

Assessment Measures

Psychiatric Research Interview for Substance and Mental Disorders: Phenomenologically Based Diagnosis in Patients Who Abuse Alcohol or Drugs¹

Deborah Hasin, Ph.D.,² Kristin Trautman, M.S.,³ and Jean Endicott, Ph.D.⁴

Abstract

The Psychiatric Research Interview for Substance and Mental Disorders (PRISM) is a psychiatric diagnostic interview designed to diagnose *DSM-IV* substance and mental disorders in patients who abuse alcohol or drugs. Primary disorders tested in the *DSM-III-R* version of the interview showed improved reliability over existing instruments, and substantially improved reliability for major depressive disorder (MOD). Developments for *DSM-IV* include a systematic set of procedures for differentiating primary disorders, substance-induced disorders, and the expected effects of intoxication and withdrawal based on the phenomenology of symptoms in conjunction with alcohol and drug use. A longitudinal version of the PRISM provides data on remission and relapse that can be analyzed with survival methods. Pilot and preliminary testing of the *DSM-IV* and longitudinal versions of the instruments is presented. By making use of psychometric principles, particularly the need to reduce criterion variance, these instruments can clarify some of the longstanding issues in the diagnosis of patients who abuse alcohol and drugs.

Psychopharmacology Bulletin 34(1):3-8, 1998.

Keywords: *DSM-IV*, substance-induced, diagnosis, reliability, comorbidity, diagnostic interviews.

¹The authors would like to acknowledge the support of grants R01AA08159, R01DA08408, K02AA00161, contract N01AA33001, and New York State Office of Mental Health.

²Columbia University, College of Physicians and Surgeons and School of Public Health and New York State Psychiatric Institute, New York, NY.

³New York State Psychiatric Institute, New York, NY.

⁴Columbia University, College of Physicians and Surgeons and New York State Psychiatric Institute, New York, NY.

Reprint requests: Dr. Deborah Hasin, Columbia University/NYSPI, 722 West 168th Street, New York, NY 10032. E-mail: hasind@nypdrat.cpmc.columbia.edu.

Introduction

Reliable and valid diagnosis of psychiatric disorders in patients with alcohol and drug problems has long been problematic; the increase in these problems among patients in the last three decades has made this an increasingly important treatment issue. Prior to *DSM-IV* (American Psychiatric Association 1994), diagnostic criteria offered little specific guidance for determining from the clinical history whether a psychiatric syndrome was substance-induced among such patients. Clinician-administered procedures left this differentiation to clinical judgement, a procedure conducive to criterion variance, unreliability, and validity problems. For example, when the Schedule for Affective Disorders and Schizophrenia-Lifetime (SADS-L; Endicott & Spitzer 1978) was administered to substance abusers 1 and 4 weeks after treatment entry, reliability of lifetime diagnoses of mental disorders was poor (Rounsaville et al. 1991). The SSAGA, developed for genetics studies of alcoholism, showed fair reliability for lifetime primary MDD ($k=.65$; Bucholz et al. 1994), but no information was given on lifetime substance-induced depression or on current diagnoses of any disorders. (Note: the term "organic" was used before *DSM-IV*, we use the term "substance-induced" throughout this paper to avoid confusion.)

Diagnoses of current disorders are important for treatment studies. The Structured Clinical Interview for *DSM-III* (SCID) showed poor reliability for current MDD ($k=.37$) in a specific substance abuser sample (Williams et al. 1992) and also for MDD among current drug users across types of treatment settings ($k=.40$; Bryant et al. 1992). SCID differentiation between substance-induced and independent psychiatric diagnoses in substance abusers showed validity problems (Kadden et al. 1995; Kranzler et al. 1996). Ross and colleagues (1995) found poor reliability results for both the SCID and the Diagnostic Interview Schedule (DIS; Robins et al. 1981) in Canadian substance abuse patients. Weiss and co-workers (1992) showed that lack of clarity for substance-induced disorders in the diagnostic criteria themselves (e.g., *DSM-III*, American Psychiatric Association 1980; *DSM-III-R*, American Psychiatric Association 1987) resulted in very different procedures being applied in different studies, even when the investigators appeared to be using the same diagnostic instrument. This included inconsistent requirements in length of abstinence, as well as different decisions about whether to make any diagnosis of a mental disorder during periods of substance abuse.

