



Implementation fidelity of Multidimensional Family Therapy in an international trial

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ABSTRACT

Implementation fidelity, a critical aspect of clinical trials research that establishes adequate delivery of the treatment as prescribed in treatment manuals and protocols, is also essential to the successful implementation of effective programs into new practice settings. Although infrequently studied in the drug abuse field, stronger implementation fidelity has been linked to better outcomes in practice but appears to be more difficult to achieve with greater distance from model developers. In the International Cannabis Need for Treatment (INCANT) multi-national randomized clinical trial, investigators tested the effectiveness of Multidimensional Family Therapy (MDFT) in comparison to individual psychotherapy (IP) in Brussels, Berlin, Paris, The Hague, and Geneva with 450 adolescents with a cannabis use disorder and their parents. This study reports on the implementation fidelity of MDFT across these five Western European sites in terms of treatment adherence, dose and program differentiation, and discusses possible implications for international implementation efforts.

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1. Introduction

Implementation is a critical bridge between a promising idea, approach, or technology and its actual impact on intended recipients. Understanding the processes and outcomes of successful implementation efforts may promote the adoption of promising programs into new contexts and increase their effectiveness with different populations. Yet surprisingly, given its central importance in the diffusion of interventions, few studies in the drug abuse field have examined the implementation of evidence-based treatments in practice (Garner, 2009).

Implementation fidelity, or the extent to which an intervention is delivered as prescribed, appears to be critical in facilitating the long-term, routine use of evidence-based interventions in practice (Klein & Sorra, 1996). Although recommendations to study and improve implementation fidelity are now standard, this aspect of technology transfer was not heavily emphasized in early dissemination efforts or theoretical formulations [e.g., Rogers (1995) ubiquitous “diffusion of innovation” theory]. It was generally taken for granted that programs would be implemented as stipulated by developers given sufficient

empirical support, organizational interest, and provision of basic information about the intervention through written materials and workshops. Yet subsequent evaluations of drug abuse prevention and treatment in school and community-based systems suggest that fidelity to intervention manuals and protocols in non-research settings has been difficult to establish and sustain (Dusenbury, Brannigan, Falco, & Hansen, 2003; Fals-Stewart, Logsdon, & Birchler, 2004; Riley, Rieckmann, & McCarty, 2008). Documented reasons for poor fidelity of interventions in practice settings include lack of resources, effective leadership, and other organizational barriers (Herbeck, Hser, & Teruya, 2008), competing clinical priorities (Henggeler et al., 2008), and ineffective training methods (Beidas & Kendall, 2010), among others. Thus, implementation is now recognized as a very active and potentially complex undertaking (Powell et al., 2012), in contrast to the more passive process of dissemination. Current conceptualizations of implementation processes and strategies tend to be contextual and multisystemic, recognizing the intersecting levels of intervention and many potential barriers to change (e.g., Beidas & Kendall, 2010; Condon, Miner, Balmer, & Pintello, 2008; Liddle et al., 2002; Simpson, 2002).

Implementation fidelity challenges in drug abuse prevention and treatment raise concern because there is evidence of a link between

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model adherence and clinical outcomes. In several studies of multi-systemic therapy (MST), for instance, adherence to the treatment has been associated with more positive outcomes when delivered by community-based practitioners (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler, Pickrel, & Brondino, 1999). In a large randomized trial within the NIDA Clinical Trials Network (CTN), Robbins et al. (2011) linked adherence to brief strategic family therapy (BSFT) with adolescents' engagement and retention, as well as improvements in family functioning and drug use over time. Drug abuse prevention delivered in school settings also appears to be more effective when teachers follow prescribed curriculum (Dusenbury et al., 2003). However, this observed link is equivocal, according to a recent meta-analysis showing weak mean adherence–outcome and competence–outcome effect size estimates over many therapy studies (Webb, DeRubeis, & Barber, 2010). Thus, although research suggests that research-developed treatments for drug abuse can be effectively implemented by community-based clinicians when treatment protocols are followed (Morgenstern, Morgan, McCrady, Keller, & Carroll, 2001), achieving fidelity is challenging in practice, and greater understanding of fidelity–outcome associations is needed.

Multidimensional Family Therapy (MDFT; Liddle, 2002) is an evidence-based treatment for adolescent drug abuse and antisocial behaviors that is distinguished not only for its strong clinical outcomes with a range of populations, including co-occurring disorders (Austin, Macgowan, & Wagner, 2005; Becker & Curry, 2008; Brannigan, Schackman, Falco, & Millman, 2004; Hawkins, 2009; Vaughn & Howard, 2004; Waldron & Turner, 2008), but also for its empirical attention to implementation processes and outcomes (Garner, 2009; Riley et al., 2008). An analysis of the integration of MDFT within a day-treatment program helped to revise a collaborative, multiple-systems framework for implementation that allows for flexibility within diverse settings and patient populations (Liddle et al., 2002). MDFT was successfully sustained and clinical outcomes were improved over baseline levels more than a year after the training period (Liddle et al., 2006). Liddle, Dakof, Henderson, and Rowe (2010) also demonstrated favorable implementation outcomes of MDFT as a cross-systems juvenile-justice and drug treatment intervention with adolescents in detention who were transitioning home to the community. Consistent with other controlled trials, research on MDFT has shown that stronger adherence to treatment protocols is related to better long-term outcomes. Specifically, Hogue, Dauber, Samoulis, and Liddle (2006) demonstrated that adherence to family-focused techniques was linked to less internalized distress and greater family cohesion 1 year following MDFT. Hogue et al. (2008) also linked MDFT adherence to fewer behavior problems at 1 year follow-up. Thus a strong foundation exists for further study of MDFT implementation in diverse settings.

