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Development and Evolution of an Evidence-Based Practice: Multidimensional Family Therapy as Treatment System

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Contents

"Evidence-based practice" can be considered the sign of the times in the substance abuse treatment field as in other areas of psychology. The phrase is so commonly (and perhaps carelessly) used that its full meaning may be obscured to researchers and practitioners alike. Multiple constituents have a stake in the use and promotion of evidence-based practice (e.g., policy makers, community agency directors, community treatment providers, etc.). Policy makers have successfully used best-practice guidelines to encourage the adoption of empirically based treatments (NIDA, 2004; NIMH, 2004). Such policies have had a broad impact on community agency program directors and community treatment providers, as well as treatment researchers. However well-intentioned, pressure from funders to adopt evidence-based practices without sufficient resources to do so places the average community-based provider at a disadvantage in maintaining funding and providing quality services. The merits of evidence-based practice are often hotly debated in relation to the effort and funds needed to implement them. What may get lost in these discussions is that evidence-based practice is not just about the "evidence base" but about developing and using clinical expertise and knowledge of different client groups, activities that have been fundamental in the evolution of certain treatments.

The Institute of Medicine (2001) defined evidence-based practice as "the integration of best research evidence with clinical expertise and client values." The editors of this volume provide a straightforward definition that reflects the IOM (2001) and APA (2005) statements on EBP: "knowledge and use of the most recent evidence to support clinical decision making" (Collins, Leffingwell, Callahan, & Cohen, this volume). Although many controversies exist in terms of the exact nature of evidence-based practice, and establishment of a research base to support and guide implementation of evidence-based practices is just beginning (Miller, Zweben, & Johnson, 2005), there are examples in the adolescent substance abuse field of models demonstrating a true integration of research evidence with clinical expertise in the context of patient characteristics, culture, and preferences (APA, 2005). One such treatment is Multidimensional Family Therapy (MDFT; Liddle, 2002a), which is the focus of this chapter.

We illustrate the ways in which the clinical development and validation of MDFT has been accomplished in the context of a series of randomized clinical trials as well as a set of process studies that have examined specific and change-relevant clinical processes. We also discuss the adaptability and suitability of the model with diverse client groups. The discussion is organized along the three pillars of evidenced-based practice: research evidence, clinical judgment and expertise, and consideration of client characteristics. The chapter concludes with a discussion of a fourth aspect (a potential fourth pillar?) of MDFT's evidence base: the empirically established implementation potential of MDFT in different clinical settings.

MDFT's research foundation includes documented effectiveness on a range of outcomes in controlled efficacy and effectiveness studies. Second, clinical judgment and decision making are discussed in terms of MDFT process studies that link hypothesized clinical mechanisms to client outcomes. Clinical expertise is also substantiated through MDFT adherence studies which show that therapists can be trained to deliver the model with a high degree of fidelity in both clinical research and community-based settings. Third, the model's acceptability to and its effects with diverse clinical groups demonstrate MDFT's flexibility as a treatment system rather than a "one-size-fits-all" approach (a common complaint of practitioners about EBPs). Over the more than 20 years in which MDFT has been studied and refined, we have developed different versions of MDFT specifically designed to match client and family characteristics. We have also established MDFT's potential for successful implementation in different practice settings, and for improving clinical outcomes over standard practice.

A framework that has been influential in shaping MDFT's growth over the past two decades has been Kazdin's (1994) "treatment development" approach (see Table 21.1). This framework, entirely consistent with the IOM (2001) and APA (2005) EBP guidelines, posits that the evolution of an EBP balances sound scientific principles with a cognizance of the need for treatment research to be relevant to multiple constituencies and in different contexts.

Steps 1–4 in Kazdin's framework describe the systematic development of MDFT since the early 1980s, from a thorough understanding and use of basic and applied research on developmental psychopathology and the contexts and processes of normative adolescent

TABLE 21.1

1. Conceptualization of the Dysfunction
   Conceptualization of key areas that relate to the development, onset, and escalation of dysfunction, proposal of key processes that are antecedents to some facet of conduct disorder and the mechanisms by which these processes emerge or operate.
2. Research on Processes Related to Dysfunction
   Research that examines the relations of processes proposed to be critical to the dysfunction (conduct disorder) to test the model.
3. Conceptualization of Treatment
   Conceptualization of the treatment focus, how specific procedures relate to other processes implicated in the dysfunction and to desired treatment outcomes.
4. Specification of Treatment
   Concrete operationalization of the treatment, preferably in manual form, so that the integrity of treatment can be evaluated, the material learned from treatment trials can be codified, and the treatment procedures can be replicated.
5. Tests of Treatment Process
   Studies to identify whether the intervention techniques, methods, and procedures within treatment actually affect those processes that are critical to the model.
6. Tests of Treatment Outcome
   Treatment studies to evaluate the impact of treatment. A wide range of treatment tests (e.g., open [uncontrolled] studies, single-case designs, full-fledged clinical trials) can provide evidence that change is produced. Several types of studies (e.g., dismantling, parametric, and comparative outcome) are relevant.
7.

development (Liddle, Rowe, Dakof, & Lyke, 1998; Liddle et al., 2000) to the specification of the intervention manual and protocols designed to target the specific risk and protective factors linked to adolescent problem behaviors (Liddle, 2002a; Liddle, Rodriguez, Dakof, Kanzki, & Marvel, 2005). The process research described in Step 5 has articulated details about MDFT treatment and clinical decision making that predict variations of therapeutic response (e.g., Diamond & Liddle, 1996; Robbins et al., 2006). A series of outcome studies (Step 6) has established the robust effects of MDFT over standard practice and other highly regarded treatments for adolescent drug abuse (e.g., individual CBT and peer group therapy). Step 7 in Kazdin's framework examines the limits or variations of treatment effectiveness, established through tests of treatment effectiveness with understudied populations and in different clinical contexts. In tests of the boundary conditions of MDFT, we have established its generalizability and ecological validity across variable contexts and addressing diverse client characteristics.

