Review

A BIOPSYCHOSOCIAL MODEL OF SOCIAL ANXIETY AND SUBSTANCE USE

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Emerging prospective work suggests that individuals with social anxiety disorder (SAD) may be at particular risk for developing substance use disorders (SUD). Yet, little is known about why this may be so. Most research has utilized existing theories of substance use (e.g. tension reduction-based theories) to understand SAD–SUD relations. However, these theories do not address why individuals with social anxiety, in particular, experience such high rates of substance-related problems. A possible explanation may lie in the nature of social anxiety itself, which is characterized not only by chronically elevated negative affective states, but by low positive affect, fear of scrutiny, and social avoidance. These aspects of social anxiety may work in concert to place these especially vulnerable individuals at risk for SUD. The current paper presents a biopsychosocial model of SAD-SUD comorbidity that focuses on several specific facets of social anxiety that may be especially related to SUD risk. The utility of this model is evaluated via a review of the literature on the relations between SAD and substance-related behaviors. Depression and Anxiety 00:1–9, 2012.

Key words: *social anxiety; social phobia; substance use disorders; alcohol; nicotine; cannabis; marijuana; review*

INTRODUCTION

Individuals with elevated social anxiety, including those with social anxiety disorder (SAD), appear especially vulnerable to substance-related problems including substance use disorders (SUD).[1] The co-occurrence of SAD and substance-related problems is associated with greater impairment than either condition alone. For instance, among treatment-seeking patients with an alcohol use disorder (AUD), those with a lifetime history of SAD experienced more severe alcohol dependence and reported more major depressive episodes, less peer social support, and lower occupational status than patients without SAD.[1,2] Similarly, relative to patients with SAD and no AUD history, patients with SAD, and a history of AUD exhibit more severe symptoms of SAD, greater psychiatric comorbidity, more health problems, and greater deficits in interpersonal functioning.[3–5] Among persons with a cannabis use disorder, compared to those without a SAD history, those with comorbid SAD were less educated, reported lower incomes and poorer physical health, were more likely to require financial assistance, used more illicit noncannabis drugs, and were more likely to suffer from additional psychiatric disorders.[6] Those with comorbid SAD and cocaine dependence were more likely to have another Axis I disorder, depression, suicidal ideation, paranoia related to use, and polysubstance use compared to those with cocaine dependence without SAD.[7] The greater impairment

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[1]Throughout this manuscript, the terms "substance use disorder," "substance dependence," and "substance abuse" refer to meeting diagnostic criteria for these specific psychiatric disorders. The term "substance use" refers to use of a substance that may or may not be associated with substance-related problems. The term "substance-related problems" refers to problems related to substance use that may or may not meet diagnostic criteria for a substance use disorder.

and distress associated with co-occurring SAD–SUD represents an important public health concern. Identification of factors related to SUD among socially anxious individuals could have important prevention and treatment implications.

Yet, little is known about why people with SAD are at such risk for SUD. Most of the extant literature has utilized existing theories of substance use (e.g. self-medication [see Ref. 8]) to understand the SAD–SUD relation. However, these theories do not answer the question why individuals with *social anxiety* (versus other types of anxiety or other types of negative affect more broadly; see below for review of the literature regarding the specificity of the SAD–SUD relationship) experience such high rates of substance-related problems.

A possible explanation may lie in the nature of social anxiety itself, which is characterized not only by chronically elevated negative affect, but by chronically low positive affect as well as fears of scrutiny and social avoidance. These aspects of social anxiety may work in concert to place socially anxious individuals at risk for SUD. Here, we present a biopsychosocial model of SAD–SUD comorbidity that focuses on several specific facets of social anxiety that may be especially related to SUD risk. We evaluate the utility of this model by reviewing representative literature on the relationships between social anxiety and substance-related behaviors. Although prior reviews have focused on the relations between social anxiety and alcohol use,[8–13] we examine the relations between SAD and SUD broadly by including a discussion of SAD's relation to the use of tobacco and illicit substances. It is our hope that, by consolidating this body of research within the framework of a new theoretical model, we can inform future directions for research and treatment efforts for individuals suffering from SAD–SUD.

