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Effective Family-Based Treatments for Adolescents with Serious Antisocial Behavior

This chapter provides clinical and research overviews of family-based treatments that have been identified by well-respected independent entities as effective in reducing serious antisocial behavior in adolescents. Separate sections are devoted to family-based interventions for adolescent criminal behavior and for substance use disorders in adolescents. For criminal behavior, identification of effective treatments was based on conclusions of The Office of Juvenile Justice and Delinquency Prevention Blueprints for Violence Prevention review (Mihalic & Irwin, 2003). Criteria for designation as a Blueprints model program include favorable reductions in rearrest in randomized trials with delinquents, replication of such outcomes across at least two research teams, and sustained treatment effects for at least a year. Only three treatments have met these criteria, and each is family based. These interventions include multisystemic therapy,

functional family therapy, and multidimensional treatment foster care. For substance use disorders, identification of effective treatments was based on reports from the National Institute on Drug Abuse (NIDA, 2012), SAMHSA's National Registry of Evidence-based Programs and Practices (www.nrepp.samhsa.gov), and recent academic reviews (Baldwin, Christian, Berkeljon, Shadish, & Bean, 2012; Spas, Ramsey, Paiva, & Stein, 2012; Tripodi & Bender, 2011). Each of the aforementioned Blueprints model programs and several additional family-based treatments were identified as likely efficacious with substance use disorders in adolescents. Indeed, family-based treatments constitute the overwhelming majority of interventions identified across reviews as effective in treating serious antisocial behavior in youths.

Several factors account for the finding that almost all of the effective interventions for serious antisocial behavior in adolescents are family based. First, as reviewed by Pardini, Waller, and Hawes (2015) and elsewhere (Lieberman, 2008), family variables play central and critical roles in the development and maintenance of antisocial behavior in children and adolescents. Variables such as parental monitoring and supervision, discipline strategies, consistency, emotional warmth, and conflict are particularly important. Second, these variables are malleable—parenting practices and emotional climate can change for the better, and certain well-specified therapeutic interventions have been shown to promote such

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change. Third, as reviewed subsequently, multiple studies have demonstrated that decreased antisocial behavior in adolescents was mediated by favorable changes in family functioning. That is, improved family relations led directly to improved youth behavior. Fourth, family-based interventions possess high ecological validity, which increases the likelihood that therapeutic changes will be sustained. In contrast with group therapy or residential treatment, for example, where youths learn to adapt to artificial contexts, family therapy aims to transform patterns of maladaptive interactions in their naturally occurring environment.

This review focuses on findings from two clinical populations that often overlap: juvenile offenders and youths with substance use disorders. The review excluded evaluations that were not peer reviewed and not published in English or that examined the effectiveness of these family-based treatments on other serious clinical problems (e.g., youths in psychiatric crisis, child maltreatment, conduct disorder).

Effective Treatments of Criminal Behavior and Substance Abuse in Adolescents

Development of the three models (i.e., multisystemic therapy, functional family therapy, multidimensional treatment foster care) identified subsequently as effective treatments of delinquency by Blueprints (Mihalic & Irwin, 2003) began in the 1970s, at a time when the general consensus in the field was that “nothing works” (Romig, 1978). These three treatment models were specified and evaluated for about 20 years before dissemination efforts began in the late 1990s. Currently, the effectiveness of the models has been supported by more than 30 published evaluations, the vast majority of which are randomized clinical trials (RCTs). Moreover, these approaches have been transported to almost 1,000 community sites worldwide, where they serve approximately 20,000 juvenile offenders and an equal number

of youths with other serious clinical problems annually (Henggeler & Schoenwald, 2011).

Multisystemic Therapy

Multisystemic therapy (MST) (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009) is based on a social ecological theoretical model that views antisocial behavior as multidetermined (i.e., by interrelated individual, family, peer, school, neighborhood factors) and is consistent with empirical literature on the determinants of juvenile crime and substance use.

Clinical Approach MST is a home-based intervention delivered by master’s level therapists who work within teams of two to four therapists and a half-time supervisor. Caseloads are low to facilitate family engagement and the delivery of intensive services, which are of 4 months duration on average. Therapists and supervisors receive intensive training and ongoing quality assurance to promote treatment fidelity and youth outcomes.

