



Motivational Interviewing to Reduce Substance Use in Adolescents with Psychiatric Comorbidity



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ABSTRACT

Substance use among adolescents with one or more psychiatric disorders is a significant public health concern. In this study, 151 psychiatrically hospitalized adolescents, ages 13–17 with comorbid psychiatric and substance use disorders, were randomized to a two-session Motivational Interviewing intervention to reduce substance use plus treatment as usual (MI) vs. treatment as usual only (TAU). Results indicated that the MI group had a longer latency to first use of any substance following hospital discharge relative to TAU (36 days versus 11 days). Adolescents who received MI also reported less total use of substances and less use of marijuana during the first 6 months post-discharge, although this effect was not significant across 12 months. Finally, MI was associated with a significant reduction in rule-breaking behaviors at 6-month follow-up. Future directions are discussed, including means of extending effects beyond 6 months and dissemination of the intervention to community-based settings.

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1. Introduction

Substance use and misuse among adolescents are significant public health concerns in light of their high prevalence (Johnston, O'Malley, Bachman, & Schulenberg, 2012; Roberts, Roberts, & Xing, 2007; SAMHSA, 2012) and associated negative consequences including traffic deaths (Kokotailo, 1995; Shope, Waller, Raghunathan, & Patil, 2001), delinquent behavior (D'Amico, Edelen, Miles, & Morral, 2008; Jessor, 1987; Myers, Stewart, & Brown, 1998), risky sexual behavior (Chan, Passetti, Garner, Lloyd, & Dennis, 2011; MacKenzie, 1993), and elevated health care costs (Drug Abuse Warning Network, 1996; Parthasarathy & Weisner, 2006). Substance use disorders (SUDs) in adolescents are associated with high rates of psychiatric comorbidity (Kandel et al., 1997, 1999; Lewinsohn, Rohde, & Seeley, 1995; Roberts et al., 2007) and suicidality (D'Eramo, Prinstein, Freeman, Grapentine, & Spirito, 2004; Fowler, Rich, & Young, 1986; Nock et al., 2013; Ramchand, Griffin, Harris, McCaffrey, & Morral, 2008). The most common comorbid disorders in adolescents with SUDs are externalizing disorders

such as attention deficit hyperactivity disorder (ADHD), conduct disorder (CD), and oppositional defiant disorder (ODD), but rates of internalizing disorders including depression and anxiety are also elevated (Armstrong & Costello, 2002; Chan, Dennis, & Funk, 2008).

Psychiatric disorders among substance-abusing adolescents complicate the clinical presentation of these youth and contribute to poor treatment outcomes (Boon & de Boer, 2007; Chi, Sterling, Campbell, & Weisner, 2013; Grella, Hser, Joshi, & Rounds-Bryant, 2001; King, Gaines, Lambert, Summerfelt, & Bickman, 2000; Rowe, Liddle, Greenbaum, & Henderson, 2004; Subramaniam, Stitzer, Clemmey, Kolodner, & Fishman, 2007; Tomlinson, Brown, & Abrantes, 2004; Vourakis, 2005). There appears to be some evidence that treating one disorder may have a beneficial impact on the other comorbid disorder (e.g., Kaminer, Burleson, Blitz, Sussman, & Rounsaville, 1998). Therefore, an intervention that results in decreases in substance involvement or related problems could also be expected to have a secondary benefit on psychiatric symptoms.

Unfortunately, many adolescents with comorbid disorders do not receive any treatment due to stigma or other barriers. Furthermore, the treatment they do receive often does not adequately address their needs because traditionally the treatment for mental health and substance use disorders has occurred in separate settings that differ in provider training and beliefs, which hinder communication and

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coordination of care (Hawkins, 2009). Mirroring the separation of psychiatric and substance use treatment services in the community, only a few treatment studies have included samples of adolescents with comorbid psychiatric and substance disorders (e.g., Cornelius et al., 2009, 2010; Deas, Randall, Roberts, & Anton, 2000; Thurstone, Riggs, Salomonsen-Sautel, & Mikulich-Gilbertson, 2010). In these studies, fluoxetine, sertraline, and atomoxetine hydrochloride, respectively, were compared to placebo in adolescents with major depressive disorder or ADHD and a substance use disorder. All participants also received behavioral treatment; results indicated that none of the medications was more efficacious than placebo in reducing psychiatric symptoms or substance use.

When adolescents with SUDs present for treatment, especially those with comorbid psychiatric disorders, they typically present in mental health rather than in substance abuse settings (Merikangas et al., 2011; SAMHSA, 2012). Among adolescents hospitalized for a primary psychiatric problem, 17% to 50% also meet criteria for one or more SUDs (Deas-Nesmith, Campbell, & Brady, 1998; Grilo et al., 1995; McDonnell, Hsiao, Russo, Pasic, & Ries, 2011; Weaver et al., 2007). In our previous study involving psychiatrically hospitalized adolescent smokers, 71.2% also met criteria for a (non-nicotine) SUD (Brown et al., 2003).