MODEL OF SAD–SUD

The majority of SAD–SUD research has focused on substance use to manage anxiety and physiological reactivity in social situations. Yet, other reviews conclude that self-medication[8] and tension-reduction[11] models do not adequately explain why socially anxious individuals have such high rates of SUD, given inconsistent findings concerning whether alcohol use results in decreases in physiological arousal and/or self-reported anxiety (i.e. the subjective experience of anxiety). Therefore, to understand the high rates of SUD among those with SAD, it may be important to focus attention on factors that may be particularly relevant to individuals with elevated social anxiety.

Figure 1 illustrates our conceptualization of the relationship between social anxiety and substance use. Social anxiety is a higher order factor comprised of various components that could be especially related to substance use including evaluation fears, physiological arousal, low positive affect, social avoidance, and perceived social deficits. Thus, socially anxious individuals may be especially vulnerable to substance use and SUD if they use substances to manage unpleasant affective states (as is seen among individuals with other types of chronically elevated negative affective states) as well as to increase positive affect and avoid social scrutiny. Substances could be used to help socially anxious individuals cope with any or all of these facets of social anxiety. For instance, some socially anxious individuals may use substances to help decrease physiological arousal, some may use substances to avoid negative evaluation by substance-using peers, some may use to enhance enjoyment during social events, and some may strive to overcome their (perceived or actual) social deficits by using substances. In the sections that follow, we review the literature concerning the specific components of the model outlined in Fig. 1.

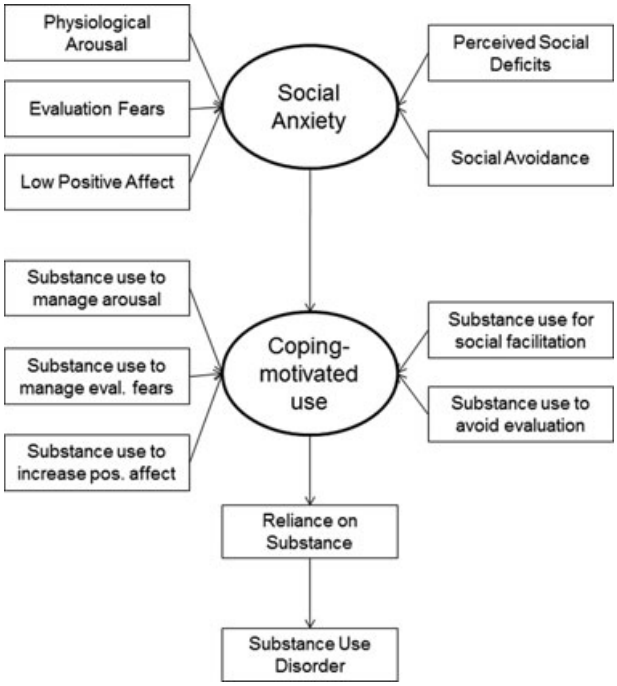

Figure 1. Proposed model of the relationship between social anxiety and substance used disorders.

CAUSALITY

This model suggests that social anxiety is a risk factor for SUD, and data support this notion. Garber and Hollon[14] outlined three criteria for causation that have traditionally been recognized in psychopathology risk research. First, the proposed risk factor must be correlated with the outcome. Second, the risk factor must demonstrate temporal precedence. Third, the relation between the risk factor and outcome variable must be nonspurious (i.e. not due to a third variable or set of variables).

