



Multidimensional Family Therapy: Evidence Base for Transdiagnostic Treatment Outcomes, Change Mechanisms, and Implementation in Community Settings

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This article summarizes the 30+-year evidence base of Multidimensional Family Therapy (MDFT), a comprehensive treatment for youth substance abuse and antisocial behaviors. Findings from four types of MDFT studies are discussed: hybrid efficacy/effectiveness randomized controlled trials, therapy process studies, cost analyses, and implementation trials. This research has evaluated various versions of MDFT. These studies have systematically tested adaptations of MDFT for diverse treatment settings in different care sectors (mental health, substance abuse, juvenile justice, and child welfare), as well as adaptations according to treatment delivery features and client impairment level, including adolescents presenting with multiple psychiatric diagnoses. Many published scientific reviews, including meta-analyses, national and international government publications, and evidence-based treatment registries, offer consistent conclusions about the clinical effectiveness of MDFT compared with standard services as well as active treatments. The diverse and continuing MDFT research, the favorable, multi-source independent evaluations, combined with the documented receptivity of youth, parents, community-based clinicians and administrators, and national and international MDFT training programs (U.S.-based organization is MDFT International, www.mdft.org; and Europe-based organization is www.mdft.nl) all support the potential for continued transfer of MDFT to real-world clinical settings.

Keywords: Treatment Outcomes; Multidimensional Family Therapy; Treatment Process; Change Mechanisms; Implementation Research

Fam Proc x:1–19, 2016

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Howard A. Liddle receives financial compensation for his role as consultant and member of the Board of Directors of MDFT International, a 501(c) (3) public charity dedicated to the implementation of MDFT. The research reported in this article was supported by grants from the National Institutes of Health (AA016186-01A2, DA027216, DA29089, DA026126, DA 016733, DA15412, DA016193, DA13298-01A1, DA07697, DA11328, DA09424, DA15995, DA13089, DA016969, DA017478, DA0186345), Substance Abuse and Mental Health Services Administration (TI11871), and the Federal Ministries of Health of Belgium, Germany, the Netherlands, Switzerland, and MILDT: the Mission Interministerielle de Lutte Contra la Drogue et de Toximanie, France. Finally, I thank the hundreds of colleagues who have contributed mightily to MDFT research over the years and offer special recognition to my multi-decade collaborators Gayle Dakof, Ph.D., Cindy Rowe, Ph.D., Henk Rigter, Ph.D. and Craig Henderson, Ph.D.

INTRODUCTION

This article summarizes the evidence base of Multidimensional Family Therapy (MDFT), a comprehensive, family-centered treatment for youth substance abuse and antisocial behaviors (Liddle, 1991, 2002, 2016). The theoretical and clinical roots of MDFT lie in developmental-contextual and dynamic systems frameworks, family and developmental psychology, and family therapy (Liddle, 2004). Commencing and continuing since 1985 with NIH funding, the MDFT research program is diversified, integrated, and reflective of treatment development frameworks in the psychotherapy and substance abuse fields (Liddle & Hogue, 2001). Four types of studies have been conducted—efficacy/effectiveness randomized clinical trials (RCTs), therapy process studies, cost analyses, and implementation/dissemination studies. Supporting the model's effectiveness with a wide range of clinically referred youth, numerous community-based MDFT randomized controlled trials have been critically evaluated in over a dozen independent scientific reviews and national and international evidence-based treatment registries. Treatment outcomes are consistent across a variety of high-quality RCTs. These studies have tested different adaptations of MDFT in diverse settings, with varied youth populations and clinical characteristics, assessing different outcome domains. Clinical outcomes remain stable at follow-up, connect to the targeting of well-specified and theory-related risk and protective factors, including individual, family, and systemic processes outside of the family (SAMHSA, 2008). In sum, multiple sources and criteria characterize MDFT studies as scientifically rigorous, evidencing transdiagnostic outcomes, and reflective of a practical, flexible, adaptive, and widely transportable approach (California Evidence Based Clearinghouse, 2010; Child Trends, 2016; Drug & Alcohol Findings 2002, 2009; Drug Strategies, 2003, 2005; EMCDDA, 2014; National Institute of Justice, 2012; NIDA, 1999, 2006; OJJDP, 1999; Perepletchikova, Krystal, & Kaufman, 2008).

Overview of Treatment Principles

Family functioning is instrumental in creating new, developmentally adaptive lifestyle alternatives for adolescents. Current behaviors within and across settings offer an accessible and immediate handle on problems that warrant clinical referral. Given this multicontextuality, intra-individual, interpersonal, and intersystem interactions are all relevant in case conceptualization, which consists of making practical, process-oriented sense of family members' lives and circumstances. Change is multifaceted, and different kinds and degrees of change are possible, and so interventions are individualized per the family's and individual family members', and relevant others' expectations, and ongoing response to treatment. Therapists must learn about the complexities of human motivation, understanding its multidimensionality (emotion, cognitive, behavioral, contextual aspects), its malleability, and its influence throughout treatment. Treatment focus and methods are organized according to three different stages (Dakof, Cohen, et al., 2010; Dakof, Godley, & Smith, 2010). A clinician's preparation for clinical work is fundamental to treatment outcome. A therapeutic attitude is optimistic about change, strengths focused, energetic, and shows itself in how the therapist establishes multiple therapeutic alliances with family members and involved professionals outside of the family (Liddle, Dakof, & Diamond, 1991; Liddle, Dakof, Henderson & Rowe, 2011).