Diagnosing mental disorders in patients abusing alcohol or drugs would be easier if patients could be observed for periods of abstinence lasting at least 1 month. However, many substance abusers cannot maintain initial abstinence for 1 month in an unprotected environment, and few now have the option of 1 month of inpatient treatment. Treating the expected effects of intoxication or withdrawal as if such symptoms were independent mental disorders is unlikely to be effective in reducing the symptoms. However, failing to recognize and treat mental disorders in drug abusers may lead to poor outcomes. The difficulty lies in determining the difference between the two types of conditions, since the symptoms themselves can appear very similar. This issue is especially relevant to diagnosis of MDD since it is common in substance abusers. Placebo-controlled studies indicate that tricyclics are effective in improving mood in alcohol abusers (Cornelius et al. 1997; Mason et al. 1996; McGrath et al. 1996; Nunes et al. 1993), and a recent review suggested that treatment of comorbid depression is a useful strategy in substance abuse patients (Nunes et al. 1997), but that improved diagnosis is needed to select appropriate cases for controlled clinical trials. Thus, sound diagnostic concepts and methods can potentially contribute to more effective care for substance abuse patients with psychiatric disorders.

In response to the problems in this area of diagnosis, we developed the Psychiatric Research Interview for Substance and Mental Disorders (PRISM). The original version of the PRISM evaluated psychiatric disorders according to *DSM-III-R* criteria. PRISM features designed to improve reliability included: (1) specific rating guidelines throughout the interview, including frequency and duration requirements for symptoms, explicit exclusion criteria, and decision rules for frequent sources of uncertainty; (2) many probes indicating questions often needed to explore responses, all of which were subjected to extensive pretesting with a variety of subjects; (3) computer programs to produce diagnoses from the interview data; (4) positioning of the alcohol and drug sections at the beginning, after the background section; and (5) more structured alcohol and drug histories to provide a context for assessing psychiatric comorbidity.

A preliminary test-retest study of the PRISM was conducted in 74 community residents who drank at levels indicating high risk for alcohol dependence. A more definitive test-retest study was conducted of the *DSM-III-R* PRISM in 172 patients in substance abuse and psychiatric dual-diagnosis settings (Hasin et al. 1996). In both studies, the diagnosis of MDD was substantially more reliable than found with other instruments. In the community heavy drinkers, the kappas for current and past MDD were .86 and .66 respectively, with a kappa for dysthymia of .65. In the clinical sample, test-retest kappas were .81 and .64 for current and past MDD and .61 for dysthymia. Good to excellent kappas were also obtained for several other

primary disorders and for psychotic symptoms, and reliability for anxiety disorders was in the same range as has been found for other studies that were conducted without the complications of an all-substance-abusing sample.

In *DSM-IV*, "non-organic" was renamed "primary," and "organic" (in a substance user) was renamed "substance-induced." For patients abusing alcohol or drugs, the differential diagnosis of a mental disorder also includes a third condition, the "expected effects" of intoxication or withdrawal. *DSM-IV* provides more discussion than previous nomenclatures about diagnoses in substance-abusing patients and also provides (for the first time) some guidelines based on clinical history to differentiate the two types of mental disorders from each other and from the expected effects of intoxication/withdrawal. In *DSM-IV*, a primary psychiatric disorder is diagnosed when: "symptoms are not due to the direct physiological effects of a substance." For example, primary depressive disorders are diagnosed under the following circumstances: (1) "persistence of depressive symptoms for a substantial period of time (i.e., about a month) after the end of substance intoxication or acute substance withdrawal"; (2) "the development of depressive symptoms that are substantially in excess of what would be expected given the type or amount of the substance used or the duration of use"; or (3) "a history of prior recurrent primary depressive disorders" (p. 374).