RELATIONS BETWEEN SOCIAL ANXIETY AND SUBSTANCE-RELATED PROBLEMS

Mounting evidence indicates that social anxiety is related to alcohol-related problems and AUDs. To illustrate, in the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), 48% of individuals with a lifetime diagnosis of SAD also met criteria for a lifetime diagnosis of an AUD.[15] The 12-month prevalence of AUD among individuals with SAD was 13.1%[15] compared to 8.5% among the general population.[16] Approximately 25% of individuals in AUD treatment met criteria for SAD,[2,17,18] and 55% of patients seeking detoxification for alcohol dependence demonstrated at least moderate social anxiety.[19] Elevated social anxiety in nonclinical samples has also been associated with greater alcohol-related problems [e.g. Ref. 20–23].

Social anxiety is also related to tobacco smoking and nicotine dependence. In the National Comorbidity Survey-Replication (NCS-R), current SAD was associated with greater risk for nicotine dependence, current and lifetime smoking, and unsuccessful quit attempts.[24] Among patients seeking treatment for anxiety disorders, smokers reported higher levels of social anxiety than nonsmokers.[25] Similarly, among those seeking treatment for smoking, patients with SAD reported higher levels of nicotine dependence than those with no anxiety disorder history.[26]

Much less research has examined the relation of social anxiety to illicit substance use. The majority has concerned cannabis, and socially anxious individuals appear especially vulnerable to cannabis-related impairment. In the original NCS, 29% of individuals with lifetime cannabis dependence met criteria for lifetime SAD, whereas rates of other anxiety disorders ranged from 6.9% (for panic disorder) to 18.5% (for posttraumatic stress disorder [PTSD]).[27] Among adolescents, 22% of those with SAD developed cannabis dependence by age 30 compared to 5% of those without SAD.[28] Among cannabis users, SAD was related to more cannabis-related problems[29] and to faster transition from first use to cannabis-related problems.[30] SAD is more strongly related to cannabis dependence than abuse[6] and elevated social anxiety in nonclinical samples is also associated with greater cannabis-related problems.[31–37]

Social anxiety also appears to be related to the use of other illicit drugs. In the NCS, compared to those without SAD, those with SAD were nearly twice as likely to use stimulants, twice as likely to use heroin, 1.5 times more likely to use cocaine, and 1.5 times more likely to use hallucinogens.[38] Social anxiety is even more prevalent among patients seeking SUD treatment. Of patients seeking treatment for cocaine dependence, approximately 14% have SAD.[39,40] One fourth of those seeking treatment for opiate dependence had elevated social anxiety,[41] and patients who underwent pharmacotherapy for opiate dependence had greater social anxiety than controls.[42] In fact, half of patients presenting for substance dependence evaluation had clinically elevated social anxiety.[43]

RELATIONS BETWEEN SOCIAL ANXIETY AND FREQUENCY/AMOUNT OF SUBSTANCE USE

Data regarding whether social anxiety is related to heavier or more frequent substance use are mixed. Social anxiety has been inconsistently related to greater frequency/quantity of alcohol use, with some studies finding a positive relationship,[44] some a negative relationship,[45–49] and the majority finding no significant relationship[21–23,50–54] between social anxiety and frequency/quantity of alcohol use. The data are also somewhat mixed as to whether social anxiety is related to greater frequency of cannabis use.[31,34,55–58] However, data suggest those with social anxiety may be more likely to be regular or heavy tobacco users.[59,60] Thus, although social anxiety has been consistently related to substance-related problems, it is less clear whether they use substances more frequently or in greater quantities.

TEMPORAL PRECEDENCE

Evaluation of typical age of onset of SAD and AUD suggests that SAD serves as a risk factor for subsequent AUD.[3,4,61,62] Prospective data also suggest that social anxiety is related to greater risk of SUD. In a 13-year longitudinal investigation,[63] individuals with subclinical symptoms of SAD showed a greater risk for AUD than individuals without SAD symptoms. One study found that SAD in adolescence predicted greater rates of alcohol dependence by age 30.[28] Among young adults, SAD was also uniquely related to the development of AUD over a 3-year period in a predominately Hispanic/Latina and/or African-American female sample.[64]