Manuals and Other Supporting Materials

The MDFT treatment manual is available online¹, and a new version is forthcoming (Liddle, in press). A certification procedure includes site readiness preparation, clinical

¹Treatment manual (Liddle, 2002) used in the Cannabis Youth Treatment Study: <http://lib.adai.washington.edu/clearinghouse/downloads/Multidimensional-Family-Therapy-for-Adolescent-Cannabis-Users-207.pdf>.

and supervision training procedures including supervisor/trainer preparation protocols, and adherence and quality assurance procedures. Publications describe focal treatment areas and illustrate core sessions and intervention modules^{2,3}, MDFT DVDs (Liddle, 2008, 2009, 2015) and videos of each clinician's work are used throughout training.

THE MDFT EVIDENCE BASE

The MDFT research program is diversified, integrated, and reflective of treatment development frameworks in the psychotherapy and substance abuse fields (details in Liddle & Hogue, 2001). This work began in 1985, and it has expanded and evolved since then with continuous NIH research grant support. Four types of studies have been conducted—efficacy/effectiveness RCTs, therapy process studies, cost analyses, and implementation/dissemination studies. Multiple RCTs have been conducted at sites in the United States with diverse samples of adolescents (African-American, Hispanic, and Caucasian youth between the ages of 11 and 18), varying socioeconomic backgrounds, geographic locales, and a range of clinical impairment. These studies have tested MDFT against other active treatments (manual-guided, expert led) as well as standard services in community settings. In one of the largest controlled trials for a family-based therapy, a multinational multisite MDFT study in Germany, France, Switzerland, Belgium, and the Netherlands produced significant substance abuse and externalizing problem outcomes posttreatment and at follow-up (Rigter et al., 2013; Schaub et al., 2014). This independent study was the first international replication of previous MDFT RCTs (Rigter et al., 2015). In most MDFT trials, participants met diagnostic criteria for adolescent substance abuse disorder and included youths with behavioral problems and juvenile justice involvement. Other controlled trials tested a 12-session adaption of MDFT for young adolescents (Rowe, Parker-Sloat, Schwartz, & Liddle, 2003), and a brief, early intervention version of MDFT for an indicated prevention sample (Hogue, Liddle, & Becker, 2002). MDFT has demonstrated efficacy relative to standard community treatments, as well as state-of-the-art, manual-guided treatments, including a psychoeducational multifamily group intervention, peer group treatment, individual cognitive-behavioral therapy (CBT), and residential treatment. Most RCTs were done in substance abuse, mental health, juvenile justice, and child welfare community-based settings with agency clinicians trained in MDFT.

Treatment Outcomes for Substance Abuse and Substance Abuse-Related Problems

Several independently conducted meta-analyses (Baldwin, Christian, Berkeljon, & Shadish, 2012; Tripodi, Bender, Litschge, & Vaughn, 2010; Van der Pol et al., in press; Vaughn & Howard, 2004; Waldron & Turner, 2008) and reviews taking into account study quality (e.g., Becker & Curry, 2008; Filges, Andersen, & Jorgensen, 2015) support the capacity of MDFT to significantly reduce youth substance use and a range of other significant problems typically co-occurring with clinically referred youth. In a review that compared RCT outcomes of five evidence-supported family-based therapies for youth substance abuse, Austin, Macgowan, and Wagner (2005) reported large effect sizes (1.28–1.66) for MDFT, as well as comparatively superior outcomes in family functioning and substance use reductions that retained at 1-year follow-up. A review by Thompson, Pomeroy, and Gober (2005) concluded that compared to active treatments in high-quality RCTs, MDFT shows the greatest

²For example, see Liddle (1991, 1994, 1995), Liddle & Rigter (2013), Liddle, Rodriguez, Dakof, Kanski, & Marvel (2005).

³MDFT clinical publications can be downloaded at <http://www.mdft.org/Resources/Publications/Books-and-manuals> and research publications at <http://www.mdft.org/Resources/Publications/The-MDFT-research-program>.