The therapist’s primary clinical task is to determine the key proximal factors (e.g., poor parental monitoring, association with deviant peers) contributing to the youth’s antisocial behavior. These factors are then prioritized based on salience and amenability to change, and specific interventions are designed to address any barriers to change. For example, perhaps parental substance abuse is a key barrier to effective monitoring of the youth’s whereabouts and implementation of productive discipline strategies. In such case, the therapist might deliver an evidence-based substance abuse treatment (e.g., contingency management) to the parent while concurrently developing more effective parenting skills. Youth and family outcomes are tracked continuously, and interventions are modified in a recursive process until the desired outcomes are achieved. Importantly, a primary aim of treatment is to empower the parents to be more effective with their children. Thus, for example, therapists might coach parents in how

to promote their child's problem-solving skills, disengage the adolescent from deviant peers, or negotiate desired support from teachers and school administrators.

Outcomes for Juvenile Offenders The first evaluation of MST (Henggeler et al., 1986) was a quasiexperimental efficacy (i.e., graduate students as therapists, conducted in a university research context) study in which MST improved the family relations and decreased the behavior problems of juvenile offenders at posttreatment. Three subsequent RCTs with chronic and violent juvenile offenders (Borduin et al., 1995; Henggeler, Melton, Brondino, Scherer, & Hanley, 1997; Henggeler, Melton, & Smith, 1992) replicated the favorable short-term effects of the initial trial (e.g., improved family relations) and included follow-ups that demonstrated favorable reductions in recidivism and incarceration. For example, in a long-term follow-up to Borduin et al. (1995), Sawyer and Borduin (2011) showed that MST decreased felony arrests, violent felony arrests, and days in adult confinement 22 years posttreatment. Together, these studies set the stage for subsequent MST research with juvenile offenders as well as MST adaptations for other complex and costly clinical problems (Henggeler, 2011).

Outcomes for Juvenile Sex Offenders With three published RCTs, no intervention has more empirical support in the treatment of juvenile sex offenders than MST. An initial randomized efficacy study (Borduin, Henggeler, Blaske, & Stein, 1990) demonstrated the capacity of MST to reduce sexual offending and other criminal offending at a 3-year follow-up in a small sample of juvenile sexual offenders. Subsequently, in a larger randomized efficacy study with juvenile sex offenders, Borduin, Schaeffer, and Heiblum (2009) demonstrated favorable effects across a variety of domains (e.g., family relations, peer relations, school performance) as well as substantive reductions in recidivism for sex offenses, rearrest for other crimes, and days incarcerated at a 9-year follow-up. These findings were generally replicated in a relatively large community-based RCT with juvenile sex offenders (Letourneau et al., 2009) at a 1-year

follow-up. At 2-year follow-up (Letourneau et al., 2013), favorable outcomes were sustained for some (e.g., youth problem sexual behavior, out-of-home placement) but not all outcomes (e.g., arrests for other crimes).

Outcomes for Youth with Substance Use Disorders Two MST RCTs were conducted with juvenile offenders with diagnosed substance use disorders. In the first (Henggeler, Pickrel, & Brondino, 1999), MST produced decreased drug use at posttreatment and decreased days in out-of-home placements. At 4-year follow-up (Henggeler, Clingempeel, Brondino, & Pickrel, 2002), young adults in the MST condition evidenced decreased violent crime and increased marijuana abstinence. The second study integrated MST into juvenile drug court (Henggeler et al., 2006) and showed that MST enhanced substance use outcomes for alcohol and marijuana. In addition, RCTs with serious juvenile offenders (Henggeler et al., 1991; Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006), an unknown percentage of who were substance abusers, have shown decreased substance use, substance-related arrests, and substance related problems.

Independent Replications More than ten independent replications of MST have been published, and three of these were conducted with samples of juvenile offenders. Timmons-Mitchell et al. (2006) conducted a randomized community-based effectiveness trial with juvenile felons at imminent risk of placement. At 18 months posttreatment, youths in the MST condition evidenced improved functioning, decreased substance use problems, improved school functioning, and decreased rearrests. Similarly, in a randomized effectiveness trial with juvenile offenders conducted in England (Butler, Baruch, Hickley, & Fonagy, 2011), MST demonstrated improved parenting and decreased offending and placements at an 18-month follow-up. Finally, in a large multisite study with juvenile offenders (Glisson et al., 2010), MST reduced youth symptoms at posttreatment and out-of-home placements at 18 months follow-up.

