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Behavioral Therapies for Co-occurring Substance Use and Mood Disorders

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Abstract

There has been marked progress in recent years in the development of effective behavioral therapies for substance use disorders and in the largely independent development of behavioral therapies for mood disorders. Until recently, however, there were few well-specified behavioral approaches that incorporated an integrated approach for individuals in whom these disorders co-occur. The emerging literature on the efficacy of several types of behavioral therapy for engaging individuals with co-occurring mood and substance use disorders in treatment, reducing substance use and affective symptoms, enhancing adherence, and preventing disengagement and relapse is reviewed, followed by discussion of the challenges likely to be met in integrating these behavioral approaches into clinical practice.

Keywords

Co-occurring disorders; substance use; behavioral therapies; review

As described in detail in other articles in this special issue, there is ample evidence that rates of comorbidity between substance use, depression, and bipolar disorders are elevated (Kessler et al 1997; Regier et al 1990), that these dual disorders place considerable stress on the service delivery system (Dickey et al 2002; Drake et al 2004; Rosen et al 2002), and that the risk of poor outcome is higher among individuals with both substance use and mood disorders compared with those that have a single disorder (Brady and Sonne 1995; Brown et al 1998; Feinman and Dunner 1996; McKay et al 2002; Rounsaville et al 1986, 1987; Thase et al 2001; Tohen et al 1990). What is also becoming clear is that a number of behavioral therapies can play a major role in several aspects of treatment for individuals with these complex disorders. This article will provide an overview of the roles that behavioral therapies (the term behavioral therapy is used here to refer to well-defined, manualized nonpharmacologic interventions rather than broader psychosocial or programmatic approaches) can play in the treatment of co-occurring substance use and mood disorders. Behavioral approaches that have been developed or adapted for these populations will be described, with a brief summary of findings from clinical trials evaluating their effectiveness, followed by a discussion of some of the challenges that will be faced as investigators and clinicians attempt to incorporate these empirically supported behavioral therapies into clinical practice.

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Roles of Behavioral Therapies

Behavioral therapies may play a range of roles in the treatment of individuals with co-occurring mood and substance use disorders. First, behavioral therapies may be used to directly target and reduce ongoing substance use. Because substance use may play a role in the perpetuation or exacerbation of psychiatric symptoms, the principal rationale for this strategy is that reductions in substance use are likely to reduce symptom severity as well as facilitate accurate assessment and appropriate treatment of the comorbid affective disorder. Second, behavioral therapies can be used to directly address the affective disorder and promote symptom relief and may also aid the individual in coping more effectively with psychiatric symptoms. Third, behavioral therapies can be used to enhance treatment engagement and stabilization, that is, to retain patients in a supportive therapeutic program that provides a structure within which pharmacologic treatments and other key services can be productively initiated or maintained. Fourth, because noncompliance with pharmacotherapy is common in dual diagnosis populations and can undermine treatment outcome (Brady 2000; Kemp et al 1996; Maarbjerger et al 1988; Ziedonis and Trudeau 1997), behavioral therapies can play a key role in promoting and maintaining compliance with pharmacologic treatments directed at the psychiatric symptoms, the substance use disorder, or both. Fifth, behavioral therapies can be used to target other psychosocial problems that commonly occur among individuals with co-occurring disorders. Finally, behavioral therapies can be used to prevent relapse as well as disengagement from treatment and other essential supports. These roles are by no means mutually exclusive; rather, behavioral therapies would ideally serve multiple roles within a comprehensive approach to the treatment of individuals with these disorders based on the integrated treatment model advocated by Drake et al (1998, 2001), which involves the provision of interventions and services directed at both disorders by the same clinicians at the same time that cut across systems of care.

No single behavioral approach is likely to serve these roles equally well, however, as there is substantial heterogeneity among the goals and theoretical rationales underlying different behavioral approaches. Any single behavioral approach, or even a single treatment modality, is unlikely to effectively meet all needs of individuals with these complex sets of disorders at all stages of treatment. Hence, a range of diverse approaches has been developed and evaluated for their efficacy in addressing these issues. In general, these approaches represent adaptations of treatments originally developed for addressing either affective or substance use disorders to meet the needs of individuals in whom the disorders co-occur. Moreover, while there has been tremendous progress in recent years in identifying a range of empirically supported behavioral therapies for substance use disorders and for affective disorders, the number of well-controlled trials evaluating behavioral therapies developed specifically for co-occurring disorders remains quite sparse. The three most commonly evaluated types of behavioral therapy for individuals with co-occurring mood and substance use disorders are motivational interviewing, cognitive-behavioral therapy (CBT), and contingency management approaches (Table 1).