improvement in substance abuse reductions, and they note that the posttreatment gains remain strongest and most stable for MDFT at 12-month follow-ups. Using integrative data analysis techniques, Greenbaum and colleagues (2015) are the first to present MDFT's effectiveness when multiple indicators of drug use involvement, measured as a latent variable, represented treatment outcome. Using an example from one study, MDFT youths reduced drug use between 41% and 66% from baseline to treatment completion at 16 weeks (total of eight sessions over 4 months; Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008). As has been the case in other controlled studies, these outcomes remained consistent at 1-year follow-up (Liddle et al., 2001; also see Liddle, Rowe, Dakof, Henderson, & Greenbaum, 2009; Liddle, Rowe, Ungaro, Dakof, & Henderson, 2004; Liddle et al., 2008). When MDFT was embedded in a standard juvenile drug court, MDFT youth reduced substance use by 76% while in drug court and by 40% 2 years after drug court enrollment (Dakof et al., 2015). In an early intervention trial, an adaptation of MDFT for clinically referred young adolescents who had recently begun regular drug use (average age 13.7 vs. the more usual average age of 16 in other MDFT trials), MDFT participants showed clinically significant outcomes posttreatment and at 1-year follow-up. MDFT adolescents had more pronounced and more rapid decreases in self-reported substance abuse problems, fewer days of substance use, and higher rates of abstinence compared with group therapy participants (Liddle et al., 2004, 2009). Specifically, in this community-based study, 7% of MDFT adolescents compared with 45% of the group treatment comparison youth reported any drug use at the 1-year follow-up. In other controlled trials, which included adolescents presenting with multiple psychiatric diagnoses, MDFT youths also have demonstrated abstinence from illicit drugs after treatment significantly more than teens in comparison treatments (Liddle et al., 2001, 2008, 2009). For instance (at posttreatment and at 1-year follow-up), MDFT participants and their parents with significant criminal justice involvement showed 64% drug abstinence rates compared with 44% for CBT adolescents (Liddle et al., 2008), and greater reductions in substance abuse problem severity and substance use overall; the impact was strongest at 1-year follow-up periods. In another study, MDFT achieved a 93% abstinence outcome compared with 67% for group treatment (Liddle et al., 2009). At 1-year follow-ups, abstinence rates for MDFT youth across studies range from 64–93% (Rowe, 2010).

In two multisite RCTs, clinically significant posttreatment substance use outcomes for MDFT remained stable at 12 months (Rigter et al., 2013), at 30 months (Dennis, 2005), and at 18 months in another RCT where outpatient MDFT was tested as an alternative to residential treatment (Liddle et al., submitted for publication). The sample in the MDFT versus Residential Treatment study youth was clinically referred to residential treatment on the basis of multiple impairments, an average of 3.8 psychiatric diagnoses, and previous unsuccessful outpatient treatments. Timeline Followback assessments showed youth in both treatments decreased their drug use by 80% or more during the first 2 months of each treatment (outpatient MDFT vs. residential treatment). But at 18 months after intake, results show that MDFT yielded significantly stronger outcomes than residential treatment on substance abuse frequency and delinquent behaviors. Participants in residential treatment reported increases in substance abuse problems and delinquent behaviors at the follow-up assessment. The capacity of MDFT to offer strong treatment effects with multiply impaired youth and families has been a consistent outcome over the years (Greenbaum et al., 2015; Henderson, Dakof, Greenbaum, & Liddle, 2010; Hendriks, van der Schee, & Blanken, 2012; Liddle et al., 2008; Rigter et al., 2013). MDFT has been effective as a community-based drug prevention program (Hogue, Liddle, Becker, & Johnson-Leckrone, 2002) and in brief therapy formats (12-sessions weekly over 3–4 months, in community treatment setting; Dennis et al., 2004).

Treatment Outcomes for School Functioning

In a comparative RCT of MDFT, adolescent group treatment, and a psychoeducational multi-family treatment (Liddle et al., 2001), MDFT youth improved their academic grades significantly more than the comparison treatments. Through the 1-year follow-up, 76% of MDFT participants had passing grades as compared with 60% of group and 40% of multi-family treatment adolescents. In a young adolescent focused (Rowe et al., 2003) RCT, another community-based study, MDFT youth compared with group treatment youth showed greater improvement in academic and conduct grades and greater reduction in absences from school (Liddle et al., 2004, 2009). In an MDFT implementation study, clinic therapists dramatically increased their contacts with school personnel after MDFT training (Liddle et al., 2002) and these changes in clinician-school contacts accompanied decreases in youth school suspensions (Liddle, Rowe, et al., 2006).

Treatment Outcomes for Co-occurring Disorders/Psychiatric Symptoms

Psychiatric symptoms show greater reductions during treatment in MDFT than comparison treatments (30–85% within-treatment reductions in behavior problems, including criminal activities, and mental health problems such as anxiety and depression; Liddle, Dakof, et al., 2006; Liddle, Rowe, et al., 2006; Liddle et al., 2009). A consistent finding has been the strength of MDFT clinical outcomes with the most severe clinically referred cases. For instance, compared with individual CBT, MDFT had better drug abuse outcomes for teens with co-occurring problems, and MDFT decreased externalizing and internalizing symptoms, thus demonstrating superior and stable outcomes (1 year) with the more severely impaired adolescents (Liddle et al., 2008). Rowe (2010) summarizes MDFT outcomes across five RCTs and notes that MDFT reduced drug and or alcohol intake 41–66% within a normal 4- to 5-month course of standard MDFT outpatient treatment, and retained these reductions at 1-year follow-up. Superior posttreatment abstinence outcomes for MDFT, ranging from 64% to 93%, were also reported, along with comparatively better outcomes favoring MDFT for youth with co-occurring psychiatric disorders (Bender, Tripodi, Sarteschi, & Vaughn, 2011; Hawkins, 2009; Rowe, 2010).

