DSM-III-R CRITERIA AS AN INDICATION OF THE SEVERITY OF ALCOHOL DEPENDENCE AMONG DWI OFFENDERS

William F. Wieczorek
Research Institute on Alcoholism
1021 Main Street
Buffalo, NY 14203

Brenda A. Miller
Research Institute on Alcoholism

Thomas H. Nochajski
Research Institute on Alcoholism

Edward A. Pristach
Research Institute on Alcoholism

Brian W. Greene
Research Institute on Alcoholism

Presented at the 5th Congress of the
International Society for Biomedical Research on Alcoholism
held jointly with the Research Society on Alcoholism
at Toronto, Canada, June 1990

Abstract

We examined whether the number of DSM-III-R dependence criteria can meaningfully differentiate the severity of alcohol dependence within a sample of convicted drinking drivers (DWI). This issue is of particular importance for DWI offenders because many only qualify marginally for the dependence diagnosis. Significant relationships between the number of DSM-III-R criteria and measures of problem severity would indicate that the number of criteria is a more appropriate measure than the categorical diagnosis. Our sample (N=374) consists of first and repeat DWI offenders. The number of DSM-III-R criteria was measured by a self-administered questionnaire based on the DIS. The preoccupation with alcohol scale (PAS) was used and it is highly appropriate since a preoccupation with alcohol is closely related to drink seeking behavior and a compulsion to drink, which are major tenets of the alcohol dependence syndrome. The severity of psychiatric symptoms (based on 5 dimensions of the SCL-90-R), level of interpersonal competence, age of first drink, age first drunk, amount spent per week on alcohol, DWI offender status, family history of alcohol problems, and a history of severe cuts or burns since age 18 also were used since all are known to be predictors of alcohol dependence. All of the measures show statistically significant relationships that indicate alcohol dependence severity increases with the number of criteria present. The strong relationships between the number of criteria and the PAS ($r=.70$, $p<.0001$), and psychiatric symptoms ($r=.65$, $p<.0001$) provide substantial support for using the number of dependence criteria as a measure of severity. The clinical implication is that the number of criteria provides an objective measure of dependence severity that can be used for matching DWI offenders with the level of treatment. (Supported by the National Highway Traffic Safety Administration.)

Introduction

Different levels of alcohol dependence severity are recognized in the DSM-III-R definition of alcohol dependence (APA, 1987; Rounsaville et al., 1986); however, research is lacking on how to operationalize severity. Severity of dependence (i.e., in remission, mild, moderate, or severe) is based on "clinical judgment considering the number of dependence criteria met and the severity of behaviors described in the individual criteria" (Rounsaville et al. 1986). This method of using clinical judgment to assign severity was criticized by Segal (1987) because "judgmental decisions lead to confusion."

The concept of severity of dependence is important because matching the intensity of treatment with the severity of alcohol dependence may lead to improved outcomes that may also be more cost effective than could be achieved without matching (Miller, 1989). DSM-III-R utilizes nine dependence criteria of which at least three must be met to make a diagnosis of alcohol dependence (APA, 1987). The DSM-III-R definition of dependence is broader than that used by DSM-III (APA, 1980), which leads to some individuals receiving a DSM-III-R dependence diagnosis who would not have received that diagnosis under DSM-III (Landry, 1987; Rounsaville et al., 1987). Similarly, among DWI offenders referred for alcoholism evaluation, Wieczorek et al. (1989) compared DSM-III and DSM-III-R diagnoses finding that the rate of alcohol dependence based on DSM-III-R was 2.5 times that for DSM-III. A major clinical issue associated with the DSM-III-R system is what type of treatment/intervention is required for those who just meet the number of criteria needed for DSM-III-R dependence as opposed to those who substantially exceed the number of criteria necessary for a diagnosis. There is a need for a method to objectively quantify dependence severity to enable the matching of patients to the correct intensity of

treatment.

The reason for the higher rates of dependence when using DSM-III-R is that DSM-III-R dependence is based on the alcohol dependence syndrome (Edwards, 1986; Rounsaville et al., 1986), which conceptualizes dependence to exist along a broad continuum of severity. The DSM-III-R dependence criteria were chosen to "reflect theoretical and empirical advances in defining a 'dependence syndrome' that underlies compulsive use..."(Rounsaville et al., 1986). This explanation of the DSM-III-R dependence criteria suggests that the number of criteria could be used to measure dependence severity.

