



The impact of disruptive behavior disorder on substance use treatment outcome in adolescents[☆]

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ABSTRACT

The current study examined the impact of disruptive behavior disorder (DBD) on substance use outcomes in an adolescent sample. Sixty-eight adolescents and their caregivers were randomized to one of two fourteen-week, outpatient treatments: Motivational Enhancement Therapy/Cognitive Behavior Therapy (MET/CBT) + Parent Management Training + Contingency Management (CM; experimental) and MET/CBT + Parent Drug Education (attention control). This study assessed abstinence, substance use, externalizing behavior, and parenting outcomes over five assessment periods for youth with DBD (DBD⁺) and without DBD (DBD⁻). Results showed DBD⁺/experimental adolescents reported fewer days of marijuana use than DBD⁺/control adolescents. Results also showed that parents of DBD⁻ adolescents in the experimental condition reported significantly better parenting outcomes compared to DBD⁻/control. Substance abuse treatment for adolescents with DBD which includes a component such as contingency management and parent training has the potential to contribute to substance use outcomes. Such treatment strategies, however, should include additional support for parents.

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1. Introduction

When compared to youth without substance use problems, youth with substance use disorders (SUDs) are approximately four times more likely to have a disruptive behavior disorder (DBD) (Armstrong & Costello, 2002). Similar to this increased risk for DBD among adolescents with SUDs, there is an increased risk for substance use among youth with DBD. These youth are 5.9 times more likely to have SUDs than youth without a DBD (Nock, Kazdin, Hiripi, & Kessler, 2006).

Results of longitudinal studies of treated adolescents have shown that those with SUD and psychiatric co-morbidity (primarily DBD) evidence higher rates of substance use 12 months after treatment when compared to adolescents without a co-morbid diagnosis (Grella, Hser, Joshi, & Rounds-Bryant, 2001). In addition, research has shown that following treatment, adolescents with SUD and

externalizing behaviors relapse sooner (Tomlinson, Brown, & Abrantes, 2004) and at higher rates (Winters, Stinchfield, Latimer, & Stone, 2008) than those with SUD and other psychiatric co-morbidity and those with SUD only. These results, however, are not unequivocal. For example, among adolescents who participated in the Cannabis Youth Treatment (CYT) project, Webb, Burleson, and Ungemack (2002) found that reductions in substance use frequency and substance use problems were similar among adolescents involved and not involved in the juvenile justice system. In addition, reductions in substance use frequency and substance use problems were significantly greater among adolescents reporting recent criminal behavior.

Research has also sought to identify risk factors that are common to SUDs and DBDs (Krueger et al., 2002). Of particular interest is parenting as a contextual variable. Parenting practices that are common in families of adolescents who use drugs include unclear expectations for behavior, poor monitoring of behavior, few and inconsistent rewards for positive behavior, and excessively severe and inconsistent punishment for unwanted behavior (Hawkins, Catalano, & Miller, 1992). Similarly, low parental involvement, poor monitoring, and harsh and inconsistent discipline are parenting factors that are associated with DBD in adolescents (Burke, Loeber, & Birmaher, 2002). As such, evidence-based treatments for both types of problems typically include treatments that integrate parenting interventions (Burke et al., 2002; Dennis et al., 2004; Stanger,

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Budney, Kamon, & Thostensen, 2009; Waldron & Kaminer, 2004; Waldron & Turner, 2008).

Randomized trials of integrated treatments for SUD and DBD show that while treatment effects are consistently related to greater reductions in substance use (e.g., Henggeler et al., 2006; Santisteban et al., 2003; Stanger et al., 2009), treatment effects on externalizing behaviors are mixed. Notably, for many of the studies that show significant treatment effects on externalizing behaviors, adolescent inclusion criteria included externalizing behavior problems, but did not require substance use (Rowland et al., 2005; Santisteban et al., 2003; Schaeffer & Borduin, 2005; Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006). On the other hand, for many of the studies that show no significant treatment effects on externalizing problems, adolescent inclusion criteria included those seeking treatment for substance abuse, but did not require other conduct problems or externalizing behaviors (Henggeler et al., 2006; Liddle et al., 2001; Waldron, Slesnick, Brody, Turner, & Peterson, 2001).

