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Substance Use Disorders and Anxiety: A Treatment Challenge for Social Workers

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Abstract

Converging evidence from epidemiologic and treatment studies indicate that anxiety disorders and substance use disorders commonly co-occur, and the interaction is multifaceted and variable. Epidemiological studies and investigations within clinical substance abuse populations have found an association between anxiety disorders and substance use disorders. Specific anxiety disorders including generalized anxiety disorder, panic disorder, and post traumatic stress disorder have all been associated with substance use. The association with obsessive–compulsive disorder is less robust, and some research has found a negative association. The risk of nicotine dependence is significantly higher among individuals with an anxiety disorder, and conversely, smoking has been found to be associated with trait anxiety and anxiety disorders. A review of the current literature and the relationship between specific anxiety disorders and alcohol and substance use disorders is discussed in detail. This article, written for social workers in a variety of practice settings, reviews the prevalence, diagnostic, and treatment issues at the interface of substance use disorders and anxiety disorders.

Keywords

Anxiety; substance use disorders; comorbidity; treatment

OVERVIEW

It is important for social workers to understand the complex relationship between anxiety disorders, symptoms of anxiety, and substance use disorders (SUDs). Converging evidence from epidemiologic studies and studies of treatment-seeking individuals indicate that anxiety disorders, symptoms of anxiety, and SUDs commonly co-occur, and the interaction is multifaceted and variable. Anxiety symptoms can emerge during the course of chronic

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intoxication and withdrawal. Anxiety disorders can be a risk factor for the development of SUDs. Anxiety disorders modify the presentation and treatment outcome of SUDs, and SUDs modify the presentation and treatment outcome for anxiety disorders. In this article, prevalence, diagnostic, and treatment issues at the interface of SUDs and anxiety disorders are reviewed.

PREVALENCE

General Population

Several epidemiologic studies conducted over the past 20 years consistently indicate that anxiety disorders and SUDs co-occur more commonly than would be expected by chance alone (B. F. Grant, Dawson, Stinson, et al., 2004; Kessler et al., 1997; Regier et al., 1990). The most recent and largest of these is the National Epidemiological Survey on Alcohol and Related Conditions (NE-SARC) in which more than 43,000 adults were surveyed concerning psychiatric and SUDs (Grant, Dawson et al., 2004). Approximately 17.7% of respondents with a SUD in the past 12 months also met criteria for an independent (i.e., not attributed to withdrawal or intoxication) anxiety disorder, and 15% of those with any anxiety disorder in the past 12 months had at least one co-occurring SUD. Based on criteria from the *Diagnostic and Statistical Manual of Mental Disorders* the relationship between anxiety disorders and drug use disorders (odds ratio [OR] D 2.8) was stronger than the relationship between anxiety and alcohol use disorders (AUDs; OR D 1.7). Associations between SUDs and specific anxiety disorders were all significantly positive ($p < 0:05$). The ORs for abuse were more positive than those for dependence, and the ORs for women were more positive than those for men. Marijuana use disorders were the most common drug use disorder (15.1%) followed by cocaine (5.4%), amphetamine (4.8%), hallucinogen (3.7%), and sedative (2.6%) use disorder in those with anxiety disorders (Conway, Compton, Stinson, & Grant, 2006).

Psychiatric Treatment Populations

Because of symptom overlap and diagnostic difficulties, estimates of co-occurring SUDs and anxiety disorders in treatment settings are variable and depend upon the diagnostic techniques used and the specific disorder being assessed. Specific prevalence estimates are addressed in sections focused on individual anxiety disorders. In one large sample of SUD treatment clinics, 80% of individuals in treatment had at least one co-occurring anxiety disorder, and there was a significant relationship between comorbidity and mental distress at initial interview and 6 years later (Bakken, Landheim, & Vaglum, 2007).

SCREENING AND DIFFERENTIAL DIAGNOSIS

Diagnostic clarity is one of the most challenging areas in co-occurring anxiety and SUDs. Anxiety is common during withdrawal from substances of abuse, and symptoms associated with substance use and withdrawal can mimic most anxiety disorders. Substances of abuse also have profound effects on the neurobiologic systems involved in the pathophysiology of anxiety disorders, and it is possible that substance use could unmask a vulnerability or lead to neurobiologic changes that manifest as an anxiety disorder.

Observation of symptoms during abstinence over time is the best way to differentiate substance-induced, transient symptoms of anxiety from anxiety disorders that warrant treatment. Transient substance-related symptoms will improve with time, but the minimum duration of time in abstinence necessary for accurate diagnosis remains uncertain and is likely influenced by the specific anxiety disorder being assessed and the substance being used. For example, long half-life drugs (e.g., some benzodiazepines, methadone) may require several weeks of abstinence for withdrawal symptoms to subside, but shorter-acting

substances (e.g., alcohol, cocaine, short half-life benzodiazepines) require shorter periods of abstinence to make valid diagnoses. The onset of anxiety symptoms before the onset of SUD, a family history of anxiety disorder, and/or sustained anxiety symptoms during lengthy periods of abstinence all suggest an independent anxiety disorder that will need to be treated.

