

Chapter 3

DIAGNOSTIC ISSUES

DSM-5 Overview for Substance-Related Disorders

The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013) provides a classification system for the diagnosis of a substance use disorder (SUD) across 10 drug classes including alcohol, cannabis, phencyclidine, other hallucinogens, inhalants, opioids, sedatives, stimulants, tobacco, and other/unknown. Diagnosis is made by specifying the substance of disorder (e.g., alcohol use disorder [AUD]). If the substance is part of a larger class, such as cocaine as a part of the stimulant disorders, you specify cocaine or amphetamine type.

The current *DSM-5* made significant changes to the prior SUDs classification system by eliminating the abuse and dependency classifications and instead utilizing the diagnosis of “substance use disorder” on a continuum from mild to severe. Rationales for these changes were well discussed in the literature (e.g., Hasin et al., 2013; O’Brien, 2011) and are beyond the scope of this chapter. Furthermore, as these changes are now at least 3 years old (by the time you are reading this text), reviewing the history of now-irrelevant diagnostic matters is not warranted.

The *DSM-5* diagnostic criteria for a SUD specified a maladaptive pattern of behaviors related to substance use. These behaviors fall into 11 criteria with overall groupings of impaired control, social impairment, risky use, and pharmacological criteria. For some substances symptoms are less prominent, and in a few instances not all symptoms apply.

Impaired Control

Impaired control over substance use is the first criteria grouping and consists of the first four diagnostic items: (1) the individual may take the substance in larger amounts or over a longer period than was originally intended; (2) the individual may express a persistent desire and/or unsuccessful history to cut down, cease, or regulate substance use; (3) the individual may spend a great deal of time obtaining the substance, using the substance, or recovering from its effects; and (4) craving is manifested by an intense desire or urge for the drug that may occur at any time. From the clinician's chair, these four criteria could present in the following manner:

1. Taking larger amounts than intended.
 - When questioned about the current amount of the substance(s) ingested, the individual discusses experiences where he or she “lost control” or “lost track” and may have felt bad or worried about the excessive substance(s) consumed.
 - For those who qualify for more than one SUD (e.g., cocaine use disorder and AUD), is the larger amount being taken consistent across both substances or only for one substance? For instance, does the loss of control in taking larger amounts of cocaine than intended lead to drinking more alcohol than intended? Though the *DSM-5* SUD is the same for each substance class, the clinician still must assess this criteria for each substance. Thus, be careful to verify that the larger amounts than intended criterion is applied to only the proper substance(s).
2. Persistent desire and/or unsuccessful efforts to reduce or cease substance use.
 - The client may discuss a long history of many episodes of brief (less than 1 month) or longer abstinence only to repeatedly relapse. There is no magic number, but look for a history. This may require probing, as the client may not consider their period of nonsubstance use as a period of abstinence. For example, I once had a client who at first did not inform me of abstinence periods of only 1 month, saying, “Those don't count to me.” So you may need to ask, ask, and then ask again and in various ways.
 - Look for a “motivation” for recovery reported in these prior abstinence episodes. Why did the client start abstinence? Why did he or she relapse? Note that clients may specifically express the reason for starting but may not be able to verbalize why they relapsed.
 - Similar to the prior criterion, was the desire to cut down or cease substance use applicable to all substances or just some?

3. Great deal of time spent acquiring substance, using substance, and/or recovering from effects.
 - When actively using, how much time is occupied by the substance use? For instance, I once worked with a client who drove many miles round-trip to purchase heroin during the workday.
4. Craving.
 - How has the client experienced the desire to use both now and in the past?
 - If use of multiple substances exists, does craving occur for all or just some of the substances?
 - Do cravings increase or decrease over length of abstinence?
 - Do cravings for one substance influence a craving for another?
 - Do cravings coincide with psychological symptoms (e.g., anxiety, depression)?
 - Do cravings cause guilt or worry in the client?
 - How often in the client's addiction history has a craving led to a lapse or relapse?

Social Impairment

Social impairment due to substance use is the second criteria grouping and consists of diagnostic items 5 to 7: (5) recurrent substance use may result in a failure to fulfill major role obligations at work, school, or home; (6) the individual may continue substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance; and (7) important social, occupational, or recreational activities may be given up or reduced because of substance use.

These three criteria all seem to overlap in regard to the types of client/collateral reports a clinician would experience in an interview. Some examples are as follows:

- A client who reports a pattern of drinking during lunch hour and then failing to return for important afternoon meetings.
- A client who reports frequently “half-assing” work projects because he or she was too hung over to give them a true effort.
- A client who was too under the influence from opioids and failed to pick up his or her child after school.
- You may see a typical pattern of clients coming with a history of repeated work terminations and/or reprimands due to substance use.
- You may see a parent who temporarily or permanently lost custody of his or her children due to substance use.

Risky Use

Continued risky use of the substance is the third criteria grouping and consists of diagnostic items 8 and 9: (8) the recurrent substance use in situations in which it is physically hazardous (such as driving while intoxicated); and (9) the individual continues substance use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance. You may hear reports similar to some of the following:

- A client repeatedly driving home drunk from the bar despite knowing he or she is drunk and could get caught.
- Clients who tell you they keep using cocaine despite the effects use has on their anxiety and self-esteem.

Tolerance and Withdrawal

Tolerance and withdrawal are the final grouping consisting of Diagnostic Criteria 10 and 11: (10) tolerance is signaled by requiring a markedly increased dose of the substance to achieve the desired effect or a markedly reduced effect when the usual dose is consumed. Tolerance may be reported in some of the following ways:

- A client who reports a change in primary substance in order to get a “better” high.
- A client who discusses a frustration in not achieving the same level of intoxication from the amount of substance ingested.
- Clients who report that they changed substance and administration routes to feel a better high (e.g., the Percocet user who moves to injecting heroin for a quicker and stronger high).

Withdrawal, Diagnostic Criteria 11, is a syndrome that occurs when blood or tissue concentrations of a substance decline in an individual who had maintained prolonged heavy use of the substance. After developing withdrawal symptoms, the individual is likely to consume the substance to relieve the symptoms. Withdrawal symptoms vary greatly across the classes of substances, and separate criteria sets for withdrawal are provided for the drug classes. In general, withdrawal syndromes must cause impairment and distress as well as not be better explained by a co-occurring psychological and/or medical disorder (this includes symptoms due to intoxication from the same substance or withdrawal from another substance). Each is briefly reviewed below.

1. Alcohol Withdrawal *DSM-5* (APA, 2013) Criteria Review:
 - Withdrawal symptoms must include two or more of the following occurring within a few days post last drink: Pulse greater than 100 beats/minute, increased hand tremors, insomnia, nausea, temporary hallucinations, psychomotor agitation, tonic-clonic seizures (a seizure affecting the entire brain), anxiety.
 - Withdrawal is only diagnosable if there is moderate or severe alcohol use disorder. (pp. 499–500)
2. Cannabis Withdrawal *DSM-5* Criteria Review:
 - Withdrawal symptoms must include three or more of the following occurring within one week of last use: Irritability/anger, anxiety/general nervousness, sleep difficulties, decreased appetite, restlessness, depression, and a somatic symptom such as abdominal pain or headache.
 - Withdrawal is only diagnosable if there is moderate or severe cannabis use disorder. (pp. 517–518)
3. Opioid Withdrawal *DSM-5* Criteria Review:
 - Withdrawal symptoms must include three or more of the following occurring within a few minutes to a few days post last use: Depressed mood, nausea, body aches, lacrimation (excessive tears) or rhinorrhea (excessive nose running), pupil dilation or sweating, diarrhea, yawning, fever, insomnia.
 - Withdrawal is only diagnosable if there is a moderate or severe opioid use disorder. (pp. 547–548)
4. Sedative, Hypnotic, or Anxiolytic Withdrawal *DSM-5* Criteria Review:
 - Withdrawal symptoms must include two or more of the following occurring within a few hours to a few days post last use: Pulse rate greater than 100 beats/minute, hand tremor, insomnia, nausea, auditory hallucinations, psychomotor, agitation, anxiety, clonic-tonic seizure.
 - Withdrawal is only diagnosable if there is a moderate or severe sedative, hypnotic, or anxiolytic use disorder.
 - Notice the similarity between withdrawal symptoms from alcohol and sedative, hypnotic, or anxiolytic substances. (pp. 557–558)
5. Stimulant Withdrawal *DSM-5* Criteria Review:
 - Withdrawal symptoms must include dysphoric mood and two or more of the following occurring within a few hours to a few days post last use: Fatigue, unpleasant vivid dreams, insomnia or hypersomnia, increased appetite, psychomotor agitation or retardation.
 - Withdrawal is only diagnosable if there is a moderate or severe stimulant use disorder. (p. 569)