Cost Analyses Several MST studies with juvenile offenders included cost analyses. Based on

the sample from Borduin et al. (1995), Klietz, Borduin, and Schaeffer (2010) observed cost benefits ranging up to almost \$200,000 per MST participant. More modestly, using data from Henggeler et al. (1999), Schoenwald, Ward, Henggeler, Pickrel, and Patel (1996) concluded that the incremental cost of MST was nearly offset by reduced out-of-home placements. Similarly, Cary, Butler, Baruch, Hickey, and Byford (2013) showed that MST was associated with cost savings related to crime reduction in the Butler et al. (2011) RCT. **Mediational Studies** The MST theory of change posits that reductions in adolescent antisocial behavior are mediated by improved family functioning. This perspective has been supported by mediational and qualitative studies with substance-abusing juvenile offenders and chronic and violent juvenile offenders (Huey, Henggeler, Brondino, & Pickrel, 2000), juvenile sex offenders (Henggeler et al., 2009), juvenile offenders in England (Tighe, Pistrang, Casdagli, Baruch, & Butler, 2012), and Dutch youth with severe and violent antisocial behavior (Dekovic, Asscher, Manders, Prins, & van der Laan, 2012).

Functional Family Therapy

Functional family therapy (FFT) (Alexander, Waldron, Robbins, & Neeb, 2013) views adolescent antisocial behavior as a symptom of dysfunctional family relations. Interventions, consequently, aim to replace problematic family relations with counterparts that promote healthy adolescent behavior and family interactions.

Clinical Approach FFT is delivered by clinicians who work in teams of three to eight therapists with caseloads of 12–15 families each. Treatment can be delivered in either home or office settings, and the average duration of treatment is about 3–4 months. FFT includes a relatively intensive quality assurance protocol to promote treatment fidelity and program success.

Treatment progresses through several stages. Therapy centers initially on engaging families in

the therapeutic process and motivating change. Here, the therapist engenders optimism and shifts the family's focus from the youth's problem behavior to establishing more positive family relations. Next, using a variety of behavioral, cognitive behavioral, and family systems intervention techniques, the therapist replaces the dysfunctional patterns of family behavior with interactions that promote more positive functioning among all family members. The final phase of treatment aims to sustain favorable therapeutic change and generalize such change to the social ecology. Here, linkages with school and community resources might be developed, and the therapist helps the family anticipate future problems and develop plans to address such.

Outcomes for Juvenile Offenders, Including Independent Replication FFT provided the first RCT of a family-based intervention to demonstrate favorable outcomes with youths in the juvenile justice system (Alexander & Parsons, 1973)—FFT improved family communication and decreased status offending through an 18-month follow-up. In a subsequent quasiexperimental study with serious juvenile offenders (Barton, Alexander, Waldron, Turner, & Warburton, 1985), FFT reduced criminal offending at a 15-month follow-up.

Two independent replications have been published. Using a quasiexperimental design, Gordon, Arbuthnot, Gustafson, and McGreen (1988) found that FFT decreased recidivism at a 2.5-year follow-up and subsequently at a 5-year follow-up (Gordon, Graves, & Arbuthnot, 1995). More recently in a large multisite community-based study, Sexton and Turner (2010) failed to demonstrate FFT effects on rearrest at 12 months posttreatment. Additional analyses, however, showed treatment adherence (i.e., therapist fidelity to the FFT model) was linked with recidivism outcomes. This finding is consistent with several MST studies (e.g., Henggeler et al., 1997) that showed more favorable outcomes when therapists adhered to treatment protocols. In addition to the aforementioned independent replications, two others with nondelinquent samples have been published in Swedish, and

these are noted in Henggeler and Sheidow (2012).