Screening patients presenting at primary care, substance use, or psychiatric treatment settings is critical for substance use and anxiety because of the high rate of co-occurrence of anxiety and SUDs. Social workers in those settings can use screening tools to help identify individuals who should be referred for further diagnostic assessment. However, because of symptom overlap and diagnostic difficulties, a detailed interview is necessary to fully differentiate substance-induced symptoms, which should resolve with abstinence, from anxiety disorders that warrant treatment. Early diagnosis and treatment can improve treatment outcomes.

GENERAL TREATMENT CONSIDERATIONS

Treatment efforts addressing SUDs and psychiatric disorders have developed in parallel rather than in an integrated fashion. The integration of services and treatments from the mental health and substance abuse fields is critical to the optimal treatment of individuals with co-occurring disorders. Maximizing the use of nonmedication treatment strategies is critically important, and social workers can play a critical role in providing these psychosocial interventions. Interrupting the destructive cycle of using alcohol and drugs to combat intolerable subjective states is an important task of early recovery. To break this cycle it is essential for individuals with co-occurring disorders to learn strategies to self-regulate anxiety symptoms as well as alternative coping strategies. Avoidance, a major hallmark in anxiety disorders, is a maladaptive learned behavior that may temporarily relieve anxiety symptoms but actually perpetuates the anxiety often causing significant impairments in functioning. Patients with comorbid anxiety and SUD use alcohol and other substances as a coping mechanism to escape or avoid these unpleasant emotions. Cognitive-behavioral therapies (CBTs) are among the most efficacious psychosocial treatments that social workers can use to treat individuals with anxiety disorders and SUDs.

Traditional models of treatment for comorbid anxiety and SUD have been used to treat the disorders separately with initial focus on the SUD. The question of whether social workers and other addictions professionals should treat the anxiety and SUD sequentially or concurrently has received much attention. Recent studies have indicated that addressing both disorders in the same treatment episode improves outcomes for certain anxiety disorders, namely post traumatic stress disorder (PTSD; Back, Dansky, Carroll, Foa, & Brady, 2001; Mills et al., 2012). Promising pilot work investigating the integration of treatments to develop therapies specifically targeting co-occurring anxiety and SUDs are discussed in the sections below.

Social workers should be knowledgeable of the options for pharmacotherapeutic treatments for anxiety disorders and SUDs that are rapidly developing. Medication treatment of specific anxiety disorders is discussed in detail below, but there are some general principles that apply across disorders. The use of some psychotropic medications such as benzodiazepines can undermine treatment of substance abuse, and therefore use of these medications is discouraged in some SUD recovery settings. Additionally, individuals in recovery often have complex and conflicting emotions and attitudes about medications and may see the need for medications as a sign of defectiveness or failure. Social workers can address feelings and attitudes about the use of medications and develop a therapeutic partnership

focused on medication adherence, which is critical when medications are an important part of optimal treatment.

When the relationship between anxiety symptoms and substance use is unclear, social workers and collaborating medical providers should carefully consider the risks and benefits of using medications. When the decision is made to use medications, treatment should follow routine clinical practice for the treatment of the anxiety disorder with some specific issues taken into consideration. Potential toxic interactions between illicit drugs, alcohol, and prescription medications must be carefully assessed and reviewed with the patient. The abuse potential of therapeutic agents should also be considered. The use of benzodiazepines in the treatment of co-occurring anxiety disorders and SUDs is controversial. Although they are effective in providing immediate relief of panic and other anxiety symptoms, benzodiazepines are generally avoided in SUD populations because of abuse potential; however, during the early treatment phase when activation or latency of antidepressant/anxiolytic onset can be an issue, benzodiazepines may be a reasonable adjunctive medication. When benzodiazepines are prescribed to patients with SUDs, patients should be given limited amounts of medication and closely monitored for relapse. As a rule, benzodiazepines should be avoided in patients with a current SUD and used with caution in those with a history of SUDs and considered for chronic treatment only when other pharmacological and nonpharmacological treatment strategies have been exhausted.

The use of medications that target SUDs, such as naltrexone or disulfiram, in individuals with comorbid anxiety disorders and SUDs is underexplored. In a study of 254 outpatients with alcohol dependence and a variety of comorbid psychiatric disorders, Petrakis et al. (2005) investigated the efficacy of disulfiram and naltrexone alone and in combination. Participants treated with either active agent had significantly more consecutive weeks of abstinence and fewer drinking days per week when compared to the placebo group. Patients treated with disulfiram reported less craving from pre- to posttreatment as compared to the naltrexone or placebo-treated groups. Either medication was associated with improvement in anxiety symptoms, but the effects on specific anxiety disorders were not explored. There was no advantage to combining medications. This study suggests that the use of adjunctive medications targeting substance use in individuals with co-occurring anxiety disorders can be useful. Hopefully, these treatments will become integrated into routine clinical practice, and future investigations will focus on combination therapies.

In the sections that follow, prevalence rates, differential diagnosis and treatment of PTSD, panic disorder, social anxiety disorder (SoAD), generalized anxiety disorder (GAD), and obsessive– compulsive disorder (OCD) are reviewed. Because most evidence suggests that simple phobia has no specific relationship to SUDs, this disorder is not discussed.

