activities are given up or reduced because of substance use.*
- 7. The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption).*

DSM-IV includes several specifiers for substance dependence, one of which outlines whether substance dependence is with physiologic dependence (evidence of tolerance or withdrawal) or without physiologic dependence (no evidence of tolerance or withdrawal). In addition, remission categories are classified into four subtypes: (1) full, (2) early partial, (3) sustained, and (4) sustained partial; on the basis of whether any of the criteria for abuse or dependence have been met and over what time frame. The remission category can also be used for patients receiving agonist therapy (such as methadone maintenance) or for those living in a controlled, drug-free environment.

Source: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Copyright 1994, American Psychiatric Association.

<http://www.appi.org>

What is the degree of scientific validity of these classifications?

In 2002, a Research Society on Alcoholism meeting was held in San Francisco to specifically discuss this question. The scientists present concluded the following: “The findings support the validity of DSM-IV alcohol dependence across numerous study designs and samples.” They went on to suggest that the findings of the studies they reviewed “raised questions about the validity of the diagnosis of alcohol abuse as currently defined” (Hasin, Schuckit, Martin et al., 2003). Studies of diagnostic reliability also note high reliability for substance dependence but greater variability of reliability for substance abuse (Hasin, Hatzenbueler, Keyes, & Ogburn, 2006).

Problems related to this classification include the following:

- Many terms used in the diagnostic criteria (e.g., larger amounts, longer periods, important activities) have not been adequately defined (Harrison, Fulkerson, & Beebe, 1998).
- Surveys reveal that many of those meeting general diagnostic criteria use 3 or more drugs, challenging the application of drug-specific diagnoses (Harrison, Fulkerson, & Beebe, 1998).
- A significant portion of those diagnosed with substance abuse do so by meeting only one symptom, e.g., hazardous driving (Hasin et al., 1997; Hoffman & Hoffman, 2003).
- Symptoms of abuse and dependence are not easily distinguished in some populations, e.g., adolescents (Harrison et al., 1998; Fulkerson et al., 1999).
- There is a social trend to describe all adolescent substance use as “abuse”—further obscuring the diagnostic precision of this term (Harrison, Fulkerson, & Beebe, 1998).
- The frequent report of tolerance among adolescents may be developmentally normal and not “a pathological process indicative of alcohol dependence” (Grant, Compton, Crowley, et al., 2007).
- Fulkerson and colleagues (1999) have argued that there is no clinical value in distinguishing substance abuse and substance dependence in adolescents.

- There is often overlap in some symptoms across the diagnoses of alcohol abuse and alcohol dependence (Grant, Harford, Muthen et al., 2007).
- “The lack of highly sensitive and specific biological tests leaves the need to rely on less precise behaviorally oriented criteria sets” (Hasin et al., 2003).
- The emphasis on tolerance and withdrawal as dependence criteria has led to withholding appropriate medication from pain patients (O’Brien, Volkow, & Li, 2006).
- Addictionologists and recovery advocates have attacked use of the term “abuse” on the grounds that it is pejorative, stigmatizing, and applied to no other health condition (Graham & Schultz, 1998; White, 2006).

Wouldn’t everyone with a diagnosis of substance dependence also manifest signs of substance abuse?

While some studies continued to report a migration from substance abuse to substance dependence (Ridenour, Cottler, Compton et al., 2003), general population studies in the US have concluded that “a substantial portion of those with alcohol dependence did not manifest signs of alcohol abuse” (Hasin & Grant, 2004). In the most recent study, one-fifth of those with DSM-IV drug dependence did not meet diagnostic criteria for substance abuse—a pattern more prevalent in women than in men (Hasin, Hatzenbueler, Smith, & Grant, 2005). A recent review of the research on this question was clear:

Alcohol abuse and alcohol dependence are conceptually and diagnostically separate and distinct entities. One is not a precursor or predictor of the other. (Grant, Compton, Crowley et al., 2007).

The clinical importance of this has been summarized as follows:

Different biopsychosocial processes may give rise to the symptoms of drug dependence and drug abuse. For example, genes affecting reward, craving withdrawal (characterizing dependence) may differ from genes affecting novelty-seeking or behavioral undercontrol (characterizing abuse) (Hasin et al., 2005).

