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Modeling the innovation–decision process: dissemination and adoption of a motivational interviewing preparatory procedure in addiction outpatient clinics

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ABSTRACT

Widespread adoption of empirically-supported treatment innovations has the potential to improve effectiveness of treatment received by individuals with substance use disorders. However, the process of disseminating such innovations has been complex, slow, and difficult. We empirically describe the dissemination and adoption of a treatment innovation—an alcohol-treatment preparatory therapeutic procedure based on motivational interviewing (MI)—in the context of Rogers' (2003) five stages of innovation–decision process (knowledge, persuasion, decision, implementation and confirmation). To this end, 145 randomly-chosen outpatient addiction treatment clinics in New York State received an onsite visit from a project trainer delivering one of three randomly-assigned dissemination intensities: a 15-minute, a half-day or a full-day presentation. Across these clinics, 141 primary administrators and 837 clinicians completed questionnaires assessing aspects of five innovation–decision stages. At each clinic, questionnaire administration occurred immediately pre- and post-dissemination, as well as 1 and 6 months after dissemination. Consistent with Rogers' theory, earlier stages of the innovation–decision process predicted later stages. As hypothesized, dissemination intensity predicted clinicians' post-dissemination knowledge. Clinician baseline characteristics (including gender, pre-dissemination knowledge regarding the MI preparatory technique, education, case load, beliefs regarding the nature of alcohol problems, and beliefs and behavior with regard to therapeutic style) predicted knowledge and persuasion stage variables. One baseline clinic characteristic (i.e., clinic mean beliefs and behavior regarding an MI-consistent therapeutic style) predicted implementation stage variables. Findings suggest that dissemination strategies should accommodate clinician and clinic characteristics.

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1. Introduction

Improving the overall effectiveness of our nation's alcohol and substance abuse treatment delivery system requires successful dissemination of empirically-supported treatment innovations. However, such empirically-supported approaches have been slow to gain acceptance and wide application in U.S. treatment programs (see Wilbourne & Weingardt, 2007). Recent research has improved our understanding of factors that affect the success of dissemination efforts (see, e.g., Gotham, 2004; Sorensen, Hettema, & Chen, 2007). However, additional work is needed to describe the process of adoption that occurs following dissemination and to identify factors that can support or inhibit adoption.

1.1. The innovation–decision process

Rogers (2003) articulates five stages through which individuals (or larger decision-making units) pass during the adoption of a novel idea—the "innovation–decision" process. The first stage involves gaining knowledge about and exposure to the innovation. The second stage, persuasion, refers to the forming of favorable attitudes and beliefs regarding the innovation, in reaction to knowledge gained in the previous stage. The third, decision, reflects the development of behavioral intentions to implement the innovation. The fourth, implementation, references overt behavior. Finally, the confirmation stage includes the seeking of reinforcement of the decision that has been made and, if adopted, recognition of the benefits of the innovation. A key implication of Rogers' formulation is that individuals are unlikely to exhibit behaviors consistent with adoption (e.g., use of a new therapeutic procedure) if they do not first come to believe that doing so would yield substantial advantages over their current practices. Thus, understanding factors that affect the early stages of adoption has the potential to substantially improve our ability to effectively disseminate therapeutic innovations.

Rogers (2003) observed that the speed with which an innovation is adopted is partly a function of potential adopters' individual characteristics, such as personality traits, socioeconomic variables, and communication and leadership styles and skills (see also Gotham, 2004). Both Gotham and Rogers also have emphasized the impact that organizational characteristics such as leadership, overall climate and

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atmosphere, eagerness for change, degree of pessimism, and resistance can have on the innovation–decision process at both individual and organizational levels.

Building on these ideas, we propose that characteristics of individual clinicians (e.g., education, professional beliefs, and professional experience) will directly affect the knowledge, persuasion and confirmation stages of adoption, which largely reflect personal reactions to and beliefs about an innovation. In contrast, we propose that external influences and characteristics of organizations (e.g., size, population served, administrators' professional beliefs, and organization milieu) will directly affect the decision and implementation stages, which encompass clinicians' behavioral intentions and overt steps taken to make use of an innovation. For instance, a clinician may believe that a novel intervention approach will be useful because he finds it consistent with his own clinical style, but may choose not to implement the innovation because other clinicians at his workplace do not share his interest in learning about it and practicing its use.

Although several reports have applied innovation–decision and dissemination theory to work in the addictions (see Hartzler & Rabun, 2013; Laflin, Edmundson, & Moore-Hirsch, 1995; Sharma, 2008), the model as a whole has not been directly and longitudinally tested in the context of substance abuse clinics. Such a test would improve our understanding of the process that ensues following efforts to disseminate an empirically-supported treatment innovation in the field of addictions treatment and has the potential to shed light on clinician and clinic characteristics that affect the adoption process in this context. Ultimately, insights gained from this research may point toward avenues for increasing the effectiveness of dissemination initiatives.