Severity Ratings

In the prior substance use diagnostic classification system in *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; APA, 2000), substance *abuse* was considered (accurate or not) the less severe of the two diagnoses, with substance *dependence* deemed as a more severe diagnosis. This paradigm resulted in numerous clinical and diagnostic difficulties and inconsistencies (e.g., O'Brien, 2011). In *DSM-5* (APA, 2013), SUDs are now rated on a continuum of severity based on the number of diagnostic criteria (out of 11) endorsed via client self-report (e.g., interview or screening/assessment), clinician observation, collateral report (e.g., family or friends), and/or biological (e.g., urine) testing. The ratings run from mild (two to three criteria endorsed), moderate (four to five criteria endorsed), and severe (six or more criteria endorsed).

Course Specifiers

Though some individuals may come to the diagnostic process as actively using, others may already be in some degree of recovery. Therefore, beyond the type and severity of diagnosis, *DSM-5* also provides the diagnostician an opportunity to specify details regarding any period of abstinence. Early remission occurs if the individual had met the full SUD criteria but now has gone between 3 and 12 months without experiencing any of the diagnostic criteria with the exception of craving. Sustained remission occurs if the individual had met the full SUD criteria but now has gone greater than 12 months without experiencing any of the diagnostic criteria with the exception of craving.

Of note is how the *DSM-5* carved out a craving exception. Craving is a new diagnostic criteria to the *DSM-5* SUDs and demonstrates that the *DSM* now considers active craving symptoms as a commonplace symptom for more than 1 year into full recovery. This decision fits the broader literature that clearly shows how treatment-seeking individuals experience strong craving symptoms and that cravings are the focus of clinical interventions (Heinz, Beck, Grüsser, Grace, & Wrase, 2009; Oslin, Cary, Slaymaker, Colleran, & Blow, 2009). Consequently, craving should not be considered a criterion of relapse but rather a general gauge for how comfortable and stable clients are during their recovery and how they cope with negative affect and experiences without returning to substance use.

Two other course specifiers remain: "In a controlled environment" pertains to those who ceased substance use but did so in a context that (in theory) restricted their access to the substance(s), such as inpatient treatment or prison; and "on maintenance therapy" is reserved for opioid use disorder and stipulates whether no SUD criteria are met due to the client being prescribed and using agonist and/or antagonist medication, such as methadone or oral naltrexone.

Taken together, the specifiers and severity ratings produce a comprehensive and clear diagnosis, for instance, severe opioid use disorder; on maintenance therapy (Suboxone); in a controlled environment; or moderate cannabis use, early remission.

International Statistical Classification of Diseases, Version 10

As of October 1, 2015, there was a mandatory updating of the codes from Version 9 to Version 10 of the World Health Organization's International Statistical Classification of Diseases and Health-Related Problems (World Health Organization, 2011; ICD-10) for the billing of substance use treatment services. As discussed above, the *DSM-5* defines SUD on the basis of severity, from mild to severe. The ICD-10, however, has two primary categories: (1) harmful use requiring physical or mental harm, and (2) dependence, which requires a minimum of three of the following six criteria endorsed:

- Strong desire or compulsion to use the substance (this may entail craving).
- Difficulties in controlling substance use in terms of onset, termination, or level of use.
- Withdrawal or using the same substance to relieve or avoid withdrawal symptoms.
- Tolerance.
- Neglect of alternative pleasures or time spent to obtain, use, and recover from use.
- Continued use despite having a physical, psychological, or cognitive problem(s) related to substance use.

The ICD-10 dependence criteria include some *DSM-5* criteria typically found in more severe SUD diagnoses (Kopak, Proctor, & Hoffman, 2012; Proctor, Kopak, & Hoffman, 2012, 2014). These *DSM-5* criteria are desire/unsuccessful effort to cut down or cease substance use, craving, strong desire or compulsion to use, failure to fulfill responsibilities due to substance use, sacrificing social/occupational/recreational activities in favor of substance use, and withdrawal. There are, however, questions about how the SUD severity scale in the *DSM-5* matches with the ICD-10 categorical style.

CO-OCCURRING PSYCHIATRIC DISORDERS

According to the *DSM-5* (APA, 2013), psychiatric symptoms may occur alongside substance use in the intoxication or withdrawal diagnosis (e.g., anxiety demonstrated during cocaine intoxication or depressed mood shown during cocaine withdrawal). However, the *DSM-5* also provides for diagnoses of substance-induced psychiatric disorders within other classification areas other than substance related.

For our purposes in this chapter, these include substance-induced anxiety disorders, substance-induced depressive disorders, substance-induced bipolar disorders, and substance-induced psychotic disorders.

The induced disorders come with a specific set of criteria designed to facilitate the differential diagnosis from psychiatric symptoms due to withdrawal, intoxication, or a non-substance-related co-occurring disorder. In brief, the following summarizes the requirements for a substance-induced psychiatric disorder as per the *DSM-5*.

- The psychiatric symptom in question (anxiety for induced-anxiety, for example) needs to be a prominent factor in the overall clinical picture. The diagnosis of induced, and not intoxication or withdrawal, is made when these psychiatric symptoms are more intense than expected in the intoxication or withdrawal period.
- The psychiatric symptoms developed soon after intoxication and/or withdrawal from the substance.
- The substance is capable of inducing the psychiatric symptom(s) in question.
- Psychiatric symptoms that are not better explained by a non-substance-related version of this disorder (e.g., major depressive disorder as opposed to substance-induced depressive disorder). For instance, do the symptoms last one month or longer after acute withdrawal/severe intoxication, or is there evidence of a preexisting psychiatric condition (i.e., evidence of preexisting bipolar disorder would nullify the ability to diagnose a substance-induced bipolar disorder)?
- The psychiatric symptoms appear to not be better explained by delirium.

The 2013 Substance Abuse and Mental Health Services Administration (SAMHSA) TEDS-A data showed that one-third of all SUD treatment admissions also presented with a *DSM*-diagnosed co-occurring psychiatric disorder ($n = 408,737$, 33.1%). Thus, just knowing how to diagnose an SUD is only half the clinical picture (and typically the easier component of the diagnostic process). This next section covers the challenging psychiatric diagnoses inherent within the SUD population.

The prevalence of co-occurring psychiatric symptoms within the SUD population is now the norm and not the exception or specialized clinical case (e.g., CSAT, 2005; Helseth, Samet, Johnsen, Bramness, & Waal, 2013; Thombs & Osborn, 2013). For example, Rosenthal (2013) noted the high rates of psychiatric disorders and symptoms within an SUD treatment population as well as a high rate of substance use and SUD in a psychiatric treatment population. Consequently, if experiencing an SUD case, though you will of course need to diagnose one or more SUDs, you will also very likely need to diagnose one or more co-occurring

psychiatric disorders and/or understand the interplay between the exhibited and reported psychiatric symptoms and the substance use.

Grant and colleagues (2015) demonstrated just how prevalent psychiatric disorders/symptoms are in the SUD population when they conducted face-to-face interviews with a representative U.S. noninstitutionalized civilian adult (18 years and older) sample ($N = 36,309$) in the 2012–2013 National Epidemiologic Survey on Alcohol and Related Conditions III (NESARC-III). They found significant associations between 12-month and lifetime AUD and other SUDs, major depressive and bipolar I disorders, and antisocial personality disorder (ASPD) and borderline personality disorder (BPD) across all levels of AUD severity, with odds ratios (ORs) and confidence intervals (CIs) ranging from 1.2 (95% CI, 1.08–1.36) to 6.4 (95% CI, 5.76–7.22). Associations were also found between AUD and panic disorder, specific phobia, and generalized anxiety disorder (ORs ranging from 1.2 (95% CI, 1.01–1.43) to 1.4 (95% CI, 1.13–1.67) across most levels of AUD severity.

