

Assessing Comorbid Mental and Substance-Use Disorders: A Guide for Clinical Practice

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The authors review the assessment of comorbid mental and substance-use disorders and provide practical guidelines to inform the clinician's diagnostic decisions. They describe how to differentiate between intoxication and withdrawal syndromes and substance-induced and primary disorders as defined in DSM-FV and present different viewpoints about how comorbid, substance-induced, primary, and secondary disorders can be defined. They discuss the types of psychiatric symptoms that may be associated with different substances (both substances of abuse and prescribed medications), focusing on mood, anxiety, and psychotic disorders. How to assess personality disorders in the context of substance use is also reviewed. Finally, the authors provide examples of questions the clinician can use during the patient evaluation to facilitate diagnostic decision making. (*JPract Psychiatry Behav Health* 1996;5:272-282)

KEY WORDS: substance use, intoxication, withdrawal, substance-induced mental disorders, personality disorders

Recent epidemiologic studies have found high rates of lifetime alcohol (66%)¹ and drug use (30%)² in the general population. The prevalence of substance-related disorders is also high, with studies reporting rates of 16.7% for any substance-use disorder,² 7% for any alcohol-use disorder,⁹ and 6% for any drug-use disorder.⁴ Substance-use problems and mental disorders are frequently comorbid. Results of the Epidemiologic Catchment Area (ECA)² study on comorbid disorders indicated that 28.9% of those diagnosed with a mental disorder had a substance-use disorder; 36.6% of those diagnosed with an alcohol-use disorder had a comorbid mental disorder; and 53.1% of those diagnosed with a drug-use disorder had a comorbid mental disorder. More recent studies based

on the National Longitudinal Alcohol Epidemiologic Survey (NLAES)⁴ * looked at prevalence rates of comorbid major depression and substance-use disorders. Grant⁴ found that in the 9.9% of the population who had a lifetime diagnosis of major depression, 19.9% had a comorbid drug-use disorder. Grant et al.⁵ also found that 24.3% of this population had an alcohol-use disorder and/or major depressive disorder, 16.2% of whom had both major depressive and alcohol-use disorders. Given these high prevalence rates, clinicians will inevitably be faced with the task of evaluating and treating patients with such dual diagnoses. Diagnostic accuracy in establishing the relationship between mental disorders and substance-use problems will therefore be important in choosing the most appropriate and effective treatment approach; however, in many cases determining the relationship between the two can be very difficult.

Several types of relationships between substance use and mental disorders are possible:

1. Substance use may be causing the psychopathology (a substance-induced mental disorder). This is the most frequent situation. Some of the more common substance-induced disorders are alcohol-induced depressive disorders, cocaine-induced psychotic disorders, and stimulant-induced anxiety disorders.
2. Substance use may be secondary to the psychopathology in various ways:
 - a) Patients may use substances to self-medicate the symptoms of their mental disorder (e.g., the use of alcohol to try to alleviate the symptoms of an anxiety disorder, such as social phobia).
 - b) Patients may use substances to enhance symptoms of the mental disorder (e.g., the use of stimulants by manic patients).
 - c) Patients may use substances in an attempt to counter side effects of medications they are taking for a mental disorder (e.g., the use of cocaine by a patient with schizophrenia in an attempt to counter neuroleptic side effects).
3. The mental disorder and the substance-use problems may be coincidental and not related to each other in one of the ways described above.

Both illicit substances and prescribed medications, whether abused or taken as prescribed, complicate the accurate assessment of a primary mental disorder. With

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COMORBID SUBSTANCE-USE DISORDERS

some basic understanding of specific drug effects and the comorbid mood, anxiety, psychotic, and other conditions commonly associated with these effects, this assessment can be somewhat simplified. When available, laboratory tests, such as blood tests and urinalysis, are excellent sources of information about symptoms that may be a result of recent substance use. However, symptoms that may be due to substances that are no longer detectable in the bloodstream minimize the usefulness of these tests. Moreover, in the clinician's office, these tools are likely to be prohibitive in terms of accessibility, cost, and the therapeutic relationship that the clinician has established with the patient. In these cases, a careful evaluation based on a clinical interview, the patient's history, and collateral reports are the clinician's best tools.

In this article, we discuss how to assess comorbid mental and substance-use disorders and provide practical guidelines to inform the clinician's diagnostic decisions. We review the differences between intoxication and withdrawal syndromes and substance-induced and primary disorders as defined in DSM-IV,⁶ and also present different viewpoints about how comorbid, substance-induced, primary, and secondary disorders could be defined. We then present information about specific substances that may cause psychiatric symptoms and syndromes, focusing on the psychiatric syndromes most frequently associated with substance-use, mood, anxiety, and psychotic disorders. We also discuss the assessment of personality disorders in the context of substance use. Finally, we provide examples of questions that can be asked in an evaluation that will facilitate diagnostic decision-making.

