Research paper

Community treatment adoption of contingency management: A conceptual profile of U.S. clinics based on innovativeness of executive staff

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ABSTRACT

Background: Community adoption of contingency management (CM) varies considerably, and executive innovativeness may help explain variance due to its presumed influence on clinic decision-making.
Methods: Sixteen U.S. opioid treatment programs (OTPs) were visited, with ethnographic interviewing used in casual contacts with executives to inform their eventual classification by study investigators into one of Rogers' (2003) five adopter categories. Audio-recorded interviews were also conducted individually with the executive and three staff members ($N = 64$) wherein they reported reactions to clinic CM implementation during the prior year, from which study investigators later identified salient excerpts during interview transcript reviews.
Results: The executive sample was progressive, with 56% classified as innovators or early adopters. Implementation reports and corresponding staff reactions were generally consistent with what might be expected according to diffusion theory. Clinics led by innovators had durably implemented multiple CM applications, for which staff voiced support. Clinics led by early adopters reported CM exposure via research trial participation, with mixed reporting of sustained and discontinued applications and similarly mixed staff views. Clinics led by early majority adopters employed CM selectively for administrative purposes, with staff reticence about its expansion to therapeutic uses. Clinics led by late majority adopters had either deferred or discontinued CM adoption, with typically disenchanted staff views. Clinics led by a laggard executive evidenced no CM exposure and strongly dogmatic staff views against its use.
Conclusion: Study findings are consistent with diffusion theory precepts, and illustrate pervasive influences of executive innovativeness on clinic practices and staff impressions of implementation experiences.

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Introduction

Contingency management (CM) is an empirically supported behavior therapy in which operant conditioning principles promote behavior change. Specifically, this involves objective measurement of a target behavior (e.g., drug abstinence via urinalysis), and provision of an incentive soon after its detection (Petry, 2000). Meta-analytic reviews of CM note its robust, reliable therapeutic effects when implemented in addiction treatment settings (Griffith, Rowan-Szal, Roark, & Simpson, 2000; Lussier, Heil, Mongeon, Badger, & Higgins, 2006; Prendergast, Podus, Finney, Greenwell, & Roll, 2006). Several empirically supported applications are available to community treatment settings, including opioid treatment programs (OTPs) wherein agonist medication is paired with

counseling and other services in maintenance therapy for opiate dependence. Available CM applications include: (1) privilege-based (Stitzer et al., 1977), where conveniences like take-home medication doses or preferred dosing times are earned, (2) stepped-care (Brooner et al., 2004), where reduced clinic requirements are gained, (3) voucher-based (Higgins et al., 1993), with vouchers for goods/services awarded, (4) prize-based (Petry, Martin, Cooney, & Kranzler, 2000), with draws for prize items given, (5) socially based (Lash et al., 2007), where status tokens or public recognition reinforce identified milestones, and (6) employment-based, with job prospects at a 'therapeutic workplace' (Silverman et al., 2002) reinforcing abstinence. Despite such options, CM implementation remains limited, even among clinics affiliated with NIDA's Clinical Trials Network [CTN; (Roman, Abraham, Rothrauff, & Knudsen, 2010)].

A recent review suggests guidance by implementation science theories may facilitate more effective CM dissemination (Hartzler, Lash, & Roll, 2012). A hallmark theory is Rogers' (2003) diffusion theory, a widely cited and comprehensive theoretical framework based on decades of cross-disciplinary study of innovation

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adoption. Diffusion theory outlines processes whereby innovations are adopted by members of a social system and personal characteristics that affect innovation receptivity. As for prior applications to addiction treatment, diffusion theory has identified clinic characteristics predicting naltrexone adoption (Oser & Roman, 2008). It also is commonly referenced in several reviews (Damschroder & Hagedorn, 2011; Glasner-Edwards & Rawson, 2010; Manuel et al., 2011) and interpretation of empirical findings concerning innovation adoption (Amodeo, Storti, & Larson, 2010; Baer et al., 2009; Hartzler et al., 2012; Roman et al., 2010).

In diffusion theory, Rogers (2003) differentiates two processes whereby a social system arrives at a decision about whether or not to adopt a new practice. In a *collective innovation decision*, individuals accept or reject an innovation en route to a consensus-based decision. In contrast, an *authority innovation decision* involves acceptance or rejection of an innovation by a person (or subset of persons) with greater status or power. The latter process more accurately portrays the pragmatism inherent in innovation adoption decisions at most OTPs, highlighting an influential role of executive leadership that merits scientific attention. According to diffusion theory, executives may be categorized into five mutually exclusive categories of innovativeness: innovators, early adopters, early majority, late majority, and laggards. Table 1 outlines personal characteristics associated with each category, as outlined by Rogers (2003).