In the NESARC-III, Grant et al. (2016) also found significant associations between 12-month and lifetime drug use disorder (DUD) and other SUDs. Significant associations were found between any 12-month DUD and major depressive disorder (OR 1.3; 95% CI, 1.09–1.64), dysthymia (OR 1.5; 95% CI, 1.09–2.02), bipolar I (OR 1.5; 95% CI, 1.06–2.05), posttraumatic stress disorder (PTSD) (OR 1.6; 95% CI, 1.27–2.10), and antisocial (OR 1.4; 95% CI, 1.11–1.75), borderline (OR 1.8; 95% CI, 1.41–2.24), and schizotypal (OR 1.5; 95% CI, 1.18–1.87) personality disorders. Lifetime DUD was also associated with generalized anxiety disorder (OR 1.3; 95% CI, 1.06–1.49), panic disorder (OR 1.3; 95% CI, 1.06–1.59), and social phobia (OR 1.3; 95% CI, 1.09–1.64).

Sunderland, Slade, and Krueger (2015) emphasized that although we clearly see a relationship between SUD and psychiatric disorders, what remains unknown is whether this relationship can best be explained by some general factor or whether there is a unique contribution made by specific substances. For instance, a general factor may be genetic vulnerability or psychological hardiness. However, the unique contribution hypothesis very much muddies the waters as evidenced by the myriad findings regarding psychiatric symptoms in the wake of substance use or withdrawal. For example, major depression is theorized to possibly cause increased alcohol use (Kahler, Ramsey, Read, & Brown, 2002). Brick (2008) added that psychotic symptoms during alcohol withdrawal, as due to the GABA/glutamate imbalance, may appear as early as 2 days after the last drink.

Other substances share this literature. Oldham and Ciraulo (2013) discussed paranoia, depression, and suicidal ideation/acts in benzodiazepine and barbiturate users. Numerous studies noted anxiety, depression, and psychosis in methamphetamine users (e.g., Chen et al., 2005), though most symptoms may subside within

one week of last use (Newton, Kalechstein, Duran, Vansluis, & Ling, 2004). However, not all methamphetamine users experience psychiatric symptom remission. For instance, Ujike and Sato (2004) noted a prolonged psychosis for 6 months or longer in one-third of methamphetamine users, whereas Glasner-Edwards et al. (2009) found that 50% of methamphetamine users met the *DSM* criteria for a psychiatric disorder 3 years posttreatment.

Cocaine is associated with a cocaine-induced psychosis severe enough to be misdiagnosed as schizophrenia (Kandel, Huang, & Davies, 2001), though upon closer look the symptoms are different due to lesser instances of thought disorder, fewer bizarre thoughts, and fewer negative schizophrenia symptoms (Harris & Batki, 2000; Thirthalli & Benegal, 2006). Cocaine also demonstrates how symptoms due to use greatly resemble psychiatric symptoms. For instance, Gorelick (2013) reviewed the presence of tactile hallucinations of bugs crawling under the skin (formication). Furthermore, panic symptoms common in cocaine use may transform into a panic disorder (Schuckit, 2006).

Similar psychiatric symptom associations are seen with other substances as well. Panic and intense anxiety are reported as adverse reactions in cannabis users, and though it may resolve postabstinence, there is evidence that this cannabis-associated anxiety can develop into panic attacks or panic disorder independent of cannabis use (Zvolensky et al., 2008). In addition, there are high rates of co-occurring psychiatric symptoms such as psychosis in opioid users (Strain, 2002).

Over the years, numerous models have attempted to explain the complicated relationship between co-occurring psychiatric disorders and SUDs. A few are discussed next. The common factor model maintains that the co-occurring SUD and psychiatric disorder originate from a single risk factor (Mueser, Drake, & Wallach, 1998). This risk factor increases the risk for both substance use and psychiatric disorder. Some common risk factors are genetic vulnerability, disordered mesolimbic activity in the brain, or psychosocial factors such as poverty or homelessness (Mueser, Noordsy, Drake, & Fox, 2003).

Other models pose a more complex hypothesis. The random multiformity and extreme multiformity models state that one disorder can take heterogeneous or atypical forms (Klein & Riso, 1993). Thus, symptoms will appear that seem associated with other disorders. This complicates the diagnostic accuracy and also seems to underscore the need for consistent and frequent reevaluation to determine the true origin of the symptom(s). The extreme multiformity model assumes the atypical form will appear only when the severity of the risk factor for either or both of the disorders is elevated. For example, the co-occurrence of cocaine use disorder and psychotic symptoms may not occur unless the frequency of cocaine use reaches a certain (likely unknown) critical threshold and/or there exists an extensive family history of psychosis (such as schizophrenia).

The correlated liabilities model proposes that the onset of co-occurring conditions arise due to shared common sets of risk factors (Neale & Kendler, 1995). For example, co-occurring SUD and depression in adolescence may arise from a variety of forms of neglect and abuse during childhood.

Three types of causation models examine the temporal order of onset of substance use and other psychiatric disorders (Mueser et al., 2003). The secondary substance abuse model proposes that psychopathology precedes and causes SUD, whereas the secondary psychiatric disorder model states that SUD precedes and causes psychiatric disorders. Finally, the reciprocal causation model proposes that one disorder will exacerbate the other. This model is less concerned with the order of onset and more focused on the integration of SUD and psychiatric disorders for the sake of best-fitting treatment options (Mueser et al., 2003).

Another perspective on the substance use/psychiatric disorders paradigm comes from research in the area of behavioral economics and states that SUD clients prefer immediate reinforcement, even if small in magnitude, as opposed to delayed reinforcement of greater magnitude. In addition, they may prefer that punishment be delayed, even if this delay means the punishment magnitude will increase (Bickel & Marsch, 2001; Higgins, Heil, & Lussier, 2004). For example, SUD individuals with psychosis report that despite being aware of the long-term physical and psychological consequences of continued substance use, they still use substances in order to obtain immediate relief from dysphoria and unpleasant side effects of antipsychotic medication via the substance-induced euphoria (Charles & Weaver, 2010). Consequently, those with co-occurring disorders suffer with various psychiatric symptoms and select the immediate (though brief) relief from symptoms via substance use despite the psychological, physical, and interpersonal damage that come later. If this model is correct, it does answer the question many ask of “why would they use if they know the consequences soon to come?” For many, the decision to use or cease substance use may be less a matter of “willpower” or “motivation” and more so a cost-benefit analysis calculated while under psychiatric distress.

The question of whether you are seeing a substance-induced psychiatric symptom or a non-substance-related psychiatric symptom/disorder is critical to clarify. However, this question is also highly complex and at times heterogeneous in presentation. Two recent studies (Foulds, Adamson, Boden, Williman, & Mulder, 2015; Foulds, Sellman, et al., 2015) demonstrated the complexity inherent in the induced versus non-substance-related diagnostic process.

Foulds, Adamson, et al. (2015) noted the presumption that antidepressants would work for non-substance-related but not induced disorders has not been clearly evaluated, at least as it pertains to AUD and depression. They also argued that the induced versus non-substance-related distinction is an “oversimplification” (p. 57) and typically not feasible due to the recall skills required by the client (see the

frontal cortex and memory impairments discussed in Chapter 1). Furthermore, they emphasized that the relationship between alcohol use and depression is fluid throughout the patient's lifetime, thus making it challenging to construct a singular diagnostic paradigm between substances and psychiatric disorders/symptoms. As echoed by McKay (2005), if the client uses substances to reduce and/or manage depressive symptoms, then obviously the relationship will adjust as the depressive symptoms and/or substance use changes.

Foulds, Sellman, et al. (2015) studied outpatients with alcohol dependence and major depression ($n = 138$). They found that improvements for drinking and depression occur by week 3 of alcohol treatment. As expected, they found that in the first 3 weeks of treatment, the substance-induced depression group showed greater improvement than the non-substance-related group for depression symptoms (likely due to the passing of the immediate withdrawal period and the associated psychiatric symptoms). Of interest, though, was that for both the induced and non-substance-related groups, poorer depression outcomes were found for those who did not reduce or cease drinking or drank more. Foulds, Sellman, et al. argued that this finding runs counter to the common notion that only the alcohol-induced depressive disorder patients would experience poor depression outcomes if drinking did not cease/reduce. This points to a complicated and nuanced relationship between substances and psychiatric disorders/symptoms and may support (in part) the finding by Nunes, Liu, Samet, Matseoane, and Hasin (2006), who noted a high rate of non-substance-related psychiatric disorders in patients originally diagnosed as having the psychiatric symptoms due to a substance-induced disorder.