The relationship between alcohol abuse and dependence is a somewhat controversial one, with some conflicting reports. Most studies have found that only about 10% of those with alcohol abuse later progress to alcohol dependence (Schuckit, Smith, Danko et al., 2005). The relationship between abuse and dependence may, however, differ by drug of preference. Ridenhour et al. (2003) found a progression from abuse to dependence with alcohol and cannabis, but not for cocaine or opiates.

Do the course of substance abuse and the course of substance dependence differ?

Reviews of the course of abuse versus dependence conclude that “dependence is likely to remain chronic, while abuse is likely to remit and unlikely to progress to dependence” (Hasin, Van Rossem, McCloud, & Endicott, 1997; Hasin et al., 2003; Hasin, Hatzenbueler, Smith, & Grant, 2005; Grant, Harford, Muthen, et al., 2007). A study of the four-year course of alcohol dependence and alcohol abuse revealed that most of those diagnosed with alcohol dependence at baseline remained there four years later. In contrast, two-thirds of those with a substance abuse diagnosis no longer met criteria for that disorder four years later. What distinguished this maturing out from the one-third who remained in the abuse category was not clear from the study. In a five year follow-up study, Schuckit and colleagues (2002) found that a diagnosis of dependence was associated with a 70% greater risk of problem continuation than a diagnosis of substance abuse.

What about people who are referred to as “diagnostic orphans”?

Diagnostic orphans are individuals who meet some criteria for substance dependence but not enough to warrant a diagnosis, e.g., reporting only increased tolerance. This category may also include people who had alcohol or other drug-related problems that have not yet met the diagnostic threshold. Those with subthreshold alcohol problems have represented as much as 20% of the adult population in some surveys (Chung et al., 2002). At present, we know very little about this group. They may reflect people on their way to developing more severe problems, people who are in the process of decelerating alcohol and other drug problems, or persons who have reached and sustained a plateau of less severe problems. In general, diagnostic orphans have less alcohol problems at five-year follow-up than those who meet criteria for alcohol abuse or alcohol dependence.

Discussion

What conclusions can one draw from the existing scientific studies of alcohol abuse and alcohol dependence and how should these findings influence the decisions of those professionals charged by the community for evaluating, punishing, treating, and monitoring DUI offenders? Based on this author's review of this data and his work in addiction treatment for nearly four decades, the following conclusions are offered as points for discussion.

The lack of objective physical diagnostic tests, the reliance on offender self-report, the variability in the competence of evaluators, and overlap in the diagnostic criteria all compromise the ability to make decisions based solely on a differential diagnosis of alcohol abuse or alcohol dependence. This principle bodes caution in the over-reliance on a diagnosis for risk prediction or for service planning. The rapid breakthroughs that are occurring in the neurobiology of addiction promise new tools (e.g., blood tests) to enhance accuracy of diagnosis.

To the extent that the accuracy of diagnoses can be relied upon, those with a diagnosis of alcohol dependence are likely to be at greater risk of DUI recidivism than those with a diagnosis of alcohol abuse. The reason for this increased risk lies in the greater severity and longer course of alcohol dependence. And yet one would be remiss in assuming that alcohol abuse is a transient problem that will dissipate with personal maturation and social consequences in all persons.

Alcohol abuse and alcohol dependence present at very different levels of severity. The higher the problem severity within each diagnosis, the greater the risk for future DUI recidivism. Problem severity can be measured in two ways: the number of the diagnostic criteria that are met and the frequency and intensity of each criteria met. In the latter, for example, an individual could meet only one criteria for alcohol abuse such as *Recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)*, but drive at a high degree of impairment (high BAC) and a high degree of frequency.

Among the dependent population, the single best predictor of increased risk for future relapse (Chung et al., 2002) and a more severe and

prolonged addiction career (Schuckit et al., 2002) is a history of withdrawal symptoms. As it relates to public safety, what evidence of withdrawal predicts is the loss of volitional control over when and under what circumstances one drinks. In the face of acute withdrawal, one's past resolutions not to drink and drive again may mean very little.

Alcohol abuse among young drinkers is less persistent over time than this same diagnosis in an older adult. About one-third of those diagnosed with alcohol abuse will still meet these diagnostic criteria five years later (Saunders, 2006). Two points are implied here. First, there really is evidence of maturing out of alcohol abuse for many individuals. Second, a subset of individuals with alcohol abuse will have a long career of alcohol problems, a portion of which will pose continued threats to public safety via drinking and driving.

