

FAMILY THERAPY FOR DRUG ABUSE: REVIEW AND UPDATES 2003–2010

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Just 15 years ago, Liddle and Dakof (Journal of Marital and Family Therapy, 1995; 21, 511) concluded, based on the available evidence, that family therapy represented a “promising, but not definitive” approach for the treatment of drug problems among adolescents and adults. Seven years later, Rowe and Liddle (2003) review described considerable progress in this specialty with encouraging findings on adolescent-focused models based on rigorous methodology, as well as advances with adult-focused family-based treatments. The current review brings the field up to date with highlights from research conducted in the intervening 7 years, cross-cutting issues, recommendations for new research, and practice implications of these findings. Adolescent-focused family-based models that attend to the ecology of the teen and family show the most consistent and strongest findings in recent studies. Adult-focused models based on behavioral and systems theories of change also show strong effects with drug abusers and their families. The overarching conclusion is that family-based models are not only a viable treatment alternative for the treatment of drug abuse, but are now consistently recognized among the most effective approaches for treating both adults and adolescents with drug problems.

DRUG ABUSE EPIDEMIOLOGY: CURRENT TRENDS

Drug abuse continues to be a public health problem of enormous proportions, with an estimated 4 million Americans and their families impacted by drug use disorders and another 3 million by abuse or dependence on both illicit drugs and alcohol (SAMHSA, 2009). Roughly 8% of the nation’s population aged 12 and older used an illicit drug in the past month, and there are almost 8,000 new users (“initiates”) of illicit drugs each day (SAMHSA, 2009).

While use of illicit drugs among adolescents declined or remained relatively steady throughout much of the past decade, most recent survey results reveal dramatic 1-year increases in past-year marijuana use (19%) and ecstasy (67%) among high school students (PATS, 2009). The same survey portends additional increases in drug use in coming years given that more students are endorsing attitudes and behaviors supportive of substance use. Other 2009 survey results, including the Monitoring the Future study, also raise alarm because youths’ marijuana use and overall drug use are rising, and attitudes about marijuana use appear to be softening (Johnston, O’Malley, & Bachman, 2009). Similarly, SAMHSA (2009) reports recent reductions in the percentage of adolescents perceiving great risk in regular marijuana use, as well as fewer teens reporting exposure to drug prevention. Elevations in rates of adolescent drug use raise concern because early initiation of drug use and increasing use of drugs over the course of adolescence are particularly strong predictors of chronic drug problems and criminal offending in adulthood (Gustavson et al., 2007), as well as STDs/HIV (Malow, Devieux, Jennings, Lucenko,

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This review is dedicated to William Fals-Stewart, PhD (1962–2010). He is gratefully acknowledged for his substantial contributions to the field of family-based drug abuse intervention research.

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& Kalichman, 2001) and a host of long-term negative outcomes stemming from drug use and crime (Stenbecka & Stattin, 2007).

In addition to emerging trends showing increasing drug abuse among teens, drug abuse among older adults is also an immediate pressing concern among drug abuse epidemiologists and clinicians (Simoni-Wastila & Yang, 2006). SAMHSA (2009) reports that prevalence of past-month illicit drug use among Americans in their 50s increased from 2.7% in 2002 to 4.6% in 2008. These dramatic elevations are attributed to the aging of the large “baby boomer” generation, which has had a higher lifetime rate of illicit drug use than previous cohorts. Increasing prevalence of drug use among older adults—particularly abuse of prescription drugs—raises serious concerns given the limited knowledge base on the effects of substances on the aging brain (Dowling, Weiss, & Candon, 2008). As drug treatment need already surpasses available resources, clinical capacity will need to increase to meet demands for intervention foretold by these trends. Currently, only about 10% of substance abusers aged 12 and older in need of treatment receive care at a specialty substance abuse facility (SAMHSA, 2009).

LINKS BETWEEN FAMILY FUNCTIONING AND DRUG ABUSE: RATIONALE FOR FAMILY-BASED TREATMENT

Several decades of consistent research findings support the reciprocal relationship between family functioning and drug abuse (Fals-Stewart, Lam, & Kelley, 2009). Drug abuse is now understood to be initiated and maintained as the result of multiple interacting factors within the individual, as well as the family, peer/social, and neighborhood/community systems. Family functioning is significantly compromised in turn by the individual’s drug use, maintaining a corrosive and often multigenerational cycle of addiction and related problems.