POST TRAUMATIC STRESS DISORDER

A number of epidemiological surveys conducted over the past decade have demonstrated the high co-occurrence of PTSD and SUDs. The National Comorbidity Survey (NCS; N = 5,877) assessed the prevalence and co-occurrence of a range of psychiatric disorders in the general U.S. population using the *Diagnostic and Statistical Manual of Mental Disorders*, 3rd edition, revised (DSM-III-R) criteria (Kessler et al., 1997). The NCS found a 7.8% lifetime prevalence of PTSD and a 26.6% lifetime prevalence of SUD and that individuals with PTSD were 2 to 4 times more likely to meet criteria for a SUD than those without PTSD. The NCS Replication study (N = 9,282; Kessler, Berglund, et al., 2005), conducted approximately 10 years later using *DSM-IV* diagnostic criteria found similar estimates of lifetime PTSD (6.4%) and SUDs (35.3%). The 2010 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC; N = 34,653) estimated a lifetime PTSD

prevalence of 6.4% (Pietrzak, Goldstein, Southwick, & Grant, 2011). Nearly one half (46.4%) of individuals with PTSD also met criteria for a SUD, and 22.3% met criteria for substance dependence. International data (Australian National Survey of Mental Health and Well-Being; $N = 10,641$) indicates that 34.4% of individuals with PTSD also had at least one SUD, most commonly AUDs (Mills, Teesson, Ross, & Peters, 2006).

High rates of comorbid PTSD and SUDs have also been consistently observed in treatment-seeking populations. Patients with PTSD have been shown to be up to 14 times more likely to have an SUD than those without PTSD (Chilcoat & Menard, 2003; Ford, Russo, & Mallon, 2007). Lifetime PTSD rates range from 30% to more than 60% in treatment-seeking SUD populations (Brady, Back, & Coffey, 2004; Dansky, Brady, & Roberts, 1994; Jacobsen, Southwick, & Kosten, 2001; Stewart, 2000). This wide variability in estimates is likely attributable to differences in measurement techniques and types of clinics sampled.

Studies also demonstrate that Veterans are at increased risk for developing PTSD and SUDs compared to the general population. A recent study assessing Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Veterans postdeployment found a 27% prevalence of alcohol misuse and a significant association between severity of combat exposure and alcohol misuse, such that a higher severity of combat exposure conferred a nearly 200% risk for alcohol misuse (Santiago et al., 2010). Prevalence rates for SUDs among OEF/OIF Veterans have been estimated at 21%, and 15% to 20% of OEF/OIF military troops meet criteria for PTSD postdeployment (Bray & Houranni, 2007; Hoge et al., 2004; Seal, Bertenthal, Miner, Sen, & Marmar, 2007; Thomas et al., 2010). High rates of comorbid PTSD/SUD among Veterans have also been documented (Centers for Disease Control and Prevention, 1988; Shipherd, Stafford, & Tanner, 2005). A recent study (Petrakis, Rosenheck, & Desai, 2011) found that of Veterans who served in the Vietnam era or later, almost one half (41.4%) with an SUD had co-occurring PTSD.

Detection and treatment of comorbid PTSD/SUD is critical because the comorbidity is associated with a more complex and costly clinical course. Compared with either disorder alone, individuals with co-occurring PTSD/SUD have poorer social functioning, more suicide attempts and legal problems, greater physical illness, increased risk of violence, and poorer treatment adherence and outcomes (Driessen et al., 2008; Norman, Tate, Anderson, & Brown, 2007; Ouimette, Brown, & Najavits, 1998; Ouimette, Goodwin, & Brown, 2006; Tarrier & Gregg, 2004; Tate, Norman, McQuiad, & Brown, 2007; Young, Rosen, & Finney, 2005).

Although the treatment of PTSD is generally multimodal, studies of medications in the treatment of co-occurring PTSD and SUDs are lacking. Sertraline, a serotonin-reuptake inhibitor antidepressant, which has received FDA-approval for the treatment of PTSD, was investigated in a double-blind, placebo-controlled, 12-week trial (Brady et al., 2005). The study demonstrated that individuals with early-onset PTSD and less severe alcohol dependence demonstrated more favorable improvements in alcohol use severity when treated with sertraline as compared to placebo. In contrast, individuals with later-onset PTSD and more severe alcohol dependence evidenced more favorable alcohol use outcomes when treated with placebo as compared to sertraline. The sertraline-treated group also showed a trend toward greater PTSD improvement as compared to the placebo-treated group. In the study by Petrakis et al. (2005) of disulfiram and naltrexone, described above, 42.9% of participants met *DSM-IV* criteria for comorbid PTSD suggesting that either disulfiram or naltrexone would be a good adjunctive treatment for individuals with co-occurring PTSD and an AUD. In a more recent study (Petrakis et al., 2011) comparing paroxetine, desipramine, and adjunctive naltrexone treatment in Veterans with co-occurring AUD and PTSD, desipramine was superior to paroxetine with respect to study retention and

alcohol use outcomes. Naltrexone reduced alcohol craving relative to placebo, but it conferred no advantage on drinking use outcomes. Although the serotonin uptake inhibitors are the only FDA-approved medications for the treatment of PTSD, this study suggests that norepinephrine uptake inhibitors may present clinical advantages when treating male Veterans with PTSD and AUD. Further investigation of the use of medications as an adjunct to psychotherapeutic treatment in the treatment of co-occurring PTSD and SUD's are needed.

