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Relapse Contexts for Substance Abusing Adolescents with Comorbid Psychopathology

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Abstract

The relationship of diagnosis, developmentally relevant factors (e.g., life stress, peer substance use) and mental health symptoms to contexts of a return to substance use were examined for 103 substance abusing adolescents with Axis I psychopathology (ages 12–17) following inpatient treatment. Proximal psychiatric symptoms and developmentally relevant factors, but not psychiatric diagnosis at treatment entry, predicted contexts in which youth returned to alcohol and drug use in the 6 months following treatment. The findings suggest that comorbid youth are similar to same-aged peers without comorbid psychopathology and adults with comorbid psychopathology in regard to contexts associated with a return to substance involvement.

Keywords

Substance use disorder; comorbidity; adolescents; relapse

Risk situations are a consideration in all current models of addiction relapse. In addition to specifying contextual features of adult relapse situations (e.g., Marlatt & Gordon, 1980, 1985), research has highlighted contexts of youth relapse (i.e., Brown, Vik, & Creamer, 1989), and adults with comorbid psychopathology (e.g., Burns & Teesson, 2002; Hovens, Cantwell, & Kiriakos, 1994; Tate, Brown, Unrod, & Ramo, 2004; Tomlinson, Brown, & Abrantes, 2004). However, no research to date has characterized the contextual features of a return to substance use following treatment for youth with comorbid psychopathology.

Models of addiction relapse have often focused on the interaction of situational factors and individual characteristics that may elevate risk for alcohol or drug use. From a cognitive-behavioral perspective (e.g., Connors, Maisto, & Donovan, 1996; Marlatt & Gordon, 1980, 1985), self-efficacy, coping and relapse context interact to produce subsequent use or

resistance to use (Connors, Maisto, & Donovan, 1996; Larimer, Palmer, & Marlatt, 1999). First use of a substance after cessation increases the probability of continued substance use as a function of abstinence-violation effects and reduced self-efficacy for abstention. Marlatt and Gordon's (1980) initial taxonomy of relapse situations featured both intrapersonal determinants for relapse (i.e., negative emotional states, negative physical states, positive emotional states, testing personal control, and urges and temptations) and interpersonal determinants of relapse (i.e., interpersonal conflict, social pressure). This early study found that 58% of all adult substance dependent participants studied initially returned to substance use in intrapersonal contexts, particularly when experiencing negative emotional states (37%). In contrast, research on abusing adolescents has suggested that development plays a role in situational risk for those sustaining abstinence. In one study, 60% of adolescents with alcohol and substance-use disorders reported that direct social pressure in interpersonal (peer) settings was a primary factor in youth initial use of substances following treatment (Brown, Vik, & Creamer, 1989). Given the salience of peer relations and peer acceptance during adolescence, these contextual differences suggest that psychosocial development might influence which situations pose high-risk for substance use for youth following treatment.

The role of concomitant psychopathology in risk for a return to substance use for those with substance use disorders continues to garner much attention. Population estimates for adults with comorbid substance use disorders and other Axis I psychopathology (e.g., depression and anxiety disorders) have ranged from 29% (Kessler et al., 1996) to 37% (Burns & Teesson, 2002; Regier et al., 1990), with substantially higher rates in clinical settings. In treatment samples, rates of co-occurring substance use and other Axis I disorders among youth have varied from 50% (Abrantes, Brown, & Tomlinson, 2004; Grilo, Becker, Walker, & Levy, 1995) to 85% (Hovens, Cantwell, & Kiriakos, 1994). Although many studies have shown poorer addiction treatment outcomes for alcohol and drug dependent adults with psychopathology compared with adults without both types of disorders (Greenfield et al., 1998; Thomas, Melchert, & Banken, 1999), some studies have not found concomitant mental health disorders to produce more adverse outcomes (Tate et al., 2004; Tsuang, Irwin, Smith, & Schuckit, 1991). More recently, research has indicated that alcohol and substance use disordered adolescents with several forms of comorbid psychopathology are more likely to return to substance use (e.g., Grella, Hser, Joshi, & Rounds-Bryant, 2002; Myers, Stewart, & Brown, 1998), and progress to substance use more rapidly than their non-comorbid peers (Tomlinson, Brown, & Abrantes, 2004). In addition, psychiatric diagnosis and the severity of substance use symptoms appear to be related. For example, for youth, severity of depressive disorders is associated with more substance withdrawal symptoms. Youth with externalizing disorders exhibit more substance dependence symptoms, and youth with ADHD symptoms are more likely to meet alcohol dependence criteria (Abrantes, Brown, & Tomlinson, 2004).