According to *DSM-IV*, a substance-induced disorder is diagnosed when: criteria for a primary disorder are not met but a prominent, persistent disturbance predominates the clinical picture, symptoms develop within a month of intoxication or withdrawal (or are judged etiologically related), and the symptoms cause clinically significant distress/impairment. Substance-induced disorders are differentiated from intoxication or withdrawal when "symptoms are *in excess of* those usually associated with the intoxication and withdrawal syndrome and when symptoms are sufficiently severe to warrant independent clinical attention." The main contribution of the substance-induced category may not be its distinction from a primary disorder, but rather that it provides an option for diagnosing disorders in patients who abuse drugs or alcohol at the time the psychiatric syndrome begins. This option is produced by defining a condition that is distinct from the expected effects of intoxication or withdrawal. This diagnostic distinction requires that the phrase "in excess of (the expected effects) be clear, reliable, and not subject to greatly different interpretations from investigator to investigator and from research study to research study. In revising the PRISM for *DSM-IV*, these ideas were conceptualized in a manner that could be operationalized, and then put into effect in the interview. The main aim of this work was to reduce criterion variance when diagnosing psychiatric disorders in patients who abuse alcohol or drugs.

PRISM DSM-IV Primary Major Depression

Since primary depressive disorder was reliable in substance abusers in the *DSM-III-R* PRISM (Hasin et al. 1996), this aspect of the PRISM remained the same. A primary depressive disorder is diagnosed in the *DSM-IV* PRISM if the episode precedes the onset of prolonged, heavy drug use or drinking, or occurs during a period of abstinence, or begins during substance abuse but continues longer than 4 weeks after substance use stops. Five or more symptoms of depression (including either depressed mood or anhedonia) must be present most of the day, nearly every day, for at least 2 consecutive weeks. The symptoms must be "newly present or must have clearly worsened compared with the person's pre-episode status" to be counted toward a diagnosis of depression (*DSM-IV*, p. 320). This latter concept, usually used to differentiate MOD from dysthymia, became important in arriving at a clear definition of a substance-induced depressive episode (see below).

PRISM Substance-Induced Depressive Disorder

In *DSM-IV*, the absence of a duration requirement or requirement for a specific number of symptoms for substance-induced mood disorder with depressive features essentially guaranteed criterion variance and unreliability, since interviewers would be making judgments without guidelines. We introduced more structure into the diagnosis, using material from the *DSM-IV* text and criteria for major depression as guiding concepts. In the PRISM, the same duration and symptom number requirements from *DSM-IV* major depression are applied to substance-induced major depression: 2 or more consecutive weeks for duration, and 5 or more symptoms (including depressed mood or anhedonia) for the symptom threshold. Reasons for this were: (a) the criteria for MDD were developed from years of reliability and validity testing, and have been consistent from *DSM-III* to the present; (b) symptom requirements were kept relatively high because most studies show lower reliability for milder diagnoses (e.g., hypomania, dysthymia, generalized anxiety); and (c) parallel duration and symptom requirements for the two disorders meant a much simpler structure for the PRISM and an easier task for interviewers.

Just as symptoms that count toward a diagnosis of primary MDD must represent a definite change from baseline (before the onset of depressed mood), symptoms that count toward a substance-induced MDD must also represent a clear change from baseline state (again, before the onset of depressed mood). Thus, substance-induced depressive symptoms must be "newly present or must have clearly worsened compared with the person's pre-episode status" (pre-episode here referring to pre-depressed status). *In the DSM-IV PRISM, the subject's nondepressed, substance-using period immediately preceding the onset of depressed mood serves as the baseline.*

This nondepressed, substance-using baseline represents what can be *expected* for that subject while using the substance but not depressed. The symptoms of intoxication or withdrawal during the nondepressed baseline period of frequent use are taken to represent the "expected effects" of the specified substance at that point in time for that particular subject. To be classified as depression symptoms of a substance-induced mood disorder, the symptoms would need to (a) have a known physiological relationship to the abused substance (e.g., including insomnia but not hypersomnia as a symptom of stimulant intoxication), and (b) occur during depressed mood, "in excess of their level during the nondepressed substance-using baseline."

