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Innovation Attributes and Adoption Decisions: Perspectives from Leaders of a National Sample of Addiction Treatment Organizations



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ABSTRACT

Drawing on diffusion theory to further knowledge about evidence-based practices (EBPs) in the treatment of substance use disorders (SUDs), this study describes the perceived importance of innovation attributes in adoption decisions within a national sample of SUD treatment organizations. Face-to-face interviews were conducted with leaders of 307 organizations. A typology differentiated organizations reporting: (1) adoption of a treatment innovation in the past year (“recent adoption”), (2) plans to adopt an innovation in the upcoming year (“planned adoption”), or (3) no actual or planned adoption (“non-adoption”). About 30.7% of organizations reported recent adoption, 20.5% indicated planned adoption, and 48.8% were non-adopters. Leaders of organizations reporting recent adoption ($n = 93$) or planned adoption ($n = 62$) rated the importance of innovation attributes, including relative advantage, compatibility, complexity, and observability, on these adoption decisions using a Likert scale that ranged from 0 to 5. Innovation attributes most strongly endorsed were consistency with the program’s treatment philosophy (mean = 4.47, SD = 1.03), improvement in the program’s reputation with referral sources (mean = 4.00, SD = 1.33), reputational improvement with clients and their families (mean = 3.98, SD = 1.31), and reductions in treatment dropout (mean = 3.75, SD = 1.54). Innovation characteristics reflecting organizational growth and implementation costs were less strongly endorsed. Adopters and planners were generally similar in their importance ratings. There were modest differences in importance ratings when pharmacological innovations were compared to psychosocial interventions. These findings are consistent with diffusion theory and suggest that efforts to link EBPs with client satisfaction and potential reputational benefits may enhance the diffusion of EBPs. Attention to these attributes when developing and evaluating SUD treatment interventions may enhance efforts to increase subsequent adoption.

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1. Introduction

With an overarching goal of improving treatment quality, the past 15 years have seen substantial resource investment from influential stakeholders in federal agencies, state governments, and private foundations in promoting the adoption of evidence-based practices (EBPs) by organizations that delivery substance use disorder (SUD) treatment (Lamb, Greenlick, & McCarty, 1998; Martino et al., 2010; Rieckmann, Kovas, Fussell, & Stettler, 2009; Schmidt et al., 2012; The Addiction Technology Transfer Center (ATTC) Network Technology Transfer Workgroup, 2011). Despite these efforts, rates of EBP adoption continue to be quite low (National Advisory Council on Drug Abuse of the National Institute on Drug Abuse, 2012).

Concurrent with stakeholders’ efforts to promote EBP adoption, a substantial body of research has focused on identifying organizational and environmental factors associated with adoption of EBPs by SUD treatment organizations. These studies have considered a range of EBPs: psycho-social interventions (Bride, Abraham, & Roman, 2011; Henggeler et al., 2008; Lundgren, Chassler, Amodeo, D’Ippolito, & Sullivan, 2012; McGovern, Fox, Xie, & Drake, 2004; Miller, Sorensen, Selzer, & Brigham, 2006), comprehensive wraparound services (Ducharme, Mello, Roman, Knudsen, & Johnson, 2007; Friedmann, Lemon, Durkin, & D’Aunno, 2003; Knight, Edwards, & Flynn, 2010), and pharmacotherapies (Friedmann, Alexander, & D’Aunno, 1999; Friedmann, Jiang, & Alexander, 2010; Garner, 2009; Knudsen & Abraham, 2012; Knudsen, Roman, & Oser, 2010). Consistent with emerging frameworks from implementation science (Aarons, Hurlburt, & Horwitz, 2011; Damschroder et al., 2009; Proctor et al., 2009; Simpson, 2002; Simpson & Flynn, 2007), these studies have documented relationships between adoption, dimensions of organizational characteristics (e.g., culture, resources, readiness for change) and, to a lesser extent, influences from the external environment. Notably, the specific variables associated with adoption have varied

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between specific EBPs, making it difficult to generalize about a core set of organizational and environmental characteristics that are consistently associated with adoption.

An implicit assumption is that there is a compelling reason for adoption when randomized clinical trials comparing an EBP with “treatment as usual” reveal statistically better clinical outcomes, such as abstinence or treatment retention, with the use of the EBP (Stirman, Crits-Christoph, & DeRubeis, 2004). Less clear-cut is a qualifying assumption that organizations vary in their capacity to adopt specific EBPs, facing different sets of contingencies as they weigh adoption decisions. These assumptions are not unique to the field of SUD treatment. As noted by Dearing (2009, p. 509), “We assume that evidence matters in the decision making of potential adopters,” when in reality, evidence may matter in different ways for different adopters.

Within SUD treatment, it is not clear how strongly decision-makers weigh clinical evidence relative to other features of treatment innovations. As noted by Rogers (2003) in his classic work, *Diffusion of Innovations*, the attributes of innovations are critical factors in promoting or inhibiting their adoption within a field. These attributes are more complex than simply the scientific evidence base favoring the use of a new practice.