MDFT is an integrative outpatient treatment that has blended family therapy, individual therapy, drug counseling, and multiple-systems-oriented intervention approaches (Liddle, 1999). Interventions target the interconnected domains of adolescent development, and within these contexts, the circumstances and processes known to create and/or continue dysfunction (Bronfenbrenner, 1979; Hawkins, Catalano, & Miller, 1992). MDFT interventions work in four domains: changes in the adolescent (individual developmental functioning, including peer relationships), the parent(s) (individual functioning of the parent as well as parenting), the family environment (family transactional patterns), and extrafamilial systems of influence on the adolescent and family (e.g., working with schools [advocacy work on behalf of the teen, coaching parents to work with school personnel], social service agencies, or the juvenile justice system).

MDFT is a treatment system and not a singular, "one-size-fits-all- approach." It has been adapted and tested in various forms or versions according to target population and contextual characteristics in community-based clinical trials with samples of mainly juvenile justice involved, substance-abusing teens. The approach strives for a consistent and obvious connection among its organizational levels: theory, principles of intervention, interventions strategies and methods, and clinical assessment of family progress. MDFT has been recognized nationally and internationally as among the most effective treatment approaches for adolescent drug abuse and delinquency (NIDA, 1999; Annie E. Casey Foundation, 2002; CSAT, 1998; Drug Strategies, 2003; DHHS, 2002; CSAP/OJJDP, 2000; DrugScope/Drug and Alcohol Findings, 2002; Rigter, Van Gageldonk, & Ketelaars, 2005).

The conceptualization of MDFT as a treatment system is basic to our research program. Implicit in this conceptualization are the notions of treatment adaptation and variability, core features addressed in the consideration of EBP. Akin to specifying and manipulating an independent variable in a classic experimental research design (Campbell & Stanley, 1966), defining a treatment as a treatment system places the approach itself in the forefront of what is manipulated and tested. Through a series of studies, the effects of the treatment adaptation are observed, and, based on data, the treatment is specified further and manipulated to address additional facets of the treatment's boundary conditions. This has been the modus operandi of the MDFT research program over the past two decades. We now turn our attention to specific studies conducted in the MDFT research program.

MDFT Research Evidence

MDFT Versus Peer Group Treatment and Multifamily Educational Groups

MDFT efficacy in reducing adolescent substance abuse and associated behavior problems has been established in five completed controlled trials conducted since the mid-1980s. In the first, Liddle et al. (2001) examined the efficacy of Multidimensional Family Therapy in comparison to two manualized active treatments, Adolescent Group Therapy (AGT) and Multifamily Educational Intervention (MFEI). The study was conducted at several community clinics in the San Francisco Bay area. Each treatment involved 14–16 office-based sessions provided weekly in the clinic. One hundred and eighty-two marijuana and alcohol-abusing adolescents were randomized to MDFT, AGT, or MFEI and followed for up to a year. Participants were primarily male, and came largely from low-income, single-parent households. Approximately 50% were ethnic minorities. Youth were primarily polydrug users, coupling near-daily use of marijuana and alcohol with weekly use of cocaine, hallucinogens, or amphetamines, and averaged 2.5 years of drug abuse. The results revealed significant decreases in substance use and problem behaviors at termination for all treatments, with youth receiving MDFT showing significantly less substance use than the two comparison treatments. At the one-year follow-up, MDFT youth again decreased their substance use to a greater extent than either treatment. In addition, MDFT showed significantly greater improvements in school performance than the comparison treatments and was also the only treatment in which youth showed improvements in their family functioning as measured by objective behavioral ratings using a videotaped family interaction scale.

MDFT Versus Individual CBT

The second outcome study compared MDFT to an empirically supported, individual-based adolescent treatment, Cognitive Behavior Therapy (CBT; Liddle, 2002b). This study is noteworthy because MDFT was compared to one of the most efficacious and commonly used behavioral treatments for adolescent drug abuse (Kaminer, 1999). Two hundred twenty-four adolescents referred to a community clinic for substance abuse treatment were randomly assigned to one of the two active treatments. This North Philadelphia urban sample was primarily male, African-American, and low income. All youth were substance users, with 78% meeting diagnostic criteria for substance dependence and 17% meeting diagnostic criteria for substance abuse. From intake to discharge, both MDFT and CBT reduced marijuana use and psychological involvement with drugs. However, youth who received MDFT showed more rapid decreases in psychological involvement with drugs through the 12-month follow-up. In addition, youth receiving MDFT continued to improve following treatment discharge, so that at the 6- and 12-month follow-up assessments their psychological involvement with drugs was lower than that of youth receiving CBT. Only MDFT affected hard drug use. Finally, a greater proportion of youth receiving MDFT (64% vs. 44%) reported no or one occasion of drug use at the 12-month follow-up.* In sum, the advantages of MDFT over CBT were its

*Of those MDFT youth reporting no or one occasion of drug use (64% of the total MDFT sample), 87% reported being abstinent over the previous 30 days. Of those CBT youth reporting no or one occasion of drug use (44% of the CBT sample), 82% reported being abstinent.

ability to sustain the effects of treatment beyond termination and to effectively affect harder drug use.

MDFT Versus Peer Group Therapy for Young Teens

A third trial tested MDFT as an early intervention for young adolescent alcohol and drug users (ages 11–15) in Miami. Both MDFT and the comparison peer group treatment were delivered by clinicians employed by a local community drug abuse treatment agency. Eighty-three adolescents were randomized to receive MDFT or peer group treatment (Liddle et al., 2004). Intake to discharge findings revealed significant treatment effects favoring MDFT in several major risk domains: (a) individual, (b) family, (c) peer, and (d) school influences. Most important, MDFT participants showed greater decreases in marijuana and alcohol abuse than youth receiving the peer group treatment. Looking further to 12-month follow-up, results indicate that the intake to discharge findings are maintained. MDFT more effectively reduces risks in individual, family, peer, and school domains. Furthermore, youth receiving MDFT were more likely to abstain from drug use, report no problems associated with drug use, and decrease their delinquent behavior more rapidly than youth receiving peer group treatment over 12 months following treatment. The encouraging results of this study indicate that MDFT can be effective with a clinically referred sample of young adolescents.