Treatment Outcomes for Delinquent Behaviors and Association with Delinquent Peers

Multidimensional Family Therapy treated youths have shown decreased delinquent behavior and associations with delinquent peers, whereas peer group treatment comparisons reported increases in delinquency and affiliation with delinquent peers. These outcomes maintain at 1-year follow-up (Liddle, 1987, in press; Liddle et al., 2004, 2009). Department of Juvenile Justice records indicate that compared with teens in usual services, MDFT participants are less likely to be arrested or placed on probation and had fewer findings of wrongdoing during the study period (Liddle et al., 2009). The young adolescent MDFT study found a 23% arrest rate for MDFT youth at 1-year posttreatment (vs. a 44% rearrest rate for group therapy participants), and in the same study, 10% of MDFT youth compared with 30% of group therapy youth were placed on probation at the 12-month follow-up (Liddle et al., 2009).

Although drug courts are widely used, controlled evaluations of juvenile drug courts are rare. Results of an RCT found that MDFT enhances juvenile drug court outcomes better than group and individual therapy. Dakof et al. (2015) reported that while both treatments produced reductions in arrests, delinquent behaviors, externalizing symptoms, and

substance use, MDFT participants showed greater improvement, especially once drug court ended. Notably, MDFT youth continued to reduce criminal activities for 2 years after intake, while adolescents in the comparison condition increased delinquent behaviors in the same 24-month period. MDFT youth also had favorable rearrest rates compared with previous studies on drug court. Of youth who received MDFT, 38% were re-arrested (misdemeanor or felony) and 22% were re-arrested with a felony. Dakof et al. (2015) note, “These results compare favorably with results from previous studies of JDC. For example, a quasi-experimental multisite study found that drug court participants were significantly less likely than a matched comparison sample to be arrested at 28 months after enrollment into a JDC, with 58% of JDC youth and 75% of comparison youth being arrested in this period (Shaffer, Listwan, Latessa, & Lowenkamp, 2008). Henggeler et al. (2006) reported that youth in JDC and regular juvenile court both had a 62% rearrest rate during the year after drug court enrollment” (Dakof et al., 2015, p. 239).

Treatment Outcomes for High-Risk Sexual Behaviors

The MDFT Detention to Community (DTC) study was part of the National Institute on Drug Abuse initiative “Criminal Justice Drug Abuse Treatment Services” (NIDA, 2013). The DTC study (Liddle et al., 2011) adapted MDFT to include an STI/HIV risk reduction intervention for youth and their parents (MDFT adaptation and protocol described in Marvel, Rowe, Colon, DiClemente, & Liddle, 2009). Adolescents started MDFT treatment immediately postarrest—in the juvenile detention facility—with clinicians who continued working with the youth and families during incarceration and postrelease. In this two-site controlled trial, enhanced services as usual were compared with the adapted MDFT protocol. Youth in both conditions and at both sites significantly reduced rates of unprotected sex acts and Sexually Transmitted Infections (STI) incidence from intake to 9 months. Rowe et al. (2016) report that across conditions and sites, youth in these relatively intensive treatments maintained lower than baseline levels of STI incidence at the three-and-a-half-year follow-up. The study also provides some support for the efficacy of a family-based intervention to reduce STI and HIV risk for substance-involved young offenders. Specifically, at Site A, adolescents who were sexually active at intake showed greater reduction in overall frequency of sexual acts and number of unprotected sexual acts in MDFT than in ESAU between intake and 9-month follow-ups. These intervention differences were maintained through the 42-month follow-up. Site B did not show differences by intervention condition either among sexual abstainers or those who were sexually active at intake. STI incidence did not differ by condition at either site, yet the significant reduction between intake and 9 months and lower than baseline levels across 42-month follow-ups is encouraging given that STIs generally rise during these critical years (Rowe et al., 2016).

Treatment Outcomes for Out-of-Home Placements

Posttreatment, MDFT youth have required fewer out-of-home placements than comparison teens (Liddle, Dakof, et al., 2006; Liddle, Jackson-Gilfort, & Marvel, 2006; Liddle, Rowe, et al., 2006). In the MDFT Day Treatment study, the baseline rate of posttreatment placement of youth to a noncommunity based out-of-home placement was 37%. The study tested clinician adoption of MDFT, program change, and client outcomes after the introduction of the MDFT clinical model, which took place over several months. After MDFT program implementation, out-of-home placement rates for Day Treatment program adolescents reduced to 3%. Over a 2-year period, 2014–2015, data collected from over 50 MDFT program sites indicate 83% of youth living in the family’s home after completing

MDFT services. Relatedly, on factors that predict out-of-home placement, 90% of MDFT cases had no new reports of child abuse or neglect, and showed a 26% reduction in family interpersonal violence post program involvement (child welfare system data⁴).