For Rogers, key innovation attributes included relative advantage, compatibility, complexity, and observability. Relative advantage reflects anticipated benefits, both tangible and intangible, of an innovation relative to current practice. Compatibility is the congruence between the innovation and organizational values, previously adopted innovations, strategic plans, and perceived need for improvement. Complexity describes how difficult the innovation is to implement and whether its use will require resources such as new staff with unique skill sets or the re-training of existing staff. Observability is tied to what Moore and Benbasat (1991) have described as the attribute of image, or the social approval among key stakeholders that can be gained from adopting an innovation.

Within the emerging body of data about EBP adoption in SUD treatment, relatively little is known about how treatment organizations weigh innovation attributes in adoption decisions. Rather than specifying *a priori* a particular innovation and measuring its adoption, this study considered innovation adoption in a broader sense by asking treatment program administrators to describe a recent or planned innovation adoption decision and then rate the perceived importance of innovation attributes in influencing that decision.

2. Methods

2.1. Sample and data collection

This study relies upon a nationally representative sample of US treatment organizations that offer specialty treatment for alcohol use disorders (AUDs). The sampling frame was constructed using the 2008 Substance Abuse Treatment Services Locator, which was published by the Substance Abuse and Mental Health Services Administration (SAMHSA; <http://findtreatment.samhsa.gov/TreatmentLocator/faces/quickSearch.jspx>). To establish eligibility, telephone screening was used to ensure that organizations were open to the general public, had at least 25% of their patients with a primary AUD diagnosis, employed at least two full-time equivalent employees (FTEs), and delivered a minimum level of treatment equivalent to or greater than the American Society of Addiction Medicine's definition of structured outpatient services. Organizations that exclusively dispensed medications to treat opioid dependence (e.g., methadone programs), only offered detoxification without offering other levels of care, programs for DUI/DWI offenders, correctional programs, facilities located in the Veterans Administration, and individual counselors offering therapy were ineligible.

Face-to-face interviews were conducted with the administrator and clinical director (when such a position existed) of eligible treatment organizations ($n = 307$; 67% response rate). Informed consent forms were sent in advance and collected before the start of the interview. Data collection occurred from mid-2009 to January 2012. All procedures were submitted to and approved by the Institutional Review Boards of the University of Georgia and the University of Kentucky.

2.2. Measures

Prior to the questions about EBP attributes, administrators were asked about *recent or planned innovation adoption*. First, a dichotomous indicator measured whether the organization had made a significant change in its treatment processes, such as adopting a medication or psychosocial treatment technique in the last year. Negative responses were followed by an additional dichotomous question about whether the organization had any plans for making a significant change in its treatment processes by adopting a medication or adopting a psychosocial intervention in the next year. Based on the responses to these two items, a typology of three mutually exclusive categories was constructed: recent adoption (i.e., in the past year), planned adoption (i.e., in the upcoming year), and no adoption (i.e., neither recent nor planned). Those with recent adoption were asked to describe the most recent change, which was coded as a *medication or psychosocial intervention*; this innovation served as the referent for all additional questions about innovation attributes. Organizations indicating that they planned to adopt an innovation in the upcoming year were also asked to describe the innovation, which was then coded as a medication or a psychosocial intervention. Cases in which respondents indicated multiple innovations that included both pharmacotherapy and psychosocial interventions were rare, occurring in 10 of 153 cases. In these instances, the interviewer allowed the respondent to choose which innovation would be used as the referent.

Perceived attributes of the innovation were measured with a set of 14 items (see Table 2) that were developed by the research team for this study. Organizations with past-year adoption were asked the 14 items in the context of the question, “Thinking about the decision to implement that change, on a scale from 0 to 5, how important (0 = not at all important, 5 = very important) were the following reasons in the decision to adopt this [medication/intervention].” For organizations that were planning to adopt an innovation in the next year, administrators were asked, “Thinking about this planned change, on a scale of 0–5, how important (0 = “not at all important”, 5 = “very important”) are the following reasons in selecting this [medication/intervention] for adoption?” before answering the 14 items. Drawing on Rogers (2003) theory, 7 of the 14 items measured the relative advantage of the innovation in terms of clinical, financial, and staffing benefits. Two items measured compatibility regarding the innovation's consistency with the organization's treatment philosophy and its limited impact on the center's operations. Complexity was addressed through 3 items about the costs of implementation and ease of staff training. Two items of observability tapped into how external stakeholders (e.g., referral sources as well as clients and their families) would perceive the impact of the innovation on the center's reputation. (See Table 1.)

An additional set of dichotomous indicators asked past-year adopters whether the innovation had resulted in organizational benefits (1 = yes, 0 = no); these items asked respondents whether the attributes of relative advantage and observability described above had actually materialized (see Table 3). Two additional items asked respondents whether the start-up costs and ongoing implementation costs were lower, higher, or consistent with expectations.

In addition to these measures regarding innovation adoption, participants provided considerable descriptive information about organizational structure, treatment services, treatment philosophy,

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