Evaluating Symptoms After a Sharp Increase or Decrease in Substance Use

Regardless of the baseline, if a symptom occurred or got worse only after a major change in use of a substance listed in *DSM-IV* under the intoxication or withdrawal syndrome for that substance, it is not counted as positive toward a diagnosis of substance-induced depressive disorder. (If the symptom is *not* listed as part of the intoxication or withdrawal syndrome for that substance, the nondepressed substance-using baseline may be used as a reference.)

This approach to the substance-induced depressive disorder is not explicitly described in *DSM-IV*, but it *is fully consistent* with *DSM-IV*. These guidelines to evaluate symptoms "in excess of expected intoxication/withdrawal effects (including the reference to the subject's nondepressed, substance-using baseline) supply a phenomenological approach to the diagnosis that can be applied equally well by those from the "disease model," the "self-medication" model, and those somewhere in between, since the procedures refer to specific, observable phenomena and not a theory of etiology.

The diagnostic concepts are operationalized in the *DSM-IV* PRISM through probes, guidelines, and written reminders to interviewers that ensure systematic questions about the chronological relationship between onset of depressed mood and substance use. A probe guide provides systematic probe sequences for depressive symptoms arising during relevant intoxication or withdrawal states.

Additional diagnostic differentiations for depressive disorders among substance abusers are also included in the *DSM-IV* PRISM. These include (a) diagnosing a current episode of substance-induced depression as primary if the individual has a previous history of recurrent MDD (*DSM-IV*, page 374); (b) identification of depressive episodes as steady-state episodes (e.g., occurring and remitting entirely during chronic substance use) (Rounsaville 1989); (c) primary or secondary according to Feighner, based on order of initial onset of disorders (Feighner et al. 1972); and (d) primary or secondary

according to Schuckit, based on order of onset of disorders relative to onset of regular drinking (Schuckit 1985).

Pilot Study of *DSM-IV* PRISM Depression Section

After completing the depression section, we conducted a small pilot test-retest study of the *DSM-IV* PRISM. Nine patients hospitalized in a psychiatric dual-diagnosis unit were administered test and retest interviews with the *DSM-IV* PRISM. Patients were required to have had recent alcohol, cocaine, or opiate use. Patients who had clear psychosis or who were on antipsychotic medications were excluded. Subjects included 5 males and 4 females, 6 white and 3 non-white patients. Their mean age was 36 years. The pilot PRISMs were administered by 3 interviewers who had 1 year of experience administering an older, longer version of the PRISM. They were all doctoral students in clinical psychology with experience treating psychiatric and substance abuse patients. No additional training was given before the pilot study.

Most of the 18 interviews took a little over 2 hours; the range was from 1 hour and 45 minutes to 4 hours. For current substance-induced MDD, 3 subjects were concordant-positive and 6 were concordant-negative ($k=1.00$). For past substance-induced MDD (diagnosed only if no past primary episodes occurred), 1 subject was concordant-positive and 8 were concordant-negative ($k=1.00$). For current primary MDD, 1 subject was concordant-positive, 7 were concordant-negative, and 1 was discordant ($k=.60$). Tapes of the discordant case showed that the interviewers followed all procedures correctly. The patient reported clear, persistent depression in the first interview but not in the second interview, 1 day later.