HOW DOES DSM-IV DEFINE SUBSTANCE-INDUCED MENTAL DISORDERS?

DSM-III⁷ and DSM-III-R⁸ called disorders caused by the effects of a substance or a medical condition "organic." However, the use of the term *organic* to refer to disorders related to physiological or biological factors was misleading, since it implies that *nonorganic* or primary disorders are not influenced by these processes. Therefore, in the DSM-IV, the diagnostic categories *Substance-Induced Mental Disorders* and *Mental Disorders Due to a General Medical Condition* replace the "organic" disorders of DSM-III and DSM-III-R, thereby eliminating the false organic/inorganic distinction and highlighting the need to consider these etiologic factors when making a diagnosis. DSM-IV uses the term "primary mental disorder" to describe mental disorders that have no specified etiology (i.e., mental disorders that are not caused by the effects of a particular substance or general medical condition).

According to the DSM-IV criteria, the diagnosis of a substance-induced mental disorder requires evidence from the patient's history, physical examination, or laboratory

tests of a specific substance judged to be etiologically related to the observed symptoms. A disorder is substance-induced if it is "the direct physiological consequence of Substance Intoxication or Withdrawal, medication use, or toxin exposure" (p. 6). Substance-induced mental disorders develop *only* in association with intoxication and withdrawal states and are diagnosed "only when the symptoms are in excess of those usually associated with the intoxication or withdrawal syndrome that is characteristic of the particular substance and when they are sufficiently severe to warrant independent clinical attention" (p.192). To accurately diagnose a mental disorder in the context of substance use, the clinician must be able to distinguish between: 1) primary disorders that are not etiologically related to substance use but may occur during substance using periods, 2) substance-induced syndromes, in which symptoms exceed intoxication or withdrawal, and 3) intoxication and withdrawal states and their relationship to the psychiatric symptoms being evaluated.

PRIMARY VERSUS SUBSTANCE-INDUCED MENTAL DISORDERS

The DSM-IV criteria for substance-induced mental disorders provide general guidelines to help the clinician differentiate primary from substance-induced disorders. To diagnose a substance-induced mental disorder, psychiatric symptoms must be present, but full criteria for a mental disorder do not have to be met. For example, a substance-induced mood disorder with depressive features requires persistent depressed mood or anhedonia, but does not require the presence of other depressive symptoms, such as insomnia, weight loss, fatigue, or guilt. Similarly, a diagnosis of substance-induced anxiety disorder requires only prominent anxiety, panic attacks, obsessions, or compulsions; and substance-induced psychotic disorder requires only that prominent hallucinations or delusions be present. The foremost factor to consider in diagnosing a substance-induced mental disorder is the biological relationship of the psychiatric symptom to the substance in question. Is there evidence that the intoxication and withdrawal syndromes for a particular substance physiologically cause the observed psychological or behavioral changes? Heavy use of alcohol can lead to depressive or anxiety syndromes but not to manic states'—although manic patients tend to use more alcohol during manic states, manic symptoms are not physiologically related to alcohol intoxication or withdrawal. Cocaine intoxication is likely to produce paranoid ideation, whereas heroin intoxication is not. Is the history of use (dosage, frequency, duration) consistent with the hypothesis that the symptom was caused by the substance? Discontinuing 5 milligrams of diazepam that the person has taken daily for 2 weeks is unlikely to cause persistent anxiety and insomnia during withdrawal.

COMORBID SUBSTANCE-USE DISORDERS

However, cessation of higher doses taken over an extended period may produce such a syndrome. As a substance with a long half-life, diazepam's withdrawal syndrome can begin up to a week after discontinuation and last for a month. The clinician's awareness of certain drug properties, such as half-life and potency, can help clarify the relationship between drug effects and symptoms of mental disorders.

Intoxication, Withdrawal, and Substance-Induced Disorders

After determining that certain symptoms are substance-related, the clinician still needs to determine whether a diagnosis of a substance-induced mental disorder, rather than simple intoxication or withdrawal, is warranted. As mentioned earlier, to diagnose a substance-induced disorder, the symptoms must be "in excess of those usually associated with the intoxication and withdrawal syndrome that is characteristic of the particular substance." ^{1b} determine if psychiatric symptoms are "in excess" of those associated with intoxication or withdrawal, the clinician must be familiar with the symptoms of both acute and chronic intoxication and withdrawal. DSM-IV substance intoxication results from the "recent use" of a substance; however, most substance-induced disorders arise from chronic rather than acute intoxication. Moreover, for many substances, the symptoms of chronic intoxication are different from the symptoms of acute intoxication. The psychological sequelae of short-term as well as heavy and prolonged use of relevant substances are both important. For example, acute and chronic cocaine intoxication have opposite effects on mood. Acute cocaine intoxication is associated with euphoria* while chronic cocaine intoxication is often associated with depressed mood. Finally, in evaluating a withdrawal syndrome, the clinician needs to consider the level of use that preceded the symptoms. The symptoms of substance withdrawal arise from the cessation of or reduction in substance use that has been heavy and prolonged. Requiring that use is heavy and prolonged prevents the clinician from overdiagnosing a withdrawal syndrome, for example, in a patient with a simple hangover after one evening of heavy drinking.