Outcomes for Substance Use Disorders, Including Independent Replications Three RCTs have examined the effectiveness of FFT in treating youths with substance use disorders, and two of these were conducted by independent investigators. Friedman (1989), in an independent study with substance-abusing adolescents, failed to observe treatment effects at a 15-month follow-up. Waldron, Slesnick, Turner, Brody, and Peterson (2001) found favorable FFT effects on marijuana use at posttreatment, but these dissipated by the 7-month follow-up. More favorable results were observed, however, in an independent study conducted with runaway adolescents with identified alcohol problems (Slesnick & Prestopnik, 2009)—FFT reduced alcohol and drug use at a 15-month follow-up.

Mediational Studies Although formal mediational analyses have not been conducted with FFT, results from several studies are suggestive. For example, Alexander, Barton, Schiavo, and Parsons (1976) observed that improved family communication was associated with decreased youth recidivism. More recently, Robbins, Turner, Alexander, and Perez (2003) showed that therapeutic alliances in which the therapist was not equally aligned with the youth and parents were associated with higher dropout rates.

Multidimensional Treatment Foster Care

Social learning theory provides the conceptual framework for multidimensional treatment foster care (MTFC). Though more explicitly behavioral and less systemic than most family-based approaches, MTFC attends closely to the broader social ecology in which juvenile offenders are embedded.

Clinical Approach As described by Chamberlain (2003), MTFC targets youths who have been removed from their family home due to serious antisocial behavior. The overriding purpose of MTFC interventions is to surround youth with

competent adults who are positive and encouraging, model responsible behavior, and provide a highly structured context. Youth are placed in a foster home for 6–9 months, one youth per placement, with specially trained foster parents who have continuous access to an MTFC program supervisor. The foster parents implement a highly structured behavioral plan that specifies contingencies for desired and inappropriate behaviors occurring at home, school, or elsewhere. Youth behavior is closely tracked, and rewards and sanctions are applied as specified in the plan. Concomitantly, a therapist works with the youth to address individual-level deficits (e.g., social skills, emotion management), and a skills trainer provides real-world opportunities to practice newly developed skills. Finally, a family therapist works with the youth's biological family to facilitate a smooth and effective transition back home.

Outcomes for Juvenile Offenders MTFC clinical trials have produced consistently favorable results in comparison with group care placements. In an initial quasiexperimental study, Chamberlain (1990) demonstrated decreased rates of incarceration at a 2-year follow-up. In a subsequent RTC (Chamberlain & Reid, 1998) with chronic and serious juvenile offenders, MTFC reduced rates of incarceration and criminal charges at 1-year posttreatment. These gains were largely sustained at a 2-year follow-up (Eddy, Whaley, & Chamberlain, 2004) and were especially pronounced for violent offending. In one of the few RCTs in the field targeted exclusively for female chronic offenders (Leve, Chamberlain, & Reid, 2005), MTFC was again effective at decreasing youth incarceration and criminal behavior at a 1-year follow-up, and these favorable outcomes were largely sustained at a 2-year follow-up (Chamberlain, Leve, & DeGarmo, 2007). An additional sample of female offenders was added to the sample from Leve et al. (2005), and outcomes on additional measures were assessed at a 2-year follow-up. Here, MTFC was also effective at decreasing pregnancy rates (Kerr, Leve, & Chamberlain, 2009) and depressive symptoms (Harold et al., 2013).

Independent Replications and Substance Use Outcomes Although the effectiveness of MTFC has not been replicated with samples of juvenile offenders, Westermark and colleagues (Westermark, Hansson, & Olsson, 2011; Westermark, Hansson, & Vinnerljung, 2008) conducted independent evaluations of MTFC in Sweden. Across studies, results showed MTFC was effective at reducing youth mental health symptoms and decreasing placement disruptions. Similarly, although MTFC has not been evaluated for youth with substance use disorders, its long-term effects on the substance use of women with prior juvenile justice involvement have been examined. Based on the samples noted in the aforementioned Kerr et al. (2009) follow-up study, a 7–9 year follow-up showed that MTFC reduced drug use and was associated with greater resilience to partner drug use (Rhoades, Leve, Harold, Kim, & Chamberlain, 2014).