Family factors including parental psychopathology, family conflict, relational distance, and parenting deficits are all strong predictors of drug use initiation and abuse (Tobler & Komro, 2010). Prevention research also strongly implicates the protective role of families and positive parenting across developmental outcome domains, including reducing drug involvement (Hawkins, Kosterman, Catalano, Hill, & Abbott, 2005). Intriguing new research shows that high levels of supportive parenting even reduce genetic vulnerability for substance use increases over time (Brody et al., 2009).

Family factors continue to be important after drug abuse problems develop. For instance, associations between relationship dysfunction and substance use appear to be reciprocal, and stress in family relationships can contribute to drug use among adults (Fals-Stewart et al., 2009). In fact, family conflict, low family support, drug use among other family members, and parenting stress have all been shown to contribute to relapse after drug treatment. Difficulties within the family can create barriers to treatment engagement that must be addressed (Appel et al., 2004), and problems in family relationships can also be strong motivators for engagement into treatment for adolescents and adults alike (Handelsman, Stein, & Grella, 2005). Thus, drug use and family relationships and interactions are inextricably linked, and addressing family issues can be critical to short- and long-term treatment success.

Drug abuse and addiction also seriously impact family members. Research consistently shows that parental drug addiction compromises children’s psychosocial adjustment. A recent study showed that less than half (44%) of children born to drug abusing mothers lived with a biological parent and 20% were in custodial care or placed outside of the family (Gilchrist & Taylor, 2009). Drug abuse also negatively affects partners and children through intimate partner violence (IPV). Drug abuse can also increase intimate partners’ vulnerability to HIV/STD infection through unsafe sexual practices and needle use (Fals-Stewart et al., 2003).

With decades of research supporting the interdependence of drug use and family functioning, the theoretical and clinical rationale for involving families in the drug abuser’s treatment now seems self-evident (CSAT, 2004; Gruber & Fleetwood, 2004). Different theoretical perspectives have guided the formulation of family-based interventions for drug abuse, which generally fall into three categories: behavioral, family systems, and multiple systems/ecological approaches. Behavioral family therapy approaches emphasize the role of the family in reinforcing behaviors and attitudes conducive to drug abuse, and attempt to alter these contingencies

so that the family can help promote the individual's abstinence. Effective couples therapy approaches for adult drug abusers follow these behavioral principles and change tenets (e.g., Behavioral Couples Therapy, BCT; O'Farrell & Fals-Stewart, 2006). Family systems approaches address problematic family relationship and management patterns that influence the individual's drug use. They generally target drug use indirectly by helping the family develop new ways of interacting that improve functioning of family members and support the individual's drug-free lifestyle. Strong family systems models for adolescent drug abusers (e.g., Brief Strategic Family Therapy, BSFT; Szapocznik & Kurtines, 1989) have their roots in structural (Minuchin, 1974) and strategic family therapy (Haley, 1976). Finally, multiple systems or ecologically based family models aim to change family factors as well as other systems of influence that maintain drug use. These models tend to be integrative and target drug use directly in subsystems, family, and "extrafamilial" work. Examples include Multidimensional Family Therapy (MDFT; Liddle, 2002) for teens and the Engaging Moms Program (EMP; Dakof et al., 2003) for adults. Regardless of the theoretical basis, family therapy approaches for drug abuse generally have similar fundamental goals: (a) utilize the support and leverage of the family to reduce the individual's drug use and implement other important lifestyle changes and (b) alter problematic aspects of the family environment to maintain positive changes in the individual and other family members and promote long-term recovery (Fals-Stewart et al., 2009).

PROGRESS IN COUPLES AND FAMILY-BASED TREATMENTS FOR DRUG ABUSE

Just 15 years ago, Liddle and Dakof (1995) concluded in their comprehensive review that family-based treatments for drug abusers offered a "promising, but not definitive" treatment alternative for this population. While there were encouraging findings and strong foundations for growth in the specialty in that time, the limited number of studies and questionable rigor of much of the science left many gaps to be addressed. Rowe and Liddle (2003) review recognized the considerable progress that had been made in family therapy approaches for adolescent drug abuse in the intervening period. New findings supported these approaches based on rigorous research methods and highlighted the clear acknowledgment of family therapy as among the most effective approaches for young people. Significant developments were noted in couples and family approaches for adult drug abuse, yet there were also gaps, such as research on systemic approaches.