Timing of Substance Use and Psychiatric Symptoms

Another critical question to consider in the differential diagnosis of primary and substance-induced syndromes is the timing of the onset of symptoms in relation to substance use. The DSM-IV guideline is that symptoms must develop during or within a month of intoxication or withdrawal. Did the symptoms begin before significant substance use or withdrawal? If depressed mood accompanied by decreased appetite and insomnia persisted for even a short period of time

prior to significant substance use, then a diagnosis of a substance-induced mood disorder would not be accurate; this would hold true even if the symptoms were exacerbated by the substance use. Did the symptoms persist for more than a month after the end of acute withdrawal? If yes, this is also evidence that the symptoms cannot be accounted for entirely by the physiological effects of withdrawal

The most straightforward diagnostic cases are those in which the onset of one disorder clearly precedes the other. For example, if a patient never experienced a depressive episode until 4 months after beginning to use cocaine regularly, this episode would be considered substance-induced. At the other end of a substance using period, assessment is also relatively clear. When the onset of a psychiatric syndrome occurs after a period of extended abstinence from a substance, a primary disorder can be diagnosed. After withdrawal symptoms from any substance have cleared, one can say with some certainty that the disorder was not substance-induced. For example, a patient who is dependent on alcohol attends detoxification and rehabilitation programs and is able to maintain extended sobriety by attending AA meetings. After 2 years of sobriety, she enters individual psychotherapy when conflicts arise in her marriage. She becomes severely depressed and requires medication. This depressive episode, beginning 2 years after the end of her alcohol use, would be considered primary.

Even in the less ambiguous instance when the onset of a mood or anxiety disorder follows an extended period of sobriety, opinions vary about how long one should wait to make a primary diagnosis. What constitutes a sufficient period of abstinence? DSM-IV offers a guideline of waiting 1 month after the cessation of withdrawal to diagnose a primary disorder. Others have suggested that an individual should be abstinent for 3 months¹⁰ or longer before a primary diagnosis should be made. Waiting at least 4 weeks after the patient stops using the substance or after the end of withdrawal tends to be a minimum rule of thumb. However, the longer the period of abstinence before the onset of the disorder or continuation of the syndrome, the more certain one can be of the presence of a primary disorder.¹¹

While establishing a sufficient period of abstinence may make a diagnosis clearer, it may not be practical, feasible, or necessary to wait for a month before assigning a diagnosis in today's climate of short-term treatments and managed care. Controlled clinical trials^{11 u} have demonstrated that alcoholics who received a diagnosis of major depression after as little as 1 week of abstinence respond well to treatment with antidepressant medications. Waiting a full month to diagnose an additional mental disorder may result in withholding treatments from patients who have such severe substance-use problems that they cannot stay clean for a week, much less a month. A common and useful

COMORBID SUBSTANCE-USE DISORDERS

practice is to begin treating a patient with a provisional diagnosis. This approach often works well, especially if the provisional diagnosis is made carefully and reevaluated after a period of time.

A final consideration in assessing the amount of time that must pass before making a diagnosis is variation in the properties of certain drugs. Some substances, due to their half-life and potency, clear from the system more quickly than others. Cocaine and amphetamines are more fast-acting and clear from the system within 24-72 hours. Others, such as long-acting tranquilizers (e.g., chlor-diazepoxide [Librium], diazepam [Valium], prazepam [Centrax], and clorazepate [Tranxene]) have accompanying withdrawal symptoms that may begin as long as a week after cessation of use and last for up to 4 weeks.

History of Mental Disorder

Another important question to consider in assessing primary and secondary disorders is a patient's history. Is there evidence of earlier episodes of mood, anxiety, or psychotic symptoms that were clearly not substance-induced? If such episodes are revealed, it is more likely that the current symptomatology is being exacerbated rather than caused by the substance. Are there features in the history or current clinical picture that are atypical of a primary mental disorder? Acute onset of prominent persecutory delusions in a graduate student with good social and academic functioning is suggestive of an amphetamine- or cocaine-induced psychotic disturbance rather than incipient schizophrenia.

Collateral information is particularly important in obtaining an accurate history of mental disorders in patients with substance-use problems, who may be motivated to deny the severity of the situation. Underreporting can lead to either the underdiagnosis of substance-related problems or the overdiagnosis of mental disorder symptoms that appear to be primary but are in fact substance-related. If the patient gives permission, contact with outside informants (especially family members, parole officers, and friends) and the use of laboratory tests can clarify these issues.

