

Therapist Adherence to a Motivational-Interviewing Intervention Improves Treatment Entry for Substance-Misusing Adolescents With Low Problem Perception*

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ABSTRACT. Objective: This study evaluated whether adherence to the Strengths-Oriented Referral for Teens (SORT) model, a motivational interviewing (MI)-consistent intervention addressing ambivalence about attending treatment, positively predicted adolescents' initial-session attendance. **Method:** Therapist adherence was rated in 54 audiotaped SORT sessions by coders who were blind to treatment-entry status. Higher adherence scores reflected greater use of MI and solution-focused language, discussion of client strengths, and dialogue with families on treatment need and options. **Results:** Therapist adherence

during adolescent segments interacted with adolescent problem perception. Predicted probabilities of attending initial sessions increased for low-problem-perception adolescents at increasingly higher therapist adherence. **Conclusions:** Although replication studies are needed, the SORT model of providing MI-consistent debriefing following initial assessments appears to be a promising approach for increasing treatment entry. Initial support for the treatment-matching hypothesis was found for substance-misusing adolescents contemplating treatment entry. (*J. Stud. Alcohol Drugs* 70: 101-105, 2009)

SEVERAL EFFICACIOUS TREATMENTS EXIST for substance-misusing adolescents, but many adolescents never attend treatment. In 2005, approximately 1.5 million adolescents ages 12-17 needed substance-misuse treatments but did not receive them (Substance Abuse and Mental Health Services Administration [SAMHSA], 2006). This situation is unfortunate, given the high societal cost of substance misuse (Miller et al., 2006).

Few studies have investigated ways to increase initial-session attendance among substance-misusing adolescents (Donohue et al., 1998; Garner et al., 2002; Waldron et al., 2007). Garner and colleagues (2002) used a streamlined admissions process and found no increase in the percentage of adolescents admitted to treatment but less time elapsing between assessment and treatment admission. Donohue et al. (1998) found that a higher percentage of adolescents attended initial appointments when parents received motivational reminder calls. Furthermore, 71% of treatment-refusing adolescents successfully entered treatment after guardians

received a 12-session unilateral intervention (Waldron et al., 2007). Research has yet to evaluate the impact of motivational interviewing (MI) to address adolescent problem perception as a means of increasing treatment entry. This avenue of investigation seems promising, because problem perception is a highly endorsed reason for not entering treatment (Grant, 1997).

MI is a directive, client-centered therapeutic approach employing active listening, empathy, and techniques to elicit change talk to help clients resolve ambivalence about change (Miller and Rollnick, 2002). MI often is adapted to different clinical problems and settings, and these adaptations are referred to here as *MI-consistent interventions*. In this study, we evaluated whether adherence to Strengths-Oriented Referral for Teens (SORT), a referral session consistent with MI, positively predicted initial-session attendance by substance-misusing adolescents. As the SORT model aims to raise adolescents' awareness of potential substance-misuse problems, this study extends findings on the theory base of MI by linking session adherence to outcomes for those who vary on problem perception.

Motivational interviewing and treatment entry

Because low readiness to reduce drug and alcohol use is the most common reason among adolescents for not receiving treatment (SAMHSA, 2003), exploring adolescents' ambivalence may increase treatment entry. Although MI-consistent interventions have reduced substance use among adolescents (Dennis et al., 2004; Grenard et al., 2007; McCambridge and Strang, 2004) and lead to higher

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retention (Aubrey, 1998), empirical support does not exist for using MI with adolescents to facilitate treatment entry. By extension, support is lacking regarding whether MI improves treatment entry among adolescents with low problem perception.

Mixed findings exist in adult studies using pretreatment MI-consistent interventions to encourage treatment entry among adults. Zweben and Zuckoff's (2002) review compared the effects of MI-consistent interventions with control conditions, and in four out of six studies the percentage of participants entering treatment was not higher for MI conditions. Methodological problems existed with these studies, however—that is, questionable MI integrity, low participation rates, and nonrandomized designs.