Studies of adults with alcohol and other substance use disorders have shown comorbid psychopathology to influence the return to substance involvement. For example, Tate et al. (2004) compared relapse circumstances of adults with substance use disorders to substance use disordered adults with other concurrent Axis I psychopathology. They found that negative emotional states preceded posttreatment substance use for a greater proportion of

comorbid (77.6%) than non-comorbid (54.3%) adults. In addition, the majority of substance use disordered adults with Axis I psychopathology were found to relapse alone (51.7%), when two-thirds of those without such psychopathology (65.7%) relapsed in social settings.

Although it has been hypothesized that mental health disorders of youth influence their clinical course (e.g., Brown, D'Amico, McCarthy, & Tapert, 2001; Cornelius, Salloum, Bukstein, & Clark, 2005), research to date has not examined whether features of psychopathology are related to contextual factors in posttreatment substance use for adolescents with alcohol and substance use disorders. It is possible that, like adults, substance use disordered adolescents will differ regarding the circumstances of their return to alcohol or drug involvement depending on their type of mental health disorder. Such a pattern would suggest that co-occurring psychopathology plays a role in determining situational risk for relapse. Alternatively, it is possible that relapse contexts are similar for adolescents with and without comorbid psychopathology and that developmental factors are the predominant contributors to the substance use relapse context and experience.

The main focus of this paper is to examine how contextual factors, influenced by the primacy of social relationships in adolescent development, and psychopathology influence the first use of alcohol and other illicit substances for this group of youth after treatment. From the cognitive-behavioral perspective, first use situations posttreatment are often the gateway to a relapse to problematic use and, therefore, are an important area of inquiry (Tapert, Tate, & Brown, 1999). Two distinct influences in posttreatment substance use for adolescents with concomitant Axis I psychopathology are suggested by the extant literature. Based on the adult studies, we would expect that adolescents with concomitant Axis I psychopathology and substance use disorders would be more likely to use alcohol or drugs for the first time after treatment in contexts in which they were facing negative emotional states typical of major mental health disorders. In contrast, we would expect comorbid youth to return to substance use without such negative affect and in social settings involving peer pressure if they follow the pattern of their substance use disordered adolescent peers.

The purposes of this paper were as follows: (1) to describe the social, affective and environmental circumstances for initial posttreatment alcohol or drug use for youth with both alcohol/substance use disorders and Axis I psychopathology, and (2) to identify the diagnoses, developmentally specific context features, and mental health symptoms associated with first use contexts within a sample of comorbid youth.

METHODS

Participants

A total of 103 adolescents ($M = 15.9$ years; range: 12–17 years) reporting use of at least one substance within the first 6 months after treatment were selected from a sample of 234 adolescents receiving inpatient treatment for alcohol and other substance use disorders and at least one Axis I DSM-III-R disorder. The mean length of abstinence posttreatment was 42 days ($M = 42.01$; $SD = 47.45$). Adolescents who used alcohol or drugs within this time frame were not significantly different from the abstainers in terms of sex, age, grade, ethnicity, socioeconomic status or pretreatment alcohol or other substance-use levels. Of the

sample, 49.5% were girls and the educational level of participants ranged from 6th to 11th grade ($M = 8.74$ grades completed, $SD = 1.22$). The average Hollingshead socioeconomic status score for the sample was 35.03 ($SD = 13.20$, range 11–72; Hollingshead, 1965). The sample was predominantly Caucasian (75%), Hispanic (18%), and African American (4%). Prevalence of Axis I psychiatric diagnoses are presented in Table 1. On average, youth met criteria for three mental health disorder diagnoses at the time of treatment with disruptive and mood disorders most frequently represented. Ninety-two percent of participants carried a current DSM-III-R diagnosis of substance dependence, 79% alcohol dependence and 72% both alcohol and drug dependence.