Part of this error may be due to the rigid notion of co-occurring disorders only consisting of an integration of one substance disorder and one psychiatric disorder. However, it is common for patients to present with multiple co-occurring psychiatric disorders. For instance, a recent study (Hidalgo-Mazzei, Walsh, Rosenstein, & Zimmerman, 2015) examined 3,651 psychiatric patients and found that 63 of these patients were diagnosed with both bipolar disorder and BPD, and that these patients were significantly more likely to have an SUD compared with bipolar patients without BPD. The study highlighted how both bipolar and BPDs together increased SUD risk as compared to bipolar-only clients and showed how two psychiatric disorders can combine into a perfect storm that increases SUD risk as a mechanism of psychiatric symptom coping.

First (2014) reviewed several critical thinking points in this complicated diagnostic process:

- Is a temporal relationship present between the substance use and the onset/maintenance of the psychopathology? Unfortunately, this determination is difficult (if not impossible) due to the order of onset of substance use and

psychopathology being impossible to accurately determine. In such situations, the clinician must wait out the withdrawal period to determine what happens to the psychiatric symptoms because (in theory) after the period of abstinence following the withdrawal phase the psychiatric symptoms—if induced via withdrawal and substance cessation—should spontaneously resolve. Persistence of the psychiatric symptomatology for a significant period of time beyond periods of intoxication or withdrawal suggests that the psychopathology is primary.

- Regular substance users who report a significant change in the amount used (either a large increase or a decrease sufficient to induce withdrawal symptoms) may develop psychiatric symptoms.
- The substance-taking behavior can be considered a form of self-medication for the psychiatric condition. Substance users often preferentially choose certain classes of substances for their effects. For example, patients with anxiety disorders often prefer central nervous system (CNS) depressants such as alcohol. The principal criterion for a primary psychiatric disorder with secondary substance use is that the primary psychiatric disorder occurs first and/or exists in the patient's lifetime while substance free.
- Even if initially independent, the co-occurring disorders may interact and exacerbate one another.

Below, several common psychiatric conditions are reviewed. Look for the degree of complexity in the integration of SUD and psychiatric symptoms. As you do, it should start to become clear as to why the misdiagnosis of a substance etiology is a very common diagnostic error, especially in clinicians not well versed in substance use diagnostics.

Anxiety/Depression

Myriad findings (e.g., Brooner, King, Kidorf, Schmidt, & Bigelow, 1997; Stewart, Zvolensky, & Eifert, 2002) support the conclusion that anxiety and depressive symptoms occur frequently within the SUD treatment population. For instance, in an SUD population, the lifetime rates of affective and anxiety disorders run between 49% and 79% (Langås, Malt, & Opjordsmoen, 2012). Other studies have documented the temporal sequencing of SUD and anxiety. First, a preexisting anxiety disorder leading to self-medication increases as predicting (OR = 2.50–4.99) the risk of SUD onset (Robinson, Sareen, Cox, & Bolton, 2011). Second, Menary, Kushner, Maurer, and Thuras (2011) documented that approximately 20% of the anxiety disorder population self-medicates with alcohol due to the anxiolytic effect of alcohol. Third, anxiety disorder onset seems to come prior to opioid use disorder onset (Fatséas, Denis, Lavie, & Auriacombe, 2010) or AUD onset (Birrell,

Newton, Teesson, Tonks, & Slade, 2015). Fourth, it is reported that at least 25% of individuals with depressive disorders use substances to relieve symptoms (Bolton, Robinson, & Sareen, 2009).

Mood disorders commonly co-occur with SUDs and trigger a significant risk for suicidal behavior (CSAT, 2009a; Darke & Ross, 2002; Dhossche, Meloukheia, & Chakravorty, 2000). For example, a review of psychological autopsy studies showed that mood disorders (particularly major depression) and SUDs were the most common disorders for those who died by suicide. Furthermore, 38% of these suicidal individuals had one or more SUD plus one or more other psychiatric disorder (Cavanagh, Carson, Sharpe, & Lawrie, 2003). The SUD/mood disorder co-occurring condition also produces a heightened risk for attempted suicide (e.g., McCloud, Barnaby, Omu, Drummond, & Aboud, 2004). Aharonovich, Liu, Nunes, and Hasin (2002) stressed that the suicide risk is present regardless if the depressed mood is due to an independent co-occurring mood disorder or a substance-induced mood disorder. Consequently, it is the symptom and not the origin of the symptom that seems most important.

The severity of these mood symptoms could be quite high. Alcohol use-disordered clients may enter treatment with high levels of depression (e.g., Davidson, 1995; Schuckit, 1994). Those with cocaine use disorder may come to treatment with mood disorder symptom severity greater than that of the general population but still falling short of those with a mood disorder (Siqueland et al., 1999). Rigg and Monnat (2015) examined data from the 2010–2013 National Survey on Drug Use and Health in regard to three classes of substance users: heroin only, prescription opiate use only, and a combined heroin and prescription opiate use. They found that the individuals who misused prescription opiate medication and used heroin were greatly burdened by numerous psychiatric symptoms such as anxiety and depression. Their findings also mirror a common clinical finding in that many clients who started with prescription opiate misuse eventually moved over to heroin due to cost (heroin is much cheaper), rapid onset of effect (injection heroin much quicker onset of effect as opposed to oral opiate pills that must move through the first-pass metabolism before reaching circulation and causing an effect), and a tolerance developed to the oral opiate medication. A client with a co-occurring anxiety disorder with whom I once worked who experienced this very transition from prescription opiate to injection heroin explained the shift in substance in the following way:

At some point, the oxy wasn't making me feel any less worried or sad or angry or anxious. I was just feeling blah. My friend suggested heroin and holy crap! I felt better. No more negative. No more sad. At least for a while. Could use more of it as it is a lot cheaper. Got a quicker rush from it. So, I never looked back. That's how I wound up here.

Bipolar Disorders

Bipolar disorder and SUDs are a common (e.g., Hawton, Sutton, Haw, Sinclair, & Harriss, 2005) and complex combination. Evidence from treatment populations indicates that one third of bipolar clients met the old *DSM-IV* abuse or dependence criteria (Baethge et al., 2005; Bauer et al., 2005). The co-occurring relationship between these disorders complicates the course and duration of the bipolar depressive and manic episodes (Strakowski & DelBello, 2000). These clients are also dangerous to self as they demonstrate medication nonadherence (Teter et al., 2011) as well as a higher risk for suicide (CSAT, 2009a; Comtois, Russo, Roy-Byrne, & Ries, 2004; Dalton, Cate-Carter, Mundo, Parikh, & Kennedy, 2003; Harris & Barraclough, 1997; Kessler, Borges, & Walters, 1999). Specifically, the mixed episode (most recent depressed and manic) bipolar client with rapid cycling seems to most commonly report a co-occurring SUD (Agrawal, Numberger, & Lynskey, 2011).

Psychotic Disorders

Psychotic symptoms are also common in SUDs, whether due to withdrawal, substance-induced, or non-substance-related co-occurring disorder (SAMHSA, 2005; Veatch & Becker, 2005). Hides et al. (2015) recently reported on the high proportion of methamphetamine users having co-occurring psychotic disorders. Hartz et al. (2014) found that severe psychotic disorders increased the risk for heavy alcohol use (OR = 4.0), heavy cannabis use (OR = 3.5), and recreational substance use (OR = 4.6). In regard to cannabis use, Johns (2001) discussed how cannabis use could induce psychosis, whereas Rubio et al. (2012) underscored the commonalities of symptoms between cannabis-induced psychotic disorder and a recent onset non-substance-related psychotic disorder. Though alcohol is found as significantly related with psychotic disorders, Jordaan and Emsley (2014) cautioned how little is actually known regarding alcohol-induced psychotic disorder, specifically in regard to how to distinguish the symptoms from alcohol withdrawal delirium or schizophrenia. Thus, there may be ample cases of misdiagnosis.