Two subsequent adult studies supported the use of MI-consistent interventions in promoting treatment entry. Carroll and colleagues (2001) found that 59.3% of child welfare-referred parents receiving MI-enhanced substance-misuse evaluations attended at least one additional session, compared with 29.2% of those receiving standard assessments. Additionally, crack cocaine users were more likely to initiate treatment following an MI-consistent intervention, compared with controls (Wechsberg et al., 2007). Despite generally positive support for MI in increasing retention (Carroll et al., 2006) for adults, the impact of MI-consistent interventions on treatment entry is unclear, and no adolescent literature exists.

Hypothesis

We hypothesized an interaction between therapist adherence and adolescent problem perception, with adolescents with low problem perception becoming more likely to enter treatment if therapists were closely adhering to SORT. Similar to the Project MATCH (Matching Alcoholism Treatments to Client Heterogeneity) hypothesis (Project MATCH Research Group, 1997) that drinking outcomes among those with low readiness to change would be superior in an MI-consistent condition, we reasoned that those adolescents with low problem perception would be more likely to enter treatment if they received greater exposure to MI during referral sessions. Before the main analyses, we investigated associations between minority status, age, criminal-referral status, and family structure with treatment entry, because these factors are associated with treatment retention among adolescents (Broome et al., 2001; Mensinger et al., 2006; Schmidt et al., 2006).

Method

Setting and participants

All procedures were approved by the host institution's institutional review board. Adolescents ($N = 219$) completed

a two-session substance-use disorder assessment as part of eligibility screening for a randomized clinical trial (Smith et al., 2006). Adolescents were eligible for this study if they were referred to outpatient substance-misuse treatment. We randomly selected 61 tapes of 179 audiotaped SORT sessions, which were rated by trained coders. Ultimately, we analyzed only 54 cases because of missing data and exclusion of partial recordings.

Sample, sampling bias, and generalizability

The sample was largely white (81.5%) and male (82.2%), and the average (SD) age of participants was 15.9 (1.1) (range: 14–18). Participants reported a variety of problems, including: early onset of substance use (<age 15; 74.1%), a family history of substance-use disorders (84.9%), alcohol abuse (43.4%) and dependence (11.3%), and cannabis abuse (40.0%) and dependence (24.0%). Psychiatric comorbidity was high (i.e., 35.2% had one or more internalizing disorders, and 59.3% had one or more externalizing disorders). We found no significant differences in clinical or demographic characteristics between the participants and those whose tapes were not selected.

We also compared the demographic and clinical characteristics of our sample with those of adolescents and young adults ages 12–20 in the Treatment Episode Data Set (Substance Abuse and Mental Health Services Administration, 2005). Our sample contains fewer racially diverse clients (18.5% vs 33.1); a comparable percentage of criminal referrals (54.7% vs 50.8%); and higher percentages of participants who were early-onset users (74.1% vs 57.7%), had co-occurring psychiatric disorders (64.8% vs 20.7%), and were diagnosed with alcohol (40.4% vs 15.6%) or cannabis abuse (40.0% vs 23.3%). It appears that our sample is similar to a nationally representative sample of adolescents in publicly funded outpatient treatments.

Intervention

SORT (Smith and Hall, 2007) is a one-session family-based referral session grounded in the principles of MI and solution-focused counseling (Berg and Miller, 1992; de Shazer, 1988; Miller and Rollnick, 2002), during which results from a structured substance-misuse assessment are given to teens and parents. It is similar to the Family Check-Up (Dishion et al., 2003; Dishion and Stormshak, 2007). Before completing a SORT session, teens complete the Global Appraisal of Individual Needs-Intake (GAIN-I) version, a widely used, reliable, and valid standardized assessment (Dennis et al., 2002), and parents self-administer the collateral version of the GAIN. Sessions are 1 hour in duration and have three 20-minute segments, including a teen segment, a parent segment, and a conjoint family segment. Each segment follows the same format, including a scripted

orientation statement, a review of client-reported strengths, a discussion of concerns, and recommendations. The therapist reviews the rationale for treatment in concrete, understandable terms and makes connections between standardized assessment findings and recommendations. Therapists give explicit details of the substance-misuse treatment program by outlining the therapeutic orientation of treatments, duration, and cost. In the family segment, the therapist summarizes the session and works to build consensus on what should be done next.