Mediational Studies Two studies have examined mediators of MTFC effectiveness, and these support the clinical emphases of the model. Eddy and Chamberlain (2000) found that favorable MTFC outcomes were mediated by improved foster parent supervision, discipline, and relations with the youth as well as by decreased association with deviant peers. Leve and Chamberlain (2007) showed that MTFC outcomes were mediated by increased completion of schoolwork.

Conclusion

Evidence of the capacity of MST, FFT, and MTFC to reduce adolescent criminal activity and rates of incarceration is overwhelming. Moreover, results from mediational studies and from secondary outcome measures (e.g., family functioning) in RCTs support the general theory of change posited by these treatment models—improved family functioning leads to

improved adolescent behavior. Significantly, and consistent with the reviews on personality traits, peer relationships, school and education, and neighborhood factors of this volume, these treatment models are also comprehensive—attending to factors from various domains of risk that can exacerbate or attenuate antisocial behavior in adolescents. As noted by White (2015), the risk factors for adolescent criminal behavior and substance use are very similar. Hence, it is not surprising that these same family-based treatments have evidenced promising results in the treatment of adolescent substance use disorders. As discussed next, several family-based interventions have been developed specifically to address such problems.

Promising Treatments for Substance Use Disorders in Adolescents

In contrast with the generally consistent findings of effectiveness for the aforementioned evidence-based treatments of delinquency, adolescent substance abuse has proven more recalcitrant to well-conceived interventions. Findings for the most promising treatments of substance use disorders in adolescents are often ambiguous. Although RCTs typically show time effects for key outcomes (e.g., substance use is reduced over time across intervention conditions), treatment effects (i.e., the experimental intervention is more effective than the comparison intervention) are often not observed. Moreover, sustained results at more than a year follow-up have rarely been demonstrated, and only a few independent replications have been conducted. The following review examines the most promising of the family-based treatments for adolescent substance use disorders, and, as stated previously, the majority of the most promising interventions are family based. Please note that only treatment effects are presented here; time effects are not described.

Family Behavior Therapy and Contingency Management with Families (CM)

Family behavior therapy (FBT) and CM are related treatment models based on well-validated cognitive behavioral and behavioral approaches to addressing clinical problems in children and adolescents. Substance use is viewed as a behavior that is learned through positive (e.g., pleasurable feelings, peer support) and negative (removal of negative emotions) reinforcement. As such, substance use behavior can be changed by the appropriate application of contingencies (i.e., rewards and disincentives) as well as through the development of certain cognitive strategies (e.g., self-management plans to avoid high-risk situations).

Clinical Approach FBT (Donohue & Azrin, 2012) is an outpatient treatment of approximately 6 months duration and includes several key components. (a) Behavioral contracts are developed in which parents agree to provide rewards (e.g., cell phone privileges, a favorite meal) for desired youth behavior that is responsible and not conducive to substance use (e.g., school attendance, household chores). (b) Self-management training is used to help the youth identify triggers for substance use (e.g., depression, attending a friend's party) and to develop and implement strategies for addressing those triggers (e.g., going to work out, visiting friends who don't use drugs). (c) Communication training is provided to help family members interact more effectively—for example, how to manage anger in ways that increase the probability that family conflicts are resolved satisfactorily.

CM (Henggeler et al., 2012) is an outpatient treatment of approximately 4 months duration and is based on the highly effective Community Reinforcement Approach for adult drug abuse treatment specified by Budney and Higgins (1998). CM possesses many theoretical and

clinical similarities with FBT. The primary differences between FBT and CM are that CM monitors youth substance use closely through frequent drug testing, with corresponding contingencies specified in the behavioral contract, and parents are closely involved in every aspect of treatment (e.g., parents are taught to facilitate self-management training with their youth).