Since 2002, couples and family approaches for adults and adolescents have achieved a solid standing in the ranks of drug abuse treatments, consistently cited as among the most powerful forms of intervention for this population (Carroll & Onken, 2005; CSAT, 2004; National Institute on Drug Abuse [NIDA], 2006; Waldron & Turner, 2008). This review presents the major research findings in this area since 2002, highlights particularly promising intervention models, addresses cross-cutting issues, and concludes with recommendations for next research steps and implications for practice. All published or in press studies on family-based interventions for drug abuse between 2003 and 2010 were reviewed, with particular attention to methodological rigor in making conclusions.

REVIEW OF MAJOR FINDINGS ON FAMILY-BASED TREATMENT FOR DRUG ABUSE: 2003 TO 2010

Family-Based Approaches for Adolescent Drug Abuse

Drug abuse tends to have its onset in adolescence, and new research suggests that long-term prognosis is better if drug treatment is received earlier in life and closer to the onset of the disorder (Dennis & Scott, 2007). Thus, adolescent drug abuse treatment has been the focus of considerable empirical and clinical attention in the last two decades, and family-based approaches have been in the forefront of treatment development efforts and research progress in this area. By the late 1990s, the accumulation of high-quality research studies supported conclusions that family therapy was among the most effective forms of adolescent drug treatment (Waldron, 1997; Williams & Chang, 2000). Currently, family-based approaches are the most

thoroughly examined models for adolescent drug abuse, and there is more evidence to support their efficacy than ever before (Becker & Curry, 2008; Hogue & Liddle, 2009). These developments are reflected in recent national and federal efforts to promote the use of family-based models (CSAT, 2004) as well as practice parameters and guidelines highlighting the importance of family involvement in adolescent drug treatment (e.g., AACAP, 2005).

Three comprehensive reviews of adolescent drug treatment since 2002 have concluded that research on family-based approaches is consistently distinguished for its methodological rigor and impressive results. In Vaughn and Howard's (2004) hybrid meta-analysis/quality of evidence review, MDFT (Liddle, 2002) and cognitive-behavioral group treatment (CBT) emerged as most efficacious. Becker and Curry's (2008) quality of evidence review revealed that multiple systems-oriented family therapies (MDFT and Mutisystemic Therapy, MST; Henggeler & Borduin, 1990) were among only three approaches (CBT and brief motivational interviewing included) to demonstrate comparatively superior treatment effects in the highest quality adolescent drug treatment studies. Finally, a meta-analysis by Waldron and Turner (2008) reported that only three of 46 adolescent drug treatments could be classified as "well-established," including MDFT, Functional Family Therapy (FFT; Alexander & Parsons, 1982), and CBT. Three additional family-based models in this meta-analysis were considered "probably efficacious" (BSFT, MST, and behavioral family therapy). A fourth review by Austin, MacGowan, and Wagner (2005) focused specifically on family-based interventions for substance use problems and categorized MDFT and BSFT as "probably efficacious" and three other models (MST, FFT, and behavioral family therapy) as "possibly efficacious." Thus, family-based treatments are well established among the most effective treatments for adolescent drug abuse. The following sections report recent research findings on these family-based models.

Multidimensional Family Therapy. Multidimensional Family Therapy (Liddle, 2002) is an integrative outpatient treatment blending family therapy, individual therapy, drug counseling, and multiple systems-oriented intervention approaches. MDFT interventions work in four domains, targeting changes in the adolescent (intrapersonal and relational development issues), 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 and the juvenile justice system). Early-stage interventions that aim to develop multiple alliances with teens, parents, and influential members of extrafamilial systems have paid off in high retention rates. For example, MDFT engaged 97% of youth in treatment in detention as compared to 55% in services as usual (SAU); MDFT retained 87% of these youth in at least 3 months of outpatient treatment after release, compared to only 23% in SAU (Liddle, Dakof, Henderson, & Rowe, 2011).