This paper examines the number of DSM-III-R dependence criteria as a measure of the severity of alcohol dependence. The purpose of this research is to investigate the relationships between the number of DSM-III-R alcohol dependence criteria met and nine other indicators of the severity of dependence in a sample of drinking and driving (DWI) offenders to ascertain if severity may be operationalized by the number of criteria present. Do significant relationships exist between the number of DSM-III-R criteria met and other measures associated with alcohol dependence such as a preoccupation with alcohol, age of drinking onset, psychiatric severity, and interpersonal competence? If so, the number of DSM-III-R criteria met may be used to identify the severity of dependence in a sample of DWI offenders.

Methods

The sample consists of 374 DWI offenders obtained during July through November 1989 in Erie and Nassau Counties, New York. The Probation Departments in these two counties provided the 210 repeat offenders in the sample, although a Nassau County Probation program also provided access to first offenders. The Drinking Driver Program was used to recruit first-offender subjects in Erie

County. The sample is 87% male and 87% white, which approximates the gender (89% male) and racial (90% white) composition of the DWI population in New York State based on the 1988 Uniform Crime Reports.

The subjects completed confidential questionnaires assessing topics such as demographic information, drinking-related items, health-related items, and interpersonal competence. Items from the Diagnostic Interview Schedule (Robins et al., 1989) were adapted for self-administration to assess DSM-III-R alcohol dependence criteria. Alcohol-related measures included the Preoccupation with Alcohol Scale (Leonard et al., 1988), amount spent per week on drinking, age of first alcoholic drink, age first drunk on alcohol, and any family history of alcoholism. The Negative Assertion Scale of the Interpersonal Competence Questionnaire (Buhrmester et al., 1988) was used to indicate the level of interpersonal competence. Self-reported psychiatric symptoms on five subscales (depression, anxiety, psychoticism, somatization, and obsessive-compulsive) of the SCL-90-R (Derogatis, 1983) were rated by 179 individuals in the sample. These symptoms were used to form a Global Severity Index (i.e., sum of distress scores/total number of items), which Derogatis (1983) recommends as the best overall indicator of psychiatric severity. Official records from the Department of Motor Vehicles were used to categorize the sample into first and repeat DWI offender groups.

Results

Table 1 shows the correlations between the number of DSM-III-R dependence criteria and measures associated with alcohol dependence and misuse. The strongest correlation is between the dependence criteria and the Preoccupation with Alcohol Scale. This relationship is highly relevant because the Preoccupation with Alcohol Scale measures a cognitive/behavioral pattern

conceptually linked to the major principles of the alcohol dependence syndrome of a compulsion to drink and the "salience of drink-seeking behavior" (Edwards and Gross, 1976). Also, Leonard et al. (1988) found a strong correlation between the Preoccupation with Alcohol Scale and the Alcohol Dependence Scale (Skinner and Horn, 1984).

The next strongest correlation is the highly significant relationship of the Global Severity Index (GSI), our measure of psychiatric severity, with the number of DSM-III-R criteria. The alcohol dependence-psychiatric severity finding is important because the relationship is strong (r=.65), and it coincides with previous research that found significant relationships between the level of alcohol dependence and psychopathology (Skinner and Allen, 1982; Rounsaville et al., 1987).

The amount spent per week on alcohol includes the cost of going out for drinks as well as alcohol consumed at home. This measure can be used to infer the amount of alcohol consumption since it is logical to expect a relationship between the amount spent on alcohol and the amount of alcohol consumed by an individual. A moderate correlation was found between the amount spent per week on alcohol and the number of DSM-III-R dependence criteria that were met. This result suggests that more severely dependent individuals drank more than those who were less dependent as measured by the number of criteria.

The other correlations in Table 1 show more modest associations in the direction indicating the number of dependence criteria reflects the severity of dependence. The age of drinking onset has been associated with developing severe alcohol problems (Gonzalez, 1989; Rachel et al., 1982). Negative correlations between the two age of onset measures (age of first drink and age first drunk) and the number of dependence criteria imply that early onset is associated with

more severe dependency. Less interpersonal competence is associated with a larger number of dependence criteria as shown by the modest negative correlation.