Outcomes FBT was initially evaluated in a small RCT with youth who had engaged in drug use during the past month (Azrin, Donohue, Besalel, Kogan, & Acierno, 1994). At posttreatment, FBT demonstrated favorable effects on drug use, alcohol use, school/work attendance, family relations, and depression. These promising results, however, were not replicated in a larger RCT that compared FBT with a cognitive behavioral approach with dually diagnosed conduct-disordered and substance-dependent youth (Azrin et al., 2001). Two RCTs have examined the effects of CM integrated into juvenile drug courts with favorable findings. In a study with juvenile offenders with substance use disorders, Henggeler et al. (2006) showed that the integration of MST into juvenile drug court improved standard drug court outcomes for substance use, and the further integration of CM accelerated the decrease in substance use achieved by MST. In a multisite juvenile drug court study (Henggeler, McCart, Cunningham, & Chapman, 2012), CM was effective in reducing marijuana use and criminal behavior at 9 months post-recruitment. Another family-based variation of CM was evaluated in an RCT with substance-abusing adolescents (Stanger, Budney, Kamon, & Thostensen, 2009). CM reduced youth marijuana use during the 14-week treatment; however, these gains were not sustained through a 9-month follow-up. In sum, although the results are promising and a vast amount of research supports the use of these types of behavioral and cognitive behavioral interventions with adult drug abusers (Higgins, Silverman, & Heil, 2008), consistent and sustained outcomes have not been observed when treating adolescents.

Brief Strategic Family Therapy

Brief strategic family therapy (BSFT) emphasizes the important role that family relationships play in the development and maintenance of youth behavior problems. Family structure, which constitutes the repetitive patterns of interactions that characterize a family, is of particular importance. BSFT targets those interactions that are maladaptive and associated with antisocial behavior in adolescents.

Clinical Approach BSFT (Szapocznik, Hervis, & Schwartz, 2003) is delivered through weekly clinic- or home-based sessions for an average duration of about 4 months. Therapists use a set of practical and problem-focused strategies to identify those family structures that are contributing to the youth's antisocial behavior and then to replace these maladaptive structures with family interactions that promote positive youth functioning. Initially, the therapist joins the family by establishing relationships with each family member and the family as a whole. During sessions, family interactions that reflect the family's typical structures are elicited, thereby allowing the therapist to identify maladaptive patterns of interaction. Family hierarchy (e.g., who leads the family), emotional connectedness, and strategies for conflict resolution are particularly important in identifying maladaptive interaction patterns. Such patterns are subsequently changed through the therapist's use of restructuring techniques. Here, for example, family therapy techniques such as reframing are employed, and the therapist works to modify family boundaries (e.g., reinforcing the primacy of the parental dyad) and alliances (e.g., disengaging an overinvolved parent-adolescent dyad and reconnecting family members who are emotionally distant). Pragmatic and strategic tasks are assigned inside the session (e.g., asking parents to determine the youth's curfew) and as homework outside the session (e.g., having parents go on a mutually agreeable date) that facilitate the desired shift in family structure. These changes in family structure are then

assumed to reduce the adolescent's behavior problems.

Outcomes The effectiveness of BSFT in treating adolescents with antisocial behavior has been evaluated in three RCTs. In a community-based effectiveness trial, Coatsworth, Santisteban, McBride, and Szapocznik (2001) failed to observe treatment effects at posttreatment for a sample of young adolescents with behavior problems. Findings in a subsequent efficacy trial with older adolescents presenting antisocial behavior (Santisteban et al., 2003), however, were considerably more favorable. At posttreatment, BSFT was effective at decreasing youth conduct problems and marijuana use, and family functioning was improved. More recently, an independent multisite effectiveness study included a follow-up and compared BSFT with community services in the treatment of adolescents, the vast majority of whom had a substance use disorder (Robbins et al., 2011). Although treatment effects based on biological measures of substance use were not observed throughout the 12-month post-recruitment follow-up, a treatment effect was found at the last assessment point for the self-report measure of substance use. BSFT effects were also observed for improved family relations. Overall, the outcomes across BSFT RCTs with antisocial adolescents show promising results but are generally modest in scope.

Mediational Research Rynes, Rohrbaugh, Lebensohn-Chialvo, and Shoham (2013) evaluated the association between therapist behavior and youth outcomes in the Robbins et al. (2011) study. As noted previously, the BSFT therapist should align with each family member and restructure maladaptive patterns of family interaction. Rynes and colleagues focused on therapist behavior that duplicated a type of maladaptive family interaction that has been linked with poor outcomes in previous research and is inconsistent with the BSFT model—demanding a family member to change, which leads that person to withdraw from the interaction (e.g., demanding that the youth stops using drugs, which leads him or her to withdraw from

the interaction). The researchers found youth substance use outcomes were worse when therapists duplicated this maladaptive interactional sequence—thereby supporting one aspect of the BSFT approach.