Taken together, this research suggests that while many integrated treatments aim to target both SUD and symptoms of DBD, treatments may be less effective at reducing externalizing (an indicator of DBD severity) problems when the primary presenting problem is substance abuse. As such, studies that directly compare treatment outcome for adolescents with and without DBD who are receiving treatment for substance abuse are needed. At the time of this review, we found only one study that examined the impact of DBD on substance use outcomes within the context of an integrated treatment program. Specifically, in a comparison study of Multi-dimensional Family Therapy and CBT, Hendriks, van der Schee, and Blanken (2011) found that when adolescents with conduct problems were compared to adolescents without conduct problems, those with conduct problems showed greater reductions in marijuana use from intake to 12-month follow-up when treated with Multi-dimensional Family Therapy (MDFT). This study, however, did not examine externalizing behavior or parenting outcomes (additional treatment targets of integrated programs). Two randomized trials have examined the interaction between behavior problems and treatment condition as a predictor of substance use and externalizing outcomes. In both studies, results were not significant for the interaction between externalizing problems and treatment condition (Henggeler, Clingempeel, Brondino, & Pickrel, 2002; Henggeler, Melton, & Smith, 1992). It is possible; however, that the externalizing measures in these studies were limited by a restriction of range (at the upper end), as both samples included adolescent juvenile offenders.

Given the importance of parenting as a contextual factor for SUD and DBD and given the variability in treatment effects on substance use vs. externalizing behavior, understanding the role of DBD in the effect of treatment on parenting within the context of substance abuse is needed. Findings of treatment effects on parenting outcomes are mixed. Some studies report significant treatment effects (Henggeler et al., 1992; Liddle, Rowe, Dakof, Henderson, & Greenbaum, 2009; Liddle et al., 2001; Santisteban et al., 2003), while others report no treatment effects (Rowland et al., 2005; Stanger et al., 2009; Sundell et al., 2008; Waldron et al., 2001). These studies were fairly consistent in their definition and assessment of parenting, and in their inclusion/exclusion criteria, so results may indicate true differential impact on parenting across these interventions. However, the extent to which the presence of DBD impacts treatment outcomes across substance use, externalizing, and parenting skills remains unclear.

We previously reported on an adolescent substance abuse intervention that integrates a parent management training program and individual cognitive-behavior therapy, enhanced with contingency management (CM; an abstinence-based reinforcement intervention that follows operant principles to enhance motivation to engage in treatment and engender abstinence) (Kamon, Budney, &

Stanger, 2005; Stanger et al., 2009). Within the context of a randomized clinical trial, we compared this experimental condition to a control condition that included MET/CBT, a parent psychoeducation program, and CM for attendance only. Adolescents treated in the experimental condition showed longer periods of abstinence during treatment; however, group differences were not significant during the 9-month follow-up period. In addition, there were no significant treatment effects on adolescent externalizing behavior problems or parenting skills; that is, adolescents and parents in both conditions showed the same pattern of improvements for both treatment conditions.

To explore how the presence of DBD affects treatment outcome for substance use, externalizing behavior, and parenting skills, secondary data analyses of the aforementioned randomized clinical trial (Stanger et al., 2009) were conducted. We hypothesized that youth with a DBD diagnosis would have higher rates of substance use across treatment conditions compared to youth without a DBD diagnosis. It was also predicted that DBD diagnosis would interact with treatment condition, such that there would be a greater effect of the experimental intervention, among adolescents with DBD, on youth substance use, externalizing behavior, and parenting (i.e., positive involvement, poor monitoring, ineffective discipline). We specifically hypothesized that adolescents with DBD who are treated in the experimental condition would show less substance use, more abstinence, decreased externalizing behavior, and improved parenting (i.e., more positive involvement, better monitoring, and more effective discipline strategies) over the course of the study (intake to 9-month follow-up) when compared to adolescents with DBD in the control condition.

2. Materials and methods

2.1. Participants and sample selection

Participants for this treatment study included 69 adolescents (57 boys, 12 girls), ages 14–18 ($M = 16$; $SD = 1.05$) who were seeking treatment for marijuana use. Families were referred for substance abuse treatment by school administrators, the juvenile justice system, community therapists, physicians, or were self-referred. Inclusion criteria included a family with a son or daughter between the ages of 12 and 18 who reported use of marijuana during the prior 30 days or had a marijuana-positive urine drug test at the intake appointment. Adolescents were excluded from the study if they (1) displayed active psychosis or current suicidal behavior or had a severe medical illness limiting their participation, or (2) had alcohol or other drug dependence requiring an alternative or more intensive treatment.

2.2. Procedures

Eligible families were assigned to one of two treatment conditions using minimum likelihood allocation (MLA) (Aickin, 1982), balancing across conditions on therapist and baseline characteristics that may influence outcome: abstinence prior to treatment (0 vs. ≥ 1 day), gender, legal status, age (≥ 17 vs. <17), tobacco smoker, prior participation in brief treatment in our clinic. The MLA procedure was successful. Treatment comparisons showed no significant differences on these variables (Stanger et al., 2009). Follow-up assessments were conducted at the end-of-treatment, 3 months, 6 months, and 9 months.

2.2.1. Treatment conditions

Both treatment conditions involved 90-min, weekly individual therapy sessions for 14 consecutive weeks and twice-weekly drug testing. All parents were informed of drug toxicology results. All adolescents received the MET/CBT12 curriculum modified for individual therapy (Sampl & Kadden, 2001; Webb, Scudder, Kaminer, &

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