Previous reviews have noted the consistent effects of MDFT in reducing adolescent drug use in rigorous research studies (Austin et al., 2005; Becker & Curry, 2008; Brannigan, Schackman, Falco, & Millman, 2004; Vaughn & Howard, 2004; Waldron & Turner, 2008). MDFT was one of five promising adolescent drug treatments tested in the Cannabis Youth Treatment (CYT) multisite clinical trial, and demonstrated similar positive effects on youths' drug use to the comparison treatments at 12-month follow-up (Dennis et al., 2004). In a randomized trial comparing MDFT to an empirically supported, individual-based CBT with 224 primary male and African American adolescents referred to drug treatment, youth in MDFT showed more rapid and sustained decreases in psychological involvement with drugs through 12-month follow-up (Liddle, Dakof, Turner, Henderson, & Greenbaum, 2008). Another recent randomized trial tested MDFT as an early intervention for 83 young minority adolescents (aged 11–15) referred for drug treatment. Youth in MDFT showed greater decreases in marijuana use than youth receiving a manualized CBT-based peer group treatment and were more likely to abstain from drug use and report no drug problems over the 12-month follow-up (Liddle, Rowe, Dakof, Henderson, & Greenbaum, 2009). These studies have shown clinically significant effects of MDFT on youths' drug use and related problems in comparison with other state-of-the-art, well-articulated, and carefully monitored treatments (Austin et al., 2005). Youths' and families' functioning in a range of domains have been shown to improve during treatment and to maintain gains following treatment (Liddle et al., 2009).

Multisystemic Therapy. Multisystemic Therapy (Henggeler & Borduin, 1990) is a social ecological approach to altering the multiple risk factors that create and maintain adolescent drug abuse and delinquency that is widely recognized as among the most effective approaches for reducing juvenile delinquency (Curtis, Ronan, & Borduin, 2004). With its implicit goal of restructuring the youth's environment to reduce antisocial behavior, MST therapists work actively and intensively in both the home and community to empower parents. The model has demonstrated impressive retention rates and consistent effects on delinquency, as well as promising substance use outcomes (Henggeler, Pickrel, Brondino, & Crouch, 1996). In recent years, MST has been tested in innovative research in juvenile justice settings, including juvenile drug court and sexual offender programs. Henggeler et al. (2006) conducted a randomized trial of three drug court conditions: MST, MST + contingency management (CM), and standard drug court, compared with family court with 161 adolescents who had substance use disorders. The three drug court models together were more effective than family court in reducing drug use and criminal behavior, and the two MST conditions were superior to standard drug court in reducing drug use. More recently, Letourneau et al. (2009) reported results of a randomized trial comparing MST and standard services for 127 adolescents in a juvenile sexual offender program. Intake to 12-month substance use outcomes favored MST, supporting its promise with this particularly challenging target population.

Multisystemic Therapy's impressive research program has paved the way for advances in several areas and has increased attention to important methodological issues, such as exploring links between therapist fidelity and youths' outcomes (e.g., Schoenwald, Carter, Chapman, & Sheidow, 2008), examining mediators and moderators of treatment effects (e.g., Foster et al., 2009), and studying dissemination in practice settings (e.g., Schoenwald, Chapman, Sheidow, & Carter, 2009b). More details about MST research and dissemination efforts are presented in the sections below.

Ecological Interventions. Drawing on the success of models such as MST in reducing delinquency and drug abuse through interventions that change the youth's broader ecology as well as family dynamics, ecologically focused interventions have received recent attention. For instance, Ecologically Based Family Therapy (EBFT; Slesnick & Prestopnik, 2005a) was recently developed based on multisystemic family therapy models that emphasize change in family functioning as well as other systems that impact the child. EBFT has also been influenced by family preservation and crisis intervention approaches, with its primary focus on helping runaway adolescents reunite with families and reduce their substance abuse, sexually risky behaviors, and other problems. Services are provided in the home and community. In an early study, Slesnick and Prestopnik (2004) randomly assigned 77 alcohol abusing runaway youths recruited from shelters to either in-home EBFT or office-based FFT, and found engagement rates to be significantly higher in EBFT (76% vs. 50% in FFT). Families attended nearly twice as many sessions of EBFT compared to FFT. Higher family income significantly predicted attendance in office-based FFT, but both lower- and higher-income families attended in-home EBFT, thus lack of financial resources was not a barrier to attendance in EBFT. In addition, history of child abuse was a treatment barrier in FFT but not EBFT, and greater severity of externalizing problems increased EBFT but not FFT attendance. In sum, in-home and systems-oriented EBFT appears to address many barriers typically presented by the most severe drug abusing adolescents and their families (Slesnick & Prestopnik, 2004).