Exclusion criteria for the study were as follows: (1) history of head trauma with loss of consciousness for 2 or more minutes, (2) active psychotic symptomatology, (3) unavailability of a resource person (e.g., a biological relative at intake or follow-up) to provide corroborative information, and (4) permanent residence more than 50 miles from the research facility. Each participant and his/her resource person completed structured interviews at study intake and completed self-report measures. Participants were assessed once per month for the first 6 months after treatment with structured clinical interviews. Youth and resource persons completed intake measures during their inpatient stay (owing to ethical concerns, youth and resource persons were not paid for their participation during treatment). Monthly assessments (1, 2, 4, and 5 months) with teens took approximately 30 minutes to complete and youth were paid \$10 per assessment. At months 3 and 6, youth participants and resource persons completed more comprehensive assessments for a larger investigation of health-related outcomes for youth with substance use disorders and Axis I psychopathology posttreatment. The 3-month assessment required approximately 45 minutes of participation, and adolescents and resource persons were paid \$40 and \$20, respectively. The 6 month assessment took up to 3 hours and participants and their resource persons were paid at the higher rate for their time.

Procedure

Youth were selected based on the evidence of comorbid alcohol and other substance use disorder and psychiatric disorder through medical chart screenings of new admissions to three psychiatric facilities in San Diego County, California. The University of California, San Diego Institutional Review Board approved parental consent was first obtained before the medical chart screening, and after participant screening, additional informed consent procedures for all research study procedures were completed with the parent or legal guardian and assent procedures with the youth. After discharge, separate interviewers evaluated adolescent functioning and obtained parent reports. Although all youth were informed that a urine toxicology screen may be required, a random sample of youth (10–15%) completed urine toxicology screens to verify use reports at the follow-up time points. With the exception of one case (cocaine), toxicology screens did not identify substances beyond those reported by youth.

Measures

Structured Clinical Interview—A trained interviewer at study intake conducted a 90-minute confidential structured interview (Brown, Vik, & Creamer, 1989) with each

adolescent, and a second interviewer assessed the parent. This procedure was used to gather demographic and background information as well as information regarding participant experiences with substance use, mental health services, and related variables. All demographic information obtained from the teen and parent was subsequently reviewed to clarify inconsistencies.

Psychopathology—Axis I mental health disorders at study intake were assessed using the Diagnostic Interview Schedule for Children-Computerized Version (DISC-III-R; Piacentini et al., 1993) with supplementary age of symptom onset questions (Aarons, Brown, Hough, Garland, & Wood, 2001). The DISC-III-R was separately administered to each adolescent and collateral reporter (e.g., parent); results from the two interviews were composited in a standard procedure to determine diagnoses. Specifically, if the adolescent or parent reported the youth met a criterion; this was counted toward the diagnosis. This standardized procedure maximizes validity of youth diagnoses (Breton, Bergeron, Valla, Berthiaume, & St George, 1998). Axis I diagnoses were rationally grouped into mood spectrum diagnoses (major depressive disorder, dysthymia, mania, hypomania), anxiety spectrum diagnoses (simple phobia, social phobia, agoraphobia, panic disorder without agoraphobia, panic disorder with agoraphobia, avoidant, overanxious disorder, generalized anxiety disorder, obsessive-compulsive disorder), and disruptive diagnoses (oppositional defiant disorder, attention-deficit/hyperactivity disorder, conduct disorder). Eating disorders and psychotic-spectrum disorder diagnoses were not assessed owing to their low base rate in this sample and potential memory and accuracy issues for the latter diagnoses.

Relapse Review—A modified version of the Contextual Cue Assessment for Relapse (Marlatt, 1996; Marlatt & Gordon, 1980) interview was administered to youth who engaged in any alcohol or drug use within the first 6 months following treatment to assess interpersonal, intrapersonal, and other contextual information. Relapse review data examined for the present study included information concerning the first alcohol or drug use episode following treatment.