Motivational Interviewing (MI) (Miller & Rollnick, 1991, 2002) is a client-centered counseling style that has recently been described (Miller & Rollnick, 2013) as “a collaborative conversation style for strengthening a person’s own motivation and commitment to change” (p. 12). MI has been demonstrated to increase motivation to change substance use behavior among adults (Hettema, Steele, & Miller, 2005; Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010). Less research has focused on adolescents; a meta-analysis of 21 studies indicated that to date, MI interventions for adolescents have produced significant but small effects on substance use behavior (Jensen et al., 2011). As explicated by Baer and Peterson (2002) and Naar-King (2011), MI seems particularly well-suited for use with teens because adolescence is a developmental period characterized by the need to develop autonomy and individuation, as well as the tendency to question and resist authority figures. Adolescents are likely to respond well to the spirit of the MI style, which respects their autonomy, provides choices and not only acknowledges ambivalence, but capitalizes upon it and “empathizes” with it (Naar-King, 2011, p. 653) to decrease resistance and develop motivation for change. MI also supports personal goal choice, which should logically promote greater follow-through and maintenance, since the goals are self-chosen (see also Tevyaw & Monti, 2004).

We are unaware of any MI interventions targeting adolescent substance use implemented in inpatient psychiatric settings with the exception of our previous study that targeted cigarette smoking in this population (Brown et al., 2003), nor are we aware of any existing MI interventions for adolescents with co-occurring psychiatric and substance use disorders with a focus on the effects of substance use on psychiatric symptoms. While the intervention in our previous study yielded no lasting effects on tobacco use (Brown et al., 2003), a treatment by time interaction emerged such that substance use significantly increased in the control (brief advice) condition 6 months following hospitalization, but did not increase significantly in the MI condition (Brown et al., 2009). This finding, while somewhat unanticipated, provided evidence that a motivational intervention with adolescent psychiatric inpatients could result in significant and lasting changes in substance use behaviors and led to the development of the intervention evaluated in the current study.

In the current study, we report the results of a randomized clinical trial that compared the effect of a motivational interviewing intervention to change substance use behavior plus treatment as usual (MI) vs. treatment as usual alone (TAU) on substance use and psychiatric symptom outcomes among psychiatrically hospitalized adolescents who had both an SUD and another Axis I psychiatric disorder. We hypothesized that adolescents who received MI in the current study would have a

longer latency to first substance use after hospital discharge, a lower number of days per month on which substances were used, and fewer substance-related consequences, during the 12 months after hospital discharge compared to those who received only TAU. MI was also hypothesized to reduce psychiatric symptoms (i.e., externalizing and internalizing symptoms) compared to TAU alone.

2. Materials and methods

2.1. Overview of study design

Adolescents with comorbid psychiatric and substance use disorders (SUDs) were recruited during inpatient psychiatric hospitalization and randomly assigned to a motivational interviewing intervention to reduce substance use plus treatment as usual (MI) vs. treatment as usual only (TAU). All adolescents (MI and TAU) completed assessments at baseline (i.e., during their hospital stay), end of hospital stay (i.e., at time of discharge), and at 1-, 6-, and 12-months after discharge. If coming to the hospital to complete the post-discharge assessments was not possible, the assessments were completed by phone. All participants were also interviewed briefly via telephone at 3- and 9-months post-discharge. Patients received \$50, \$25, \$35, \$50, and \$50 in the form of gift certificates to a local mall for completion of baseline, end of hospital, and 1-month, 6-month, and 12-month follow-up assessments respectively.

2.2. Participants

2.2.1. Inclusion and exclusion criteria

Participants were recruited from the adolescent inpatient units at Butler Hospital, a private psychiatric hospital in Providence, RI, and Bradley Hospital, a private psychiatric hospital for children and adolescents in East Providence, RI. Eligible patients were 13 to 17 years of age, met DSM-IV criteria for a non-nicotine substance use disorder (SUD) during the past 12 months and one or more additional current Axis I psychiatric disorders (other than an SUD), and had access to a telephone. Patients were excluded if they had a current DSM-IV diagnosis of a psychotic disorder, mental retardation, or pervasive developmental disorder.

2.2.2. Screening and recruitment

This study was approved by the Institutional Review Boards of Butler Hospital and Lifespan, the parent corporation of Bradley Hospital. Per the policies of both hospitals and made known in writing to all adolescents and parents during the admission process, medical records were subject to screening by research staff for possible research study recruitment. In this case, study staff pre-screened the medical records of admitted patients for evidence of substance use and consulted with unit staff to learn about patients who might be eligible. The parents of eligible patients were contacted to obtain their written informed consent and permission to approach their child about participating. Patients were then given a detailed explanation of study procedures and provided written assent.

2.3. Baseline assessment and randomization

After completing the baseline assessment, eligible patients were assigned to either MI or TAU. To avoid potential intervention contamination during hospitalization, group assignment was done in cohorts determined randomly before initiation of the study, with a washout period between cohorts. Initially, 161 adolescent patients provided assent for this study. Ten adolescents subsequently withdrew their assent to participate. The remaining 151 adolescents comprise the final sample for the current analyses (see Fig. 1).

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