Figure 1 shows the differences in the mean number of DSM-III-R dependence criteria based on DWI offender status, a family history of alcoholism, and a history of severe cuts or burns since age 18. Repeat DWI offenders are known to have more alcohol and other problems than first-time DWI offenders (Beerman et al., 1988; Perrine, 1975). Repeat DWI offenders reported significantly more DSM-III-R dependence criteria than the first offenders. The repeat offenders averaged 5.6 criteria whereas the first offender mean was close to the cutoff of three criteria necessary for a dependence diagnosis.

A family history of alcoholism is positively associated with the severity of alcohol dependence (Latcham, 1985). Our results show individuals with a positive family history of alcoholism to average significantly more DSM-III-R dependence criteria than those without such a history. The difference is highly significant; those with a family history reported an average of six dependence criteria, whereas the mean of those without a family history was less than 4 criteria.

Trauma such as severe cuts or burns (e.g., those that leave a scar) past age 18 is a predictor of alcohol dependence (Skinner et al. 1985). In this sample of DWI offenders, those who reported severe cuts and burns were significantly more likely to have reported more alcohol dependence criteria.

Discussion

All of the evidence presented in this paper indicates that the severity of alcohol dependence among DWI offenders is reflected in the number of DSM-III-R dependence criteria met. The convergent findings strengthen this conclusion because the measures represented a variety of domains (e.g., behavioral,

drinking, and health) associated with the severity of alcohol dependence. The results of this study and the findings of Hiller et al. (1989) who concluded that each of the nine DSM-III-R criteria are relevant for diagnosing alcoholism suggest strongly that the DSM-III-R criteria are suitable for indicating the level of severity and that more effort is needed to operationalize the criteria into specific severity levels.

These findings have substantial clinical and research implications. First, the DSM-III-R criteria provide a direct assessment of dependence symptoms that can be made using the well-validated Diagnostic Interview Schedule (Helzer and Robins, 1988; Robins, Helzer, Cottler, and Goldring, 1989). Second, the matching of patient and treatment characteristics can be facilitated considerably. The treatment matching hypothesis offers the hope of improved outcomes based on the assumption that individuals do better in a treatment program that is matched to their problems (Miller, 1989). The number of DSM-III-R criteria met by a client can be determined by any clinician. The clinician can direct the client to a treatment program with an intensity that matches the severity of dependence. Matching with mildly dependent individuals is of special interest because brief and low intensity interventions, that are usually low-cost, may prove to be highly appropriate for this group (Sanchez-Craig and Wilkinson, 1986). The number of DSM-III-R criteria combined with other measures such as the level of psychopathology also may be useful for developing typologies for treatment matching uses. Treatment outcome research will need to evaluate these possibilites.

Some caution is warranted regarding these findings since this paper is a preliminary examination of using DSM-III-R criteria to quantify the severity of alcohol dependence. Future research needs to examine the dependence criteria

using non-DWI samples and other measures and a quantified categorization of dependence (e.g., mild, moderate, severe) severity needs to be developed. However, the findings presented in this paper strongly implicate that the dependence criteria will provide a practical method for quantifying severity.

(This research was supported by the Governor's Traffic Safety Committee with funds from the National Highway Traffic Safety Administration.)

References

APA (1980). Diagnostic and statistical manual of mental disorders (3rd Ed.). Washington, DC: American Psychiatric Association.

APA (1987). Diagnostic and statistical manual of mental disorders (3rd Ed.--Revised). Washington, DC: American Psychiatric Association.

Beerman, K. A., Smith, M. M., and Hall, R. L. (1988). Predictors of recidivism in DUIIs. Journal Studies on Alcohol, 49, 443-449.

Buhrmester, D., Furman, W., Wittenberg, M. T., and Reis, H. T. (1988). Five domains of interpersonal competence in peer relationships. Journal of Personality and Social Psychology, 55(6), 991-1008.

Derogatis, L. R. (1983). SCL-90-R: Administration, Scoring & Procedures Manual - II. Towson, Maryland: Clinical Psychometric Research.

Edwards, G. (1986). The alcohol dependence syndrome: a concept as stimulus to inquiry. British J Addiction, 81, 171-183.

Edwards, G. and Gross, M. M. (1976). Alcohol dependence: Provisional description of a clinical syndrome. British Medical Journal, 1, 1058-1061.