At each monthly assessment, youth were first asked to describe in detail their initial alcohol or drug use experience following treatment. Interviewers queried into intrapersonal, interpersonal, and environmental characteristics during the 2 weeks before the initial use, day of first use and immediately (few minutes) before the use. Youth then completed the modified version of the Contextual Cue Assessment, which assesses details of intrapersonal/emotional states, interpersonal factors, negative physiological states, and social pressure occurring at the time of relapse (Marlatt, 1996; Marlatt & Gordon, 1980). Finally, items addressing broader developmentally relevant contextual features, ascertained from previous focus groups, were also administered. These domains included stress (social: for example, “afraid of missing out”; prevalent life stressors: for example, family conflict) and abstinence-related factors (e.g., cravings, distress with abstinence, and motivation). These features were queried for the 2 weeks before initial use, day of the use episode, and immediately before the first posttreatment use. The modified Contextual Cue Assessment has been used to examine relapse precursors in samples of adolescents with substance use disorders (Tomlinson, Brown, & Abrantes, 2004) and with substance use disorders and

concomitant Axis I psychopathology (Abrantes, Brown, & Tomlinson, 2004; McCarthy, Tomlinson, Anderson, Marlatt, & Brown, 2005) successfully in the past.

In addition to the contextual cues and developmentally relevant factors, the presence and severity of 12 types of psychiatric symptoms were assessed. Based on a confirmatory factor analysis (MPlus; Muthén & Muthén, 2001), three domains accounting were identified: depression, anxiety, and psychotic symptoms. The 3-factor solution fit the data well (χ^2 (19, $N = 103$) = 131.39, CFI = .97, TLI = .97). Depressed mood, sleep difficulties, appetite/somatic complaints, and memory/concentration problems comprised the depression factor. The anxiety domain included anxious affect, irritability, fear/avoidance, and repetitive thoughts/behaviors. Hallucinations, flashbacks, delusional cognitions, and paranoia constituted the psychotic factor. Total symptom counts were calculated for each domain (range 0–4). The interview also assessed the severity of each symptom during the 2 weeks and immediately before initial substance use (i.e., larger values indicating worsening of symptoms). Severity scores were summed to provide a composite of psychiatric symptom severity for each domain immediately before and 2 weeks before the first use episode.

RESULTS

Social and Environmental Circumstances for First Use

Following treatment, 85.3% of these youth used substances for the first time in the presence of others; 52.9% were in groups of three or more people. Of those who drank or used in social situations, 74.1 % reported that they were with same-aged peers or friends who were older and half (50%) reported that the most important person to them in these situations was a “good friend.” Although the most important person in the relapse situation was typically known by the youth before treatment (72.8%), 17% were new (posttreatment) friends and 10.5% were family members. Youth most commonly (45.8%) reported that socializing (hanging out, dancing, or playing) was the main activity during their first substance use situation, although 1/3 indicated substance use was the primary activity. Illicit drugs (no alcohol present) were available in 42% of situations and modal use occurred in a friend’s home (35.4%) in the evening hours (44.4%). Of note, 40.6% of youth reported that the substance was offered to them in the first use situation, as opposed to purposefully obtaining the substance through other means (e.g., request or advance purchase). Youth reported using alcohol (48%), marijuana (49%), stimulants (15%), and other drugs (opiates, inhalants, benzodiazepines; 10%) during their first use episodes posttreatment; 53% reported using their drug of choice in this situation.

Characteristics of substance use circumstances of comorbid youth who relapsed in social situations and those who used alone are presented in Table 2. Chi-square analyses indicate that youth using in social situations differ from those using alone in location, activity, and method of acquisition of substances. Comorbid youth who relapsed in the context of others most often used substances at a friend’s home, while most youth who used substances alone were at home (χ^2 (1, $N = 98$) = 4.66, $p < .05$). Socializing was the main focus of activity for those relapsing with others (χ^2 (1, $N = 96$) = 11.60, $p < .01$) and substances were more likely to be offered to the youth by other people in the situation (χ^2 (1, $N = 96$) = 3.80, $p < .05$).

Contextual Cue Precursors

In examining first use contexts, the Marlatt Contextual Cue Assessment was modified to consider all immediate precursors of the relapse. Youth with both substance use disorders and other Axis I disorders reported that they most used in situations involving temptation (i.e., testing personal control, giving in to temptations) or to enhance positive emotional states (85.4%), social pressure (69%), and negative intrapersonal states (68%). Interpersonal contexts were precursors of 37.9% of return to use situations and negative physiological states preceded 9% of use situations.