OTHER DEFINITIONS OF COMORBIDITY

There is a great deal of variability in clinical practice in how primary and secondary conditions are distinguished. Researchers have been trying to clarify these definitions since standardized criteria for mental disorders were introduced in 1972." Focusing on the timing of the onset of disorders to determine the primary/secondary distinction (as in DSM-IV) makes the assessment more objective; a more subjective approach is to assign the primary designation to the "most important or severe" condition. While DSM-IV focuses on the presenting episode, another common approach

involves comparing the age at onset of the psychiatric condition with the age at onset of a substance-use disorder." The disorder with the earliest onset is then considered to be primary. Another approach focuses on determining the onset of regular substance use (e.g., three times a week or more) and the first occurrence of a mental disorder; if the mental disorder precedes regular substance use, the mental disorder is considered primary.^{1*}^{1†}

When onset alone does not provide sufficient information to make a primary diagnosis, clinicians must consider other factors. Schuckit¹⁰ has suggested that in order to distinguish primary from secondary alcoholism, one should consider when the first life problem associated with substance use occurred. A patient's personal and family history may also help clarify the diagnostic picture. If a patient was diagnosed with bipolar or major depressive disorder before the onset of a substance-use disorder, subsequent affective episodes that occur during alcohol use are most likely *not* substance-induced states.^{1*} It is important to remember, however, that a substance use disorder, even if it is secondary, may also require treatment.

STEADY STATE SUBSTANCE USE

Strict adherence to DSM-IV criteria calls for diagnosing a substance-induced disorder when psychiatric symptoms begin, persist, and remit during a period of heavy, chronic substance use. However, Rounsaville^{1*}-^{*o} provides an exception. He contends that a primary diagnosis can be made in the context of "steady state use of the drug, during which time the subject has ingested sufficient amounts of a drug to which the subject is tolerant to avoid withdrawal symptoms but not enough to induce an acute intoxicated state"^{1*} (p. 1187). In a sense, the steady state provides a consistent baseline condition during which a syndrome meeting diagnostic criteria could be considered primary. Consider, for example, a patient who has been using alcohol heavily and regularly over the past year and has a 2-month major depressive episode during that time, perhaps after a relationship ends. In a steady state paradigm, this depression would be considered primary, not substance-induced. The diagnostic history (e.g., history of past episodes) may also help the clinician decide whether the disorder is primary or secondary in such a case. Research is needed to determine if these steady state disorders have different prognostic characteristics in terms of severity of substance use, mental disorders, or treatment outcome.

PROTRACTED WITHDRAWAL

While the acute effects of withdrawal from most substances usually last no longer than 1 week after cessation of substance use, some substances produce a protracted withdrawal. This is most likely to occur during withdrawal

COMORBID SUBSTANCE-USE DISORDERS

from long-acting sedatives, but is also associated with withdrawal from alcohol, opiates, and stimulants, including cocaine.¹¹ ** However, studies in this area have not been systematic enough to enable us to construct a clear definition of a protracted withdrawal syndrome that can be applied consistently across substances. Nevertheless, protracted withdrawal symptoms, even those that are mild but nonetheless cause some discomfort, can lead to a return to substance use. Clinicians need to consider such protracted withdrawal symptoms in planning treatment for primary substance users, since these uncomfortable and persistent effects can lead to relapse. If clinicians can identify the presence of protracted withdrawal, they may be able to use this information to develop relapse prevention strategies.

DIAGNOSIS OF SUBSTANCE-INDUCED MENTAL DISORDERS

In the following sections, we discuss illicit and prescribed substances that can cause mood, psychotic, or anxiety symptoms during intoxication and withdrawal. We present guidelines to help the clinician determine if these symptoms would be considered to be "in excess" of the symptoms "usually associated with the intoxication or withdrawal syndrome that is characteristic of the particular substance" and hence warrant the DSM-IV diagnosis of a substance-induced mental disorder. We also discuss how to distinguish primary and substance-induced mood, psychotic, and anxiety disorders.

Mood Disorders

Individuals with a primary major depressive disorder who experience persistent, depressed mood accompanied by symptoms such as loss of interest, changes in appetite and sleep patterns, feelings of guilt or worthlessness, and suicidal ideation, may use substances, particularly alcohol and cocaine, to try to counteract these unpleasant symptoms. However, virtually all substances of abuse, except cannabis, can cause depressed mood as a result of intoxication. Depressed mood can also occur during withdrawal from alcohol, sedatives, and cocaine and other stimulants (see Table 1).