Motivational Approaches

Motivational approaches are brief treatment approaches that are designed to produce rapid, internally motivated change in substance use and other problem behaviors. Motivational interviewing (MI), developed by Miller (2000) and Miller and Rollnick (1991, 2002), best represents these types of treatment approaches. Grounded in principles of motivational psychology and client-centered counseling, MI is closely related to the transtheoretical model (stages of change) (Prochaska et al 1992), in which individuals who are attempting to change problem behaviors are seen as moving through a reliable sequence of stages from

precontemplation (associated with individuals who are not considering changing their behavior), to contemplation (recognition of the need to change and consideration of the costs and feasibility of behavior change), to determination (making the decision to take action and change), and then to action and maintenance of change. Motivation is seen as a critical variable for understanding how people move from one stage to another (DiClemente et al 1999).

As a treatment, MI is typically implemented as a brief approach, occurring over the course of one to four sessions, with early work focusing on building the patient's motivation for change and subsequent work strengthening the patient's commitment to change. However, the empathic, nonjudgmental interviewing style associated with MI can be used throughout treatment and even incorporated into other therapeutic approaches (Carroll et al 2004a). Key MI techniques associated with this style are summarized by the acronym OARS (Open questions, Affirming, Reflecting, and Summarizing) (Miller and Rollnick 2002).

The current level of empirical support for MI as an intervention across a wide range of substance use disorders and related behavioral domains is both extensive and strong (Bien et al 1993; Burke et al 2003; Dunn et al 2001; McCambridge and Strang 2004; Miller et al 1993; Miller and Wilbourne 2002; Wilk et al 1997). In recent years, several investigators have highlighted the potential applicability of the stages of change model (Carey et al 2002b; McHugo et al 1995) and MI to a range of dual diagnosis populations to address the critical issues of engagement and motivation (Barrowclough et al 2001; Carey 1996; Ziedonis and Trudeau 1997). For example, Mueser et al (2003) have adapted MI for use with patients with co-occurring substance use disorders and conceptualize MI as an important component of the engagement and persuasion stages of the integrated treatment model (Mueser 2004).

While well-controlled evaluations of MI adapted for populations with co-occurring disorders remain rare, the studies that have been completed to date suggest the promise of MI in enhancing treatment engagement as well as fostering greater awareness of the negative consequences of substance use. For example, Daley et al (1998) assigned 23 patients meeting criteria for cocaine dependence and major depression to either motivational therapy or treatment as usual upon discharge from an inpatient treatment unit. They reported that participants assigned to the motivational condition completed significantly more aftercare sessions (7 vs. 2) and were significantly less likely to be hospitalized in the year following discharge than those assigned to treatment as usual. Swanson et al (1999) randomized 121 psychiatric inpatients, most of whom had co-occurring substance use disorders, to either standard inpatient treatment or the same program with the addition of one 15-minute MI session early during hospitalization followed by one 1-hour MI session near discharge. Rates of patients who attended at least one subsequent aftercare appointment were significantly higher in the group assigned to MI (47% vs. 21%). Martino et al (2002) developed a manualized version of MI for use with patients with substance dependence and severe mental illness (either affective or schizophrenic disorders), which retained key MI skills and interventions but adapted them, first, to accommodate an integrated dual diagnosis approach and, second, to accommodate cognitive impairments and disordered thinking that often occurs in this population. Three key goals—abstinence from alcohol and psychoactive drugs, medication adherence, and program participation—are emphasized. In a pilot trial of this approach, 23 individuals with substance abuse/dependence and either affective or schizophrenic disorders who were entering a dual diagnosis partial hospitalization program were randomized to either a standard preadmission interview or a dual diagnosis MI (DDMI) interview of the same length (Martino et al 2000). Compared with participants who received the standard interview, those assigned to DDMI had improved program attendance patterns and lower substance abuse scores on several, but not all, outcome measures. Carey

et al (2001, 2002a) evaluated the feasibility of addressing motivation among 30 outpatients with both substance dependence and either bipolar or schizophrenia via a four-session, individual, manual-guided MI approach adapted for this population. Although there was no comparison group with which to compare outcomes for MI in this pilot therapy development study (Rounsaville et al 2001), the majority of participants completed the intervention and reported feeling very satisfied with it. Moreover, participants reported significant increases in their readiness to change substance use as well as their perceptions of the negative consequences of substance use. Again, while most of these studies were small pilot investigations, taken together they suggest that MI adapted for individuals with co-occurring mood and substance use disorders can improve treatment engagement and, hence, is likely to also have a beneficial effect on outcome, in that retention in treatment is strongly associated with better outcome. Findings regarding the effectiveness of these approaches in reducing substance use and psychiatric problems are more equivocal, however.