Multidimensional Family Therapy

Multidimensional Family Therapy (MDFT) conceptualizations of behavior are based primarily on findings from developmental psychology and developmental psychopathology regarding factors that sustain problem behavior in adolescents. Conceptualizations and interventions are also influenced by family systems theory and structural and strategic approaches to family therapy.

Clinical Approach MDFT can be delivered in a variety of settings (e.g., office based, home based, residential) over about 4–6 months with varying frequency (Liddle, 2009). Therapists address four treatment domains that are interdependent—adolescent, parent, family, and extrafamilial. In the adolescent domain, the therapist engages the adolescent and aims to develop his or her social skills and problem-solving skills across peer and school settings. Interventions in the parent domain focus on facilitating more effective parenting of the children (e.g., monitoring and supervision) as well as improving emotional bonds. Parental psychosocial challenges might be addressed as well. Interventions in the family domain emphasize the development of effective communication strategies, conjoint problem solving, and conflict resolution skills. In the extrafamilial domain, the therapist aims to build positive relations between family members and key social systems, such as the school and juvenile justice authorities. Similar to FFT, these interventions are delivered through three phases: engagement, behavior change, and generalization and maintenance.

Outcomes In contrast with the validation of most evidence-based treatments (e.g., initial studies typically use graduate students as therapists and are conducted in university settings), the vast majority of MDFT RCTs

have been conducted in community settings—a practice that facilitates transport to real-world service systems. In an initial RCT with drug using adolescents (Liddle et al., 2001), MDFT evidenced several favorable outcomes at a 12-month posttreatment follow-up, including decreased drug use, improved school functioning, and improved family functioning. These findings were replicated in a subsequent RCT (Liddle, Rowe, Dakof, Ungaro, & Henderson, 2004) that included young adolescents referred for substance abuse and behavior problems—youth with severe problems were excluded. At posttreatment, MDFT was effective at decreasing youth externalizing symptoms, marijuana use, and association with delinquent peers, and treatment improved school functioning and family relations. These favorable outcomes were generally sustained at a 12-month posttreatment follow-up (Liddle, Rowe, Dakof, Henderson, & Greenbaum, 2009), and MDFT reduced juvenile recidivism as well. On the other hand, findings were mixed at 12-month follow-up in an RCT with adolescents with substance use disorders (Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008). MDFT decreased the severity of problems associated with substance use, but treatment effects were not observed for the frequency of substance use. Henderson, Dakof, Greenbaum, and Liddle (2010) conducted secondary analyses on data from Liddle et al. (2008) and also presented findings from a new RCT of MDFT delivered in juvenile detention and subsequently in the youths' homes. Interestingly, across studies, MDFT was effective for youths with more serious problems (i.e., greater substance use and more co-occurring mental health disorders) but not for counterparts with less serious problems.

Independent Replications and Cost Analysis Three independent RCTs have been conducted for MDFT, with mixed results. In the large multisite Cannabis Youth Study (Dennis et al., 2004), which included MDFT and four other treatment conditions, treatment effects were not demonstrated for any of the interventions. Likewise, an economic evaluation of this study (French et al., 2003) concluded that

MDFT failed to provide significant net benefits. An independent evaluation with adolescents meeting diagnostic criteria for substance use disorders in the Netherlands (Hendriks, van der Schee, & Blanken, 2011) also failed to support the effectiveness of MDFT. Consistent with findings from Henderson et al. (2010), however, posthoc analyses showed that youth with the most severe problems tended to respond more favorably to MDFT. Importantly, a multisite study in Western Europe has recently supported the effectiveness of MDFT in treating cannabis use disorders in adolescents (Rigter et al., 2013). MDFT was more effective at moving youth from dependence to abuse at 12-month follow-up and, again, was especially effective with higher severity youth. Overall, despite some equivocal results, evidence of MDFT effectiveness in addressing substance-related problems in challenging adolescents is promising.