MDFT in the CYT Study

MDFT was also one of the treatments tested in the multisite Cannabis Youth Treatment (CYT) Study (Dennis et al., 2004). The version of MDFT employed in the CYT study was delivered once a week at outpatient clinics in urban Philadelphia and rural Illinois over a 12–14-week period. Teens who received MDFT in the CYT were primarily male, White non-Hispanic, or African-American, and involved in the juvenile justice system. Consistent with findings from previous trials, MDFT had a positive impact on drug use and other problem behaviors, and it also showed the capacity to sustain gains made in treatment through a 12-month follow-up period (e.g., youth receiving MDFT decreased their substance-related problems over 50% from intake through the 12-month follow-up). The improvements associated with MFDT were similar to those achieved by the other empirically supported active comparison treatments (Motivational Enhancement Therapy/Cognitive Behavioral Therapy, Adolescent Community Reinforcement Approach) in the CYT study (Dennis et al., 2004).

MDFT as a Prevention Approach for High-Risk Youth

In the fifth completed controlled trial, Multidimensional Family Therapy was tested as a prevention approach (MDFP) with a sample of at-risk, inner-city young adolescents and their families in North Philadelphia (Hogue, Liddle, Becker, & Johnson-Leckrone, 2002). Study participants were early adolescents (mean age 12.5 years), predominantly girls (56%), almost entirely African-American (97%), and mostly low income. Intervention effects were examined for nine targeted outcomes within four domains of functioning: self-competence, family

functioning, school involvement, and peer associations. As in the early intervention study described above, these domains are considered to be proximal mediators—that is, indices of risk and protection—of the ultimate behavioral symptoms to be prevented: substance use and antisocial behavior. Youth in MDFP showed greater gains than controls on four of the nine outcomes (one outcome in each of these four domains): increased self-concept, a trend toward increased family cohesion, increased bonding to school, and decreased antisocial behavior by peers. These results offer preliminary evidence for the short-term efficacy of family-based prevention counseling for at-risk young adolescents. Although controls experienced decreases in family cohesion and school bonding and an increase in peer delinquency, MDFP subjects reported strengthened family and school bonds and reduced peer delinquency. Overall, these gains were small to moderate in magnitude, and they were evident regardless of the adolescent's sex, age, or initial severity of behavioral symptoms.

In sum, the research evidence supporting MDFT's effects is strong in several respects. First, the studies have shown favorable outcomes for youth in MDFT in comparison to other state-of-the-art, well articulated, and carefully monitored treatments. Second, youths' and families' functioning in a range of domains have been shown to improve during treatment and to maintain gains up to a year following treatment. Third, the studies have recruited clinically referred samples with a range of problems and we have achieved effects within community clinics, demonstrating MDFT's effectiveness in real-world settings as well as its efficacy.

Clinical Judgment and Expertise: MDFT Process and Adherence Research

Clinical judgment and expertise can be established through treatment research focused on processes of change (Kazdin, 2001), as well as adherence research showing that therapists can be trained to deliver the approach with high fidelity to the manual specifications (Waltz, Addis, Koerner, & Jacobson, 1993). MDFT process studies have revealed details about treatment that predict variations of therapeutic response (e.g., Diamond & Liddle, 1996; Robbins, et al., 2006). These studies of the treatment's interior have served to advance manualization and refinement of the approach, as well as substantiating core hypothesized mechanisms of change and helping guide clinical decision making. Our understanding of the mechanisms of change that account for successful outcome in EBPs is far from complete (Kazdin & Nock, 2003), however, progress has been made. In addition, treatment adherence procedures verify that MDFT therapists deliver the interventions with high fidelity to model specifications.

MDFT process research has confirmed the importance of some core hypothesized mechanisms of change in facilitating change during treatment, consistent with the model's theory of change. For instance, interesting results of a recent process study showed that family-focused, and not adolescent-focused interventions, predicted posttreatment improvements in drug use, externalizing, and internalizing symptoms within both MDFT and individual CBT (Hogue, Liddle, Dauber, & Samoulis, 2004). Other MDFT process studies, described below, have systematically studied therapist and client contributions to the development of an effective

therapeutic alliance (Diamond, Liddle, Hogue, & Dakof, 2000), improvements in parenting (Schmidt, Liddle, & Dakof, 1996), and the resolution of in-session therapeutic impasses (Diamond & Liddle, 1996).

Adolescent Domain: Building Therapeutic Alliances

One of the MDFT therapist's first tasks in treatment is to establish a strong therapeutic relationship with the teen to create a collaborative atmosphere that will facilitate later requests for change. The MDFT theory of change is epigenetic: establishing the alliance with the teen is a fundamental building block that creates the foundation for later therapeutic work. Teen substance abusers are notoriously difficult to engage in therapy, and it can often be a challenge to identify ways that the treatment can be meaningful for them. The critical process of establishing the alliance with teens has thus been an important focus in a series of MDFT process studies.

We first examined the impact of adolescent engagement interventions on improving initially poor therapist–adolescent alliances (Diamond, Liddle, Hogue, & Dakof, 2000). The sample was juvenile justice involved, substance-abusing inner-city teens, most of whom had a dual diagnosis of substance abuse and a mental health disorder. Cases with weak therapist–adolescent alliances in the first treatment session were observed over the course of the first three sessions. Significant gains in working alliance were evident when therapists emphasized the following alliance-building interventions: attending to the adolescent's experience, formulating personally meaningful goals, and presenting one's self as the adolescent's ally. Lack of improvement or deterioration in alliance was associated with the therapist continually socializing the adolescent to the nature of therapy. Moreover, in improved alliance cases therapists increased their use of alliance-building interventions from session two to session three (therapist perseverance), whereas therapists in unimproved cases decreased their use (therapist resignation). These results indicate that although it is an instrumental early-stage therapist method, when therapists over-focus on and become stuck in orienting adolescents to therapy, and thus wait too long to discuss how the therapy can be personally meaningful for the teenager, a productive working relationship is not formed.