It is not difficult to understand why some people, especially in the early stages of recovery from alcohol and drugs, may feel dysphoric, regretful, fatigued, and generally "down" on themselves. While this experience is a common component of the recovery process, extended periods of depressed mood and associated depressive symptoms may indicate the presence of a primary mood disorder. For example, severe insomnia characterizes withdrawal from both alcohol and cocaine. However, depressed mood along with severe insomnia that continues for 2 or more weeks after the end of acute withdrawal from these substances should raise suspicion that some aspect of the depression is not entirely substance-induced. Similarly, hypersomnia associated with depressed mood and heavy drinking or the immediate post-withdrawal phase of alcohol, sedatives, or opiates should also be viewed as a potential symptom of depression. Pervasive loss of interest or pleasure extend-

TABLE 1. Substances of Abuse That Can Cause Symptoms of Mood Disorders

	Major Depression		Dysthymia*		Mania/Hypomania	
	<i>Intoxication</i>	<i>Withdrawal</i>	<i>Intoxication</i>	<i>Withdrawal</i>	<i>Intoxication</i>	<i>Withdrawal</i>
Alcohol	X	X	X	X		
Sedative/hypnotics	X	X	X	X		
Cocaine/crack	X	X	X	X	X	
Stimulants	X	X	X	X	X	
Heroin/opiates	X		X			
Cannabis						
Hallucinogens	X		X			
Phencyclidine (PCP)	X		X		X	
Inhalants	X		X			

*Intoxication or withdrawal

COMORBID SUBSTANCE-USE DISORDERS

ing beyond the acute phases of withdrawal also suggests depressive illness. While life may be filled with difficulties for addicts in very early phases of recovery, an across-the-board "don't care" attitude is not typical and may indicate depression.

The appetite-suppressing properties of cocaine and stimulants, which often result in weight loss, are well-known. Severe alcoholics often experience malnutrition because most of their caloric intake comes from their drinking. Marked weight loss and lack of appetite are not typically associated with other substances, however. Marked weight loss or gain accompanied by depression may indicate a withdrawal depressive syndrome for most drugs, including cocaine (especially if no previous undue weight loss is being corrected once use of the drug has stopped).

Finally, persistent suicidal thoughts, plans, or urges should never be ignored in the belief that they will clear once substance use stops. Suicide is a frequent form of death for active substance abusers, and suicide also occurs at a high rate as a long-term outcome in those who formerly abused substances. Suicidal plans and urges should be systematically evaluated in all substance abusers, both as evidence of a depressive syndrome and as a potential risk for death or injury.

Bipolar patients also commonly abuse substances, most frequently alcohol and stimulants. Drinking between cycles of mania or depression may induce depressive symptoms, and can even lead to a relapse of a full-blown major depressive episode. Bipolar patients may use stimulants, such as cocaine, to relieve a depressive episode or to try to induce or recreate a manic-like state. Unless a patient has a history of manic episodes, however, manic symptoms in the context of cocaine, amphetamine, and PCP use are most likely to be substance-induced.

Although withdrawal from abused substances is not associated with manic symptoms, addicts may experience a hypomanic-like period in the earlier stages of recovery, referred to in 12-step groups as the "pink cloud." Within a few weeks to months of being abstinent, some recovering drug users report a feeling that everything is going so well that they can do anything, accompanied by an inflated, sometimes grandiose sense of self. For example, a middle-aged man had previously been dependent on alcohol, cocaine, and heroin. After a year of sobriety, his small maintenance dose of methadone was gradually tapered and discontinued. After 2 weeks clean of all substances, he reported feeling "high on life," very energetic, and in a euphoric mood. He was much more talkative than usual, speaking so rapidly that his girlfriend thought he had done cocaine. He was much more active than usual around the house and had been cleaning, painting, and doing many other chores. His excitement about his success in being clean and sober did have some qualities of • hypomanic

episode; however, a few issues contraindicated the presence of hypomania: 1) he had no prior history of a mood disturbance; 2) the onset of the change in mood and energy closely followed the change in his drug use; and 3) other important symptoms of hypomania, such as the intensity of affect, lack of sleep, and flight of ideas, were not present.

Psychotic Disorders

A key problem in the management of schizophrenia is patient compliance with the medications necessary to alleviate psychotic symptoms. Any illicit substance use by these patients may cause them to discontinue their medication or may lead to a relapse of psychotic symptoms even if they continue to take their medication as prescribed. Patients in the prodromal or residual phases of schizophrenia may experience an initial onset of the disorder or a relapse as a result of marijuana or cocaine use.¹³ Patients with schizophrenia may be polysubstance users. Because their problems in judgment and navigating interpersonal relationships may cause them to shy away from interactions with drug dealers, they have a greater tendency to abuse substances such as alcohol and marijuana. However, there may be a subgroup of schizophrenic substance users with higher premorbid functioning and better social skills than non-substance-using schizophrenics,^{14*} who may be more able to participate in the drug culture. Such patients, however, have similar levels of overall functioning as non-substance-using schizophrenics, indicating that substance use may complicate what are initially less severe forms of schizophrenia.