In the current study, MDFT implementation fidelity was explored in the context of a multi-national randomized clinical effectiveness trial conducted in five Western European countries called INCANT (INternational CAnnabis Need for Treatment; Rigter et al., 2010). This international trial of MDFT began in 2006, when these Western European governments sought to fill a gap in treatment services in their countries and develop an effective treatment program for adolescents with cannabis use disorders. MDFT was selected for this study based on its rigorous empirical development and testing with drug abusing youth in the U.S. The model was initially piloted with success in the five collaborating countries, leading to a test of MDFT in a randomized trial against well-developed individual psychotherapy approaches typically delivered in each country. Beyond establishing integrity of MDFT delivery for the RCT, we were interested in exploring implementation fidelity processes and outcomes of the model as well.

There are notable accounts of successful transportation of U.S.-developed and tested alcohol and drug interventions to other countries (e.g., Cherpitel, Bernstein, Bernstein, Moskalewicz, &

Swiatkiewicz, 2009). Yet previous research has also documented many challenges inherent in the transportation of evidence-based models to new cultural, political, and clinical systems and settings (Schoenwald, Heiblum, Saldana, & Henggeler, 2008). For instance, Assertive Community Treatment (ACT) was found to be less effective when implemented in the U.K. than in Australia and the U.S. Less intensive delivery of active home treatment components may account for the model's diminished efficacy in the U.K., given that client and staff characteristics did not differ significantly from those in an Australian site (Harvey et al., 2011). Other international implementation efforts have highlighted the need to appreciate the cultural context of the new intervention setting, even though universal principles of health promotion, behavior change, and family relations may apply across cultures (Bell, Bhana, McKay, & Petersen, 2007; Kumpfer, Pinyuchon, Teixeira de Melo, & Whiteside, 2008). Finally, effectively addressing broader systemic, funding, regulatory, and policy issues, as well as clinical and medical provider needs and requirements, may be critical to successful international implementation of evidence-based treatments and guidelines (Autrique, Vanderplasschen, Broekaert, & Sabbe, 2009; Coltart et al., 2011; Larney & Dolan, 2009).

In the INCANT pilot study, we met many of these challenges and demonstrated the feasibility of MDFT for these different European practice contexts by training supervisors to adequate adherence levels with a single training case. Yet in the INCANT effectiveness trial, entire teams needed to successfully implement MDFT, address larger systems issues impacting full implementation of all treatment components, and demonstrate fidelity to the treatment parameters and interventions. This study therefore fits within hybrid effectiveness–implementation research, aimed at accelerating the process of transferring clinical research knowledge to real-world settings by examining critical challenges and outcomes of implementation within effectiveness trials (Curran, Bauer, Mittman, Stetler, & Pyne, 2010).

While many types of implementation outcomes are ultimately important to pave the way for more effective implementation strategies (Proctor et al., 2011), we focused on establishing implementation fidelity as an important step in this broader research agenda. Several indicators of implementation fidelity were monitored and evaluated, consistent with expert guidelines (Dusenbury et al., 2003; Proctor et al., 2011), including: (1) adherence to intervention protocols, (2) dose/intensity, or amount of intervention delivered, and (3) program differentiation, or the presence of critical distinguishing features of the intervention. This multidimensional evaluation of implementation fidelity sought to establish the internal validity of the treatment comparison as prescribed by model developers (Carroll, Kadden, Donovan, Zweben, & Rounsaville, 1994). Four questions were explored:

1. Were MDFT therapists in all five sites adherent to MDFT interventions in sessions?
2. Did MDFT therapists in all five sites deliver sufficient dose of MDFT interventions?
3. Would MDFT be differentiated from IP in all five sites as measured by greater family and community/systems focus?
4. Would measures of implementation fidelity be linked to client outcomes?

2. Methods

2.1. Overview

INCANT was a multisite randomized controlled trial that compared MDFT with individual psychotherapy (IP) for adolescent drug abuse in Brussels, Belgium (Brugmann Hospital), Berlin, Germany (Therapie-laden), Paris, France (Centre Emergence and CEDATs), The Hague, the Netherlands (Parnassia Brijder and De Jutters), and Geneva, Switzer-

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