More recent studies link the development of the therapeutic alliance with teens' and families' overall clinical outcomes. For instance, Shelef, Diamond, Diamond, and Liddle (2005) found that both adolescent–therapist and parent–therapist alliances made important contributions to treatment retention and outcome. Whereas the strength of the parent–therapist alliance predicted treatment retention, once the family engaged in treatment, it was the quality of the adolescent–therapist alliance that predicted decreases in the adolescents' drug-using behavior. In addition, MDFT therapeutic alliances are linked to and predict treatment completion (Robbins et al., 2006).

Parenting Domain: Changing Parenting Practices

The simultaneous development of a strong working alliance with parents sets the stage for change efforts in the parenting realm. When engagement in the program and motivation for change has been facilitated with parents (see Liddle, Rowe, Dakof, & Lyke, 1998 for details

about early-stage work with parents), the intensive work of targeting ineffective parenting practices and building upon competent parenting strategies can be initiated. Using behavioral ratings of videotaped therapy sessions, Schmidt, Liddle, and Dakof (1996) investigated the nature and extent of change in parenting behaviors, as well as the link between parental subsystem change and reduction in adolescent symptomatology. In a sample of parents whose teenagers were juvenile justice referred and evidenced serious drug and mental health problems, parents showed significant decreases in negative parenting behaviors (e.g., negative affect, verbal aggression) and increases in positive parenting (e.g., monitoring and limit-setting, positive affect, and commitment) over the course of MDFT. These improvements in parenting behaviors were associated with reductions in adolescent drug use and problem behaviors. Four different patterns of parent–adolescent tandem change were identified: 59% of families showed improvement in both parenting practices and adolescent symptomatology, 21% evidenced improved parenting but no change in adolescent problems, 10% showed improved adolescent symptoms in the absence of improved parenting, and 10% showed no improvement in either parenting or adolescent functioning. These results support an elemental tenet of family-based treatments: change in a fundamental aspect of the family system (parenting practices) is related to change at the critical level of interest: reduction of adolescent symptoms, including drug abuse.

Family Domain: Resolving Therapeutic Impasses

A third illustration of the potential of process research to empirically support clinical decision making in MDFT addressed one of the core challenges of family-based therapy: moving beyond stalemates and promoting healing and real relationship change within families. G. S. Diamond and Liddle (1999) used task analysis, again by studying therapy videotapes, to identify the combination of clinical interventions and family interactions necessary to resolve in-session impasses. These are clinical situations characterized by negative exchanges, emotional disengagement, and poor problem solving between parents and adolescents. The sample in this process study was substance-abusing, juvenile justice-referred teenagers and their families.

Therapist behaviors that contributed to changing these negative interactions included: (a) actively blocking, diverting, or addressing and working with negative emotions; (b) offering, evoking, and amplifying thoughts and feelings that promote constructive discussion; and (c) creating emotional treaties among family members by alternately working in session with parents alone and adolescents alone and then together, a kind of shuttle diplomacy. In cases with successful resolution of the impasse, the therapist transformed the nature and tone of the conversation in the session. The therapist shifted the parent's blaming and hopelessness to attention to their feelings of regret and loss and sometimes sadness about what was occurring with their child. At the same time, the therapist elicited the adolescent's thoughts and feelings about relationship roadblocks with the parent and others. These in-session shifts of attention and emotion made new conversations between parent and adolescent possible. In so doing, the parents developed empathy for the difficult experiences of their teenager and offered support for their teen's coping. These interventions and processes facilitated personal disclosure by the adolescent, decreased defensiveness, and created give and take exchanges.

This study yielded insights about clinical judgment and decision making in several areas. First, we found a theory-based way to reliably define and identify family transactional processes that are known determinants of poor developmental outcomes in children and teenagers. Second, we broke down in behavioral terms the components of the impasse, defining the unfolding sequential contributions of both parent and adolescent. Third, we specified the relation of different therapist actions to the impasse. Fourth, we demonstrated that therapists can change an in-session therapeutic impasse and thus affect one of the predictors of developmental dysfunction related to drug abuse.

MDFT Adherence Evaluation and Monitoring to Support Clinical Judgment and Decision Making

Process-based adherence research has also confirmed that MDFT can be implemented with a high degree of clinical skill and fidelity to the treatment model's prescriptions (Hogue et al., 1998). This line of research also supports clinical decision making by demonstrating that MDFT therapists adhere to interventions consistent with model guidelines and they can be differentiated from therapists delivering other treatment approaches. We compared intervention techniques of MDFT therapists to intervention techniques of cognitive-behavioral therapists in a controlled trial with adolescent substance abusers. Nonparticipant coders observed videotapes of randomly selected sessions from the MDFT and cognitive-behavioral conditions using an adherence evaluation instrument designed to identify therapeutic techniques and facilitative interventions associated with the two treatment models. Coders estimated both the frequency and the thoroughness (i.e., depth, complexity, or persistence) with which techniques were delivered.

Results demonstrated that MDFT therapists reliably utilized the model's core interventions: focusing on and enhancing individual teen and parenting functioning, shaping parenting practices, preparing for and coaching multiparticipant interactions in session, and facilitating change directly with multiple family members (Hogue et al., 1998). Moreover, in keeping with MDFT's commitment to working on family attachment bonds and developmental themes (Liddle & Schwartz, 2002), MDFT therapists focused on establishing a supportive therapeutic environment, encouraging expression and discussion of emotions, engaging clients in crafting a collaborative treatment agenda, and exploring everyday behavior related to normative adolescent development. This study illustrates how fine-grained process-oriented adherence evaluation can contribute to therapist training that shapes clinical decision making. Having a rigorous systematic adherence evaluation system in place enables the level of clinical expertise and quality of clinical decision making to be regularly monitored and adjustments to be made as needed in supervision.