To evaluate substance-induced psychotic experiences, the clinician must first be aware of the range of substances that can cause delusions and hallucinations (see Table 2). To determine if the psychotic symptoms are primary or substance-induced, enough time must pass for the effects of the substance to clear. Most psychotic symptoms occur either during intoxication or in the acute phases of withdrawal, but rarely as a gradual effect over a longer period. Schizophrenia and other primary psychotic disorders are also characterized by specific types of psychotic symptoms and other important problems (e.g., deterioration in functioning, social withdrawal, and other more subtle indicators of psychopathology are most likely to be indicators of primary psychopathology). Similarly, an individual who has bizarre delusions, such as believing that rays from the television are changing her gender or that a neighbor is taking thoughts out of her head, should be considered to have a primary disorder, even in the context of substance use. These symptoms are pathognomonic of schizophrenia and should not be considered substance-induced.

Persecutory delusions commonly occur during intoxication with stimulants (cocaine and amphetamines), as well as hallucinogens and PCP. These paranoid thoughts often

COMORBID SUBSTANCE-USE DISORDERS

TABLE 2. Substances of Abuse That Can Cause Psychotic Symptoms

	Hallucinations		Delusions	
	<i>Intoxication</i>	<i>Withdrawal</i>	<i>Intoxication</i>	<i>Withdrawal</i>
Alcohol	X	X	X	X
Sedative/hypnotics	X	X	X	X
Cocaine/crack*	X		X	
Stimulants*	X		X	
Heroin/opiates	X		X	
Cannabis	X		X	
Hallucinogens*¹*	X		X	
Phencyclidine (PCP)*	X		X	
Inhalants	X		X	

* Substances that most commonly cause hallucination* and delusion* during intoxication
¹After cessation of use, hallucinogens can cause hallucinogen perception disorder (flashbacks)

take the form of a feeling that someone (usually police, drug dealers, parents) is at the door, or that others are talking about the person because he is high. Psychotic symptoms may also be present in conjunction with withdrawal from alcohol and sedative-hypnotics. Tactile hallucinations, such as feeling that bugs are crawling on one's skin, are common during withdrawal from these drugs and may persist, depending on the half-life of the substance. In general, most tactile hallucinations are indicative of a substance-induced process and are unlikely to be primary.

Any hallucinogen may produce hallucinations in some people. However, insight about the relationship between the hallucination and the drug's effects will also provide important information about a diagnosis. DSM-IV provides the specifier "with perceptual disturbances" (p. 198) for intoxication and withdrawal syndromes that include hallucinations or illusions, such as alcohol withdrawal and cocaine intoxication. If the patient has insight at the time of the experience that the hallucination or delusion is being caused by the substance, he or she would receive a diagnosis of intoxication or withdrawal. However, if the patient lacks insight into the relationship between the substance use and the psychotic symptom, DSM-IV suggests that a substance-induced psychotic disorder be considered. DSM-IV also includes a category for hallucinogen persisting perception disorder (p. 233-234) that serves to

classify the flashbacks an individual may experience as a result of past hallucinogen use.

Anxiety Disorders

Because individuals with primary anxiety disorders tend to abuse substances that temporarily decrease anxiety (e.g., alcohol, sedatives prescribed for anxiety symptoms), the potential is high for them to become dependent on these substances. Paradoxically, the withdrawal effects of sedatives and alcohol produce psychological and physical anxiety symptoms that may exacerbate a preexisting anxiety disorder. Cocaine and caffeine can also exacerbate anxiety disorders. The clinician should ask about the characteristics of the anxiety before the onset of heavy substance use to determine the nature and severity of the anxiety disorder.

In the absence of a primary anxiety disorder, panic attacks and prominent anxiety features can be caused by intoxication with or withdrawal from a number of abused substances (Table 3). Patients often come to the emergency room with what appear to be severe anxiety symptoms (e.g., a racing heart, dry mouth, and an impending sense of doom), but which are actually a result of cocaine, crack, or even marijuana use. Stimulants such as cocaine and amphetamines can produce a clinical picture similar to a panic attack. However, the euphoria, interpersonal sensi-

