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Peer Network Counseling with Urban Adolescents: A Randomized Controlled Trial with Moderate Substance Users

Michael Mason, Ph.D. [a,*], John Light, Ph.D. [b], Leah Campbell, Ph.D. [a], Lori Keyser-Marcus, Ph.D. [a], Stephanie Crewe, M.D. [a], Thomas Way, Ph.D. [c], Heather Saunders, M.S.W. [a], Laura King, M.P.H. [a], Nikola M. Zaharakis, M.S. [a], Chantal McHenry, B.A. [a]

[a] Virginia Commonwealth University, Richmond, VA, USA
[b] Oregon Research Institute, Eugene, OR, USA
[c] Villanova University, Villanova, PA, USA

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ABSTRACT

Close peer networks can affect adolescents' health behaviors by altering their social environments, and thus their risk for and protection against substance use involvement. We tested a 20 minute intervention named Peer Network Counseling that integrates motivational interviewing and peer network strategies with 119 urban adolescents who reported occasional or problem substance use. Adolescents presenting at primary care clinic were randomized to intervention or control conditions and followed for 6 months. Mixed-effect latent growth models were used to evaluate intervention effects on trajectories of alcohol and marijuana use, offers to use substances, and moderation models to test for interactions between intervention condition and peer network characteristics. A significant intervention effect was found for boys for offers to use alcohol from friends ($p < .05$), along with a trend significant effect for alcohol use ($p < .08$). Intervention was more effective in reducing marijuana use, vs. control, for participants with more peer social support ($p < .001$) and with more peer encouragement for prosocial behavior (school, clubs, sports, religious activities); however, intervention did not affect these network characteristics. Results provide support to continue this line of research to test brief interventions that activate protective peer network characteristics among at-risk adolescents, while also raising some interesting gender-based intervention questions for future research.

1. Introduction

Adolescent substance use persists as a health issue of national concern, with illicit drug use steadily increasing over the last 2 years in a national sample of high school students (Johnston, O'Malley, Bachman, & Schulenberg, 2013a). While most adolescents' substance use does not worsen into a disorder, approximately 11% of US adolescents meet the criteria for a substance use disorder (Winters, Leittne, Wagner, O'Leary, & Tevyaw, 2007). Urban youth are particularly vulnerable to early use and future problematic use of alcohol and illicit drugs (Martino, Ellickson, & McCaffrey, 2008; Wright, 2004). For instance, they are disproportionately exposed to trauma (e.g., violence, crime) which increases vulnerability to substance use (e.g., Lee, 2012; Zinzow et al., 2009). Moreover, alcohol and illicit drug use are positively correlated with population density such that adolescents residing in more densely populated areas use substances with greater frequency than their counterparts in less populated areas (Johnston, O'Malley, Bachman, & Schulenberg, 2013b). This disparity is particularly acute for African American youth, who are often overrepresented in such samples (Martino et al., 2008).

1.1. Brief interventions in primary care

Due to the typically non-threatening nature of primary care settings, health care providers have unique access to patients with substance abuse problems. Providing adolescents with brief counseling in primary care settings has been shown to (a) reduce the stigma of seeing a substance abuse specialist for teens and their families, (b) normalize the process of seeking help before problems become severe, and (c) stimulate adolescents to discuss and rethink their substance use within a safe environment (D'Amico, Miles, Stern, & Meredith, 2008; Ernst, Miller, & Rollnick, 2007). Evidence points to the importance of early interventions for at-risk adolescents, a goal particularly addressable in primary care settings, where youth who may be transitioning into heavier substance use might be identified before they begin experiencing major negative consequences (Carney & Myers, 2012). Unfortunately, there are few controlled trials of brief interventions

* Corresponding author at: Department of Psychiatry, Commonwealth Institute for Child & Family Studies, Virginia Commonwealth University, P.O. Box 980489, Richmond, VA 23298-0489.
E-mail address: Mjmason@vcu.edu (M. Mason).

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with adolescents set within a primary care setting and thus, the need exists to develop and test these interventions (Harris, Louis-Jacques, & Knight, 2014).

1.2. Peer network framework

Social networks can be defined as systems constituted as relational ties and interactions between a finite number of people and entities (Mason, 2014). Among these interactive systems is the peer network, or close friend network. Peer networks, defined for the present study represent close friends that an individual has personal contact (beyond social media) at least monthly. Peer relationships are known to be important mediators of substance use among adolescents (Burk, van der Vorst, Kerr, & Stattin, 2012; Light, Greenan, Snijders, Nies, & Rusby, 2013), and thus may be a promising target for interventions. Peer attitudes and behaviors are potent predictors of substance use, with effects varying by gender, race/ethnicity, and type of substance (Mason, Mennis, Linker, Bares, & Zaharakis, 2014). In contrast, evidence supports that positive peer relations are protective against substance use in adolescents through creating and maintaining healthy, prosocial peer networks (Exner-Cortens, 2014; Mrug & McCray, 2013). Recent research has supported the clinical effectiveness of targeting peer network characteristics with brief intervention with adolescents (Chung et al., 2014). Further, a recent review of the mechanisms of change within adolescent substance use intervention found that positive social support was one of three mechanisms identified to mediate intervention effects (Black & Chug, 2014). Finally, Louis-Jacques, Knight, Sherritt, Van Hook, and Harris (2014) reported that a brief intervention within primary care succeeded in reducing alcohol onset and consumption among teens with peer risk (friends who drink or approve of drinking). To date, however, no adolescent peer network-focused intervention has been studied in a controlled trial.