There is a growing body of evidence suggesting that integrative psychotherapeutic treatments targeting PTSD and SUD symptoms simultaneously can lead to significant reductions in PTSD and SUD symptoms, and knowledge of these integrated treatment approaches is important in social work practice. A number of integrated treatments commonly used in substance abuse community treatment programs focus on psychoeducation, exploring the relationship between PTSD symptoms and substance use, self-management of symptoms and negative emotions, and development of cognitive-behavioral coping skills.

Some of these treatments separate the addiction treatment from the trauma work by the use of treatment phases, with the first phase dedicated to stabilizing the addiction in preparation for the second phase of working on the trauma (Donovan, Padin-Rivera, & Kowaliw, 2001; Triffleman, Carroll, & Kellogg, 1999). Examples of this type of integrated treatment include: Addictions and Trauma Recovery Integrated Model (ATRIUM; D. Miller & Guidry, 2001) and Trauma Affect Regulation: Guidelines for Education and Therapy (TARGET; Ford & Russo, 2006), trauma exposure and empowerment model (TREM; Fallot & Harris 2002), and Transcend (Donovan et al., 2001). Although there is preliminary support for these treatments, they have not been tested in rigorously controlled trials so their efficacy in producing positive outcomes is unclear.

More rigorous research has been conducted with Seeking Safety (SS), a manualized cognitive-behavioral intervention for women with comorbid PTSD and SUDs, which does not involve exposure to trauma-related cues/narrative (Hien, Cohen, Miele, Litt, & Capstick, 2004; Hien et al., 2009; Najavits, Weiss, Shaw, & Muenz, 1998). Key concepts include anticipating dangerous situations, setting boundaries, anger management, and affect regulation. In one study comparing SS to relapse prevention, both interventions improved PTSD and SUD symptoms, but there were no significant differences between treatments (Hien et al., 2004). In a larger national multisite community study comparing SS to a women's health education (WHE) control group, both groups significantly reduced PTSD symptoms, but there was no significant impact upon abstinence rates over time (Hien et al., 2010). However, among women who had the largest reduction in PTSD symptom severity at the 12-month follow-up, those who received SS were more than twice as likely to be abstinent from substances than those who received WHE (43% vs. 19%, respectively).

Although Prolonged Exposure Therapy (Foa, Hembree, & Rothbaum, 2007) has been deemed one of the treatments of choice for PTSD (Institute of Medicine [IOM], 2008), there is limited research exploring its efficacy in substance-abusing populations because of the fear that exposure to trauma cues would precipitate relapse. A recent meta-analysis of prolonged exposure therapy for PTSD found large effect sizes for prolonged exposure in comparison to control conditions (Powers, Halpern, Ferenschak, Gillihan, & Foa, 2010) and exposure-based therapies have demonstrated effectiveness in addressing PTSD among a variety of traumatic stress populations.

Concurrent Treatment of PTSD and Substance Use Disorders using Prolonged Exposure (COPE) is a treatment that combines evidence-based CBT for SUDs (Carroll, 1998) with the

key components of prolonged exposure for PTSD (Foa et al., 2007) including in vivo and imaginal exposure techniques (Back et al., 2001; Brady, Dansky, Back, Foa, & Carroll, 2001). The PTSD treatment component is designed to help patients understand the relationship between PTSD and substance use, normalize common reactions to trauma, and reduce PTSD symptoms via exposure techniques. The substance use treatment component is designed to help patients recognize and manage cravings and urges to use alcohol or drugs, manage thoughts about substance use, identify and plan for "high-risk" situations in which vulnerability to relapse is heightened, and effectively manage a potential lapse (Carroll, 1998). A preliminary, uncontrolled trial of COPE was promising with dramatic reductions in PTSD and SUD, which were sustained at 6-month follow-up, but dropout rate was high (Brady et al., 2001). A randomized controlled trial of COPE compared to treatment-as-usual (TAU) was recently completed in Australia (Mills et al., 2012). COPE produced significantly greater reductions in PTSD symptom severity over time at the 9-month follow-up, as PTSD symptom severity was significantly lower in the COPE group than in the TAU group. Both groups reported significant reductions in drug use, and COPE patients were significantly less likely than the TAU patient to meet criteria for a SUD during the follow-up period. In sum, findings from this first randomized controlled trial of COPE demonstrate that treatments utilizing exposure therapy can be used safely with patients with co-occurring SUDs and produce greater improvements in PTSD and SUDs than treatment as usual. There are several controlled trials of COPE in progress.

PANIC DISORDER

In NESARC, lifetime prevalence of panic disorder (with or without agoraphobia) was 5.1% and was twice as common in women as compared to men, and lifetime risk of alcohol and drug dependence were increased in individuals with panic disorder (B. F. Grant et al., 2006). In the Collaborative Study on the Genetics of Alcoholism, lifetime risk for panic disorder was increased in individuals with AUDs (4.2% vs. 1.0%, respectively; Schuckit, Tipp, Bucholz, et al., 1997).