Client Characteristics and Values: The Different "Looks" of MDFT

The previous sections have described the research evidence for MDFT's effects, as well as process and adherence studies supporting the clinical judgment and expertise of MDFT therapists trained along manual guidelines. The next section describes how variations of the MDFT

approach have been developed to meet the needs of different client groups (e.g., ethnic minorities, youth with comorbid mental health problems, and girls).

MDFT with Different Cultural Groups

MDFT is noteworthy among treatment approaches for adolescent substance abuse and delinquency because it has been developed and tested with a broad range of cultural and ethnic groups across the United States and more recently in Europe. Almost all of the youth and families with whom we have worked over these years have been from minority groups: primarily African-American and Hispanic. Our engagement and retention rates attest to the acceptability of the treatment with different cultural groups. MDFT clients stay in treatment longer than clients in other outpatient and residential comparison treatments (Dakof, Rowe, Liddle, & Henderson, 2003). Specifically, 96% of clients (a sample that was approximately half African-American and half Hispanic) in intensive outpatient MDFT completed treatment, compared to 78% of youth in group therapy. Recent U.S. national figures indicate that only 27% of youth stay in standard outpatient for 90 days (Hser, Haikang, Chou, Messer, & Anglin, 2001). Although retention rates are a good indicator of the acceptability of MDFT with families of different ethnicities, a major focus of our treatment improvement and development efforts have been directed toward making our approach culturally appropriate and more efficacious for diverse families.

Early treatment development research on MDFT examined key cultural themes important for working effectively with inner-city, African-American youth (Jackson-Gilfort, Liddle, Tejeda, & Dakof, 2001). We investigated whether therapeutic discussion of culturally relevant themes enhanced treatment engagement of African-American male youths residing in urban North Philadelphia. A total of 187 videotaped therapy sessions with African-American male adolescents were coded for in-session discussion of developmentally and culturally related content themes. Exploration of anger and rage, alienation, and the journey from boyhood to manhood (i.e., what it means to become an African-American man) were associated with both increased participation and decreased negativity by adolescents in the very next treatment session. The extent of the adolescent's participation in session was also linked to more open communication and dialogue about the youth's journey from boyhood to manhood in the next therapy session. Interestingly, discussions of racial identity/socialization were found to have no association with adolescent engagement. These results suggest that articulation of particular culturally meaningful themes is directly linked to adolescent investment in the treatment process (Liddle, Jackson-Gilfort, & Marvel, 2006).

Ongoing treatment development work with youth and families in Miami has focused on outlining cultural themes that are most relevant in working effectively with Hispanic and Haitian teens and families. Specifically, MDFT investigators have identified a number of salient content themes and relational patterns, many surrounding the immigration experience and acculturation process, that affect intervention focus and outcome in MDFT. This work has included eliciting the family's immigration story as a fundamental component of treatment engagement, expanding interventions to work within and influence Hispanic and Haitian families' conceptualizations of adolescent development, addressing acculturation differences among family members, and developing culturally syntonic protocols for parents to reconnect with their adolescents.

Our work in exploring cultural themes and making MDFT suitable and maximally effective for other cultural groups continues in Western Europe. We have successfully implemented the model in five countries in Europe (Belgium, France, Germany, the Netherlands, and Switzerland) through a collaborative study financed by the Health Ministries of these nations. A pilot study of MDFT's potential for implementation established the feasibility of training European therapists from a range of backgrounds in MDFT and demonstrated that youth and families from all five countries responded well to the treatment with minimal adaptations of core interventions. The European therapists delivered MDFT at comparable adherence and competence levels to MDFT therapists trained by the model developer in our controlled trials in the United States (Rigter, 2006). Based on the success of the pilot study, the five countries have embarked on a multinational randomized trial comparing MDFT with treatment as usual for cannabis-dependent adolescents. Another NIDA-funded study examines the acceptability and effects of MDFT for youth and families treated by addiction workers in Glasgow, Scotland. Responses of the providers and their clients have been positive, and as in the Western European study, few significant adaptations have been needed to implement the model in Scotland. The adaptations tend to have been along the lines of the most salient themes and particular content developed in sessions, as well as systems-level issues, rather than changes to core interventions.

MDFT with Adolescent Girls and their Families

MDFT has also been tested and refined with delinquent and drug-abusing adolescent girls, who face daunting challenges (Dakof, 2000). Their problems are as severe as boys', yet because they tend to internalize their distress to a greater extent than boys (Rowe, Liddle, Greenbaum, & Henderson, 2004), they often do not come to the attention of social service agencies until they are in serious trouble. For instance, an alarmingly large percentage of the girls assessed in Miami-Dade County's Juvenile Detention experienced significant trauma (84%), suffered from mental health and substance abuse disorders (78%), had serious family problems (e.g., 61% with history of family criminality), and were sexually active (79%; Lederman, Dakof, Larrea, & Li, 2004). Moreover, the more girls became involved in the juvenile justice system, the greater the severity of many of their problems. When these girls grow up, they are at high risk for drug addiction, psychiatric problems, HIV infection, poor physical health, domestic violence, losing custody rights of their children, incarceration, and increased mortality if they do not receive the help they need.

Behavioral sciences theory about female adolescent development and the psychology of women, especially Miller's (1987) "self-in-relation" theory, and empirical findings from studies on adolescent female development, combined with our years of clinical experience with adolescent females, have guided the development of a comprehensive intervention specifically for adolescent girls. The approach integrates basic behavioral sciences theory and empirical findings on female adolescent development and the psychology of women with MDFT theory (Dakof, 2000). Given the importance of interpersonal relationships to the well-being of adolescent females, the primary focus of the intervention is relational. Developmental research and clinical findings consistently highlight the importance of healthy and nurturing relationships to adolescent girls, suggesting that in clinical samples, therapists must help heal key

relationships to heal the girl. We have developed a gender-specific version of MDFT that aims to repair the relationship between the adolescent girl and her family, instill a positive sense of self in relation to others, and improve her social skills and prosocial opportunities so she is able to increase her affiliations with healthy same-sex and opposite-sex peers.