COMORBID SUBSTANCE-USE DISORDERS

TABLE 3. Substances of Abuse That Can Cause Symptoms of Anxiety Disorders			
Panic Attacks		Generalized* or Persistent Anxiety	
<i><u>Intoxication</u></i>		<i><u>Withdrawal</u></i>	
Alcohol	X	X	
Sedative/hypnotics	X		
Cocaine/crack	X	X	X
Stimulants	X	X	
Heroin/opiates			
Cannabis	X	X	
Hallucinogens	X	X	
Phencyclidine (PCP)	X	X	
Inhalants	X	X	
Caffeine	X	X	
* <i>Must be in the context of chronic intoxication or withdrawal</i>			

tivity, irritability, and hypervigilance associated with stimulant intoxication can help distinguish drug effects from panic disorder. The dry mouth and increased heart rate that accompany cannabis intoxication may also be mistaken for panic symptoms, but the euphoria, social withdrawal, increased appetite, sense of slowed time, and lack of coordination experienced during cannabis intoxication are not associated with panic. Symptoms of tachycardia, heart palpitations, perspiration, and tremors in hallucinogen intoxication may also be mistaken for panic, but the blurred vision, poor coordination, depersonalization, derealization, hallucinations, and illusions of hallucinogen intoxication help rule out panic. Even ingestion of an excessive amount of caffeine can induce panic attacks; however, caffeine intoxication is also accompanied by symptoms such as restlessness, excitement, rambling speech, insomnia, increased heart rate, increased urinary output, and gastrointestinal disturbance.

Prescribed Medications

Medications being taken as prescribed can also cause psychiatric symptoms. Prolonged or even short-term use of the medications listed in Table 4 may produce mood, anxiety, or psychotic symptoms. A complete psychiatric assessment must include information about all medications a patient is taking so that the possible, mood-altering side-effects of

these substances can be considered. One commonly prescribed medication that often produces a variety of psychiatric symptoms is the corticosteroid. Steroids, which are prescribed for a range of conditions from asthma to lupus, can produce psychiatric side-effects (e.g., changes in mood, restlessness, sleeplessness, irritability, and even psychotic symptoms) in many patients. These types of changes often occur soon after the medication is prescribed or when it is tapered or discontinued. Other medications that are used on a long-term basis, such as blood pressure medications, can produce long-term emotional changes. For example, long-term use of reserpine can produce a mild low mood and associated symptoms that resemble dysthymic disorder. If this low mood occurs only during reserpine use, a substance-induced condition may be diagnosed.

PERSONALITY DISORDERS

We can see that trying to tease apart comorbid acute mental disorders and substance use is a complicated process. In some ways, determining the relationship between substance use and personality disorders is an even more complicated task. Personality disorders are defined as enduring, maladaptive patterns of behavior that begin during late adolescence or early adulthood. When substance use is prolonged and chronic, its effects may produce changes in personality that can resemble a personality disorder. The

COMORBID SUBSTANCE-USE DISORDERS

TABLE 4. Prescribed Medications That Can Cause Psychiatric Symptoms

	<i>Major Depression</i>	<i>Dysthymia</i>	<i>Mania</i>	<i>Psychosis</i>	<i>PanicAttacks</i>	<i>Generalized or Persistent Anxiety</i>
Anti-hypertensives (e.g., rverpine)	X	X		X		X
Corticosteroids	X	X	X	X		X
Anabolic steroids	X	X		X		X
Anticonvulsants	X	X		X		X
Anti-Parkinsonian agents	X	X	X	X		X
Anti-ulcer medications	X	X	X	X		X
Oral contraceptives	X	X		X		X
Cardiac medications (e.g., digitalis, clonidine)	X	X		X		X
Sulfonamide antibiotics	X	X		X		X
Asthma medications						X
Insulin						X
Antinistamines						X
Thyroid medications						X

emphasis on overt behavior in diagnosing personality disorders has contributed to substantial overlap in the criteria for substance-related disorders and personality disorders and has made differentiating the two even more complex.²⁷ To deal with this issue, DSM-IV provides a general exclusionary criterion for the personality disorders:

When a person has a **Substance-Related Disorder**, it is important not to make a Personality Disorder diagnosis based solely on behaviors that are consequences of Substance Intoxication or Withdrawal or that are associated with activities in the service of sustaining a dependence (e.g., antisocial behavior), (p. 632)

Symptoms of personality disorders that occur in the context of substance use should be considered in evaluating all personality disorders. However, this is especially relevant in assessing the symptoms of the two personality disorders that share the most features with substance-use disorders: antisocial personality disorder (APD) and borderline personality disorder (BPD).

In APD, substance use often accompanies the other illegal and antisocial behaviors that are part of this disorder.

Studies have found high rates of APD in alcoholics and drug users, with some rates as high as 50%.¹ However, this figure may be an artifact of making an APD diagnosis without ruling out behaviors that occur only during substance-using periods. When engaged in a substance-using lifestyle, many people commit crimes that they would not commit if substance-free. Stealing, lying, conning others, shirking responsibilities, and acting recklessly may all result from substance use, not a personality disorder. In The Personality Disorders Interview-IV* (PDI-IV), a diagnostic interview for DSM-IV personality disorders, Widiger et al. provide specific guidelines to assess the overlapping behaviors of substance-use and personality disorders. For example, the PDI-IV excludes arrests that occur only during substance intoxication and deceitfulness and lying directly related to drug use, such as lying to friends and family about drug use or lying to one's employer about being high. Assessing antisocial behaviors during periods of abstinence (e.g., incarcerations, stays in controlled environments) or other periods of sobriety can also help clarify the diagnostic picture.