1.3. Motivational interviewing

Motivational interviewing (MI) is defined as a client-centered, yet directive therapeutic style with the explicit goal of enhancing readiness for change by helping clients explore and resolve ambivalence toward behavioral problems (Miller & Rollnick, 2002). Evidence-based interventions such as MI fit well within pediatric health care settings (Erickson, Gerstle, & Feldstein, 2005). MI is considered an evidenced-based, frontline approach to reducing substance use and negative health outcomes through increased levels of patient-centered care, shared decision making, and improved clinician–patient relationships (Anstiss, 2009; Rollnick, Miller, & Butler, 2008). Findings regarding efficacy of MI with racial and ethnic minority groups generally indicate that MI is an appropriate intervention for diverse populations. In a recent meta-analysis of 119 studies covering 25 years, Lundahl, Kunz, Brownell, Tollefson, and Burke (2010) concluded that MI may be particularly effective with individuals from racial and ethnic minority groups, supporting similar meta-analytic findings (Austin, Hospital, Wagner, & Morris, 2010; Hettema, Steele, & Miller, 2005). MI may be also be appropriate as an early intervention, addressing moderate substance use or those at-risk for more substantial problems, as MI is particularly helpful with clients who are less motivated or ready to change, more angry or oppositional (Hettema et al., 2005).

Efforts to provide brief interventions that target adolescent substance use should leverage effective approaches such as MI as well as address the dynamic social processes associated with adolescent substance use involvement. More randomized controlled trials are needed with underserved, populations such as substance using racial minority urban adolescents within primary care settings. In this current study, we sought to address this gap by conducting a randomized clinical trial using a brief, one session intervention: motivational interviewing integrated with social network counseling with at-risk urban youth. Based on this review and our previous work with a similar population where the brief intervention reduced alcohol use related problems and offers for marijuana (Mason, Pate, Drapkin, & Sozinho, 2011), we hypothesized that adolescents in the experimental intervention (Peer Network Counseling) condition would decrease substance use and increase their peer network's protective characteristics relative to the control condition.

2. Method

2.1. Procedure

Participants for the study were recruited between April 2013 and February 2014 from an adolescent medicine outpatient clinic at a large urban academic medical institution in the southeastern United States as well as from a city public health department, adolescent health program. A total of 119 adolescents were enrolled into the study. Research procedures were identical for both settings, and 104 (87%) of the sample were recruited from the medical center clinic, and the remaining 15 (13%) from the public health clinic. Fig. 1 provides details on the number of adolescents approached, enrolled, and followed for 6 months. Age-eligible (14 to 18 year olds) adolescents presenting to the adolescent clinic for routine care were approached for interest in the study by a research assistant while in the waiting room or pending arrival of the physician into the patient's exam room. Interested adolescents completed screening questions to determine eligibility for the study. Informed consent/assent was obtained from adolescents and parents prior to conducting any research activities. The first authors' university and the city health department's institutional review boards approved the research protocol, and the study received a federal Certificate of Confidentiality from the National Institutes of Health. Participants received $150 over 6 months as incentive for their time and effort. Following screening and informed consent, teens were randomized into either the intervention or control condition. Randomization was completed using a random number table as well as using blocked randomization to create equal numbers allocated to intervention and control groups. The attention control condition controls for therapist attention by matching the experimental condition in time spent with the adolescent, detailed in Section 2.3. Participants completed the baseline assessment while at the clinic using a Web-enabled laptop, and follow-up assessments at 1, 3, and 6 months post intervention upon receiving an email or text message with an embedded URL (link) to click on and complete the questionnaires.

2.2. Intervention

The goal of the intervention is to alter the substance use trajectory through reduction or cessation, for at-risk adolescents presenting in primary care. Because our intervention targets at-risk youth who have not been diagnosed with a substance use disorder, the intervention is classified as an indicated prevention intervention. This classification developed by the Institute on Medicine (Mrazek & Haggerty, 1994), specifies types of interventions along a spectrum from universal prevention interventions, to treatment, to maintenance. Indicated prevention interventions are designed for high-risk individuals identified by screening or assessment who do not meet diagnostic criteria, but are at risk for developing a disorder. Thus, the present study falls at the cusp of treatment, and is referred to as a preventive intervention for high risk youth.

Adolescents assigned to the intervention condition received a 20-minute intervention referred to as Peer Network Counseling. The intervention is built upon and extends our previous pilot work (Mason et al., 2011), and is guided by five key MI clinical issues: rapport, acceptance, collaboration, reflections, and non-confrontation. The intervention follows motivational enhancement procedures with age-matched substance use normative data presented as feedback.

The intervention is structured into four component parts each lasting for 5 minutes: (a) rapport building and laptop presentation of