Efforts to categorize executive innovativeness according to such personal characteristics are well-suited to qualitative research methods, which are under-represented in addiction literature (Rhodes, Stimson, Moore, & Bourgois, 2010). Such methods reflect a range of elicitation methods, of which two examples are the ethnographic interview and the semi-structured interview. An ethnographic interview elicits greater depth of information from a key informant, and is most useful for observing and eliciting personal data that may be more evident or comfortable via informal interviewer contact. Ethnographic interviewing is a fluid and unstructured process, appearing as casual conversation and reliant on a 'funnel method of inquiry' with responses to broad initial questions prompting more specific, subsequent exploration (Bernard & Ryan, 2010). In contrast, semi-structured interviews for the most part elicit similar data from a set of informants, via use of a standardized set and sequence of questions within a structured timeframe. Consequently, they are better-suited to gathering of pre-determined target information, about which additional open-ended probes may allow conceptual elaboration (Bernard & Ryan, 2010).

In the current study, ethnographic interviewing was employed in discussions with an executive director over the course of a full-day site visit to 16 U.S.-based OTPs. Interviewer notes and impressions regarding relevant personal characteristics were later used to sort these executives into one of the five noted adopter categories. Each executive, as well as a subset of clinical staff (a clinical supervisor and two front-line clinicians) also participated in individual semi-structured interviews focused on perceptions of clinic implementation experiences with CM during the prior year. The primary aim of this report is to profile executive innovativeness as an influence on clinic implementation and corresponding staff perspectives.

Methods

Study design and sampling approach

To promote diversity in the clinic sample, eight U.S. regions (Pacific Northwest, Rocky Mountain, Southwest, Midwest, South, Northeast, Mid-Atlantic, Southeast) were specified a priori from which 16 OTPs were evenly drawn. As CTN-affiliate OTPs have greater exposure to CM than do others in the treatment community (Ducharme, Knudsen, Abraham, & Roman, 2010), the sample included a CTN and non-CTN clinic in each region. Regional clinics located in proximity were sought to account for local population density (assessed by census statistics), with some effort to promote inter-regional heterogeneity in population density. Clinic recruitment was initiated via an investigator letter that broadly described study aims and procedures, and directed interested clinics to contact the research team. Study investigators then outlined a practical template for site visit procedures, confirmed clinic interest in study participation, requested letter of clinic cooperation, and negotiated a site visit date. Collectively, 19 clinics were contacted, of which two did not respond and another was deemed inappropriate due to discontinued OTP services.

Each site visit included ethnographic interviewing of the executive director, and a set of four individual semi-structured interviews with the executive and three staff members focused on perspectives about a range of empirically supported practices. Extant literature suggests clinic role influences such attitudes (McCarty et al., 2007), particularly for CM (Kirby, Benishek, Dugosh, & Kerwin, 2006), and that clinical supervisors are pivotal in implementing new practices (Amodeo et al., 2010; Heaven, Clegg, & Maguire, 2006). Thus, semi-structured interview informants at each clinic were the executive, a clinical supervisor, and two front-line clinicians. Executives were provided a copy of a study consent form in advance, and asked to review it with their clinical staff so all were apprised of the opportunity to participate in semi-structured interviews. Aside from the noted stratification by clinic role, interest in the study and availability during the site visit were the lone selection criteria outlined by the research team for staff interviewees. The design of this study involved: (1) stratification of the clinic sample by CTN affiliation and geographic region, (2) targeted ethnographic interviewing of clinics' executive directors, and (3) stratification of the sample of semi-structured interview participants by personnel tier. This best reflects a stratified purposive nonprobability sampling approach (Sandelowski, 2000).

Participants and procedures

All study procedures were approved by the local university Institutional Review Board. The lead investigator visited sixteen clinics between October, 2010 and June, 2011, with site visits in the same region typically completed during the same week. Ethnographic interviewing was initiated with the clinic executive at the outset of each site visit, aimed at identification of broad personal characteristics associated with one of Rogers' (2003) five adopter categories. Discussions encompassed topics of professional background and networking, management style, treatment philosophy, and regard for empirically supported practices. The interviewing approach was fluid, typically occurring amidst casual conversation in the executive's office as well as during executive-led interactive activities such as a facilities tour and introduction to other staff members. The investigator kept private notes during the visit, and logged corresponding overall impressions upon leaving the clinic at day's end.

Each site visit included conduct of four semi-structured individual interviews focused on topics related to a range of empirically supported practices. Interviews were 50–60 min in length, and audio-recorded in a private clinic room. Interviewees provided informed consent prior to audio-recording, and were asked to avoid identifying references to the clinic, self, other staff, or clientele. Executives were specifically asked about clinic implementation of CM during the prior year, and this executive report was later referenced in subsequent staff interviews. All