Theory-of-Change Related Outcomes: Family Functioning

Multidimensional Family Therapy treated youth report improvements in relationships with their parents (Liddle et al., 2009). And, using behavioral ratings of therapy videos, family functioning improves (e.g., observed reductions in family conflict and increases in family cohesion) to a greater extent in MDFT than family group therapy or peer group therapy, and these gains remain at 1-year follow-up (Liddle et al., 2001). Another study, also using trained raters of MDFT videos, found MDFT participants (in this case an indicated prevention sample) to gain on self-esteem and social skill measures (Hogue, Liddle, Becker, & Johnson-Leckrone, 2002).

In a change mechanism study, Schmidt, Liddle, and Dakof (1996) investigated key 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 showed significant 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. Moreover, 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. Furthermore, these data suggest that parenting risk and protective factors for drug use are amenable to modification within a therapeutic environment. Subsequent work expanded the theoretical and empirical basis of interventions in the parenting realm (Liddle, Rowe, Dakof, & Lyke, 1998).

Moderators and Mediators of Clinical Outcomes

Gender and ethnic minority populations

Using pooled data from five MDFT RCTs, Greenbaum et al. (2015) concluded that MDFT is an effective drug abuse treatment with adolescents of both genders and varied ethnicity. In these same analyses, replicating earlier findings (e.g., RCT conducted in Philadelphia; Liddle et al., 2008), MDFT was found to offer particularly robust outcomes with African-American youth and families. The Greenbaum et al. (2015) analyses covered five MDFT RCTs and concur with the previously published cross-study findings of Henderson et al. (2010). The Greenbaum et al. (2015) publication also bolsters the conclusion reached by Huey and Polo (2008) in their meta-analysis and comprehensive evaluation of science-based treatments for ethnic minority youths. Huey and Polo (2008) identify MDFT as the only probably efficacious treatment for drug-abusing minority youths.

⁴The California Evidence-Based Clearinghouse for Child Welfare, see <http://www.cebc4cw.org/program/multidimensional-family-therapy/>, also see review by Lopez-Zeron & Parra-Cardona (2015).

Severity of Symptoms

A consistent outcome of MDFT studies is the program's significant and stable effectiveness with high severity, multiply impaired (comorbidity, see Rowe, 2010) youth who were clinically referred from diverse treatment settings and sectors of care (mental health, substance abuse, juvenile justice and child welfare) (Hawkins, 2009; Henderson et al., 2010; Hendriks, van der Schee, & Blanken, 2011; Hendriks et al., 2012; Liddle et al., 2008, in press; Rigter et al., 2013; Schaub et al., 2014; see the three-level meta-analysis by Van der Pol et al., in press).

Adherence

Hogue, Liddle, & Becker (2002) found that greater use of core MDFT family- and adolescent-focused treatment techniques were associated with greater reductions in adolescent internalizing and externalizing symptoms, as well as improvements in family cohesion and conflict, up to 1 year after treatment. And again for MDFT as well as for individual CBT, Hogue et al. (2008) showed that stronger treatment adherence predicted greater decline in externalizing symptoms (linear adherence effect), whereas intermediate levels of adherence predicted the largest declines in internalizing behavior, with high and low adherence predicting smaller improvements (curvilinear adherence effect). Overall, these findings indicate that the implementation of core MDFT interventions (Liddle, Dakof, & Diamond, 1991) promotes positive outcomes in both adolescent and family functioning.

Therapeutic Alliance

Diamond, Liddle, Hogue, and Dakof (1999) found that improvements in adolescent alliance over the first three sessions of MDFT were connected to specific alliance-building therapy techniques. Robbins et al. (2006) reported that both adolescent alliance and parent alliance in MDFT declined significantly between sessions one and two for dropout cases (attended fewer than eight sessions) but not treatment completers.

A few studies involving the MDFT model have linked therapeutic alliance to treatment outcome. Tetzlaff et al. (2005) found that client ratings of adolescent alliance predicted reduced drug use across five manualized treatment conditions, including MDFT; alliance effects occurred at 6 months postintake but not at longer follow-up. Shelef, Diamond, Diamond, and Liddle (2005) reported that observer ratings of adolescent alliance in MDFT predicted reductions in substance use and psychological symptoms at up to 3-month follow-up, but only for cases with high parent alliance. Hogue, Dauber, Stambaugh, Cecero, and Liddle (2006) found that stronger parent alliances in early MDFT sessions predicted declines in adolescent drug use and externalizing symptoms at 6-month follow-up. This study also found that not only could weak clinician-youth alliances improve with MDFT engagement interventions [as was the case in Diamond et al. (1999) and Jackson-Gilfort, Liddle, Tejada, & Dakof (2001)], but when weak early therapeutic alliances improved by mid-treatment (2 months), youth showed greater reductions in externalizing than adolescents whose alliances declined. As a group, these engagement and outcome studies support early theoretical assumptions that strong therapeutic alliances with both adolescents and parents (Liddle, Dakof, & Diamond, 1991) are key to effective family-based treatment with youth (Liddle, 1995, 1999).