Alcohol withdrawal can cause panic attacks; however, withdrawal-precipitated panic attacks generally markedly improve during the first several weeks of abstinence. Alternatively, individuals with panic disorder may use alcohol to decrease panic symptoms and, consequently, develop an AUD (Cosci, Schruers, Abrams, & Griez, 2007). Panic attacks early in recovery that decrease in frequency may respond to support and reassurance; however, if they persist or increase during abstinence, the diagnosis of panic disorder should be made. Without treatment, the risk of relapse to alcohol use is increased. In one prospective study of acute treatment of alcoholism, panic disorder was the most common diagnosis and was predictive of relapse. After 4 months, approximately 50% of those who had initially met criteria for an anxiety disorder no longer met diagnostic criteria (Kushner et al., 2005). This emphasizes the need for social workers to carefully track anxiety symptoms during early abstinence and to inform patients about common withdrawal symptoms and the typical course of recovery.

The relationship between panic disorder and smoking is of interest. In NESARC, individuals with panic disorder had elevated 12-month prevalence rates of nicotine dependence (B. F. Grant, Hasin, Chou, Stinson, & Dawson, 2004). Daily smoking is associated with an increased risk of panic disorder, and the risk is higher in active smokers than past smokers (Breslau & Klein, 1999). Early smoking increases the risk of developing panic disorder (Morissette, Tull, Gulliver, Kamholz, & Zimering, 2007); however, the initiation of smoking may precede the onset of panic disorder by many years (median = 12 years; Amering et al., 1999). Individuals with panic disorder who smoke regularly report more severe anxiety

symptoms and social impairment as compared to nonsmokers (Zvolensky, Schmidt, & McCreary, 2003).

According to current guidelines, four classes of medications—selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants (TCAs), benzodiazepines, and monoamine oxidase inhibitors (MAOIs)—have approximately comparable efficacy in the treatment of panic disorder (American Psychiatric Association [APA], 1998). As previously discussed, benzodiazepines are generally avoided in individuals with SUDs. The SSRIs fluoxetine, sertraline, paroxetine, and fluvoxamine have all demonstrated effectiveness in clinical trials, have no abuse potential and are the best choice for individuals with co-occurring panic disorder and SUD.

There is an extensive body of literature supporting the efficacy of CBT in the treatment of panic disorder (APA, 1998). In one controlled trial comparing standard alcohol treatment to combined CBT for panic disorder plus AUD, improvement of panic symptoms and relapse rates did not differ between the two groups. The authors hypothesized that typical strategies for managing anxiety such as stress management, relaxation training, and relapse prevention are standard in alcohol treatment programs and may have made it difficult to detect between group differences (R. C. Bowen, D'Arcy, Keegan, & Senthilselvan, 2000).

SOCIAL ANXIETY DISORDER

Lifetime prevalence of SoAD ranges from 3% to 13% and approximately 20% of individuals with SoAD also suffer from a drug or AUD. Lifetime prevalence of an AUD with SoAD (48%) is more than 50% higher than that of individuals without lifetime SoAD (29%; Grant, Hasin, Blanco et al., 2005). The average onset of social phobia is before adolescence, so symptoms of social anxiety typically precede the initiation of alcohol or drug use (Sareen, Chartier, Kjernisted, & Stein, 2001). In one study, SoAD was diagnosed in 24.7% of 300 patients hospitalized for AUD and the onset of SoAD preceded the onset of AUD in 90.2% of cases (Carrigan & Randall, 2003).

Current treatment recommendations for SoAD include: SSRIs or beta-blockers (a drug commonly used to treat angina and other heart rhythm disorders, migraines, high blood pressure, panic attacks, and tremors) in combination with integrated psychosocial treatment. There are a few studies examining treatment options in comorbid populations. Schade et al. (2005) randomized 96 patients who were alcohol dependent with comorbid anxiety disorders, including SoAD ($n = 87$), to CBT plus optional fluvoxamine (150 mg/day) versus treatment as usual. Although the combined treatment group demonstrated greater improvement in anxiety outcomes, fluvoxamine treatment was not associated with better outcomes.

In two placebo-controlled studies of paroxetine treatment in individuals with co-occurring AUD and SoAD, there was significant improvement in social anxiety in the paroxetine-treated group but no significant group differences in alcohol use (Book, Thomas, Randall, & Randall, 2008; Randall, Thomas, & Thevos, 2001). Of interest, gabapentin, an anticonvulsant agent with demonstrated efficacy in the treatment of SoAD (Pande et al., 1999), has also demonstrated efficacy in the treatment of alcohol dependence (Anton et al., 2011; Malcolm, Myrick, Brady, & Ballenger, 2001). Unlike benzodiazepines, gabapentin has no abuse potential. One case report of an individual with polysubstance dependence with comorbid SoAD who was treated with gabapentin documented significant improvement in craving and substance use (Verduin, McKay, & Brady, 2007), but there are currently no controlled trials examining the efficacy of gabapentin in co-occurring SoAD and SUDs.

In a study of individual CBT for AUDs versus integrated alcohol use/SoAD therapy, there were worse alcohol outcomes in those who received the combined CBT. The authors hypothesized that exposure to anxiety-provoking social situations in concurrent treatment increased drinking to cope with anxiety (Randal et al., 2001). Terra et al. (2006) followed 300 patients who were detoxified for alcohol dependence with and without SoAD and found no difference in treatment adherence and outcomes; however, individuals with SoAD were less likely to chair Alcoholics Anonymous (AA) meetings, were more ashamed of attendance, felt less integrated into the group, and were less likely to feel better after a meeting. These studies suggest that individuals with SoAD may need treatment targeting their social anxiety before being able to benefit from group interventions. Social workers providing treatment to patients with SoAD may find that individual therapy is better tolerated than group therapy, and a period of sobriety and skills training may be important before increasing exposure to social situations. Additionally, specialized dual-diagnosis 12-Step support groups may offer more benefits than traditional AA/Narcotics Anonymous (NA) for patients with anxiety disorders, particularly, SoADs (Bogenschutz, 2007).