The risk for future DUI recidivism involves risk factors that transcend and may be shared across the diagnostic boundaries of alcohol abuse and alcohol dependence. Instruments like the Hard Core Drinking Driver Checklist reflect these common risk factors shared by those who have one or the other diagnosis (White & Gasperin, in press).

Because of its heightened degree of severity and chronicity, those diagnosed with alcohol dependence should receive treatment of greater intensity and duration than those diagnosed with alcohol abuse (Hoffmann & Hoffmann, 2003). The exception to this rule consists of persons diagnosed with alcohol abuse who present patterns of high severity and problem persistence. These individuals may require sustained treatment and monitoring on par with those diagnosed with alcohol dependence.

DUI offenders with multiple problems constitute a group at higher risk for problem chronicity and future DUI recidivism. A portion of DUI offenders also meet diagnostic criteria for drug abuse and dependence (other than alcohol) (about 4-10% and 20-30% respectively) (C'de Baca et al., 2004). In a recently published study, 77% of DUI offenders met criteria for alcohol abuse or alcohol dependence, 42% also met lifetime criteria for drug abuse or dependence, and 33% met criteria for a co-occurring mood or anxiety disorder (Palmer, Ball, Rounsaville, & O'Malley, 2007). Early treatment gains are less likely to be sustained for those DUI offenders with co-occurring drug abuse/dependence and psychiatric problems (Palmer et al., 2007).

The ability to resolve alcohol problems by altering the frequency, intensity, and contexts of drinking is dependent on problem severity (Larimer et al., 1998). The abstinence goal for those with alcohol problems grew out of experience treating persons in late stages of alcohol dependence whose moderation attempts had been consistently unsuccessful. Moderated solutions to alcohol problems for those with histories of alcohol dependence are unlikely, and even when achieved, difficult to sustain, as indicated by the fact that many who achieve temporary moderation eventually migrate toward abstinence. In contrast, moderated solutions to alcohol abuse seem to be the most common approach to resolving such problems among community populations, particularly young drinkers (White & Kurtz, 2006). The question of whether a person can make and keep decisions to reduce the frequency and quantity of alcohol intake and drink in ways that do not pose threats to the safety of themselves and others seems to rely, not on diagnosis, but on problem severity. As severity increases in each of these diagnostic categories, the odds of successful moderation of drinking decline¹ (for a more detailed discussion, see White & Gasperin, 2006). Individuals seeking reinstatement of driving privileges through the Secretary of State bear the burden of proof that their resolution goal (abstinence or moderation) is congruent with the intensity and duration of their drinking history/problems and that this resolution (abstinence or moderation) marks a sustainable pattern of stability rather than a brief, externally posed hiatus in their career of alcohol problems. Factors, particularly in combination, that may reduce the chances of successful moderation and increase the risks of sustained alcohol problems include the following:

- Family history of alcohol and other drug problems,
- Early age of onset of alcohol use,
- Developmental victimization (physical/sexual abuse),
- Presence of a co-occurring psychiatric disorder, and
- An alcohol-saturated social network.

Effectively treating those with the most severe alcohol problems, particularly severe patterns of alcohol dependence, benefits from new pharmacological treatments and new approaches to post-treatment monitoring. New medications such as naltrexone, nalmefene, and

¹ “Moderation is defined as no more than one drink per day for women and no more than two drinks per day for men. A drink is considered to be 12 oz. regular beer, 5 oz wine or 1.5 oz 80-proof distilled spirits.” Dufour, 1999, p. 13)

acamprosate have been shown to reduce post-withdrawal cravings for alcohol and reduce the rewarding effects of alcohol if it is consumed (Alcohol Alert, 2000; Volpicelli, 2001). Antidepressants, mood stabilizers, and neuroleptic (anti-psychotic) medications are being increasingly used in addiction treatment to manage co-occurring psychiatric disorders. New monitoring protocol includes sustained “recovery checkups” that provide regular monitoring, support and, when needed, early re-intervention (Dennis, Scott, & Funk, 2003).

Effectively treating those with less severe alcohol and co-occurring problems will also require new treatment technologies. These technologies may involve different goals, different treatment philosophies and techniques, and different support groups. These technologies include brief interventions that have proven effective with those with less severe alcohol problems (Alcohol Alert, 2003).

About the Author: William L. White is a Senior Research Consultant at Chestnut Health Systems in Bloomington, IL. He has a Master’s Degree in Addiction Studies and more than 35 years of full time work in the addictions field. He is the author of more than 250 articles and monographs as well as 12 books.

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