Cognitive-Behavioral Approaches

Cognitive-behavioral approaches focus on teaching new strategies and skills for dealing with and reducing problem behaviors and cognitions through modeling, behavioral practice, and extra-session homework assignments. When applied to substance use, cognitive-behavioral therapy helps patients identify the patterns associated with the perpetuation of substance use (i.e., functional analysis) and implement new strategies for avoiding or more effectively coping with antecedents of substance use (i.e., relapse prevention skills training). Cognitive-behavioral therapy has been shown to be effective across a wide range of substance use disorders (Carroll 1996; Irvin et al 1999), including alcohol dependence (Miller and Wilbourne 2002; Morgenstern and Long-abaugh 2000), marijuana dependence (Marihuana Treatment Project Research Group 2004; Stephens et al 2000), and cocaine dependence (Carroll et al 1994, 1998, 2004b; McKay et al 1997; Rohsenow et al 2000). When applied to mood disorders, most frequently depression, CBT focuses on maladaptive cognitions and enhancing behavioral activation (Jacobson et al 1996). Cognitive-behavioral therapy also has strong empirical support for its efficacy in treating a range of affective disorders (DeRubeis and Crits-Christoph 1998; DeRubeis et al 1999; Dobson 1989; Fava et al 1998; Gonzalez-Pinto et al 2004; Hollon 2003; Paykel et al 1999; Sajatovic et al 2004). Given the strong level of empirical support for the efficacy of CBT when applied to either substance-dependent or mood-disordered patients, investigators have recently moved toward evaluating integrated CBT approaches for populations in which these disorders co-occur. These integrated CBT approaches emphasize recognition of the associations between substance use and recurrence or worsening of affective symptoms, relapse, or noncompliance (Jerrell and Ridgely 1995; Mueser 2004; Weiss et al 1999).

Again, because integrated CBT approaches targeting co-occurring disorders are a relatively new development, very few controlled trials of these approaches have been done. Weiss et al (1999) developed integrated group therapy (IGT), a 20-session, manualized group relapse prevention approach for individuals with bipolar disorder and substance dependence. The goals of the group include education regarding the relationship between the substance use and bipolar disorder, provision of mutual support through group interactions, abstinence from substance use, and adherence to prescribed medication regimens. Topics for each group are described in detail in the manual and include, for example, a session promoting greater awareness in patients that substance use can trigger affective symptoms and reduce medication adherence, a session exploring the effect of manic and depressive thinking on judgment, a session on skills training for recognizing and avoiding high-risk situations for substance use and relapse, and sessions emphasizing the use of self-help groups as an important support network. In a randomized comparison of IGT with an assessment-only condition for 45 individuals with both bipolar disorder and substance dependence, Weiss et

al (2000) reported significantly improved substance abuse outcomes among those assigned to IGT, including percentage of months abstinent.

Several studies have evaluated cognitive-behavioral approaches for individuals with substance use and depressive disorders. Brown et al (1997) evaluated the effectiveness of adding an eight-session cognitive-behavioral component focusing on coping with depression (Brown and Lewinsohn 1984) versus relaxation training to a partial-day hospitalization program for 35 alcohol-dependent patients with elevated depressive symptoms. Results suggested significant and sustained reductions in depressive symptoms, as well as reductions in drinking quantity and frequency, among those assigned to cognitive-behavioral therapy for depression (CBT-D) compared with the control condition. Using data from a controlled trial of CBT and desipramine for 121 cocaine-dependent individuals, Carroll et al (1995) evaluated the subgroup of participants who also had significantly elevated levels of depression. Compared with supportive clinical management, CBT was associated with longer periods of abstinence and improved retention among this subgroup. Similar results were reported by Maude-Griffin et al (1998) based on data from a randomized clinical trial involving 128 cocaine-dependent individuals, where a CBT approach that incorporated mood control strategies was significantly more effective than 12-step oriented counseling among the subgroup of participants who also had a history of major depression.