MDFT for Youth with Comorbid Mental Health Problems

Our work with youth who suffer from serious comorbid mental health problems (see Rowe et al., 2004) facilitated the development of a more intensive and comprehensive version of MDFT to address youths' multiple impairments. The success of comprehensive interventions with their intensity of service delivery, case management components, and home-based service delivery contexts (Henggeler, 1999; Olds et al., 1998) led us to develop a highly intensive version of MDFT incorporating case management and face-to-face therapy sessions primarily delivered in the home and offered more than once per week (Rowe, Liddle, McClintic, & Quille, 2002). We then set out to test whether this intensive family-based treatment could achieve comparable outcomes to residential treatment with youth referred for inpatient treatment due to severe substance abuse, previous failure in outpatient programs, family dysfunction, and comorbid mental health disorders. The study also includes a comprehensive benefit-cost analysis of the treatments, and follows youth and their parents each year for four years.

Although this study is ongoing, our preliminary findings are promising (Liddle et al., 2004). Significantly greater proportions of MDFT participants are retained in treatment (87% vs. 68%). In addition, from intake to discharge, despite living at home, MDFT participants decrease their drug use and psychological involvement with drugs at approximately the same rate as residential treatment participants. Furthermore, between intake and discharge, youth receiving MDFT were arrested at approximately the same rate as youth receiving residential treatment (18% vs. 15%), despite the fact that youth in MDFT were "at large" in the community and residential youth were housed securely in their program. Additional preliminary findings show that between treatment discharge and 18-months follow-up, MDFT youth spend fewer days in controlled environments than youth coming from the residential program. Preliminary cost estimates (as measured by the DATCAP) indicate that the cost of delivering intensive MDFT is approximately one-third the cost of delivering the residential treatment ($384 vs. $1,138; Zavala et al., 2005).

Additional support for the benefits of MDFT for youth with severe comorbid conditions comes from additional analyses of the second clinical trial data described above, in which MDFT was tested against a strong individual CBT approach (Liddle, 2002b). Henderson, Dakof, Rowe, Greenbaum, and Liddle (2004) used growth mixture modeling analyses to uncover two distinct subgroups differentiated by their baseline severity in psychological involvement with drugs. The more severe substance-abusing group was also characterized by more baseline family conflict, externalizing symptoms, and comorbid externalizing disorders. Both subgroups showed similar (statistically significant) decreases in their psychological involvement with drugs over time. Treatment comparisons were then conducted within each latent class. For the less severe class, MDFT and CBT were equally effective in reducing substance abuse; however, for the more severe class, MDFT was more effective than CBT. These results suggest that more severely impaired youth benefit significantly from more comprehensive, family-based treatments.

Finally, a new study set in the New Orleans area tests an integrative family-based approach to treating comorbid substance abuse and trauma among teens and families in the wake of Hurricane Katrina. This randomized trial has a treatment development component in which MDFT developers have systematically incorporated trauma-focused interventions within the model (Rowe & Liddle, gl nress). The approach is unique in that few trauma-focused interventions have been truly integrated within an empirically supported substance abuse program. In addition, few empirically based trauma interventions concurrently address the stress and coping of teens and their parents, or leverage the healing potential of the family as a larger unit. Taken as a whole, our systematic work to adapt MDFT for youth with diverse problems has been fruitful, paving the way for new developments. One of our next steps is to devise and test a version of MDFT that can be used in adolescent residential settings, and then, continued upon the youth's discharge back home and to the community.

Pillar 4: MDFT's Potential for Dissemination in Diverse Practice Settings

The transportation of empirically based practices (EBPs) to practice settings is a topic of much conversation in the field of treatment research (IOM, 1998; NIDA, 2004; NIMH, 2004). However, there are multiple factors in clinical settings that may dilute treatment effects, such as insufficient monitoring and compromised adherence to treatment protocols (Henggeler, Melton, Brondino, Scherer, & Hanley, 1997), heterogeneity of the clinical population (Weisz, Doneberg, Han, & Weiss, 1995), and restrictions on treatment delivery (e.g., insufficient time or resources to deliver EBP as specified; Willenbring et al., 2004). Lacking knowledge about how empirically supported treatments work, with whom they are most effective, and how to disseminate them effectively, EBPs ultimately may be ineffective in clinical settings (Kazdin, 2001).

We are increasingly prepared to face these challenges, having launched a series of new studies translating our knowledge about how to execute critical components of the MDFT model into interventions that help systems prepare for and adopt MDFT within their existing structures and realities (Liddle et al., 2002). Our extensive experience in training and supervising family therapists (Liddle, Breunlin, & Schwartz, 1988; Liddle, Becker, & Diamond, 1997) has been instrumental in our ability to effectively train multidisciplinary clinical teams with a wide range of backgrounds, clinical training, and treatment experiences. Our quest to understand how to most effectively train community clinicians in delivering MDFT continues in our ongoing studies. We are examining how to integrate MDFT into complex and challenging clinical systems (e.g., Juvenile Drug Court and Juvenile Detention) and how to integrate technological aids (i.e., interactive on-line training curriculum, personal digital assistant [PDA]) into core training methods. Our current studies aim to improve outcomes in community-based clinical settings by helping providers learn and integrate MDFT into their day-to-day work.