The following examples illustrate these differences. A 25 year-old heroin addict in a therapeutic community has

- history of multiple arrests for drug-related charges and

COMORBID SUBSTANCE-USE DISORDERS

burglary and assault. He committed crimes both when using and not using drugs. Staff has caught him stealing from another community member's locker during his first 2 weeks at the therapeutic community. When employed in the past, he moved from one job to another, often leaving without notice and remaining unemployed for months at a time. He has often conned others for money. As a child, he often bullied and fought with other children, ran away from home, missed school, shoplifted, and vandalized others' property "just for fun." This combination of childhood and adult antisocial behaviors occurring during both substance-using and abstinent periods indicates a long-standing APD co-occurring with heroin addiction.

In contrast, another 25-year-old heroin addict has some history of adult antisocial behavior, but all within the context of sustaining his heroin habit. He has no history of behavior problems outside periods of substance use. While he might meet criteria for heroin dependence, this patient would not receive an APD diagnosis.

Similar considerations apply in making a diagnosis of BPD in the context of substance use. The assessment must establish that borderline traits have been present since young adulthood and have persisted across situations. A woman in her late 20s who exhibits borderline characteristics, such as affective instability, angry outbursts, impulsivity, and intense interpersonal relationships during periods of substance use would not be diagnosed with BPD unless these characteristics began in her late teens and also occurred at times when she was not using substances. However, it is also common that both BPD and substance-use disorders have been present from young adulthood. More severe borderline characteristics are evident in substance-using patients^{2*} *o an<j may indicate the need for more intensive treatment focused on both characterological problems and substance abuse.

QUESTIONS TO CHIDE DIAGNOSTIC DECISION HJUOHC

To illustrate how to assess symptoms associated with substance use in clinical settings, we list a number of questions that clinicians can use to elicit the information necessary to diagnose primary disorders, substance-induced disorders, and substance intoxication and withdrawal (see Table 5). These questions have been adapted from the Psychiatric Research Interview for Substance and Mental Disorders (PRISM),^{1,*2} a semi-structured diagnostic interview designed to assess primary, substance-induced, and comorbid DSM-IV Axis I and II disorders. The questions in Table 5 are geared towards assessing depressed mood in the context of alcohol use but can be adapted to suit the substances in question and the psychiatric symptoms. Is there evidence of heavy and prolonged use of* substance etiologically related to the psychiatric symptoms? Are the symptoms in excess of those usually associated with intoxication

TABLE 5. Questions* to Guide the Assessment of Psychiatric Symptoms in the Context of Substance Use:

Alcohol and Depression

To assess history of drinking in relation to depression:

- Just before you began to get depressed, what was your
 - How often did you usually drink?
 - How many drinks did you usually have?
 - How long have you been drinking that way?
- Had you recently started drinking more than you had been?

To assess if depressive symptoms are in excess of substance intoxication or withdrawal:

- Do you feel depressed most of the time or just on the days that you drink a lot?
- Do you feel depressed most of the time or just on the days *after* you drank a lot?
- Were there periods of time when you cut down or topped drinking and still felt depressed most of the time?
- Have you felt so depressed you thought about dying or killing yourself?
- Were you drinking a lot the *whole* time you felt depressed?
- Were you feeling depressed much of the time *before* you started drinking a lot?

To assess timing and duration of depressive symptoms after acute withdrawal:

- Have you recently cut back on or stopped drinking?
 - How much had you been drinking before you stopped?
 - How long had you been drinking that much?
- Did you stop drinking over a month ago?

To assess history of nonsubstance-induced episodes:

- Did you ever feel depressed when you iverent drinking a lot?
- Did you ever feel depressed when you hadn't recently stopped drinking?
- When was that?
- How long did the depression last?

COMORBID SUBSTANCE-USE DISORDERS

or withdrawal? If so, did those symptoms last for more than 4 weeks after acute withdrawal? *B* Is there a history of psychiatric episodes that occurred outside the context of substance use? The answers to these questions can facilitate the complex assessment of primary versus substance-induced conditions and aid in differential diagnosis.

CONCLUSION

Assessing mental and substance-use disorders is an important and difficult task. By focusing on the order of onset of conditions, knowing the abused and prescribed medications that can produce symptoms mimicking mental disorders, and allowing for assessment over time, the clinician can obtain a more accurate diagnostic picture. As assessment becomes more efficient and accurate, more appropriate treatment plans can then be chosen and implemented.

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