Similar findings have emerged from studies evaluating CBT strategies to enhance rates of abstinence and successful quitting among depressed smokers. Hall et al (1994) compared the addition of a cognitive-behavioral intervention that emphasized strategies for mood management to reduce dysphoria-related smoking with standard treatment for 149 smokers. There were no main effects of treatment type for the full sample or for patients without a history of depressive illness; however, patients with a history of major depressive disorder had significantly higher abstinence rates when assigned to the cognitive-behavioral condition compared with standard treatment both at posttreatment (72% vs. 47%) and 1-year follow-up (34% vs. 18%). A more recent study did not replicate this effect, however (Hall et al 1996). Patten et al (1998) evaluated behavioral counseling with and without cognitive-behavioral mood management among 29 heavy smokers with histories of alcohol dependence and major depression and reported sustained, significant improvements in abstinence rates at posttreatment and 1-year follow-up (46% vs. 12%) for those assigned to CBT.

Thus, while there are still relatively few well-controlled clinical trials evaluating CBT approaches for individuals with mood and substance use disorders, those which have been done suggest that CBT is associated with a moderate, but durable, effect on substance use and/or depressive symptoms.

Contingency Management Approaches

Arguably, the most innovative and revolutionary development in the area of behavioral treatments for substance use disorders has been the findings regarding the robust efficacy of contingency management procedures in reducing substance use. These approaches, which are based on principles of behavioral pharmacology and operant conditioning, typically provide incentives or rewards to patients for demonstrating observable target behaviors, such as abstinence verified by drug-free urine specimens or other treatment goals. The landmark studies in this area were done by Budney and Higgins (1998), Higgins et al (1991), and Higgins and Silverman (1999), who developed a highly flexible contingency management procedure for cocaine-dependent individuals, where patients receive vouchers redeemable for goods and services contingent on cocaine-free urine specimens and where the value of the vouchers escalates with each successive drug-free specimen. In a series of

well-controlled clinical trials, they demonstrated 1) high rates of acceptance, retention, and abstinence for patients assigned to this approach (e.g., 85% completing a 12-week course of treatment; 65% achieving 6 or more weeks of abstinence) relative to standard counseling approaches (Higgins et al 1991, 1993); 2) that rates of abstinence do not decline when less valuable incentives, such as lottery tickets, are substituted for the voucher system later in treatment (Higgins et al 1993); 3) that the value of the voucher system itself (as opposed to other program elements) produces good outcomes in comparisons of the behavioral system with and without the vouchers (Higgins et al 1994); and 4) some durability of treatment effects after cessation of the contingencies (Higgins et al 2000). Contingency management approaches have since been demonstrated to be effective in a wide range of substance-using populations (Griffith et al 2000; Higgins and Silverman 1999; Iguchi et al 1996; Jones et al 2001; Kirby et al 1998; Silverman et al 1998,2002). While these approaches have been criticized for having low generalizability to clinical settings due to the high cost of the vouchers (as much as \$1200), in recent years highly effective and lower cost contingency management procedures have also been developed (Petry and Martin 2002; Petry et al 2000).

Because of the wide range of behaviors that respond to contingency management interventions, these approaches have also been adapted for populations with co-occurring substance use and mood disorders. For example, Milby et al (1996, 2000, 2003) have conducted two large clinical trials in which a program offering work therapy and housing, contingent on demonstrated abstinence from cocaine via submission of drug-free urine specimens, was significantly more effective than standard care in populations of homeless individuals with both cocaine dependence and nonpsychotic mental disorders. Similarly, Tracy et al (unpublished data) found that the provision of low cost prizes, contingent on verified abstinence from cocaine and alcohol, was associated with significant reductions in cocaine and alcohol use among 30 homeless individuals with co-occurring substance use and psychiatric disorders, compared with an assessment only condition. Shaner et al (1997) reported data from a trial showing that monetary reinforcement of abstinence could be used to reduce cocaine use among homeless, treatment resistant, cocaine-dependent patients with schizophrenia. Roll et al (1998, 2004) recently demonstrated the feasibility of voucher-based contingent reinforcements in reducing cocaine abuse or cigarette smoking among individuals with schizophrenia. It is also noteworthy that a number of studies evaluating contingency management procedures in general populations of substance users have reported that subgroups of those with mood disorders respond as well as or better to contingency management procedures compared with those without comorbid mood disorders (Gonzalez et al 2003; McNamara et al 2001; Tidey et al 1998). This may be consistent with similar reports that dual-diagnosis patients do not invariably have poorer outcome than individuals with substance use disorders only in response to well-defined treatments (Charney et al 2001; Galanter et al 1996; Woody et al 1983).