One of the most interesting issues regarding psychotic disorders and substance use rests in the debate regarding the antipsychotic quality of opiates. This dialogue dates as far back as the early 1970s when there was some discussion regarding the antipsychotic qualities of heroin (Wellisch, Gay, Wesson, & Smith, 1971). More recently, 23 psychotic heroin-dependent patients, at their first agonist opioid treatment, were compared with 209 nonpsychotic individuals. Findings showed that psychotic heroin-dependent clients presented for agonist opioid treatment demonstrating more severe psychopathology but a shorter, less severe addiction history than the nonpsychotic comparison group. Maremmani et al. (2012) reasoned that since the psychotic clients requested agonist opioid treatment earlier,

and with a less severe addiction history, these clients primarily benefited from an opioid medication alleviating their psychiatric symptoms and not necessarily their heroin addiction. However, Maremmani and colleagues noted that psychotic symptoms may also develop after substance use (i.e., heroin) onset, thus confusing the non-substance-related versus substance-induced diagnostic deliberation.

This finding supports earlier research regarding how methadone maintenance helps prevent psychotic relapses in clients with a history of psychotic episodes. The cessation of methadone with these clients led to a reemergence of psychotic symptoms (Levinson, Galynker, & Rosenthal, 1995). Similarly, research involving heroin addicts admitted for inpatient treatment of manic and/or acute psychotic episodes found that regardless of the reasons for hospitalization, those receiving increasing dosages of methadone were found to be less in need of antimanic and antipsychotic drugs at discharge (Pacini & Maremmani, 2005). Interestingly, the proposed antipsychotic effects of methadone may make it challenging to effectively diagnose co-occurring disorders which are non-substance-related, such as schizophrenia. It may also dampen the psychotic features in some other disorders that commonly co-occur with SUD, such as severe major depressive disorder, which can contain a psychotic feature.

Personality Disorders

Rosenthal (2013) noted that ASPD and BPD are the two personality disorders most commonly associated with co-occurring SUD. Research shows that consistently high levels of comorbidity between SUDs and ASPD have been reported within samples of individuals with SUDs in treatment (Cottler, Price, Compton, & Mager, 1995). ASPD clients present as complex cases (Goldstein, Dawson, & Grant, 2010; Westermeyer & Thuras, 2005) and are associated with a more severe course of SUD (Ford et al., 2009; Hesselbrock, 1986). Among clients with co-occurring disorders, ASPD is associated with more severe addiction and worse overall functioning (Crocker et al., 2005). Furthermore, those diagnosed with co-occurring ASPD and another serious mental illness reported higher rates of substance misuse than those with serious mental illness but not co-occurring ASPD (Tengström, Hodgins, Grann, Långström, & Kullgren, 2004).

BPD is also prevalent within the SUD treatment population. One study (Sansone, Whitecar, & Wiederman, 2008) found a prevalence rate of BPD in those seeking buprenorphine treatment for opioid addiction exceeding 40%. Sansone and Wiederman (2009) found that nearly 50% of individuals with BPD reported a history of prescription drug misuse. A large survey found that 50.7% of individuals with a lifetime BPD diagnosis also qualified for a diagnosis of an SUD over the previous 12 months. This same survey found that for individuals with a lifetime diagnosis of an SUD, 9.5% also had a lifetime diagnosis of BPD (Grant et al., 2008).

Co-occurring SUD and BPD present a few challenges. Both BPD and SUD are associated with emotional dysregulation (Beatson & Rao, 2012) and high rates of disorder relapse (Darke, Ross, Williamson, & Teeson, 2005). Thus, differential diagnosis may be difficult if the client is in the midst of a depressive, manic, or mixed episode. BPD is difficult to treat primarily due to the pervasive and inflexible nature of personality disorders. Furthermore, BPD is linked with impulsivity, suicidality, and self-harm risks, and all these risk factors are likely exacerbated by substance use. Thus, it is plausible to conclude that BPD may contribute to the severity of SUD symptoms and that SUD treatment may be more complicated for clients who also have BPD (e.g., SAMHSA, 2014b), especially in regard to treatment alliance building (e.g., Luborsky, Barber, Siqueland, McLellan, & Woody, 1997). For instance, a large-scale study of alcohol-dependent inpatients showed that BPD alone was associated with a lifetime suicide attempt after controlling for other risk factors and personality disorders (Preuss, Koller, Barnow, Eikmeier, & Soyka, 2006). However, the role of other personality disorders in suicide attempts and suicide among individuals with SUDs is not well established (CSAT, 2009a). For example, a study of alcohol-dependent clients failed to find ASPD as significantly associated with suicide attempts, even after controlling for other risk factors (Preuss et al., 2006).

Posttraumatic Stress Disorder

PTSD is common in the SUD population (Coker, Stefanovics, & Rosenheck, 2016; Morgen, Maschi, Viola, & Zgoba, 2013; Saxon & Simpson, 2015), with one quarter to one third of SUD clients in treatment meeting PTSD diagnostic criteria (Dreissen et al., 2008). Those with a PTSD diagnosis have nearly a twofold risk of a lifetime SUD diagnosis (Pietrzak, Goldstein, Southwick, & Grant 2011). Furthermore, many SUD clients have a heightened risk of developing PTSD and/or other co-occurring psychiatric disorders (Green, Calhoun, Dennis, & Beckham, 2010). Like many other substances mirroring psychiatric symptoms, careful diagnostic deliberation is required with PTSD as many of the symptoms of this trauma disorder (such as arousal or reactivity) strongly resemble some symptoms of use and/or withdrawal (Saladin, Brady, Dansky, & Kilpatrick, 1995; Saxon & Simpson, 2015).

The exact nature of any causal relationship between SUD and PTSD is still not clear (Fontana, Rosenheck, & Desai, 2012), though there is clear empirical evidence showing that PTSD is associated with poorer substance use outcomes (Jacobsen, Southwick, & Kosten, 2001). The combination of PTSD and SUD is associated with complex clinical challenges because of the adverse relationship between these two disorders (Back, Waldrop, & Brady, 2009). For example, some research demonstrates that trauma cues can increase craving for addictive substances (Coffey et al., 2002).

In addition, Maschi and colleagues (Maschi, Gibson, Zgoba, & Morgen, 2011; Maschi, Morgen, & Viola, 2014; Maschi, Morgen, Zgoba, Courtney, & Ristow, 2011; Maschi, Viola, Morgen, & Koskinen, 2015) have noted the potential for consistent reexposure and retraumatization as a contributing factor in deteriorating psychiatric well-being. This phenomenon is also noted in the SUD literature. For instance, previous research found that 27% of active injecting substance users not receiving consistent treatment contacts experienced a new traumatic event each month (Peirce, Kolodner, Brooner, & Kidorf, 2012). Peirce and colleagues (2012) also noted how traumatic reexposure was associated with an increased risk of later drug use and a desire for SUD treatment. However, this desire for treatment does not lead to an increase in treatment admissions (Peirce, Brooner, Kolodner, Schacht, & Kidorf, 2013). Furthermore, a recent study underscored how 18% of methadone clients with a co-occurring psychiatric disorder were reexposed to a traumatic event each month during the 12-month study, and this trauma reexposure doubled the risk of SUD treatment interruption within the next 60 days (Peirce, Brooner, King, & Kidorf, in-press). Though in no way explanatory, it does point to how SUD clients may continually turn to substances as a trauma symptom coping mechanism and how the addiction is perpetuated if the individual is not actively engaged in treatment.

PROCESS ADDICTIONS

In discussions regarding co-occurring SUD and other disorders, the traditional bias has been to only consider substance use (e.g., alcohol, cocaine, heroin) and psychiatric disorders (e.g., anxiety, mood, trauma). However, the process addictions are also of critical relevance and play a role in the co-occurring disorder experience. Unfortunately, as of the *DSM-5* release, only one process addiction (pathological gambling) is considered an official *DSM-5* diagnosable disorder. This is despite the clinical, research, and anecdotal evidence that other process addictions do indeed exist. This next section covers pathological gambling as well as three others: sex addiction, food addiction, and nonsuicidal self-injury (NSSI).