1.2. The current study

The first goal of the current study was to model the stages of the innovation–decision process with constructs assessed immediately following dissemination (knowledge, persuasion, and decision), 1 month post-dissemination (implementation), and 6 months post-dissemination (confirmation). The disseminated innovation was a specific preparatory therapeutic procedure that is based on motivational interviewing and has been shown to enhance outcomes of outpatient treatment for alcohol use disorders (Connors, Walitzer, & Dermen, 2002). Motivational interviewing (MI; Miller & Rollnick, 1991, 2002, 2013) is a form of brief intervention that was developed with the explicit goal of increasing client motivation to engage in healthy, adaptive behavior. Often adapted to incorporate the provision of personalized feedback regarding the client's behavior (e.g., Miller, Sovereign, & Krege, 1988), MI has been used both as a stand-alone form of treatment for a variety of behavior change programs (e.g., Zweben & Zuckoff, 2002) and as a preparatory intervention for therapy (see Walitzer, Dermen, & Connors, 1999). Evidence for the efficacy of MI-based preparatory procedures has come from a large and still-growing set of clinical trials (Hettema, Steele, & Miller, 2005, Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010). Findings (e.g., Bien, Miller, & Boroughs, 1993; Brown & Miller, 1993) indicate that using MI-based procedures to prepare alcohol abusers for outpatient treatment can increase session attendance and reduce posttreatment heavy drinking. The procedure disseminated in the current study was tested in a clinical trial in which 126 clients (87 men, 39 women) scheduled for admission to a structured 12-week outpatient alcoholism treatment program were assigned randomly to one of three preparatory conditions: a role induction session, a session of MI (including presentation of personalized feedback), or a no-preparatory session control group (Connors et al., 2002). Clients assigned to the MI-based preparatory intervention attended more treatment sessions and had fewer heavy drinking days during treatment and in the year following treatment, and had more abstinent days during treatment and during the first 3 months posttreatment, relative to clients assigned not to receive a preparatory session. Outcomes of clients assigned to the role induction condition did not differ significantly from those assigned to the control group.

The second goal of the current study was to examine the differential impact of three levels of dissemination intensity on the innovation–decision process. We hypothesized that intensity of dissemination would directly affect the knowledge and persuasion stages of the innovation–decision process. Although successful dissemination of an MI-based preparatory procedure requires both that clinicians learn a new set of skills and procedures and that they competently implement those new skills and procedures with their clients, such skill development and implementation are unlikely to occur if clinicians are not first persuaded that the procedure can feasibly be implemented and is likely to have a positive impact on clients. Questions regarding how best to teach MI (e.g., Noonan & Moyers, 1997) have received empirical attention only recently (e.g., Baer et al., 2004; Bennett et al., 2007; Hartzler, Bear, Dunn, Rosengren, & Wells, 2007; Miller & Mount, 2001; Miller, Yahne, Moyers, Martinez, & Pirritano, 2004, Miller et al., 2008; Moyers et al., 2008; Shafer, Rhode, & Chong, 2004; Smith et al., 2007). Reviews of early studies in this area (Barwick, Bennett, Johnson, McGowan, & Moore, 2012; Madson, Loignon, & Lane, 2009) have found that general or introductory MI training presented in a seminar or workshop format usually succeeds in increasing clinicians' MI-related knowledge and skills, although long-term maintenance of skills is likely to require some form of post-workshop support (Madson et al., 2009; Schwalbe, Oh, & Zweben, 2014; Walters, Matson, Baer, & Ziedonis, 2005). Only in recent years has work examined the extent to which clinicians incorporate the use of MI into regular clinical practice and investigated systematically the impact of training intensity or format on clinicians' learning and adoption of MI (for example, see de Roten, Zimmermann, Ortega, & Despland, 2013).

The third goal of the current study was to examine clinician and clinic characteristics that influence the innovation–decision process. As reflected in the larger literature regarding potential facilitators of and barriers to adoption, several characteristics have been suggested as having a potential impact on adoption of MI and related methods. These include clinicians' level of formal education, clinical orientation, pre-training beliefs regarding the potential value of MI, history of training in MI, post-training self-efficacy for use of MI and perceptions of program support for using MI, as well as the treatment agency's tendency to reward autonomy and creativity among its staff and its administrators' attitudes toward MI (Amodeo et al., 2011; Baer et al., 2009; Madson et al., 2009; Miller et al., 2008). Other clinic-level characteristics that may influence adoption include the proportion of the agency's clients who belong to racial or ethnic minorities or have more severe addiction problems and the extent to which clients at a given agency tend to drop out early or have poor treatment outcomes (Carroll et al., 2006; Hettema et al., 2005; Lundahl & Burke, 2009).

Clinician and clinic characteristics that have been identified as potentially influencing adoption of therapeutic innovations generally (beyond those identified specifically in relation to MI) include clinician age, gender, specialized certification, years of practice, caseload, and post-training ratings of the innovation's relevance to clients' needs and the desire for more training, as well as the extent to which there is a perceived need for the innovation at a given agency, the overall size of the agency's caseload, and the extent to which staff and administrators at the agency are familiar with and endorse the innovation (Bartholomew, Joe, Rowan-Szal, & Simpson, 2007; Beidas & Kendall, 2010; Haug, Shopshire, Tajima, Gruber, & Guydish, 2008; Henggeler et al., 2008; Miller, Sorensen, Selzer, & Brigham, 2006; Sholomskas et al., 2005; Story et al., 2002; Wiltsey Stirman, Crits-Christoph, & DeRubeis, 2004). For the current study, we also explored clinic characteristics such as the size of the treatment staff, the proportion of patients who are mandated to treatment or who have comorbid disorders, and administrators' and clinicians' beliefs regarding alcohol problems.

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