MI-consistent behaviors are used throughout the session, such as when therapists engage clients in a dialogue about their perceptions of recommendations, and when they meet client disagreements about recommendations or about problem severity with empathy and complex reflections. This approach was developed to raise adolescents' awareness of problems in the context of high empathy and support, which, in turn, may increase treatment entry. Solution-focused questions, such as asking what one is doing to cope with problems and asking about times when problems were not so bad, also are used during SORT to elicit clients' coping skills. Once these skills are identified, therapists praise clients' use of coping skills, thus reinforcing client self-efficacy. For additional detail, we refer the reader elsewhere (Hall et al., 2008).

Training and therapist characteristics

Therapists received initial didactic and role-play training, read a session manual, and observed sessions before conducting them independently. Therapists then participated in periodic audiotape reviews. Variation in adherence to the SORT model was expected on the part of therapists, given the absence of rigorous training and ongoing coaching (Miller et al., 2004). Eight racially diverse therapists conducted a mean of 8.3 sessions (range: 2- 14), with all but one (i.e., at the bachelor's level) having master's degrees and an average of 2.75 (range: 0-10) years of experience in providing substance-misuse treatment.

Measures

Observers coded therapist behaviors with a 12-item Likert scale ranging from 0 (none) to 3 (high) (range: 0-36), including the following: (1) facilitation of a discussion of client strengths; (2) use of concrete examples from assessment to define concerns (2 items); (3) pursuit of clients' reactions to presented concerns; (4) use of reasons for referrals; (5) level of detail presented about referral destinations; and use of (6) paraphrasing or summary, (7) positive feedback and praise, (8) empathy, (9) open-ended questions, (10) solution-focused language, and (11) confrontation (reverse scored). Observers were two undergraduate students who were trained and

supervised by the lead author and who received 8 hours of initial didactic training, listened to a pre-coded tape with transcripts, and observed live SORT sessions with families not in this study. They then coded tapes with the lead author, who resolved discrepancies.

Once coding of study tapes started, coders received 1 hour of weekly supervision to prevent drift. Coders were blind to participants' treatment-entry status. The intraclass correlation between coders (.76) and the average intraclass correlation between the lead author and coders (.96) were high. Following the methodology of Hogue et al. (2006), we averaged the two coders' scores to create a single predictor (mean = 19.6 [6.1]). Problem perception was measured by a single dichotomous item on the GAIN, where participants were asked whether they had any current problems owing to their alcohol or drug use. Treatment entry was confirmed by agency records (1 = entry, 0 = no entry).

Data analysis

Minority status, session length (mean = 66.8 [20.4] minutes), and age were chosen a priori as covariates. No clinical characteristics indicated in the literature (i.e., conduct disorder, problem severity) as correlates of retention or treatment dropout were significantly associated ($p < .10$) with post-SORT treatment attendance. Simultaneous entry logistic regression predicted attendance of at least one post-assessment therapy session.

Results

Overall, 62.9% ($n = 34$) of the participants entered treatment. Participant age (odds ratio = 0.34, 1 df, $p < .05$), minority status (odds ratio = 33.66, 1 df, $p < .05$), and the interaction between problem perception and adolescent adherence (B [SE] = -0.50 [0.25], 1 df, $p < .05$) predicted treatment entry. The model fit for this analysis (Hosmer and Lemeshow's $\chi^2 = 7.8778$; 9 df, $p = .5465$) was acceptable. To interpret the interaction, predicted probabilities of treatment entry were plotted at different scores of adolescent adherence for both groups while holding other variables constant. As shown in Figure 1, we found support for the major hypothesis that higher therapist adherence would lead to increased treatment entry among low-problem-perception adolescents.