Two studies found SAD to be unrelated to subsequent AUD onset[63,65] although methodological issues may at least partially explain these findings. Specifically, individuals diagnosed with SAD using DSM-III criteria[66] did not show an increased risk of subsequent AUD.[63] However, DSM-III criteria included avoidance as a necessary symptom for social phobia, and this is no longer the case in DSM-IV.[67] This change is important because it may be those individuals with SAD who do not avoid social situations who are most vulnerable to alcohol-related problems, especially if they use alcohol in social situations in an attempt to attenuate anxiety reactions. Similarly, among German adolescents, SAD was associated with subsequent regular and hazardous alcohol use but not AUDs at 4-year follow-up.[68] However, participants were not followed very far into the typical period of onset of alcohol dependence (age 14–24), thereby limiting interpretability of this finding.

Among nicotine users in the NCS-R, 81.3% of those with SAD reported that SAD was present prior to smoking initiation.[24] This stands in contrast to other anxiety

disorders (i.e. PTSD, panic disorder, and generalized anxiety disorder [GAD]), for which smokers reported beginning smoking prior to the onset of the anxiety disorder. Social anxiety also appears to be related to greater odds of developing nicotine dependence.[60]

SAD onset also tends to occur prior to illicit SUD onset. SAD in adolescence predicted greater rates of cannabis dependence by age 30,[28] and the majority of individuals with comorbid SAD and cannabis use disorder report SAD onset prior to the cannabis use disorder.[6] In an ecological momentary assessment that monitored antecedents of ad lib cannabis use, fears of social scrutiny and social interaction anxiety interacted with state cannabis craving to predict later use.[69,70] Nearly all patients with comorbid SAD and cocaine dependence reported that SAD onset prior to cocaine dependence.[7] Taken together, these data provide strong support for the temporal precedence of the onset of SAD to the onset of SUD.

UNIQUENESS/NONSPURIOUSNESS

Some evidence suggests that social anxiety may be more closely related to substance-related impairment than other types of anxiety or depression. In the NCS, SAD was associated with higher rates of AUD than most other anxiety disorders[71] and remained related to AUD after controlling for the presence of other Axis I disorders.[4] SAD, but not other anxiety disorders or depression, remained significantly, prospectively related to AUD onset in multivariate analyses.[28] Social anxiety also appears to be uniquely related to use of at least some illicit substances. Nearly one third to one fourth of people with cannabis dependence have SAD, a higher rate than for panic disorder, GAD, and PTSD.[27,72] After controlling for gender, adolescents with SAD were almost seven times more likely to develop cannabis dependence.[28] They were almost five times more likely to develop cannabis dependence after controlling for other anxiety disorders, depression, other SUD, and conduct disorder. Further, other anxiety disorders were not significantly prospectively related to cannabis dependence. SAD was more strongly related to cannabis dependence than abuse after controlling for mood, personality, psychotic, other SUD, and conduct disorders, whereas no other anxiety disorder (GAD, panic disorder, specific phobia) remained related to cannabis dependence in multivariate analysis.[6] Among cannabis users, SAD was related to transition from first use to cannabis-related problems among adolescent boys, controlling for delinquency.[30]

It is not clear if social anxiety is related to greater rates of tobacco use or nicotine dependence than other anxiety disorders and/or depression. One the one hand, in the NCS-R, those with current SAD demonstrated greater risk of nicotine dependence, heavy smoking, and unsuccessful quit attempts relative to those without SAD after controlling for co-occurring anxiety disorders, depression, and other SUD.[53] However, individuals with SAD reported somewhat lower rates of nicotine dependence (16.6%) than individuals with GAD (19.6%), PTSD (19.3%), and panic disorder (17.2%).[24] When examining pure cases (i.e. those without co-occurring anxiety disorders), individuals with SAD were less likely than those with panic disorder to be current smokers.[73] In the NESARC, 5.8% of those with nicotine dependence had SAD,[74] a rate that is comparable to some other anxiety disorders (i.e. panic disorder without agoraphobia—4.3%, GAD—5.3%[74]). In sum, although the observed relation between SAD and smoking does not appear to be due to co-occurring anxiety or depression, individuals with anxiety disorders broadly are at risk for smoking and nicotine dependence (i.e. those with SAD may not be at greater risk than those with other anxiety disorders).