Gonzalez, G. M. (1989). Early onset of drinking as a predictor of alcohol consumption and alcohol-related problems in college. J Drug Education, 19, 225-230.

Helzer, J. E. and Robins, L. N. (1988). The diagnostic interview schedule: Its development, evolution, and use. Social Psychiatry and Psychiatric Epidemiology, 23, 6-16.

Landry, M. (1987). Addiction diagnostic update: DSM-III-R psychoactive substance disorders. Journal of Psychoactive Drugs, 19, 379-381.

Latcham, R. W. (1985). Familial alcoholism: Evidence from 237 alcoholics.

British J Psychiatry, 147, 54-57.

Leonard, K. E., Harwood, M. K., and Blane, H. T. (1988). The preoccupation with alcohol scale: Development and validation. Alcoholism: Clinical and Experimental Research, 12(3), 394-399.

Miller, W. R. (1989). Matching individuals with interventions. In R. K. Hester, and W. R. Miller (Eds.), Handbook of Alcoholism Treatment Approaches. (pp. 261-271). New York: Pergamon Press.

Perrine, M. W. (1975). Alcohol, drugs, and driving: Relative priorities for basic and applied research. In S. Israelstam and S. Lambert (Eds.), Alcohol, Drugs, and Traffic Safety. (pp. 107-128). Toronto: Addiction Research Foundation.

Rachel, J. V., Guess, L. L., Hubbard, R. L., Maisto, S. A., Cavanaugh, E. R., Waddel, R., and Benrud, C. H. (1982). Alcohol misuse by adolescents. Alcohol Health and Research World, 6(4), 61-68.

Robins, L., Helzer, J., Cottler, L., and Goldring, E. (1989). NIMH Diagnostic Schedule: Version III Revised (DIS-III-R). St. Louis, Missouri: Washington University.

Rounsaville, B. J., Spitzer, R. L., and Williams, J. B. W. (1986). Proposed changes in DSM-III substance use disorders: Description and rationale. Am J Psychiatry, 143, 463-468.

Rounsaville, B. J., Dolinsky, Z. S., Babor, T. F., and Meyer, R. E. (1987b). Psychopathology as a predictor of treatment outcome in alcoholics. Arch Gen Psychiatry, 44, 505-513.

Rounsaville, B. J., Kosten, T. R., WIlliams, J. B. W., and Spitzer, R. L. (1987a). A field trial of DSM-III-R psychoactive substance dependence disorders. Am J Psychiatry, 144, 351-355.

Sanchez-Craig, M. and Wilkinson, D. A. (1986). Treating problem drinkers who are not severely dependent on alcohol. Drugs and Society, 1, 39-67.

Segal, B. M. (1987). Proposed changes in DSM-III subtance dependence criteria. Am J Psychiatry, 144, 257-258.

Skinner, H. A. and Allen, B. A. (1982). Alcohol dependence syndrome: Measurement and validation. Journal of Abnormal Psychology, 91, 199-209.

Skinner, H. A., Holt, S., Schuller, R., Roy, J., and Israel, Y. (1985). Identification of alcohol abuse: Trauma and laboratory indicators. In N. C. Chang and H. M. Chao (Eds.), Early Identification of Alcohol Problems. (pp. 285-301). Rockville, MD: NIAAA.

Skinner, H. A. and Horn, J. L. (1984). Alcohol Dependence Scale (ADS) User's Guide. Toronto: Addiction Research Foundation.

Wieczorek, W. F., Nochajski, T. H., Miller, B. A., and Whitney, R. (1989). DSM-III and DSM-III-R alcohol diagnoses for problem-drinker drivers. Presented at American Psychological Association Convention in New Orleans.

Table 1 Correlations between the number of DSM-III-R dependence criteria and measures asociated with alcohol dependence.

	Preoccupation with alcohol	GSI	Amount Spent on Alcohol/wk	Interpersonal Competence	Age of First Drink	Age of First Drunk
# of DSM-IIIR criteria	.70	.65	.50	-.23	-.29	-.33

For all correlations, $p<.0001$ based on two-tailed tests.

Figure 1

Differences in Mean Number of DSM-III-R Dependence Criteria by Offender Status, A Family History of Alcoholism, and a History of Cuts or Burns