With these encouraging results, Slesnick and Prestopnik (2005b) conducted a larger randomized trial of EBFT vs. usual services with 124 runaway adolescents and their families. For cases completing five or more sessions, EBFT was superior to usual care in reducing drug use. More recently, Slesnick and Prestopnik (2009) tested in-home EBFT, office-based FFT, and SAU with 119 runaway adolescents presenting with primary alcohol problems. Both family models performed well in comparison with SAU on measures of drug use between intake and 15-month follow-up. In-home EBFT also had better engagement rates, as in Slesnick and Prestopnik's (2004) study, as well as stronger effects on drug use with younger teens and females than office-based FFT (Slesnick & Prestopnik, 2009). Research on EBFT has paved the way for advances in effective family-based treatment with runaways and homeless teens—a population that has been thought to be too severe or not amenable to family therapy.

A second study comparing ecologically oriented family treatment against more traditional family therapy was conducted by Robbins et al. (2008). Structural Ecosystems Therapy (SET; Robbins, Schwartz, & Szapocznik, 2003), a family-based ecological approach, was compared to Family Process Therapy, referred to as FAM, and community services with 113 adolescents with substance use disorders. There were no reductions in drug use among African American teens for any of the treatments. However, SET was shown to be more effective than FAM and community services in reducing drug use among Hispanic adolescents up to the 18 month follow-up.

Taken together, the results of these studies show certain added benefits of multiple systems models that go beyond the family to alter the youth's broader ecology. Treatment models that do not intervene directly within the environments most influential in an adolescent's day-to-day life, including the home, school, court, and social services, may be at a disadvantage in attempting to alter the range of risk factors for chronic addiction and related problems.

Functional Family Therapy. Functional Family Therapy (Alexander & Parsons, 1982) is a behaviorally based, systems-oriented family therapy approach that aims to alter the maladaptive family patterns maintaining the adolescent's problems. Treatment aims to change negative family interactions and uses behavioral interventions to reinforce positive ways of responding and more effective problem-solving approaches within the family. Early research on FFT, among the first well-controlled trials of family therapy for adolescent behavior problems (Alexander & Parsons, 1973; Barton, Alexander, Waldron, Turner, & Warburton, 1985), established that FFT improved family functioning and reduced recidivism among delinquent teens to a greater extent than juvenile court-based group therapy, group home therapy, psychodynamic therapy, or no treatment. This important and foundational research paved the way for subsequent development and study of family-based treatments for drug abusing teens. With preliminary evidence of its effects on substance use (Waldron, Slesnick, Brody, Turner, & Peterson, 2001), FFT was recently tested in comparison with EBFT (Slesnick & Prestopnik, 2005a; described above) and SAU with adolescent runaways. In this study, FFT was found to more significantly reduce drug use up to 15 months postintake than SAU (Slesnick & Prestopnik, 2004; see *EBFT* section above for details). The FFT intervention is widely disseminated in mental health and youth care clinics around the country and in Europe, demonstrating considerable promise in transportation efforts to increase use of evidence-based practices (e.g., Breuk et al., 2006).

Brief Strategic Family Therapy. Brief Strategic Family Therapy (Szapocznik, Hervis, & Schwartz, 2003) research program builds on early studies showing impressive results using strategic-structural engagement strategies with troubled Hispanic boys and their families (Szapocznik et al., 1989). BSFT (see Szapocznik & Williams, 2000) relies on three core structural family therapy (Minuchin, 1974) strategies of "joining," "family pattern diagnosis," and "restructuring" to alter family interactions that keep the youth and family from engaging in treatment and making significant changes in their lives. The developers of BSFT distinguish this model in terms of its pure focus on "within-family" structural and strategic therapy techniques, as well as its resonance with Hispanic families and culture (Santisteban, Suarez-Morales, Robbins, & Szapocznik, 2006). Earlier research showed that BSFT engagement strategies successfully retained families and addressed cultural factors that influence engagement (e.g., Coatsworth, Santisteban, McBride, & Szapocznik, 2001; Szapocznik et al., 1989). This foundational work on engagement strategies has significantly impacted the development of other family-based models and the empirical specification of alliance building interventions. More recently, Santisteban, Muir, Mena, and Mitrani (2003) reported results of a clinical trial with 126 Hispanic substance involved adolescents, demonstrating that BSFT was superior to group therapy in reducing marijuana use. BSFT was recently tested in the NIDA clinical trials network in eight sites with over 400 adolescents and families (Santisteban et al., 2006), and results of this large real-world effectiveness trial are forthcoming.