SUBSTANCE USE TO MANAGE PHYSIOLOGICAL AROUSAL

As outlined in Fig. 1, socially anxious individuals may use substances in response to physiological arousal associated with state social anxiety, both to decrease or avoid unpleasant sensations associated with arousal and as a way to avoid scrutiny should others observe their physiological arousal. In support of this contention, cannabidiol (CBD; an active ingredient in cannabis) induces anxiolytic behavioral responses in animal studies [e.g. Ref. 75]. In the only known study among persons with SAD, CBD decreased heart rate prior to a speech task.[76,77]. CBD also decreased self-reported state social anxiety.[77] Interestingly, tetrahydrocannabinol (THC; another ingredient in cannabis) appears to produce a dose-dependent response such that at lower doses, anxiolytic effects are generally reported whereas at higher doses, anxiogenic effects are reported.[78] Despite the possible anxiogenic effects of THC, cannabis users with SAD report wanting to use cannabis during periods of elevated anxiety.[79] They are also more likely to report using cannabis in social situations and to be especially vulnerable to using cannabis during periods of elevated state anxiety when others are using cannabis.[70]

Although the majority of studies do not find a direct impact of alcohol consumption on physiological response among those with SAD,[80–83] drinking may reduce the subjective experience of state social anxiety.[82] Further, socially anxious persons consume more alcohol in response to social anxiety-provoking tasks than neutral tasks.[84,85] One possible explanation for these seemingly discrepant findings is that it may be that only those socially anxious individuals who expect alcohol to decrease their anxiety experience anxiety attenuation after drinking. Men with elevated anxiety regarding heterosexual interactions who were told that alcohol enhances social performance reported less anxiety after drinking before a heterosexual social interaction than men who were told that alcohol impairs social performance.[83] Men with SAD who held stronger tension reduction expectancies reported less anticipatory social anxiety than men who

expected less tension reduction from drinking.[86] This pattern was observed only among men who believed they had received alcohol.

In sum, it appears as though some substances (cannabis) may directly impact physiological arousal, whereas others (alcohol) may impact the experience of anxiety via beliefs about the substance's ability to decrease arousal and/or enhance sociability. Taken together, these data support the notion that socially anxious individuals are vulnerable to substance use as a means to manage physiological arousal associated with elevations in state social anxiety.

SUBSTANCE USE TO MANAGE EVALUATION FEARS

Socially anxious individuals may also use substances to help them cope with their fear of scrutiny. In fact, individuals with elevated social anxiety report using alcohol in situations involving negative affect, and using alcohol in this way mediated the relation between social anxiety and alcohol-related problems.[22] Social anxiety has been related to coping motives for alcohol use,[87–89] especially among women.[90] Further, social anxiety was positively related to using cannabis to cope with negative affect, and using cannabis in this way mediated the relation between social anxiety and cannabis-related problems.[31,37]

Given that not all studies find social anxiety to be related to using substances to cope with negative affect broadly,[22,91] researchers have examined whether socially anxious individuals use substances to cope specifically with their social anxiety. Thomas, Randall, and Carrigan[92] utilized some items from the *Liebowitz Social Anxiety Scale* (LSAS)[93] to examine whether individuals with higher social anxiety were more likely than those with lower social anxiety to report drinking to cope in these situations and to avoid these situations if alcohol was not present. Buckner and Heimberg[23] replicated that finding using all LSAS items and extended the Thomas et al. study by determining that the relationship between social anxiety and alcohol-related problems was mediated by drinking to cope in these situations as well as by avoidance of these social situations if alcohol was unavailable. The Buckner and Heimberg measure was adapted to assess use of cannabis to cope in social situations.[35] Cannabis users with clinically elevated social anxiety were more likely to report using cannabis to cope in social situations, and this coping strategy mediated the relation between social anxiety group classification and cannabis-related problems. Social anxiety was also related to smoking cigarettes to cope across a greater number of social situations and reporting needing a greater number of cigarettes to feel comfortable in social situations.[94]