Logistic regression analyses were conducted/to determine the extent to which type of mental health diagnosis predicted adolescent use in specific contexts. No diagnostic domain or number of diagnoses within a domain was predictive of use in intrapersonal, temptation, social pressure, or negative physiological contexts. Number of disruptive disorder diagnoses was predictive of use in interpersonal contexts (Wald (1, 3) = 4.39, $p < .05$; OR = 1:1.67). Posttreatment substance use when coping with frustration and anger ($r = .21$, $p < .05$) and coping with tension ($r = .22$, $p < .05$) were the two aspects of the negative interpersonal context associated with this type of diagnosis.

Next, proximal psychiatric symptoms (psychiatric symptom counts, symptom severity 2 weeks earlier and immediately before first use) were examined in relation to adolescent relapse context. Both the total number of anxiety symptoms immediately before use (Wald (1, 3) = 7.64, $p < .01$; OR = 1:2.26) and the total number of depressive symptoms (Wald (1, 3) = 4.77, $p < .05$; OR = 1:1.68) were significantly predictive of use of substances in negative intrapersonal contexts. The severity of anxiety and depressive symptoms experienced immediately prior to first use (anxiety:Wald (1, 3) = 6.87, $p < .01$; OR = 1:1.39; depressive:Wald (1, 3) = 6.86, $p < .01$; OR = 1:1.37) and 2 weeks before first use (anxiety:Wald (1, 3) = 5.44, $p < .05$; OR = 1:1.26; depressive:Wald (1, 3) = 3.92, $p < .05$; OR = 1:1.19) were related to relapsing in contexts of negative intrapersonal states.

Anxiety symptom severity immediately prior (Wald (1, 3) = 4.58, $p < .05$; OR = 1:1.68) and during the 2 weeks prior (Wald (1, 3) = 4.79, $p < .05$; OR = 1:1.46) to relapse also predicted substance use when adolescents were coping with negative physiological states. Total anxiety symptom counts (Wald (1, 3) = 9.55, $p < .01$; OR = 1:2.22) also predicted use in negative interpersonal situations. Correlations suggest that anxiety symptoms were associated with relapse when coping with frustration and anger ($r = .22$, $p < .05$) and nervousness ($r = .29$, $p < .01$) in interpersonal situations. Other psychiatric symptoms were not associated with use in temptation or social pressure contexts for comorbid youth.

Developmental Factors and Posttreatment Use

The influence of stress (e.g., social conflict, family stress) and abstinence-related factors (e.g., desire for drug, abstinence-focused distress, belief one can use without problems) experienced before (immediately before and 2 weeks before) substance use were examined for each relapse context. Youth experiencing stress were significantly more likely to return to substance use in negative intrapersonal contexts (stress:Wald (1, 3) = 6.63, $p < .01$; OR=

1:1.72). Youth relapse following temptation was also predicted by abstinence-related factors immediately before relapse (Wald (1, 3) = 6.64, $p < .01$; OR = 1:1.74).

Individuals reporting more stress (Wald (1, 3) = 17.52, $p < .001$; OR = 1:3.07) and fewer abstinence-maintenance issues (Wald (1, 3) = 4.1, $p < .05$; OR = 1:0.72) were more likely to use in interpersonal contexts. Correlations suggest that substance use when coping with frustration and anger were significantly related to elevated stressors ($r = .34$, $p < .001$) before first use. Stress was also related to relapsing in response to social pressure (Wald (1, 3) = 16.46, $p < .001$; OR = 1:2.58), particularly direct offers ($r = .32$, $p < .001$).

Next, we examined whether more distal or protracted experiences during the 2 weeks before use were associated with contexts of the return to substance involvement. More protracted stress (Wald (1, 3) = 5.72, $p < .05$; OR = 1:1.76) during the 2 weeks before use predicted substance involvement in negative intrapersonal contexts. Correlations suggest that protracted stress was significantly associated with a return to use when coping with depression ($r = .22$, $p < .05$), and when facing negative interpersonal situations (Wald (1, 3) = 6.29, $p < .01$; OR = 1:1.75) and social pressure (Wald (1, 3) = 4.45, $p < .05$; OR = 1:1.60). In contrast, use to enhance positive emotional states ($r = .22$, $p < .05$) was predicted by abstinence-specific issues (e.g., limited commitment to abstinence, distress over maintaining an abstinence program, etc.) during the 2 weeks before relapse (Wald (1, 3) = 7.61, $p < .01$; OR = 1:1.95).