Integrative Family Therapy Models. Recent studies have also tested integrative treatment approaches that combine core family therapy interventions with other therapeutic approaches to attempt to maximize effects on youths' drug use. For instance, Latimer, Winters, D'Zurilla, and Nichols (2003) tested an integrated family and cognitive-behavioral therapy approach (IF-CBT) against a psychoeducational drug program in a small pilot study with 43 adolescents

diagnosed with substance use disorders. Promising results of IFCBT were demonstrated between intake and 6-month follow-up in reducing days when marijuana was used. Integrative models are promising, yet more research is needed to delineate critical ingredients of these approaches (Carroll & Onken, 2005).

Broader Impact of Family-Based Approaches: Addressing Multiple Problems. Family-based models for adolescent drug abuse have been recognized for their ability to impact not only the drug use, but other related problems as well. Presumably, family-based models have the capacity to impact multiple problems because they comprehensively address the underlying risk factors that are common to interrelated problem behaviors (Rowe, (2010)). Family-focused treatments show positive effects on established predictors of healthy adolescent development, including family functioning (Latimer et al., 2003), school performance (Brown, Henggeler, Schoenwald, Brondino, & Pickrel, 1999), and association with delinquent peers (Liddle et al., 2009). Multiple systems-oriented approaches appear to have wider reach than traditional family therapy approaches on a range of adolescent problem behaviors. Indeed, both MDFT and MST were featured in a recent review of “a handful of research-supported integrated interventions that simultaneously address both mental health and substance use disorders” (Hawkins, 2009, p. 207).

Multisystemic Therapy research attests to the model’s impact on juvenile delinquency as well as drug use, school problems, and mental health symptoms (Curtis et al., 2004). For instance, a trial of MST with seriously emotionally disturbed youth demonstrated better short-term effects than existing services on adolescents’ internalizing and externalizing symptoms, minor crimes, and out-of-home placements (Rowland et al., 2005). Huey et al. (2004) reported that MST was also more effective than emergency hospitalization in reducing suicide attempts and decreasing symptoms up to 1 year following referral for a psychiatric emergency.

Multidimensional Family Therapy is also distinguished for its impact on co-occurring problems. For instance, with young adolescents, MDFT showed more significant effects on internalized distress, affiliation with delinquent peers, and school performance between intake and 12-month follow-up than CBT peer group treatment (Liddle et al., 2009). In addition, official court records showed that MDFT clients were less likely to be arrested or placed on probation. In the “Detention-to-Community” (DTC) study, MDFT was tested in a 2-site NIDA CJDATS randomized trial as a cross-systems integrative model with youths while they were in detention and in the community after they were released (Liddle et al., 2011). Adolescents receiving MDFT were detained for fewer days in the 9-month follow-up period than youth in SAU. In this study, an HIV/STD prevention module was also developed and integrated within MDFT (Marvel, Rowe, Colon, DiClemente, & Liddle, 2009), and youth receiving MDFT engaged in fewer unprotected sex acts between intake and 9 months. Finally, emerging research suggests that adolescents with greater initial severity of comorbid problems may benefit more from MDFT than other highly regarded active treatments, such as individual CBT (Henderson, Dakof, Greenbaum, & Liddle, in press).

Other innovative approaches are being tested for adolescent substance abusers with comorbid mental health problems. For instance, an integrative model was developed to address the concurrent problems of drug abuse and borderline personality disorder among adolescents. Integrative Borderline Adolescent Family Therapy (I-BAFT; Santisteban et al., 2003) combines structural and strategic family therapy interventions for adolescents drug abuse, skills training techniques demonstrated effective with adult borderline patients and adapted for adolescents, and individual motivational focused sessions. Results of I-BAFT are expected soon. Rowe and Liddle (2008) describe empirical efforts to adapt MDFT for clinically referred drug-involved adolescents and their families impacted by Hurricane Katrina in Greater New Orleans, incorporating empirically supported trauma-specific interventions in one of the only tests of a family-based substance abuse and trauma-focused intervention. Taken together, these studies suggest that for more severe drug users with comorbid problems, multiple systems-oriented family interventions may be necessary to achieve positive outcomes across domains.