Transporting Family Therapy into Adolescent Day Treatment

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(ADTP). Our goals were: (1) to determine if the treatment staff would be able to effectively deliver the MDFT model with fidelity, (2) to examine adolescent outcomes in response to the training, (3) to determine if therapists would continue to be adherent to MDFT following removal of monitoring and supervision by the MDFT team, and (4) to assess the impact of the technology transfer on the organizational climate of the ADTP. A significant aspect of this study was that all ADTP employees (therapists, program director, medical staff, and teachers) were trained in MDFT interventions. Additionally, MDFT was adapted to fit within the existing service delivery characteristics of the ADTP (for details see Liddle et al., 2002). The study utilized an interrupted time series design, divided into study phases: (1) Baseline, in which provider practices, program environment, and client outcomes were assessed but no training was provided; (2) Training/Exposure, in which MDFT developers trained all day treatment staff in MDFT; (3) Implementation, in which MDFT developers provided ongoing supervision and booster training as needed and the impact of training was assessed; and (4) Durability, in which MDFT trainers and research staff withdrew from the ADTP and the sustainability of the training was assessed.

Liddle et al. (2006) reported the impact of training in MDFT on provider practices, program and environmental factors, and client outcomes. First, we investigated whether the intervention effectively changed therapist practices in accordance with MDFT guidelines. Analyses of therapeutic contacts indicated that therapists did indeed hold more treatment sessions with the individual adolescents, their families, and extrafamilial others (e.g., juvenile probation officers and school officials), as prescribed by the MDFT model, following training in MDFT than in the pretraining Baseline phase. Although we expected that the adherence to MDFT parameters would dissipate some in the Durability phase of the study when supervision and monitoring were withdrawn, we found that the number of therapy sessions and extrafamilial contacts either remained stable or increased. All parameters remained significantly above baseline levels. In addition to changing provider practices, content analyses of session notes indicated that therapists were more likely to deal with core MDFT principles in their sessions during the Implementation and Durability phases. As a more powerful test of adherence to MDFT interventions, nonparticipant observers rated actual therapy sessions of day treatment providers during the Baseline, Implementation, and Durability phases using the adherence system described above (Hogue et al., 1998). As hypothesized, day treatment providers utilized more MDFT interventions in the Implementation and Durability Phases than in Baseline.

In addition, the training affected the organizational climate of the ADTP. Clients reported that the ADTP was more orderly in the Implementation phase of the study than in the Baseline phase. Furthermore, clients reported that the staff were clearer about the program rules and expectations and provided a more practical focus to their problems following training.

Perhaps most important, clients showed more improvement in the Implementation and Durability phases than the Baseline phase. Specifically, substance use and comorbid internalizing and externalizing symptoms decreased more rapidly in Implementation and Durability. In addition, youth in the Baseline phase were more likely to be placed in a controlled environment (39%) than youth in the Implementation (8%) and Durability (0%) phases. Finally, client outcomes, specifically substance use and externalizing symptoms, showed greater decreases in Implementation than Baseline. These findings indicate that MDFT can be successfully adapted and transported into an existing community-based drug treatment program, with sustained impact on therapist practice patterns, the organizational climate of the treatment

program, and client outcomes. Furthermore, the success of this transportation project supports the dissemination potential of MDFT.

Family-Based Juvenile Drug Court Services

Despite the widespread support and enthusiasm for juvenile drug courts and some promising results, treatments within these systems and the courts themselves tend to lack empirical validation (Belenko & Dembo, 2003). In order to improve the outcomes of court-involved youth, we collaborated with the Miami-Dade County Juvenile Drug Court to adapt MDFT for incorporation into their system. An ongoing randomized trial is comparing the acceptability, efficacy, and benefit-cost of MDFT versus services as usual within the drug court program. As an effectiveness trial, the inclusion and exclusion criteria are set by the court itself and community-based clinicians deliver both treatments. We are interested not only in the comparative effects of MDFT in this setting, but also the mediators and moderators of outcomes (the mechanisms by which both treatments achieve their effects and any variations in clients' response to the treatments). Findings will shed light on key questions, such as whether the effects of drug court are enhanced when empirically supported treatments are implemented, what processes predict the effects of drug courts, and whether drug courts are differentially effective for certain teens or families.

MDFT-DTC: "Detention to Community"

A second current study targeting drug-abusing juvenile offenders tests an integrative, cross-systems family-based intervention model that aims to reduce drug abuse, delinquency, and high-risk sexual behavior and other individual and family problems among adolescents detained in juvenile detention and as they return to the community following release. Expanding the boundaries of MDFT, the MDFT-DTC ("Detention to Community") intervention is designed to provide seamless services that bridge the transition between youths' incarceration and their return to the community. This bridge is created by linking the in-detention and outpatient treatment components in ways that reflect the consensus in the literature regarding the need for integrative comprehensive interventions for criminal justice involved, substance-abusing individuals (Altschuler & Armstrong, 1999). The MDFT therapist targets multiple systems influential to a teen's developmental outcomes, including the adolescent's family and school, the judiciary, and social service agencies. This cross-systems intervention includes three principal components: an in-detention family-based intervention, an outpatient family-based intervention, and an HIV/STD prevention intervention. Each component targets change in the four core areas of MDFT: adolescent, parent, family, and other systems. The MDFT-DTC intervention is currently being tested in a randomized clinical trial in two sites of NIDA's Criminal Justice-Drug Abuse Treatment Studies, a collaborative of drug abuse and criminal justice experts around the country.

Brief Family-Based Therapy for Adolescent Drug Abuse

In addition to our focused efforts to improve services for drug-abusing youth in juvenile justice settings, the success of the initial day treatment study led us to adapt the MDFT treatment

approach to be more "community-friendly" for a wide range of substance abuse agencies. Dissemination research documents that existing EBPs rarely conform to the parameters that guide community-based practice (IOM, 1998). Community clinic therapists typically handle large caseloads and have limited opportunity to learn the intricacies of complex manualized treatments (Foster-Fishman, et al., 1997). Furthermore, the resources needed to implement multifaceted treatments are rarely in place in most community-based programs. Thus, even agencies eager to adopt empirically supported treatments may lack the resources to sustain their use. In contrast, brief treatments fit within the contextual realities faced by community practitioners, including delivering effective treatments within timeframes imposed by managed care regulations (Giles & Marafiote, 1998) and needing to treat a large number of clients to more efficiently meet the demands of overtaxed service delivery systems (Bloom, 2000). These factors provided the impetus for our group to develop and test a brief, "community-friendly" version of MDFT that would be less difficult for providers to master and sustain in practice.