Pathological Gambling

Pathological gambling is the only process addiction included in the *DSM-5* (APA, 2013, p. 585). This process addiction causes considerable problems across the areas of finances (debt, bankruptcy), family conflict, career/educational issues, as well as the experiencing of co-occurring psychiatric and/or SUDs (Ledgerwood & Petry, 2015). The criteria, in brief, target “persistent and problematic gambling behavior” that cause impairment over a 12-month period in four or more of the

following ways: (1) an increasing need to gamble with greater amounts of money to achieve an exhilaration from the gambling; (2) restlessness and irritability when the individual tries to reduce or stop gambling; (3) repeated and unsuccessful efforts to reduce or cut down gambling; (4) a preoccupation with gambling; (5) gambles when experiencing negative affect and/or mood; (6) tries to “get even” immediately after losing large amounts of money; (7) lying to conceal gambling behaviors; (8) important family, relationship, work, or school obligations jeopardized or lost due to gambling; and (9) requires money from others to support gambling behaviors. Severity ratings are four or five criteria endorsed (mild), six or seven criteria (moderate), and eight or more criteria (severe).

Cowlshaw and Hakes (2015) cautioned that pathological gambling is a common but undetected diagnosis in the SUD population and that the presence of a gambling condition may highlight the presence of underlying psychopathology. Other reviews confirm their claim. Korman, Torneatto, and Skinner (2010) noted that pathological gambling typically occurs along with co-occurring disorders, citing SUDs (50% of cases), depression (72% to 76% of cases), and personality disorders (93% of cases) met the criteria for a *DSM* personality disorder diagnosis. Lorrains, Cowlshaw, and Thomas (2011) added to the evidence via their meta-analysis of 11 studies where they reported pathological gamblers experience high rates of co-occurring SUD (57.5%), mood disorder (37.9%), and anxiety disorder (37.4%).

Sex Addiction

Carnes (1983) introduced sex addiction to the recovery and treatment population. Unfortunately, though widely accepted within the mental health community, Southern, Ellison, and Hagwood (2015) indicted the persistent lack of a diagnostic consensus as the key explanation as to why there is still no inclusion of sex addiction within the *DSM*. For instance, the ICD of the WHO does include two relevant categories for sex addiction: There is “Excessive Sexual Drive,” which is divided into satyriasis for males and nymphomania for females, and “Excessive Masturbation.” However, Giugliano (2013) underscored the pertinent clarification needed as to what exactly is “excessive” in regard to quantifying sex drive and/or masturbation.

As emphasized by Hall (2014), there is no clear diagnostic paradigm for sex addiction. That sets up the paradox that even though the *DSM* refuses to include sex addiction as an official diagnostic option and the profession cannot agree on a diagnostic definition, there is still much known about sex addiction. For example, Kuzma and Black (2008) documented sexual behaviors by gender and showed that men are more likely to compulsively masturbate, use pornography, pay for sex, and

have one-night stands, whereas women are more likely to engage in sex as a business transaction. Furthermore, Schwartz and Southern (1999) cautioned that women who engage in dysfunctional and out-of-control sexual behaviors likely also present with an adult attachment disorder and show difficulties with stress, intimacy expectations, and emotion regulation (Schneider & Schneider 2004). Southern (2002) hypothesized that the sexual behaviors are implemented in an effort to cope with stressors or psychological symptoms.

The closest yet to a clear diagnostic paradigm for sex addiction comes courtesy of Kafka (2010), who presented the hypersexual disorder criteria. In brief, for at least the past 6 months there needs to be recurrent and intense sexual urges and/or behaviors demonstrated in four or more of the following ways: (1) a great deal of time is spent on sexual fantasies or sexual behaviors; (2) the individual repeatedly engages in sexual fantasies and/or behaviors as a response to dysphoric mood; (3) the individual repeatedly engages in sexual fantasies and/or behaviors as a response to stressful life events; (4) there have been repeated unsuccessful efforts to cut down or cease the hypersexual fantasies, urges, and/or behaviors; and (5) the sexual fantasies, urges, and/or behaviors are continued despite the risk of harm to self and/or others. Kafka also includes specifiers regarding whether the sexual activity is focused on masturbation, pornography, sex with consenting adult(s), cybersex, phone sex, or strip clubs.

Food Addiction

The National Center on Addiction and Substance Abuse (2016) recently produced a comprehensive review of food addiction. Specifically, this report noted that similar to sex addiction, food addiction is not a recognized disorder in the *DSM-5*. The National Center on Addiction and Substance Abuse recommended using the Yale Food Addiction Scale (YFAS) (Gearhardt, Corbin, & Brownell, 2009), a valid and reliable measure, for the diagnostic assessment of a potential food addiction. The YFAS criteria are as follows:

1. Substance taken in larger amount and for longer period than intended;
2. Persistent desire or repeated unsuccessful attempts to quit;
3. Much time/activity to obtain, use, recover;
4. Important social, occupational, or recreational activities given up or reduced;
5. Use continues despite knowledge of adverse consequences (e.g., failure to fulfill role obligations, use in physically hazardous situations);
6. Tolerance (marked increase in amount; marked decrease in effect);

7. Characteristic withdrawal symptoms; substance taken to relieve withdrawal; and
8. Use causes clinically significant impairment or distress.

According to the YFAS, endorsement of three or more symptoms demonstrate clinically significant impairment or distress within the past 12 months and meets the criteria for a food addiction diagnosis.

The National Center on Addiction and Substance Abuse (2016) cautioned that individuals with *DSM-5* diagnosable eating disorders (e.g., anorexia nervosa, bulimia nervosa, and binge eating disorder) may demonstrate such addiction-related symptoms as obsessions, compulsions, or impulsivity. The report argued that there is a key difference between eating disorders and food addiction:

Still, the emphasis in eating disorder research and treatment has concentrated less on food than on the individual's cognitions and feelings with regard to food and weight, whereas in addiction research and treatment, the power of the addictive substance to "hook" the person is paramount. The advent of the food addiction construct bridges these two traditions and, like substance addiction, puts significant emphasis on the target of the addiction: certain types of food (i.e., those that are highly palatable and usually highly processed or refined) and their ability to "hook" those with certain psychosocial vulnerabilities or risk factors. (p. 4)

The report also implied a similarity between food and sex addictions. Specifically, both are biologically common in all individuals and represent natural rewards for which the human system was designed. Thus, it is challenging to reduce the disordered and addictive eating (or sex) behaviors.

Nonsuicidal Self-Injury

I spent 4 months debating whether to include NSSI in the list of process addictions for this text. As discussed below, some may agree with my decision, whereas others will not. As with any text, the content is objective but the perspective through which the content is reviewed comes with an author bias. The review of the NSSI literature and my clinical experiences with individuals who engaged in NSSI and had co-occurring psychiatric and SUDs finally led me to take the stand that NSSI should be considered a process addiction. I will now briefly make the case as to why.

The *DSM-5* (APA, 2013) lists NSSI as a condition in need of further study. Though present in the manual, NSSI does not have an ICD-10/*DSM* diagnostic

code. The proposed criteria stipulates that in the past year on at least five occasions the individual has engaged in “intentional, self-inflicted damage” such as cutting, burning, stabbing, punching, or excessive rubbing that is not culturally sanctioned (i.e., as part of a religious or cultural ceremony/ritual) (p. 803). Of importance, this damage is not inflicted as part of a suicidal act. As per the *DSM-5*, NSSI is inflicted for one or more of the following reasons: to seek relief from a negative emotion, to produce a positive emotion, and/or to resolve interpersonal difficulties. In addition, the NSSI occurs in the context of at least one or more of the following: negative affect/mood (e.g., anxiety, depression) in the lead-up to the NSSI act, preoccupation with the NSSI behavior that is difficult to control, and/or frequent rumination regarding NSSI acts (even if not acted upon).