Parenting practices

Henderson, Rowe, Dakof, Hawes, and Liddle (2009) found that MDFT improves parental monitoring, increases the proportion of youth abstaining from drug use to a greater extent than group therapy, and creates significant change in parental monitoring

(compared with group therapy participants) during treatment. Importantly, improvements in parental monitoring also precede increases in the proportion of youth abstaining from drug use, empirically demonstrating that parental monitoring statistically mediates treatment effects, and highlighting its potential as a core mechanism of change (Henderson et al., 2009; Schmidt et al., 1996).

Studies on the Therapeutic Process and Change Mechanisms

Two overarching organizers of the MDFT approach are stages of treatment and the four domains, or modules, in which a therapist seeks to foster competence and change. MDFT studies have demonstrated how to improve family interactions by targeting family interaction (Diamond & Liddle, 1996) and how therapists build successful therapeutic alliances with teens and parents (Diamond et al., 1999). Adolescents are more likely to complete treatment and decrease their drug use when therapists have solid relationships with their parents (Hogue, Liddle, Singer, & Leckrone, 2005) and with the teens (Robbins et al., 2006). Stronger therapeutic alliances with adolescents predict greater decreases in their drug use (Shelef et al., 2005). Another process study found a linear adherence-outcome relation for drug use and externalizing symptoms (Hogue, Dauber, Samuolis, & Liddle, 2006). MDFT process studies found that parents' skills are improved during therapy (Henderson, Rowe, Dakof, Hawes, & Liddle, 2009), parent changes predict teen symptom reduction (Schmidt et al., 1996), and a connection exists between systematically addressing cultural and racial/ethnic themes and increases in adolescent treatment participation (Jackson-Gilfort et al., 2001). Finally, MDFT interventions that focused on changing family interactions associate reliably to changes in drug use and emotional and behavioral problems (Hogue, Liddle, Dauber, & Samuolis, 2004).

Resolving parent–adolescent impasses

Diamond and Liddle (1999) used task analysis 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 defusing these negative interactions included (a) actively blocking, diverting, or addressing and working through negative affect; (b) implanting, evoking, and amplifying thoughts and feelings that promote constructive dialog; and (c) creating emotional treaties among family members by alternately working in session with parents alone and adolescents alone—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 perhaps 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 possible new conversations between parent and adolescent. In so doing, the parents developed empathy for the difficult experiences of their teenager and offered support, even admiration, for their teen's coping. These interventions and processes facilitated personal disclosure by the adolescent and created give and take exchanges. Severity of family conflict and pessimism predicted successful resolution of the impasse, with the most conflicted and pessimistic families less likely to move to a new conversational level.

This study yielded clinical insights in four 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 impact one of the putative mechanisms of developmental dysfunction related to drug abuse.

Building therapist–adolescent alliances

We examined the impact of adolescent engagement interventions on improving initially poor therapist–adolescent alliances (Diamond et al., 1999). The sample was juvenile justice involved, substance abusing inner city adolescents, 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 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 further 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 using the interventions (therapist resignation). These results indicate that although it is an important early-stage therapist method, when therapists overfocus 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. Details about how to engage teenagers in family-based therapy are described elsewhere (Liddle, 2002; Liddle & Diamond, 1991; Liddle et al., 1992).

Crafting culturally responsive interventions

Jackson-Gilfort et al. (2001) investigated whether therapeutic discussion of culturally responsive themes enhanced treatment engagement of African-American male youths with an inner city Philadelphia sample of juvenile justice involved, substance abusing teenagers. Exploration of particular themes—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. These results suggest that the use of certain culturally meaningful themes is directly linked to adolescent investment in the treatment process. Jackson-Gilfort et al. (2001) describe how these content themes about African-American development were derived and give illustrations of their clinical use.

Treatment engagement and retention

Treatment engagement of adolescents remains a challenge for most clinicians in regular (Block & Greeno, 2011) care settings. National studies indicate treatment dropout rates for youth ranging between 40% and 60%. Despite long-standing documentation of service delivery and clinical service system problems, continued discussions in the literature, and decades of family therapy research, including studies that have developed effective family engagement protocols, family involvement is not the norm in contemporary clinical work and dropout and ineffective engagement remains the norm. Regular involvement of parents and families in child and adolescent treatment occurs about 20% of the time. Adolescents continue to be regarded as supremely difficult to engage and retain in treatment, and some national studies show that 77% of youth in a national sample of youth treatment centers do not receive the recommended dose of treatment (i.e., do not complete the program's 3-month

recommended amount of time/dose) (Grella et al., 2001). State of the science family therapies routinely improve upon the engagement and retention rates found in standard clinical practice (Boustani, Henderson, & Liddle, 2016). As noted in comprehensive reviews (Substance Abuse and Mental Health Services Administration National Registry of Evidence-based Programs and Practices, 2008) and evaluations (Van der Pol et al., in press), MDFT has ranged from 73% to over 90% engagement, retention, and treatment completion of youth and parents, and in community-based MDFT programs, clinicians engage and retain over 80% of youth and families in treatment.