DISCUSSION

The findings from this investigation suggest that both developmentally relevant environmental factors and psychiatric symptoms are associated with the specific contexts in which mental health disordered youth return to substance use following treatment. A number of aspects of the social and environmental circumstances of first use in our comorbid sample were strikingly similar to other adolescent relapse studies (e.g., Brown, Vik, & Creamer, 1989; Cornelius et al., 2003). For example, posttreatment use commonly occurred in the company of same-aged or older peers, and most frequently while socializing with pretreatment friends. These findings suggest that many of the situational aspects for first use are the same for substance use disordered youth after treatment, regardless of the psychiatric status. Interestingly, however, youth with comorbid substance use and mental health disorders of the present study relapsed when dealing with temptation while former studies of substance use disorders of youth (but without such psychopathology) more frequently relapsed in the context of social pressure (Brown, Vik, & Creamer, 1989). It must be noted that a large proportion of the comorbid sample of youth also indicated that social pressure was an important factor in the relapse context. However, only one-third of non-comorbid youth stated that coping with negative affect was part of their first use context compared with two-thirds of these comorbid youth. In one regard, comorbid youth seem similar to their adult counterparts with comorbid substance use disorders. Both comorbid adults and comorbid youth indicate that intrapersonal contexts, particularly negative affective states, are common before their first use situations (e.g., Tate et al., 2004). Recent work by Cornelius and colleagues (2003) found that adolescents with substance use disorders, including some youth with depressive disorders or conduct disorder, reported relapsing in

contexts associated with social pressure, withdrawal, and negative affect. Thus, our sample of comorbid youth shared characteristics of both their same-aged peers with and without comorbid psychopathology and adults with comorbid psychopathology in regards to relapse context.

This investigation also compared the extent to which diagnosis, current psychiatric symptoms and developmentally relevant factors were associated with specific to relapse contexts for comorbid youth. Compared to current symptoms and developmentally relevant factors, psychiatric diagnosis at intake was less successful in predicting first use contexts in this sample. Only disruptive diagnoses, such as conduct disorder, attention-deficit disorder and oppositional-defiant disorder, were predictive of first use experiences; and only in interpersonal contexts when coping with frustration, anger and tension. It may be possible that Axis I diagnoses do not capture those aspects of risk related to youth substance relapse context or that Axis I diagnoses made during treatment are too distal from youth relapse situations to have a significant influence on relapse context. Disruptive disorders were predictive of some contextual features of first use, and may, therefore, represent either a more stable, severe or risk laden aspect of comorbidity for these youth (Myers, Stewart, & Brown, 1998). Exploring these possible hypotheses directly is beyond the scope of this paper but would be a fruitful avenue for research in the future.

Developmentally relevant context features, including life stress and issues regarding abstinence maintenance, were related to the circumstances in which comorbid youth return to substance use. These contextual features, consistent with domains associated with adult relapse, are developmentally specific in their specific content; for youth, these stressors are consistent with the developmental focus on peer influence and frequent attempts for individuation from their families-of-origin. Stress in the teen's environment was associated with use in intrapersonal, interpersonal and social pressure contexts. This finding suggests that practitioners should be aware of the increased risk for relapse that both acute and chronic stressors can engender in comorbid youth.

Youth reporting issues specifically related to their abstinence-maintenance efforts were more likely to use in temptation contexts for relapse, particularly when enhancing emotional states. These factors relating to abstinence motivation and craving may be related to expectations youth have for the relapse context as well as cue reactivity. Given the relation between substance use expectancies and substance relapse (e.g., Brown, 1985; Maisto, O'Farrell, Connors, McKay, & Pecolovits, 1988), it would be of interest to examine how outcome expectancies, both for use and abstinence (e.g., Metrik, Frissell, McCarthy, D'Amico, & Brown, 2003) might relate to the contexts of return to substance. Also, recent studies suggest substantial cue reactivity in the form of neural activation among youth with histories of heavy alcohol involvement (Tapert et al., 2003). Thus, both greater attention to substance cues combined with expectancies of improved emotional states may place comorbid youth at greater risk for relapsing in temptation laden situations.