Other Primary and Substance-Induced Disorders in the *DSM-IV* PRISM

Considerable additional work was conducted to improve the other sections of the PRISM, to adapt them for *DSM-IV* and to shorten them. Sections were added to cover PTSD and obsessive-compulsive disorder. The process just described for the development of substance-induced depressive disorders formed the model for our work on the other disorders, and resulted in five additional substance-induced disorders: mania, dysthymia, panic, generalized anxiety, and psychosis. Phobic disorders, obsessive-compulsive disorders, PTSD, and eating disorders were not included as *DSM-IV* PRISM substance-induced disorders because the principal features were not ordinarily considered to be intoxication/withdrawal effects of any abused substance. Diagnostic supervision indicated that interviewers often misunderstood conceptual differentiations between the anxiety disorders, so these sections were reorganized to clarify the diagnostic information that was needed for each disorder. The dysthymia section was shortened and sim-

plified considerably. Coding guidelines were added to mania and hypomania to better differentiate these disorders. The *DSM-III-R* PRISM assessed psychotic symptoms but not psychotic disorders, analogous to the SCID-NP (nonpsychotic). In the *DSM-IV* PRISM, the psychotic section was modified to diagnose schizophrenia, schizoaffective, delusional, schizophreniform, brief psychotic, psychotic NOS, and psychotic mood disorders. The items for delusions and hallucinations were clarified and probes were added throughout. The eating disorder sections worked well and thus were not changed much, as was the case for borderline personality disorder. The section on antisocial personality disorder was shortened and simplified considerably.

PRISM Shortened and Simplified

Because the *DSM-III-R* PRISM was overly long, we removed much material that was not directly needed to make a diagnosis and simplified sections, thereby reducing training and interviewing time. After interviewers have received training and gained some experience with the PRISM, it usually takes between 90 minutes and 2½ hours to administer, depending on the history and the response style of the patient. While our first PRISM interview with a normal control took 60 minutes, 2 subsequent interviews took 35 and 39 minutes, which included time spent ruling out disorders in some diagnostic sections by completing the sections.

Procedures for Generating Diagnoses

Computer programs were used to assign diagnoses from the *DSM-III-R* PRISM. However, the design of many studies requires an immediate diagnosis, for example treatment studies that use the PRISM diagnosis as a criterion for entry into the study. We inserted check boxes in each section that summarized the subject's responses, providing the interviewer with information on whether criteria for a diagnosis have been met or not. The diagnoses are summarized on a scoresheet that accompanies the *DSM-IV* PRISM.

The *DSM-IV* PRISM

The *DSM-IV* PRISM includes the following disorders: **1. Substance use disorders.** Substance dependence (current, past and lifetime): alcohol, anxiolytics/hypnotics/sedatives, cannabis, cocaine, heroin, hallucinogens, licit opiates (e.g., painkillers), and stimulants. The PRISM also includes diagnoses for abuse. Hierarchical abuse conforms to *DSM-IV* criteria (abuse is not diagnosed if an individual ever received a dependence diagnosis for that drug category). A nonhierarchical abuse diagnosis (e.g., entirely independent of dependence) is obtained from the computer diagnostic programs. The distinction does not affect PRISM administration but offers an extra diagnostic option.

2. Primary affective disorders. Major depression, manic episode (and bipolar I), psychotic mood disorder, hypomanic episode (and bipolar n), dysthymia, and cyclothymic disorder.

3. Primary anxiety disorders. Panic, specific phobia, social phobia, agoraphobia, obsessive-compulsive disorder, generalized anxiety disorder, and posttraumatic stress disorder.

4. Primary psychotic disorders. Schizophrenia, schizoaffective disorder, schizophreniform disorder, delusional disorder, and psychotic disorder not otherwise specified.

5. Eating disorders. Anorexia, bulimia, and binge eating disorder (BED; Spitzer et al. 1992), a disorder commonly studied by eating disorder researchers. BED is included in the appendix of DSM-F (p.731).

6. Personality disorders. Two personality disorders are included due to their prevalence hi substance abusers: antisocial and borderline personality disorder.

7. Substance-induced disorders. Major depression, mania, dysthymia, psychosis, panic disorder, and generalized anxiety disorder.

The PRISM-Longitudinal (PRISM-L)

In clinical trials and other types of studies, prospectively collected data on the course of substance and psychiatric disorders over time is often required. To make PRISM developments available for such studies, we developed the PRISM-Longitudinal (PRISM-L). Longitudinal elements of the PRISM are modeled on the Longitudinal Interval Follow-up Evaluation (LIFE; Keller et al. 1987), which was used to collect the data for over 100 papers on the longitudinal course of affective disorders. However, the PRISM-L assesses *DSM-IV* criteria and incorporates the PRISM developments for comorbidity. The time frame covered is the period since last interview, or to some other fixed point in time.