This new "brief" version of MDFT represents a marked departure from previous versions, which have typically been anywhere from 12 weeks (CYT version) to 6 months (intensive home-based version) in duration. To enhance its real-world applicability, we refined and then pilot tested an 8-week/ 8-session version of MDFT in a community setting with agency treatment providers. The new treatment, MDFT-B (Brief), was compared to community treatment as usual (TAU, with a standard length of 4–6 months) and assessments of the new treatment's feasibility and acceptability to the adolescents, parents, and counselors were conducted. Drug use outcomes and changes in prosocial functioning were assessed from adolescent and parent perspectives up to 9 months post-intake. Although results are not yet available, we are hopeful that MDFT-Brief can advance technology transfer efforts by providing community treatment agencies with an EBP that fits within the contextual and structural realities of their day-to-day practice.

Training Community-Based Providers in MDFT

A final ongoing study aimed at increasing the dissemination of MDFT into practice examines the training practices and tools that help community providers implement MDFT with maximal effects. An ongoing pilot study tests the feasibility, acceptability, and effectiveness of a comprehensive, technology-based training program in changing clinician practices and clinical outcomes of providers. The project aims to develop and evaluate a training package that can be used to teach an EBP (MDFT) to a diverse and representative group of community therapists who work with teenagers. We are using methods that integrate new technologies (a Web-based interactive training program and handheld personal digital assistant) with existing training methods to facilitate the learning, mastery, and continued high-level use of MDFT following training. The study employs the same interrupted time-series design used successfully in the day treatment study described above (Liddle et al., 2006) to test training effects on providers' practices, organizational factors, and their clients' outcomes. The results will help inform us about more efficient and effective training strategies to help providers adopt EBPs in their agencies.

This final pillar of EBP is the last frontier for clinical researchers and has become the main focus of the MDFT program of research in recent years. Considerable effort has gone into developing and manualizing the model, establishing its efficacy, identifying core mechanisms

of action, and adapting the approach for specific populations over the past 20 years. Further refinements and improvements of the model are underway in the projects described to facilitate adoption of the approach in diverse practice settings.

Summary and Conclusions

The field of adolescent substance abuse treatment research has evolved significantly over the past two decades (Liddle & Rowe, 2006). Key among these advances has been the establishment of several empirically based practices for teens with multiple problems. In this chapter, we have shown how MDFT's program of research demonstrates its evidence base consistent with all three pillars of EBPs. We have also provided examples of how MDFT research, along the lines of Kazdin's (1994) concept of testing boundary conditions, supports its dissemination potential in diverse clinical practice settings and systems.

As treatment researchers, we often lament the fact that research findings do not have more impact on national drug policies (Prendergast & Podus, 2000). Yet we need to recognize that part of the problem, as Gregrich[†] (2003) notes, is that a great deal of treatment research does not address the most pressing questions facing policy makers. Such questions include studies identifying the essential elements of treatments, the modalities most suited to specific populations, and studies exploring the costs and economic benefits associated with treatment. Others have also pointed to the critical role that economic evaluations of treatment and its effects have on policy decisions (French, 2001). In the field of substance abuse treatment, the State of Washington has used data from economic evaluations to design funding streams for the state substance abuse treatment system (French, Salomé, & Carney, 2002). Policy makers are influenced by research findings if they are perceived as policy relevant (Backer, 2000). Studies demonstrating the most effective treatment modalities for different populations are needed to make more informed policy decisions (Gregrich, 2003).

MDFT researchers have attempted to address the interests of policy makers in several ways. First, we have designed studies to make MDFT more community-friendly. Recent MDFT studies are each designed to maximize the effectiveness of MDFT in nonresearch settings and have involved adapting the treatment based on a realistic appraisal of the context in which MDFT is being implemented. Second, we have become involved in the systematic study of the process by which community providers can be trained to implement research-based therapy in existing practice. In NIDA-funded studies, training contracts with jurisdictions such as the State of Connecticut (DCF), and international research conducted with European research partners, we are examining and improving the ways we teach and certify MDFT therapists in adolescent outpatient drug treatment programs. Third, we have initiated several studies evaluating the economic impact of MDFT, and preliminary results from these studies have been encouraging, indicating that the costs of MDFT are less than the costs of community treatments of comparable intensity and duration (French et al., 2002; Zavala et al., 2005). Furthermore, in the CYT study, MDFT reduced costs to society (e.g., societal

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costs incurred as a result of criminal activity) up to 12 months following treatment intake (French et al., 2003). Benefit-cost analyses comparing MDFT to comparison treatments are ongoing.

Thus, although dramatic strides have been made in developing and testing EBPs for adolescent substance abuse in the past decade, there are many challenges ahead. Given the push to disseminate empirically supported treatments to naturalistic practice settings while maintaining adequate treatment fidelity, it is incumbent on treatment researchers to empirically identify the core elements of their treatments. Further studies are needed to explicate mechanisms of action and evaluate the relative influence on outcome of different components of family-based treatment, as well as their costs and economic benefits. Questions remain about the level of adherence to EBPs needed to obtain effects comparable to those in randomized trials. Much more research is needed to facilitate the adoption of EBPs across different service delivery contexts/settings and patient populations. The push for greater treatment dissemination both within the United States and abroad is making further research on the social and cultural appropriateness of treatments even more important (Rigter et al., 2005). Workforce issues such as therapist turnover have been infrequently studied and remain a formidable barrier to the adoption of EBPs. The challenges are considerable, and the opportunities limitless.

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