GENERALIZED ANXIETY DISORDER

SUDs are among the most common comorbid psychiatric disorders in individuals with GAD (Wittchen, Zhao, Kessler, & Eaton, 1994). In NESARC, GAD was strongly associated with AUDs, and approximately 90% of individuals with GAD had at least one other co-occurring disorder (Grant, Hasin, Stinson et al., 2005). Another epidemiologic study ($N = 5,877$) found that GAD was the anxiety disorder most often associated with using alcohol or drugs to self-medicate symptoms (Conway, Compton, Stinson, & Grant, 2006). In adolescents, the presence of GAD is associated with a more rapid progression from age of first drink to alcohol dependence (Sartor, Lynskey, Heath, Jacob, & True, 2007). GAD follows a chronic course with low rates of remission and frequent relapses/recurrences. Comorbid SUD decreases the likelihood of recovery from GAD and increases the risk of exacerbation (Bruce et al., 2005; Compton, Cottler, Jacobs, Ben-Abdallah, & Spitznagel, 2003).

The diagnosis of GAD in individuals who are actively using substances is fraught with difficulty because of the considerable overlap between symptoms of GAD and symptoms associated with substance use or withdrawal. Assessment of GAD symptoms should be delayed until the individual is through the acute withdrawal period. For short-acting drugs (e.g., cocaine), it may be possible to assess GAD after one week of abstinence, but longer periods of time (e.g., 4–8 weeks) may be required for longer-acting drugs (e.g., methadone, valium; McKeehan & Martin, 2002). Social workers should also assess patients for use of over-the-counter substances that can induce anxiety (e.g., caffeine, diet pills). *DSM-IV* requires that a core number of anxiety symptoms be present for at least 6 months to meet diagnostic criteria for GAD. Substance use during those 6 months needs to be considered, and symptoms of GAD must have been present during times other than when the patient was using or recovering from alcohol or drug use. Social workers may find this challenging to assess because many patients with SUDs presenting for treatment with symptoms of anxiety will not have had 6 months of abstinence.

The treatment of GAD in the context of addiction can also be challenging. First-line medications for the treatment of GAD include paroxetine, escitalopram, sertraline, and venlafaxine XR (Canadian Psychiatric Association, 2006); however, there have been no clinical trials of these agents in individuals with comorbid GAD/SUD. Second-line agents include alprazolam, lorazepam, diazepam, buspirone, imipramine, pregabalin, and buproprion XL. Although effective for some individuals, controlled trials do not support the use of beta-blockers. Because approximately 20% to 40% of patients with GAD relapse

within 6 to 12 months after the discontinuation of pharmacotherapy, long-term treatment may be needed (McKeehan & Martin, 2002).

Benzodiazepines are effective in the treatment of GAD; however, their use in individuals with SUDs is not recommended because of abuse liability. It has been suggested that the empirical evidence regarding these concerns is lacking, and benzodiazepines may be safely used to treat anxiety disorders in some patients with a SUD (Posternak & Mueller, 2001), but this approach remains controversial. Buspirone, an anxiolytic with low abuse potential, has been shown to be efficacious in some studies in individuals with alcohol use problems and who are anxious (Kranzler et al., 1994; Malec, Malec, Gagne, & Dongier, 1996; McKeehan & Martin, 2002), but the results are mixed (Malcolm et al., 1992; Tollefson, Montague-Clouse, & Tollefson, 1992), and more evidence is needed. Among psychosocial treatments, social workers may find that CBT helps patients decrease anxiety symptoms and risk of relapse. Patients with co-occurring GAD and SUDs may benefit from relaxation techniques, coping skills training, cognitive restructuring, behavioral activation, problem solving, and sleep hygiene (McKeehan & Martin, 2002). Nutritional counseling and regular exercise may also prove beneficial for patients with GAD/SUD; although, empirical trials are lacking.

OBSESSIVE–COMPULSIVE DISORDER

The association between OCD and SUDs is less robust than for other anxiety disorders. In a clinical sample (n = 254), approximately 4% of patients with OCD met criteria for a lifetime SUD (Sbrana et al., 2005). In the National Comorbidity Survey Replication study, OCD was negatively correlated with SUDs (Kessler, Chiu, Demler, Merikangas, & Walters, 2005). The Collaborative Study on the Genetics of Alcoholism found no significant increase in rates of OCD in individuals with AUDs (Schuckit, Tipp, Bucholz et al., 1997). The lower rates of OCD among patients with SUDs may be due, in part, to the generally low levels of impulsive or spontaneous behaviors and high levels of harm avoidance exhibited by individuals with OCD. When patients with OCD do use substances, they typically choose sedating agents (e.g., alcohol, marijuana).