Another potentially important but heretofore unexplored role for contingency management interventions among individuals with co-occurring disorders may be in facilitating treatment adherence, for example, via providing incentives for medication compliance. For example, voucher-based contingent reinforcement of medication compliance has been found to significantly enhance naltrexone compliance and outcome among naltrexone-maintained opioid addicts (Carroll et al 2001, 2002; Preston et al 1999). Rigsby et al (2000) have demonstrated that contingent reinforcement of adherence to complex antiretroviral therapy regimens can substantially enhance medication compliance among human immunodeficiency virus (HIV)-positive substance users. Thus, contingent reinforcement of compliance may be useful among individuals with co-occurring disorders who have difficulty adhering to their medication regimens, although to our knowledge, this application of contingency management has not yet been evaluated in clinical trials. Contingency

management may also have utility in promoting program attendance, as suggested in an uncontrolled study by Helmus et al (2003) which evaluated the feasibility of contingent reinforcement of group attendance among 20 individuals enrolled in a community-based dual-diagnosis treatment program. A similar approach is reflected in programs that link abstinence and/or compliance with program recommendations to disbursement of entitlements (Ries and Dyck 1997; Rosen et al 2003). Taken together, these findings suggest greater empirical evaluation of contingency management approaches in co-occurring populations is warranted.

Conclusions and Challenges

While there are still comparatively few large-scale, randomized controlled trials of behavioral approaches developed for use with individuals with co-occurring mood and substance use disorders, the preliminary evidence suggests that several well-defined approaches which have been demonstrated to be effective in the treatment of substance use disorders uncomplicated by mood disorders have generally shown feasibility and efficacy when adapted and applied to individuals with co-occurring mood disorders. Moreover, these data suggest that several of these approaches appear to be well suited for different roles and stages of treatment. For example, the available data suggest that motivational interviewing appears particularly useful in facilitating initial engagement and retention in these populations, as well as in facilitating attendance at aftercare programs. Cognitive-behavioral approaches appear to be moderately effective and durable in reducing substance use and, to some extent, depressive symptoms. Their efficacy in preventing relapse in this population has not yet been established. Contingency management approaches have robust effects in reducing substance use in both general populations and those with co-occurring disorders. It is not yet known whether they are effective in changing other target behaviors, although further investigations are warranted.

Several challenges, however, remain in this area. First, while the studies cited above are promising, large well-controlled trials of these approaches remain rare, and the field is in a very early stage of development. None of the studies cited above have been replicated in effectiveness studies in community-based settings for individuals with co-occurring disorders. Moreover, no studies have explored the extent to which active elements from this approach might be combined to enhance their effectiveness with this population, although this approach has shown promise in some drug-using populations, for example, via combining cognitive-behavioral and motivational interviewing approaches with marijuana users (Marijuana Treatment Project Research Group 2004) or combining contingency management for cocaine-dependent methadone maintained individuals (Rawson et al 2002). Second, because these approaches represent enhancements or additions to current practice, their higher cost may be a barrier to their implementation in clinical practice. Since few of these studies have evaluated the cost-effectiveness of these enhancements (e.g., Schumacher et al 2002), policymakers and program directors may be unwilling to implement them in clinical practice unless their cost-effectiveness is demonstrated as well.

Furthermore, as highlighted in the article by McLellan and Meyers (2004), another crucial challenge facing the field is the effective service delivery system into which these behavioral approaches might be integrated. The substance abuse treatment and mental health treatment systems remain nonintegrated in many areas of the United States (Drake et al 2001, 2004; Institute of Medicine 1998), and competent staff trained to provide these interventions are comparatively rare (McLellan et al 2003). Intensive training is likely to be necessary to train the current workforce to effectively implement empirically supportive therapies for those with co-occurring disorders approaches (Miller and Mount 2001; Sholomskas et al, in press). Effective training programs which include certification and supervision may be

crucial, given recent evidence of strong relationships between levels of fidelity to empirically supported approaches and outcomes in clinical practice (Henggeler et al 1997; McHugo et al 1999). Moreover, workforce turnover is high, particularly in substance abuse treatment settings, and is likely to represent a significant challenge in moving these approaches into the community (Horgan and Levine 1999). Thus, while the sharp recent increase in the development and identification of effective behavioral therapies for individuals with co-occurring disorders is promising and suggests a situation in which we might consider the glass half full, whether the glass itself will remain viable is an important question.

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Table 1

Potential Roles of Behavioral Therapies and Commonly Evaluated Approaches

	Reduce Substance Use	Target Mood Disorder, Symptoms	Enhance Treatment Engagement, Retention	Improve Compliance with Pharmacotherapy	Address Comorbid Problems	Prevent Relapse, Maintain Engagement
Motivational Interviewing			x			
Cognitive-Behavioral Therapy	x	x			x	
Contingency Management	x		x	x		