A review of these proposed diagnostic criteria mirrors the experiences of those who struggle with SUDs. Furthermore, as discussed below, co-occurring psychiatric and SUDs are to be considered the norm, so why not co-occurring psychiatric and process addictions (such as the proposed process addiction of NSSI)? In brief, it appears that the individual with NSSI struggles with issues that overlap substantially with those of substance-related disorders—for instance, in the context of psychiatric difficulties via the experiencing of negative affect, mood, or thought; in the use of NSSI to cope with or counter these negative experiences; and in the uncontrollable thoughts (or obsessions) regarding NSSI acts. For example, a commonly cited study (Nixon, Cloutier, & Aggarwal, 2002) showed the similarity between NSSI and addiction. A sample of adolescents who engaged in NSSI were diagnostically evaluated via the *DSM-IV* (APA, 2000) substance abuse and dependence criteria but with the wording edited to accommodate NSSI and not substance use. The results showed that 97.6% of the adolescents met at least three of the seven substance dependence criteria and 81% met at least five of the dependence criteria.

I ask my substance use-disordered clients in recovery about their cravings and/or thoughts regarding substance use in each session. I do the same of my NSSI clients via asking about any NSSI ideation, intent, plans, or acts. I have seen similarities in the following scenarios:

- Both report a constant daily thinking about substance use or NSSI.
- Both report a heightened frequency and/or intensity of these thoughts when experiencing life stressors and/or co-occurring psychiatric disorder symptom flare-ups.
- After excessively using the substance or NSSI for years, they both have reported a tolerance effect. The NSSI clients have discussed not getting the same “relief” or “control” from the acts that they used to achieve. This causes them frustration as their principal coping skill is deteriorating.

These experiences of my NSSI clients sound quite analogous to the affect regulation function of NSSI discussed by some (e.g., Brain, Haines, & Williams, 2002). Buser and Buser (2013) agreed. They provided a comprehensive review of the NSSI literature and concluded that NSSI entails issues of compulsion, loss of control, continued use despite negative consequences, and the development of tolerance, which are all indicative of an addiction.

However, Victor, Glenn, and Klonsky (2012) did not see NSSI as a process addiction. Their reasons for excluding NSSI as a process addiction include the following:

- Substances are craved in a variety of contexts, while NSSI is craved only in context of negative emotion.
- Substance use is maintained via positive reinforcement (e.g., euphoric feelings due to intoxication), whereas NSSI is maintained via negative reinforcement (e.g., reduction of negative affect or mood).

Their argument may be flawed if you consider the co-occurring disorder paradigm as the norm and not the exception in all addictions. For instance, Zetterqvist (2015) reviewed numerous studies and demonstrated the high rates of various co-occurring disorders within the NSSI population such as anxiety, mood, substance use, and eating disorders as well as symptoms of emotional dysregulation and heightened general psychiatric distress. Consequently, it is plausible to suggest that—if you accept the co-occurring paradigm as the norm for all addictions (substance and process)—the positive reinforcement argument falls flat. Whether ingesting cocaine, gambling, being involved in excessive hypersexual behaviors, or engaging in an NSSI act such as cutting, the client is primarily engaged in negative reinforcement. The addiction is not perpetuated to induce a euphoric feeling as much as it is to use that euphoric feeling as a way to (temporarily) reduce the negative affect and/or mood they are experiencing. Addicted individuals do not so much chase the “high” as they instead perpetually return to their coping skill (i.e., the addiction) to escape the hurt.

SPECIAL POPULATIONS

Adolescents

Among adolescents, SUDs and psychiatric disorders exist within a bidirectional relationship, with each increasing the risk for the other (Essau, 2011). For example, a recent study found that 25% of 13- to 17-year-olds who received any type of psychiatric attention at a large medical center presented with at least one co-occurring

SUD (Wu, Gersing, Burchett, Woody, & Blazer, 2011). The 2013 Treatment Episode Data Set (SAMHSA, Center for Behavioral Health Statistics and Quality, 2015) showed that 27.1% of the adolescents admitted for SUD treatment also presented with a co-occurring psychiatric disorder diagnosis. Table 3.1 reports on the most commonly reported substances by adolescents at admission. Many of these substances, as discussed throughout this chapter, have a direct or indirect relationship with psychiatric symptoms. However, many of the normative thoughts, emotions, and behaviors experienced during adolescence may resemble psychiatric symptoms, thus blurring the diagnostic clarity for addressing co-occurring disorders (Brown et. al., 2008).

Virtually any psychiatric disorder may occur with SUDs, such as any of the following:

- Attention-deficit/hyperactivity disorder
- Oppositional defiant disorder
- Conduct disorder
- Depression
- Anxiety disorders
- Posttraumatic stress disorder
- Bipolar disorder
- Psychotic disorder

So similar to adult SUD, there is a large commonality of symptoms shared by the substance use and psychiatric disorders. A few recent studies underscore this complexity. First, Saranga and Coffey (2010) demonstrated the innate complexity in adolescent co-occurring disorders cases via the review of an adolescent demonstrating manic and schizophrenic symptoms along with cannabis and other substance misuse.

Table 3.1 Substances Reported at Admission in Minors Ages 12 to 17 Years (Minimum 5%): SAMHSA Treatment Episode Data Set (2013) Results

Substance	N	%
Alcohol	46,010	45.3%
Marijuana	11,517	11.3%
Other Opiates	5,951	5.9%
Methamphetamine	5,573	5.5%

Source: SAMHSA (2015).

Second, Milin (2013) reviewed the strong association between bipolar disorder and SUD onsets within an adolescent population. What both of these studies also emphasize is that there is still much to know regarding the intersection of substance use and psychiatric disorders in adolescents.

Consequently, in regard to adolescents, it is the collateral report from parents, family, teachers, and school counselors (among others) that first tip off the potential for a substance use issue. Though not exhaustive, there are behavioral and cognitive signs/symptoms to look for, which include the following:

- Change in overall attitude/personality with no other identifiable cause
- Changes in friends, new hang-outs, sudden avoidance of old crowd, doesn't want to talk about new friends, friends are known drug users
- Change in activities or hobbies (e.g., giving up sports)
- Drop in grades at school or performance at work
- Change in habits at home, loss of interest in family and family activities
- Difficulty in paying attention, forgetfulness, blackouts
- General lack of motivation, energy, self-esteem, "I don't care" attitude
- Sudden oversensitivity, temper tantrums, or resentful behavior
- Moodiness, irritability, nervousness, aggressiveness, depression or suicidality
- Paranoia
- Confusion
- Excessive need for privacy
- Secretive or suspicious behavior
- Car accidents
- Taking risks, including sexual risks
- Chronic dishonesty
- Unexplained need for money, stealing money or items
- Change in personal grooming habits
- Possession of drug paraphernalia
- Use of room deodorizers and incense

In addition, there are numerous physical signs associated with substance use, intoxication, or withdrawal in adolescents, and these include the following:

- Change in appetite
- Unexplained weight loss or gain
- Poor physical coordination
- Sleep difficulties
- Red, watery eyes; pupils larger or smaller than usual

- Smell of substance on breath, body, or clothes
- Extreme hyperactivity, excessive talkativeness
- Runny nose, persistent hacking cough
- Nausea, vomiting, or excessive sweating
- Tremors of hands, feet, or head
- Irregular heartbeat, rapid heartbeat, chest pain
- Difficulty breathing
- Difficulty speaking
- Dark-colored urine

The *DSM-IV* (APA, 2000) substance abuse/dependence criteria were designed for adults and did not fit well with adolescent substance use clinical presentation. For example, adolescents may experience substance use issues without signs of withdrawal or physiological dependence (Stewart & Brown, 1995). In addition, Chung and Martin (2001) noted how some degree of tolerance is considered normal in adolescent substance use. Thus, some key *DSM-IV* diagnostic criteria are muddled in an adolescent population. As it stands now, evidence suggests that the *DSM-5* did not improve upon this flaw.

Winters, Martin, and Chung (2011) reported on some areas of the *DSM-5* with questionable validity when applied to adolescent substance users. First, as discussed earlier, tolerance may be normative in adolescent and young adult drinkers (Chung, Martin, Winters, Cornelius, & Langenbucher, 2004) in that it is easier to meet this criterion earlier in the career of the substance user. Thus, a younger user would have had fewer years of substance use history. Second, withdrawal symptoms are rare in adolescents because they only emerge after years of heavy drug use. Third, the hazardous use criterion is questionable. For instance, Winters, Martin, and Chung argued how hazardous use is developmentally bound and more common in adults (likely due to adolescents having less access to dangerous contexts while using, such as driving a car). Fourth, Winters, Martin, and Chung discussed that more research is needed to determine the effectiveness of the craving criterion for adolescents. Fifth, Winters, Martin, and Chung also pointed toward more research being needed for the severity criteria of the 2/11 threshold for SUD in youth, citing how this may wind up diagnosing many mild SUD cases that may not reflect the true definition of an SUD.