Some substances of abuse (e.g., alcohol, stimulants) and medications (e.g., benzodiazepines) can produce obsessive–compulsive behaviors (McKeehan & Martin, 2002; Satel & McDougle, 1991). This potential confound should be ruled out when diagnosing OCD among patients with a SUD. In general, the differential diagnosis of OCD in individuals with SUDs is not as difficult as that of some of the other anxiety disorders because there is less symptom overlap. For patients with a SUD, the content of obsessions and compulsions is restricted to alcohol or drug use. Social workers should be mindful that obsessions and compulsions focused on procuring and using drugs alone or that occur only during intoxication do not meet diagnostic criteria for OCD.

Little research on the treatment of co-occurring OCD and SUDs has been conducted to date, and there are no randomized controlled trials examining the use of a pharmacologic treatment for this patient population. First-line medications for OCD are clomipramine, fluoxetine, fluvoxamine, paroxetine, and sertraline. In individuals with SUDs, SSRIs are preferable to clomipramine because of more favorable side effect profiles (Koran, Hanna, Hollander, Nestadt, & Simpson, 2007). Fals-Stewart and Schafer (1992) randomly assigned 60 individuals with co-occurring SUD/OCD to combined OCD and SUD treatment, SUD treatment alone, or SUD treatment plus progressive muscle relaxation. At 12 months, the group receiving combined treatment had higher abstinence, longer duration in treatment, and a greater reduction in OCD symptoms.

NICOTINE AND ANXIETY DISORDERS

In NESARC, 28% of participants used tobacco products, and 25% were current cigarette smokers (B. F. Grant, Hasin, Chou, et al., 2004). The 12-month prevalence rate of nicotine dependence was 13% in the general population and 25% among individuals with anxiety disorders. The risk of anxiety disorder in individuals with nicotine dependence was more than twice that of any other psychiatric disorder. Conversely, the prevalence rates of nicotine dependence were also increased in individuals with anxiety disorders (panic disorder 40%, SoAD 27%, and GAD 33%; B. F. Grant, Hasin, Chou, et al., 2004). Despite the strong associations between smoking, nicotine dependence and anxiety disorders, there has been relatively little investigation of causal connections or treatment. A recent review suggested that smoking, and nicotine in particular, can alleviate anxiety, but other studies indicate that nicotine use and withdrawal can cause anxiety (Morissette et al., 2007). The Development and Assessment of Nicotine Dependence in Youth (DANDY) study followed a cohort of seventh-graders for 3.5 years and found a strong association between trait anxiety and all measures of tobacco use and nicotine dependence. A relaxing effect from initial exposure to nicotine, distinct from relief of withdrawal symptoms, was predictive of a sixfold increase in risk for nicotine dependence (DiFranza et al., 2004). Smokers with a history of panic attacks have significantly more anxiety-related withdrawal symptoms and shorter quit attempts compared to those without panic attacks (Zvolensky, Lejuez, Kahler, & Brown, 2004).

OTHER PSYCHOSOCIAL TREATMENTS TO CONSIDER

Another psychosocial intervention with potential for treatment of co-occurring SUD and anxiety is “mindfulness.” Mind–body interventions such as meditation used to gain better control over emotions are increasingly being investigated for efficacy in reducing substance use. Mindfulness meditation involves an intentional suspended awareness of the present moment experience that excludes judgement, evaluation, and reaction. Mindfulness meditation was explored in a population of incarcerated individuals with PTSD and SUD. Participation in the mindfulness course predicted lower 3-month drinking and illicit drug use consumption regardless of PTSD symptom severity (Simpson et al., 2007).

Mindfulness-based relapse prevention (MBRP), developed as an aftercare treatment for individuals with SUD, has shown promising preliminary results in reducing cravings and drug use (S. Bowen et al., 2009). MBRP integrates coping skills from cognitive-behavioral relapse prevention therapy with mindfulness practices with the goal of increasing awareness of substance use triggers without emotional and behavioral reactivity. Future studies of mindfulness based interventions for persons with SUD and anxiety disorders are needed to determine efficacy for co-occurring anxiety and SUD.

An important component to the treatment of comorbid anxiety and SUD is family involvement, which social workers can use to engage loved ones in treatment or provide support throughout recovery. Studies show that having a supportive network is associated with better prognosis for recovery. The Community Reinforcement and Family Therapy (CRAFT) is a family program that identifies and works with concerned significant others. The intervention utilizes motivational interviewing, behavior change skills and reinforcement techniques with the goal of reducing substance use and engaging the identified patient in treatment (Fernandez, Begley, & Marlatt, 2006). CRAFT has been shown to be more acceptable and effective in engaging loved ones in treatment than the Johnson Intervention and Al-Anon (64%, 23%, and 13%, respectively; W. R. Miller, Meyers, & Tonigan, 1999).

CONCLUSIONS

Because of the high co-occurrence of anxiety and SUDs and their prevalence in the population, social workers in a variety of practice settings will frequently encounter these conditions. It is essential that social workers address anxiety symptoms in individuals with SUDs as a routine part of treatment. This requires careful differential diagnosis, which usually requires at least a brief period of sustained abstinence. It also requires social workers to collaborate with medical providers to help choose those medications with the lowest risk for abuse. Psychosocial treatments for anxiety and substance use are excellent primary and adjunct treatments for these co-occurring disorders and social workers with skills and knowledge of these behavioral interventions can play an important role in promoting a patient's recovery.