Mediational Research Two studies have supported the MDFT theory of change—linking treatment processes with youth outcomes. Shelef, Diamond, Diamond, and Liddle (2005) found that a strong therapist–adolescent alliance was associated with short-term reductions in symptoms when the therapist–parent alliance was also positive. Consistent with mediation research for MST and MTFC, Henderson, Rowe, Dakof, Hawes, and Liddle (2009) observed that favorable MDFT effects on substance use were mediated by improved parental monitoring.

Conclusion

Evidence of the capacity of FBT, CM, BSFT, and MDFT to reduce adolescent substance use and abuse is convincing, though modest—with treatment effects observed in most RCTs. As noted previously, the evidence-based treatments of delinquency (i.e., MST, FFT, and MTFC) also showed promising results in the treatment of adolescent substance use disorders. Although outcomes are not overwhelming, family-based

treatment models are undoubtedly the most promising approaches in this area of research, with scant evidence supporting the relative effectiveness of individual, group, or residential approaches to the treatment of adolescent substance use disorders. Moreover, consistent with research for the evidence-based treatments of delinquency, mediation studies for adolescent substance abuse support the important role that family relations play in attenuating substance-related problems in youths.

Summary

Only three interventions have met the Blueprints criteria for effective treatments of delinquency, and each is family based. Several additional family-based approaches are the most promising treatments of adolescent substance abuse in the field. Significantly, the treatments discussed in this chapter share several commonalities that likely account for their effectiveness:

- These treatments explicitly address well-established family risk factors associated with youth antisocial behavior (e.g., monitoring, supervision, discipline, emotional bonding). Moreover, the reviewed outcome research showed that these family-based treatments improve family functioning, and mediation studies demonstrated that such improved functioning leads to decreased antisocial behavior in the adolescents.
- Interventions are also directed at known risk factors in the youth and family's broader environment, including association with problem peers, school performance, and relations with community stakeholders.
- Each of the family-based models has well-specified intervention strategies that are pragmatic, problem focused, and present oriented. Similarly, behavioral and cognitive behavioral intervention techniques are used across models, though these techniques are implemented within systemic conceptual frameworks.

- The interventions are delivered in community-based settings, often directly in the youths' homes and schools, which overcomes barriers to service access and promotes treatment generalization.
 - The programs within which these treatments are delivered include considerable quality assurance (i.e., training, clinical oversight) to promote treatment fidelity and youth outcomes. Indeed, several studies demonstrated significant links between therapist adherence to the treatment protocols and favorable youth outcomes.
 - Importantly, and in contrast with many intervention approaches in youth service systems, the family is viewed as the solution, not as the problem. Thus, each of the family-based treatments takes a strength-focused approach to problem conceptualization and intervening.
- that have contributed to inconsistent outcomes among clinical trials is needed. Clearly, poor intervention fidelity is often a major factor in treatment failure, but other treatment and service system variables are likely relevant as well.
- Additional research is needed on the mediators of intervention effectiveness. Although some family-based treatments have two or more mediation studies, others have none.
 - Finally, although demographic moderators (e.g., gender, race, age) of the effectiveness of these interventions have rarely been observed, investigators should continue to explore the generalizability of treatment effects.

Future Research Needs

Several research priorities can be identified:

- Although the effectiveness of a number of the family-based approaches has been supported in independent replications, others have not received independent validation. Treatments that require the oversight of the treatment developer for success are limited in their ultimate value. Hence, independent replications are critical for several of the approaches reviewed here.
- As detailed by Fixsen, Naoom, Blase, Friedman, and Wallace (2005), the transport of interventions proven effective in controlled settings (e.g., university clinic with graduate student therapists) to real-world community settings can be extremely challenging on many levels (e.g., training, funding, administrative demands). The transportability of family-based treatments is a ripe subject for the emerging field of implementation research.
- Similarly, and this likely also comes under the rubric of implementation research, a better understanding of the conditions and processes

Recommended Readings

- Baldwin, S. A., Christian, S., Berkeljon, A., Shadish, W. R., & Bean, R. (2012). The effects of family therapies for adolescent delinquency and substance abuse: A meta-analysis. *Journal of Marital and Family Therapy, 38*, 281–304.
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