Discussion

After considering potential confounds, analyses supported this study's hypothesis that low-problem-perception adolescents have greater predicted probabilities of treatment entry at higher levels of therapist adherence to this MI-consistent intervention. This matching effect has not been demonstrated

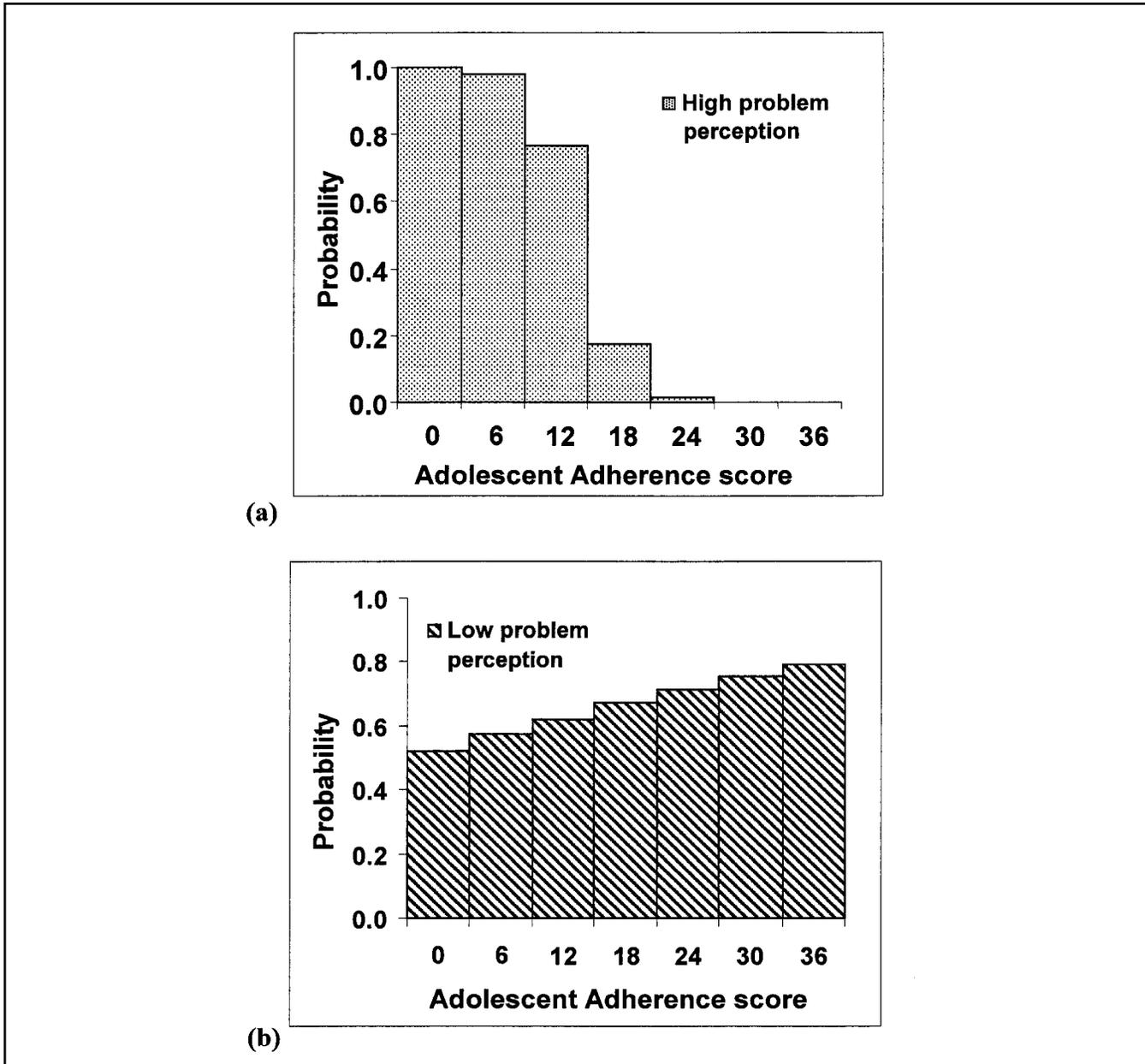


FIGURE 1. Predicted probabilities of treatment entry for high- (a) and low- (b) problem-perception adolescents at varying Strengths-Oriented Referral for Teens (SORT) adherence

previously with substance-misusing adolescents. Thus, it appears that, for some but not all adolescents, resolving ambivalence about problem perception is a valid pretreatment task. This study's limitations, however, include the use of a small sample size with low base rates of minority and low-problem-perception participants, a nonrandomized design that did not control for therapist effects, and the use of a single item indicator (i.e., problem perception) of a broader treatment-readiness construct. These limitations restrict causal inferences and indicate the need for replication in studies with larger samples.

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