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APPENDIX

Anticonvulsants

Several anticonvulsants have been a focus of research for the treatment of anxiety disorders. Additionally anticonvulsants are utilized in detoxification from alcohol and other drugs. Off-label gabapentin has demonstrated both safety and efficacy for both of these purposes. Pregabalin has been explored in several research studies as a treatment for generalized anxiety disorder.

Benzodiazepines

Commonly used benzodiazepines include alprazolam (Xanax), lorazepam (Klonopin), diazepam (Valium), and lorazepam (Ativan) among others. Benzodiazepines increase the actions of GABA, a major inhibitory neurotransmitter in the brain.

Bupropion

Bupropion (Wellbutrin, Zyban) is a norepinephrine and dopamine reuptake inhibitor that is indicated for the treatment of depression and nicotine dependence.

Beta-blockers

Propranolol (Inderal) is a non-selective β-blocker that is prescribed off-label for somatic symptoms of anxiety such as increased heart rate by blocking the heart's β_1 receptors.

Buspirone

Buspirone (Buspar) has been approved for the treatment of generalized anxiety disorder.

Disulfiram

Disulfiram (Antabuse) is indicated for the treatment of alcohol dependence. Disulfiram blocks the action of the enzyme acetaldehyde dehydrogenase leading to the accumulation of

acetaldehyde, one of the intermediate breakdown products in the metabolism of alcohol in the liver. If alcohol is consumed after taking disulfiram nausea, vomiting, sweating, palpitations, and rarely death can occur.

Hydroxyzine

Hydroxyzine (Atarax, Vistiral) is a long-acting antihistamine commonly used to treat anxiety. Some anxious individuals benefit from hydroxyzine's sedative effects.

Methadone

Methadone is an opioid medication that is used for the treatment of severe chronic pain such as the pain associated with some forms of cancer. Methadone is also used as a replacement or agonist therapy for opioid dependence in federally designated clinics.

Monoamine Oxidase Inhibitors (MAOIs)

MAOIs inhibit the enzyme monoamine oxidase thus decreasing the metabolism of norepinephrine and serotonin, two of the neurotransmitters implicated in depression and anxiety. Less commonly used that other medications due to the side effect profile and need for a special diet. Phenelzine (Nardil), selegiline (Eldepryl, Emsam) and tranylcypromine (Parnate) are examples of this class of medication.

Naltrexone

Naltrexone, an opioid antagonist, blocks the opioid receptors in the brain. The opioid receptors are the site of action of narcotic pain medications such as morphine and oxycodone and the illicit street drug, heroin. Additionally the opioid pathway is involved in the rewarding pathways of alcohol and other drugs. Available in both an oral form and a once a month intramuscular injection, naltrexone is currently FDA indicated for the maintenance of abstinence in alcohol dependence and opioid dependence.

Serotonin Reuptake Inhibitors (SSRIs)

SSRIs are frequently used in the treatment of anxiety and depression. Commonly used SSRIs include: citalopram (Celexa), escitalopram (Lexapro), fluoxetine (Prozac), fluvoxamine (Luvox), paroxetine (Paxil), and sertaline (Zoloft) among others. SSRIs increase the amount of serotonin available in the brain by inhibiting the reuptake of the neurotransmitter by the presynaptic cell after its release.

Serotonin and Norepinephrine Reuptake Inhibitors (SNRIs)

Several medications used to treat anxiety and depression inhibit the reuptake of both serotonin and norepinephrine. Examples of this class of drugs include duloxetine (Cymbalta) and venlafaxine (Effexor).

Tricyclic Antidepressants (TCAs)

The TCAs are an older class of antidepressants developed prior to the newer SSRIs. Historically TCAs were commonly utilized to treat depression and anxiety. In general due to a more favorable side effect profile and safety in overdose SSRIs are preferred by most prescribers. Commonly used TCAs include: amitriptyline (Elavil), imipramine (Tofranil), desipramine (Norpramin), and nortriptyline (Pamelor). Clomipramine (Anafranil) is indicated for the treatment of OCD. TCAs' can act on either or both the serotonin and

norepinephrine system. For example, desipramine acts exclusively to block the reuptake of norepinephrine and imipramine inhibits reuptake of both.

GLOSSARY OF TERMS

ATRIUM	addictions and trauma recovery integrated model
AUD	alcohol use disorder
CBT	cognitive-behavioral therapy
COPE	Concurrent treatment of PTSD and substance use disorders using prolonged exposure
DANDY	*Development and Assessment of Nicotine Dependence in Youth*
DSM-III-R	Diagnostic and Statistical Manual, 3rd ed., revised
FDA	Federal Drug Administration
GAD	generalized anxiety disorder
MAOIs	monoamine oxidase inhibitors
NCS	National Comorbidity Study
NESARC	National Epidemiologic Survey on Alcohol and Related Conditions
OCD	obsessive–compulsive disorder
OEF/OIF	Operation Enduring Freedom/Operation Iraqi Freedom
OR	odds ratio
PET	prolonged exposure therapy
PTSD	post-traumatic stress disorder
SoAD	social anxiety disorder
SS	seeking safety
SSRI	selective serotonin reuptake inhibitor
SUD	substance use disorder
TARGET	Trauma Affect Regulation: Guidelines for Education and Therapy
TCAs	tricyclic antidepressants
TREM	trauma exposure and empowered model
WHE	women’s health education