Socially anxious individuals may use substances in social situations to avoid potential scrutiny from substance using peers and/or because they believe substance use is a common (and thus socially acceptable) strategy for dampening anxiety in social situations. In support of this hypothesis, perceived injunctive norms (beliefs that others approve of risky drinking) moderated the relationship between social anxiety and alcohol-related problems, such that students with higher injunctive norms and social anxiety reported more alcohol-related problems.[52] Further, social anxiety moderated the relationship between perceived descriptive norms (beliefs regarding others' drinking frequency) and drinking quantity such that those with higher descriptive norms and social anxiety reported drinking the most drinks per week.[44] When gender is considered, the relations between social anxiety, descriptive norms, and drinking behaviors appear especially applicable to males.[54] Further, socially anxious individuals report consuming alcohol in response to perceived peer pressure, a strategy that mediated the relation between social anxiety and alcohol-related problems.[22]

Beliefs about normative use are also related to cannabis behaviors among socially anxious individuals. Among college students with more friends who used substances, those with a higher number of SAD symptoms reported more cannabis use disorder symptoms than those with fewer SAD symptoms.[33] Further, elevated social anxiety was related to using cannabis to avoid scrutiny,[31,37] and using in this way mediated the relationship between social anxiety and cannabis-related problems among men.[37]

SUBSTANCE USE TO INCREASE POSITIVE AFFECT

Social anxiety is somewhat unique among the anxiety disorders in that it is characterized by both high negative affect and low positive affect.[95,96] Thus, it may be that socially anxious persons are vulnerable to using substances to increase positive affect. In fact, positive affect is inversely correlated with substance use, and individuals with higher negative affect and lower positive affect have been found to use substances more frequently.[97] Prospectively, individuals with increasing negative affect and decreasing positive affect demonstrated the greatest increase in substance use.[97] Yet little empirical work has examined whether socially anxious individuals use substances to increase positive affect. Social interaction anxiety (the type of social anxiety related to lower positive affect[98]) was related to using alcohol to increase positive emotions (i.e. enhancement motives), and enhancement motives mediated the relationship between social interaction anxiety and alcohol problems.[22] Further, participants with SAD who received alcohol reported a greater increase in positive thoughts (as well as a decrease in negative thoughts) during public speaking tasks than those who received a nonalcohol control beverage.[99] Importantly, change in positive (but not negative) thoughts mediated the relationship between beverage group and state social anxiety.

SUBSTANCE USE FOR SOCIAL FACILITATION

Although social skill deficits are not considered a fundamental characteristic of SAD,[100] socially anxious individuals tend to rate their social skills poorer than those without social anxiety and to be rated as less socially skilled by others.[101–103] It may be that some socially anxious individuals use substances to overcome these (perceived or actual) deficits. Most of the work in this area has concerned social facilitation expectancies (i.e. the expectation that substance use will make one more socially savvy). The majority of studies find social anxiety to be related to social facilitation alcohol outcome expectancies (AOEs).[45,46,48,51,104–107] Although some studies have failed to find that social facilitation AOEs are related to more drinking among those with elevated social anxiety,[20,45,48,50,51,84] it may be that socially anxious individuals drink to manage the impressions they make on others. Buckner and Matthews[108] found that particular beliefs about what others will think of one while drinking (such as the belief that one will be perceived as more gregarious or less fearful) mediated the relation between social anxiety and drinking problems. Those who believe alcohol will make them more socially savvy may actually come across as more sociable after drinking. To illustrate, men with higher heterosexual interaction anxiety who believed they had consumed alcohol (regardless of whether they consumed alcoholic or placebo beverages) were rated as more relaxed, less anxious, less inhibited, and more dominant during a social interaction with a female confederate than men who did not believe they had consumed alcohol.[109]