Economic Analyses

Several publications offer evidence of cost benefits for MDFT. Goorden, van der Schee, Hendriks, and Hakkaart-van Roijen (2016) found MDFT youth to have better quality of life outcomes, and to be more cost-effective than CBT participants in the Dutch youth healthcare context where CBT is the standard of care. Analyses conducted by the Washington State Institute for Public Policy estimate combined monetary benefits (crime, earnings via high school graduation, health-care costs) for MDFT participants and families to be over \$23,000 per case (Drake, 2012). Dennis (2005, p. 16) identifies MDFT as an integrated youth substance treatment (see Mason, Aplasca, Morales-Theodore, Zaharakis & Linker [2016] for more on integrated treatments and psychiatric comorbidity) that yielded superior cost-effectiveness when contrasted with a manual-guided nonintegrated family treatment (French et al., 2003; Zavala et al., 2005). The average weekly costs of treatment are significantly less for MDFT (\$164) than standard treatment (\$365). Tested as an alternative to residential treatment, an intensive version of MDFT provided superior clinical outcomes at significantly less cost (average weekly costs of \$384 vs. \$1,068; French et al., 2003; Zavala et al., 2005). Two-and-a-half-year year outcomes for MDFT show continued reductions in “average cost to society” with MDFT being nearly half the cost of standard outpatient treatment using data from the National Treatment Improvement Evaluation Study. Benefit cost analyses show a significant baseline to 12-month reduction in drug use consequences and approximately equivalent net benefits associated with reduced drug use consequences when MDFT was compared with a brief MET/CBT, and with both treatments showing relatively greater net benefits compared with an evidence-based substance abuse treatment that involves parents at 30-month follow-up (French et al., 2003; Zavala et al., 2005).

Implementation Outcomes

Using an interrupted time series design, we found that MDFT could be transported successfully into a representative day treatment program for adolescent drug abusers (Liddle, Dakof, et al., 2006; Liddle, Jackson-Gilfort, & Marvel, 2006; Liddle, Rowe, et al., 2006). Several outcomes should be highlighted. Therapists delivered the MDFT according to protocol following training. Clinicians broadened their treatment focus posttraining, addressed core MDFT content such as parenting, family relationships, peer relationships, and focused more on adolescents’ thoughts and feelings about themselves and extrafamilial systems (e.g., neighborhood and community issues, complying with juvenile justice obligations). According to observational adherence measures used in other studies, these therapist behaviors remained stable after the MDFT training phase was completed. Outcomes for the adolescents in the day treatment program also improved significantly post MDFT training of clinicians, and these client outcomes persisted at follow-up. In this case, MDFT youth decreased drug use by 25 percent before MDFT, compared to a reduction of 50% after MDFT training and organizational intervention. Program or system level factors improved dramatically, according to dimensions such as adolescents’ perceptions of

increased program organization and clarity of program expectations. MDFT clinicians collaborate effectively with other professionals in working with the youth and family (Liddle et al., 2011). Diverse groups of clinicians evaluate MDFT training methods and materials favorably (Godley, White, Diamond, Passetti, & Titus, 2001; Regas, 2016). In detailing the international adaptation and multi-context implementation of MDFT, Rigter et al. (2015) describe how therapists from diverse cultural contexts benefited from the clinical training and demonstrated mastery of the approach in regular community settings (see data and other implementation details of the multi-site European Study in Rowe et al. 2013).

CONCLUSION

Multidimensional Family Therapy is routinely regarded as one of the most extensively studied (Becker & Curry, 2008; National Institute on Drug Abuse, 1999, 2006) and most effective therapies for youth substance misuse and delinquent behaviors (European Monitoring Centre for Drugs and Drug Addiction, 2014; SAMHSA NREPP, 2008; National Institute of Justice, 2012). Informed by an empirical philosophy and the overarching zeitgeist of treatment improvement (Rowe, Dakof, & Liddle, 2007), the treatment development (Rowe & Liddle, 2006, 2008a,b; Rowe et al., 2003) dissemination efforts, and research of MDFT have influenced the philosophy, standards, and methods of outpatient adolescent treatment (Brannigan, Schackman, Falco, & Millman, 2004; Drug Strategies, 2003, 2005). Several aspects of the approach can be highlighted. MDFT is a flexible treatment system (Drug and Alcohol Findings, 2002, 2009). Different versions of the approach have been implemented successfully in diverse community settings by agency clinicians, with both male and female adolescents from varied ethnic, minority, and racial groups (Huey & Polo, 2008). Across studies participants were not narrowly defined, rarefied research samples; participants were drug using and generally showed psychiatric comorbidity, delinquency, and juvenile justice involvement (Rowe, 2010). Assessments included state of the science measures, theory-related dimensions, and measures of clinical and practical knowledge, important to the everyday functioning of target youth and families. MDFT has been tested against services as usual, as well as active treatments, including individual CBT and high-quality peer group and multifamily approaches. The approach has been varied on dimensions such as treatment intensity and consistently favorable outcomes have been obtained in these various versions. In a rare study, an intensive version of MDFT was found to be a clinically effective alternative to residential treatment, with outcomes remaining significant at 42 months post baseline. On the other end of the spectrum, MDFT has been effective as a prevention program with at-risk youth (not clinically referred as per other MDFT RCTs), and as an effective intervention for clinically referred young adolescents early on in drug and criminal justice involvement. An independently conducted replication—a five country multinational RCT—demonstrated significant and stable reductions in substance use and behavioral problems, as well as the effectiveness of the MDFT training system with clinicians from Western European community based clinical settings. MDFT studies have used rigorous designs in conducting efficacy/effectiveness trials, followed CONSORT guidelines, used intent to treat analyses, and include multisite RCTs. We developed psychometrically sound adherence measures (Hogue et al., 1998) and trained therapists, supervisors, and trainers in mental health, juvenile justice, child welfare, and drug abuse settings (Rowe et al., 2013). A dissemination organization supports the clinical work of over 150 national and international MDFT programs.⁵ MDFT process studies have honed in on outcome-related mechanisms of action. Cost analyses indicate