In such longitudinal studies, information is needed on remission and relapse, as well as changes in treatment status or other risk or protective factors during the followup that may influence outcome. In addition, subjects are almost invariably lost to followup or followed for variable periods of time. Thus, assessment procedures are needed to ascertain data that will allow these factors to be taken into account in the analyses. The PRISM-L provides cross-sectional diagnoses for the time frame hi question. However, in addition, the PRISM-L provides timeline ratings of diagnoses, use of alcohol and specific drugs, and of participation in treatment. These are ratings of the severity of disorders (based on reliable methods of scaling severity, the Psychiatric Status Ratings that are used in the LIFE), frequency of drinking and drug use, and frequency of participation in different types of treatment. The ratings are ascertained in a form that provides information on time to remission, subsequent relapse, and time to change in the status of various other conditions. The data are collected in a form that is amenable to survival analytic methods such as propor-

tional hazards models. With these methods, the relationship of fixed and time-varying predictors to events such as remission and relapse can be tested.

To complete PRISM-L timeline grids, interviewers establish with the subject a common understanding of the subject's status at the point of the last interview for a specific condition, aided by a diagnostic summary sheet from the previous interview and prior timeline ratings. A full symptom picture is then rated for each prior and potential new disorder. Interviewers ask about the occurrence and timing of changes, remissions, onsets, and other facts, working with an actual calendar. If the timing of a change is unclear, the interviewer clarifies the timing by asking if the change occurred before or after a certain date (e.g., the beginning of June, July 4th, etc.). Time is measured in weeks and charted by the interviewer on the grids that are included in the interview. The rate of change of conditions is also probed to determine whether the change was gradual or sudden.

Reliability for alcohol-related elements of the timeline was initially investigated hi a pilot test-retest study with 25 heavy-drinking community residents participating hi a longitudinal study of drinking practices and problems. The retest interviews were administered approximately 1 week after the initial interview. Interviewers were research assistants who had received systematic training in the procedures. The intraclass correlation coefficient (ICC) was used for continuous measures. Reliabilities were as follows: weeks from study intake to first marked change in drinking level, .94; weeks from study entry to sustained decrease in drinking (8 weeks or more), .92; weeks from study intake to sustained increase in drinking (8 weeks or more), .71; and number of marked transitions from one drinking level to another, .94. We also computed an ICC for number of dependence symptoms experienced during the followup period, which was .83. A full test-retest study of the PRISM-L was conducted with 150 patients interviewed and re-interviewed during their participation in the followup component of a longitudinal study on comorbidity. These patients had originally been consecutive admissions to psychiatric and substance abuse treatment facilities. Data for this study are currently being analyzed. However, preliminary results are as follows for the presence of the following conditions during the followup: cocaine use, .89; heroin use, .89; and depression, .75.

Conclusion

Diagnostic issues have long been problematic hi patients who abuse alcohol or drugs. Through systematic application of theoretical and practical concepts, we developed the *DSM-IV* PRISM and PRISM-L, which allow for diagnosis of psychiatric disorders in alcohol and drug users based on phenomenology of the symptoms. Evidence indicates im-

proved reliability for primary disorders and preliminary evidence suggests improved reliability for the differentiation of substance-induced disorders from the expected effects of intoxication and withdrawal. Little evidence exists now either supporting or refuting the validity of the *DSM-IV* or other distinctions between primary disorders, substance-induced disorders, and expected effects of intoxication or withdrawal. A major impediment to accumulating such evidence has been the lack of well-performing diagnostic measures. Previous results and current pilot and preliminary results suggest that further methodological work with the instrument may clarify some of the confusion and controversy in this area of clinical research. Further reports on the reliability and validity of these instruments will be forthcoming as they are completed.

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