In addition, this is another adolescent-specific pragmatic issue for SUDs and the *DSM-5*. The switch to *DSM-5* eliminated the substance abuse diagnostic category. As a reminder, the old *DSM-IV* (APA, 2000) substance abuse criteria involved a pattern of substance use leading to clinically significant impairment

or distress, as manifested by one (or more) of the following, occurring within a 12-month period:

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

A common treatment occurrence is a client referred/mandated by his or her high school to receive an assessment and possibly receive some brief treatment intervention for substance use. This usually involves a scenario such as a high school student who was caught on school grounds smoking marijuana. Considering that marijuana (in my practicing state of New Jersey) is an illegal substance, coupled with the school's zero tolerance policy, the high school student can get in some trouble at school, which usually involves the need for an assessment.

Many of these high school students may not be addicted to marijuana. You could argue that they are "casual" or "recreational" users. In these instances, they typically wind up endorsing only one of the above substance abuse criteria, usually using when hazardous, poor academic work performance, or continued use despite persistent social/interpersonal problems. However, as per the *DSM-IV* (APA, 2000), one endorsed criterion was the minimum number needed for a diagnosable substance abuse disorder, so they would be diagnosed as cannabis abuse, and that diagnosis was sent over to their (parent's) medical insurance plan. Insurance plans need a diagnosable disorder that is biologically based (thus the reason why the adjustment disorders and v-codes can possibly receive some third-party reimbursement resistance).

However, *DSM-5* (APA, 2013) now requires that at least two criteria be endorsed for a mild SUD diagnosis. In addition, the unspecified other (or unknown) substance-related disorder articulates the following:

This category applies to presentations in which symptoms characteristic of an other (or unknown) substance-related disorder that causes clinically significant distress or impairment in social, occupational, or other important areas of functioning predominate but do not meet the full criteria for any specific other (or unknown) substance-related disorder or any of the disorders in the substance-related disorders diagnostic classes. (p. 585)

Here, this diagnostic choice is not an option as it seems to better reflect an atypical collection of substance use symptoms, with the key term being the plural symptoms. As written, it does not seem to imply that this diagnosis can be used when the person only meets one of the SUD criteria.

In the instances listed above, the high school students would not be diagnosable for an SUD. The students only present with one symptom, and despite a thorough assessment, only seem to experience that one symptom as a casual user. In this case, they are more diagnosable for “poor decision making” for smoking on school grounds. But the schools still want an assessment. And health care coverage for the session is usually only obtainable if there is a diagnosis. So at the end of the session, there is a dilemma in that your client does not have a *DSM-5* diagnosis due to having only one criterion endorsed. Now the parents, who expected to pay nothing more than the co-pay, may have to cover the full session as benefits may be denied. Furthermore, some schools request that the student have a few sessions with a counselor as part of the intervention process. Without a diagnosable (for example in this instance) cannabis use disorder, will this be possible?

In brief, something to consider is that schools were used to the *DSM-IV* substance abuse diagnosis as being an easy catchall where zero tolerance policy, school discipline, and counseling intervention all met. That paradigm does not exist any longer. Consequently, it could be possible that you encounter a student and his or her family who were encouraged (or mandated) to seek an assessment and perhaps some counseling sessions. But this student is not *DSM-5* diagnosable for an SUD. This type of case, based on anecdotal evidence from colleagues nationwide and my own experiences, is becoming common.

Older Adults

Substance use within the older adult population continues to rise (Han, Gfroerer, Colliver, & Penne, 2009), and the challenges of older adult SUDs are documented in a quickly growing body of research (e.g., Blow & Barry, 2014; Morgen et al., 2013; Salmon & Forester, 2012; Satre, 2013). For instance, recent national data demonstrated that of the population 60 years old and older, 5.4% reported illegal

drug use in the past year (SAMHSA, 2014a). Liu and Satterfield (2015) underscored that numerous complications exist for older adults with SUD. For instance, older adults may be more sensitive to substances ingested at low levels (CSAT, 1998), have interactions between substances and prescribed medications (Pringle, Ahern, Heller, Gold, & Brown, 2005; CSAT, 1998), demonstrate increased tolerance levels (Schonfeld & MacFarland, 2015), and struggle with increased dementia and other cognitive impairments (Doweiko, 2015).

There are a few key issues relevant to diagnosing older adults. First, older adults may be more likely than younger adults to demonstrate and experience SUDs while not meeting the diagnostic criteria. For example, a study using *DSM-IV* abuse/dependence criteria found that 19% of clients age 55 and older did not meet the dependence criteria (Satre, Mertens, Areán, & Weisner, 2003). It is still unclear as to whether this issue would also occur with the *DSM-5* SUD criteria. Second, Moore, Beck, Barbor, Hays, and Reuben (2002) cautioned that older adults may experience AUD problems without experiencing tolerance or physiological dependence. The amount of alcohol considered problematic differs in older adults when compared to younger drinkers (i.e., 49 years old and younger). The National Institute on Alcohol Abuse and Alcoholism (2005) stipulated no more than three standard alcohol drinks per day. Satre, Gordon, and Weisner (2007) presented maximum alcoholic drinks per day as one (for women) or two (for men). Consequently, there is not a rigid benchmark for problematic drinking. Third, issues of early or late-life onset of the SUD are still unclear, with some evidence indicating late onset SUD is less severe than SUD developed earlier in life (Satre, Chi, Mertens, & Weisner, 2012). Fourth, are symptoms of substance intoxication and/or withdrawal simply dismissed as being what older people do (Morgen, 2015)?

In addition to alcohol and illegal drug use, older adults also struggle with prescription medication. Older adults (age 65 and older) may consume large amounts of over-the-counter (OTC) medications, many of which have strong abuse potentials (Simoni-Wastila & Yang, 2006; Simoni-Wastila, Zuckerman, Singhal, Briesacher, & Hsu, 2006). Medications with strong abuse potential include benzodiazepines (for anxiety, insomnia, or seizures), opioids (for pain), and stimulants (for weight management or attention/concentration). Wu and Blazer (2011) noted that adults ages 50 to 64 years old were more likely to misuse prescription medications than their peers ages 65 years and older. However, these individuals in their 50s and early 60s will eventually grow into adults ages 65 and older. Furthermore, older adults with cognition issues are at risk of taking medications that further impair cognition (Weston, Weinstein, Barton, & Yaffe, 2010).

Interestingly, SAMHSA TEDS (2013) data show that alcohol is by far the most commonly reported substance at admission (regardless of primary, secondary, or

Table 3.2 Substances Reported at Admission in Adults Age 55 Years and Older (Minimum 5%): SAMHSA Treatment Episode Data Set (2013) Results

Substance	N	%
Alcohol	91,182	72.8%
Cocaine/Crack	25,334	20.2%
Heroin	23,344	18.6%
Marijuana	18,009	14.4%
Other Opiates	10,093	8.1%

Source: SAMHSA (2015).

tertiary designation). Table 3.2 shows that other opioid use (i.e., prescription pain medication) was a far less commonly reported substance. This may point to either the client underreporting, the counselor missing the degree of opioid use, and/or the older adult pattern of using opioids in combination with alcohol.

QUESTIONS TO CONSIDER AS YOU MOVE ON TO CHAPTER 4

Question 1: Considering the neurocognitive deficits from Chapter 1 in regard to memory, how would long-term substance use influence an early (a few weeks) recovery client's ability to accurately report temporal or other more sophisticated diagnostic data? How would you work around this issue (or can you)?

Question 2: In Chapter 2, we discussed interviewing and assessment. How do you see the DSM-5 diagnostic criteria interacting with these assessments? As a clinician, if the endorsed DSM-5 diagnostic criteria for SUD tell a different story than a substance use instrument, which of the two would you "trust" more and why? How would this discrepancy influence your further interviewing, assessment, and diagnostic efforts?