A number of psychiatric symptoms were related to youth relapse contexts. For example, anxiety symptoms were associated with relapse in negative physiological states and following interpersonal conflicts which may reflect increased sensitivity to cues relating to

threat. Consequently, in situations where youth with a substance use disorder history are faced with physiological distress, these concomitant anxiety symptoms may lower the threshold of tolerance for these experiences and accentuate potential remedy through substance use. The self-medication hypothesis (Khantzian, 1985) has been posited to explain this phenomenon and the present findings highlight the potential for testing this hypothesis among comorbid adolescents.

In concert, these findings suggest that there may be two types of relapse for comorbid youth: one related to temptation and social pressure, and the other related to stress and distress. Situations involving temptation and social pressure were not related to psychiatric symptoms despite the high rate of use in these situations. In contrast, the psychiatric symptoms of comorbid youth place them at highest risk for return to substance use in negative intrapersonal, negative interpersonal and negative physiological states. In particular, in the present study, anxiety and depressive symptoms appear to reduce comorbid youth's ability to maintain abstinence when facing the challenges associated with these aversive situations.

Some cautions are necessary in interpreting the results of this investigation. In this report, we measured first posttreatment use within the initial 6-month period after treatment rather than relapse. No distinction was made between those youth who used one time or continued to engage in alcohol or drug use for extended periods. Therefore, connections between these findings and statements regarding relapse or severity of use should be made with caution. In addition, when we discuss the potential implications of our descriptive findings, and compare these with results of other studies of non-comorbid youth and comorbid adults, the design of this study did not allow for direct comparisons of these samples. Further research is necessary to directly compare matched groups of substance use dependent youth and adults with and without psychiatric comorbidity drawn from programs in the same time frame and catchment areas.

It is also important to note that our sample size limits generalizations to the entire population of comorbid youth who return to substance use posttreatment. The characteristics of our sample might not generalize to other populations of youth with comorbid Axis I psychopathology and alcohol/substance use disorders, such as those in the juvenile justice system or school settings. For example, due to the low base rate of certain diagnoses in our sample, we were unable to perform tests of eating disorders and psychotic disorders. Investigations with larger samples of participants would allow for more fine-grained analyses of diagnosis and relapse context unavailable given our sample size.

This study is the first to our knowledge to examine associations between features of psychopathology of abusing youth and contexts of their first posttreatment use. Findings highlight similarities between initial use environment for comorbid and previous non-comorbid youth of other investigations, as well as relapse context overlap with adults with comorbid psychopathology. Thus, it appears that both development and psychopathology may influence contextual features of risk for adolescents with comorbid Axis I and substance use disorders. These findings suggest that careful attention to the specific symptoms of youth psychopathology, within the context of developmental stressors and

abstinence-maintenance motivation, is necessary to help prevent a return to substance involvement for comorbid youth.

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TABLE 1

Axis I Diagnoses of Substance Use Disordered Adolescents Who Used Alcohol/Drugs Within 6 Months of Treatment (N = 103).

Disorders	%
Anxiety disorders	
Simple phobia	25.3
Social phobia	31.9
Agoraphobia	9.9
Panic	4.4
Separation anxiety	24.2
Avoidant	11.0
Overanxious	23.1
Generalized anxiety	14.3
OCD	18.7
Mood disorders	
Major depression	58.2
Dysthymia	34.1
Mania	18.7
Disruptive disorders	
ADHD	33.0
Conduct'	78.0
Oppositional defiant	58.2

Note: Due to exclusion criteria, psychotic spectrum and eating disorders were not included.

TABLE 2

Social and Environmental Circumstances for First Posttreatment Substance Use for Comorbid Adolescents (N = 103)

Social Context	With Others (85.4%)	Alone (14.6%)
Location (%)		
Friend's home	39.5	8.3
Home	10.5	75.0
Outdoors	18.6	0.0
Vehicle	8.1	0.0
Public facility	4.7	8.3
Other	18.6	8.4
Time of day (%)		
Evening	46.0	33.3
Afternoon	31.0	58.3
Night	17.2	8.3
Morning	5.7	0.0
Activity (%)		
Socializing	52.4	0.0
Alcohol/Drug use	32.1	50.0
Watch an event	8.3	16.7
Listening to music	4.8	16.7
Other	2.4	16.6
How acquired substance (%)		
Offered	44.0	16.7
Requested it	22.6	8.3
Bought it	21.4	8.3
Stole it	.4.8	25.0
Brought it to location	4.8	25.0
Repeatedly offered	2.4	0.0
Other	0.0	16.7