SUBSTANCE USE TO AVOID EVALUATION

A core component of social anxiety is social avoidance. In our clinics, several clients with SAD report using cannabis as a type of social avoidance strategy. For example, a client with comorbid SAD and cannabis dependence reported that rather than eat lunch in the cafeteria at work (and thus be in a situation in which small talk was expected), he would drive around town smoking cannabis during his lunch break (thereby avoiding this social anxiety provoking situation). In response to such anecdotal evidence, we have conducted some studies of whether social avoidance plays a role in risky substance use behaviors. Individuals with clinically elevated social anxiety reported avoiding social situations if alcohol was unavailable, a strategy that mediated the relation between social anxiety group status and alcohol-related problems.[23] In a sample of current cannabis users, clinically elevated social anxiety was related to avoiding social situations if cannabis was unavailable.[35] Also, both social fears and social avoidance were positively related to cannabis-related problems among current users.[32] Yet only social avoidance remained significantly related to cannabis problems in multivariate analyses. Gender moderated this finding such that men with greater social avoidance were especially vulnerable to cannabis-related problems.

FUTURE DIRECTIONS AND CONCLUSIONS

Most of the literature has utilized existing models of substance use (e.g. self-medication [see Ref. 8]) to understand the SAD–SUD relation. Yet, these models do not address why socially anxious individuals seem to be at particular risk for substance-related impairment.[28] It is our hope that the model presented in Fig. 1 can inform future research and treatment efforts for individuals suffering from SAD and SUD. Some aspects of this model have received less empirical attention than others, and future work will benefit from testing the utility of all aspects of this model. Below are some suggestions for future work in this area.

SOCIAL ANXIETY'S RELATIONSHIPS TO SPECIFIC SUBSTANCES

Although the model presented in Fig. 1 outlines potential influences on social anxiety's relationship to substance use generally, it is possible that some factors play a stronger role in social anxiety's relationship to specific substances and may help explain why some socially anxious individuals are vulnerable to AUD whereas others are vulnerable to other types of SUD. To illustrate, alcohol may be used to help socially anxious individuals be more social, whereas cannabis may be used as a social avoidance strategy. However, we know of no studies directly testing factors that may influence social anxiety's relationship to specific substances.

BIOLOGICAL INFLUENCES

There is evidence of genetic influence on the relationships outlined in Fig. 1. Among patients with AUD, alcohol dependence among female (but not male) relatives is associated with greater odds of comorbid SAD.[110] Further, among female relatives with alcohol dependence, the odds of SAD were greater than the odds of having comorbid GAD, major depressive disorder, or dysthymia. Individuals who have parents with alcohol-related problems appear more likely than those without such parents to have SAD.[111,112] Additional work may benefit from further examination of genetic influences on the relationships of social anxiety to substance use and use-related problems.

An additional area of future work is to further delineate gender differences in substance use behaviors. Some data suggest that socially anxious women are vulnerable to coping-motivated alcohol use and resulting alcohol-related problems,[90] whereas socially anxious men appear especially vulnerable to coping-motivated cannabis use and resulting cannabis-related problems.[37]

TREATMENT IMPLICATIONS

The relationships outlined in Fig. 1 have implications for the treatment of SAD–SUD. For instance, dually diagnosed patients who present for treatment of SAD may not present for treatment of substance use. These

patients may believe that their substance use is an adaptive way to cope with their pathological anxiety. It may be necessary to assess patients for substance use behaviors regardless of whether they present for substance-related treatment. Clinicians are also encouraged to determine the specific reasons for substance use so as to tailor treatment to meet the needs of the individual patient. For instance, some patients may use substances to increase positive affect whereas others may use for social avoidance, and this may suggest that specific skills may be a necessary part of the treatment for patients with SAD who use substances for different reasons.

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