⁵Multidimensional Family Therapy International (background see <http://www.mdft.org/About/Program-history>).

MDFT is an affordable alternative compared to standard outpatient or inpatient treatment. Although often thought of as a drug abuse treatment only, MDFT studies also offer a range of favorable outcomes far beyond drug taking and drug abuse. Delinquency, externalizing, and internalizing symptoms have improved significantly in MDFT trials. HIV- and STD-risks have decreased as well (family-based HIV prevention module; Marvel et al., 2009). We have also demonstrated the capacity to target and change key components of the outcome equation (affiliation with drug using peers, family and school functioning, psychological trauma; Lopez-Zeron & Parra-Cardona, 2015; Rowe & Liddle, 2008a,b, as examples). Our RCTs routinely track outcomes, at a minimum, with 1-year follow-ups, and the outcomes remain stable at this and more distal assessments (Liddle et al., 2011).

A noteworthy clinical focus of MDFT is its specification of how to establish individual relationships with diverse groups of parents and teens (Becker & Liddle, 2001; Liddle, Jackson-Gilfort, et al., 2006), work with each alone in individual sessions, target family interactional changes, and intervene with the youths' and parents' social context (Diamond, Diamond, & Liddle, 2000; Diamond & Liddle, 1998; Liddle, 1994). MDFT's treatment development tradition is strong, given its process studies, use of behavioral ratings of videotapes, and incorporation of basic science to create a developmentally centered therapy (Liddle & Rigter, 2013; Liddle et al., 1998, 2000). The approach's extensions now include manual-guided modules that begin MDFT with youths in juvenile detention and continue after release as part of the regular MDFT outpatient phase (3–4 months), an integrated parent-involved, youth HIV/STD prevention intervention, and adaptations of the approach in criminal justice settings, including day treatment, residential treatment, juvenile detention and drug court (Rowe et al., 2007). Training and supervision and quality assurance protocols are well developed, and our published training videotapes illustrate the model's core sessions and clinician skills.

Current Research

Studies are underway to examine MDFT implementation factors (stages of implementation [L. Saldana], program sustainability issues [G. Dakof & Z. Amerigian], the integration of MDFT into residential treatment programs [G. Dakof]), and an effectiveness trial of MDFT-Family Recovery (MDFT-FR), an adaptation of MDFT for adult substance abusers involved in the Child Welfare system (see Dakof, Cohen, et al., 2010; Dakof, Godley, et al., 2010). Just beginning are two new treatment development studies to adapt and test MDFT with Internet gaming disorders (Nilsen & Rigter, 2016) and transition age (18–25) young adults (Liddle, 2016).

Coda

The articles in this issue of *Family Process* give testimony to the current stage of family and couple therapy's development. One reason systemic research has had such a hard time is simply the lack of product to evaluate and work with. That is no longer the case. MDFT and the treatments included in this section have established a broad and ever deepening evidence base. Perhaps the days of referring to evidence-supported couple and family therapy as simply promising are over (see early reviews, Liddle & Dakof, 1995; Stanton & Shadish, 1997). But family therapy's exuberance has led to criticism, marginalization, and perhaps downright embarrassment in the past (Blechman, 1990; Garfield, 1982; McFarlane, 2016). The clinical and empirical advances evidenced in this section's articles should be noted and critically examined, but so too should the snail's pace of progress in improving standard clinical services for the most frequent issues faced by therapists. Most public sector clinics are far from offering an evidence informed treatment and even further

from making evidence-based therapies available. What's possible? The Golden Days of family therapy have been chronicled with nostalgia and pride (Fraenkel, 2005; Hoffman, 2002; Nichols, 2013). If the therapies included here and others with parallel scientific bases and dissemination capability can be brought to public health scale, and if this work can influence emerging models that seek to improve standard services (Chorpita, Daleiden, & Weisz, 2005), and last but certainly not least, if these efforts can influence therapist training (Beidas & Kendall, 2010; Weissman et al., 2006), then that trifecta would represent Golden Days of a more contemporary sort.

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