Family-Based Approaches for Adult Drug Abuse

There is greater recognition than ever before that drug abuse treatment with adults can be improved by involving families—and may be seriously hindered without the participation of

family members (Fals-Stewart et al., 2009; Gruber & Fleetwood, 2004). This growing awareness and receptivity is related to several emerging themes in the literature. First, family members may offer the most powerful source of leverage to motivate the drug abuser to enter treatment and maintain positive changes (Dakof et al., 2010). Family factors may be among the most important predictors of treatment engagement, and family support can be one of the most important factors in maintaining abstinence. Second, as described earlier, drug abuse by an individual affects all members of the family, including partners, children, and others not residing in the home. Family members need help not only in dealing most effectively with the drug abuser, but also to cope with their distress and resolve their own concerns. Third, stress in family relationships and parenting can exacerbate drug abuse and contribute to relapse if not addressed (Carlson, Smith, Matto, & Eversman, 2008). The individual is inextricably linked to the family, thus lasting recovery is unlikely in isolation from the realities of family life and relationships.

There have been several different approaches to family-based treatment with adult drug abusers. While Stanton and Todd (1982) were first on the scene with a structural and strategic family systems approach showing promising effects with young adult drug addicts, this work has unfortunately not been replicated or developed further since the mid-1980s. Family and couple approaches for alcoholics developed rapidly in the 1980s and 1990s (McCrary & Epstein, 1996), and this work informed and complemented more recent efforts with drug abusing populations. Stanton and Shadish's (1997) meta-analysis of family therapy for drug abuse problems was encouraging, concluding that family therapy works equally well for both adults and adolescents, and that family therapy research with adults generally tends to be of good design quality, shows better results for family than nonfamily approaches, and demonstrates cost-effectiveness as a component of methadone maintenance. The most encouraging recent progress in this specialty has been made in three specific areas: (a) working with significant family members to facilitate engagement of the drug abuser into treatment; (b) applying behavioral principles to work jointly with drug abusers and their partners; and (c) working concurrently with drug abusing parents both to achieve abstinence from drugs and to improve their parenting skills to prevent substance abuse and promote positive adjustment in children. Advances in these areas are described below.

Facilitating Engagement into Drug Treatment through Family Relationships. Family members may be among the most powerful sources of leverage in engaging drug abusers into treatment (O'Farell & Fals-Stewart, 2006), and unaddressed problems in the family may undermine the drug abuser's efforts to access treatment (Hser, Maglione, Polinsky, & Anglin, 1998). Thus family involvement in the engagement process can be critical, yet utilizing this resource effectively takes active work on the part of the therapist to both recruit and motivate family members and to increase openness and receptivity of the drug abuser to having family members involved. Specialized treatment protocols have been developed to increase engagement of drug abusers into treatment by working actively and mobilizing these family supports.

The EMP (Dakof et al., 2003) is an innovative family-based in-home and in-community drug abuse treatment enrollment and retention intervention. EMP is unique among the adult-focused models in that it has its roots in systemic family therapy for treating drug abuse, as well as women's relational development and family preservation models of service delivery. Dakof et al. (2003) reported results of the first randomized trial testing the efficacy of EMP with 103 Black mothers of substance-exposed infants. Results demonstrated that significantly more women in EMP enrolled into drug abuse treatment than did women assigned to the community engagement as usual (control) condition (88% vs. 44%). Although 67% in the EMP received at least 4 weeks of drug abuse treatment compared to 38% of the control women, only 39% of Engaging Moms clients and 35% of control clients stayed in treatment for at least 90 days, thus the developers aimed to increase the impact of the intervention on treatment retention and outcomes.

Dakof and colleagues subsequently conducted treatment development research to refine EMP for the dependency drug court setting. In a quasi-experimental study, Dakof, Cohen, and Duarte (2009) showed that 72% of mothers assigned to EMP graduated from drug court (compared to 38% of mothers in case management services), and 70% of EMP mothers were

reunified with their children (compared to only 40% of mothers in case management). Based on these results, a second fully randomized trial was conducted to compare EMP with Intensive Case Management Service in the dependency drug court (Dakof et al., 2010). Mothers in EMP had significantly better outcomes over 18 months in terms of graduation from dependency court (68% EMP; 53% ICS), positive child welfare dispositions (77% vs. 55%), decreased substance use and psychiatric symptoms, and improved family functioning and parenting practices. Thus, the EMP has considerable promise in facilitating treatment engagement, as well as improving longer-range individual and family outcomes.

Another promising family engagement intervention, "Community Reinforcement and Family Training" (CRAFT, previously "Community Reinforcement Training" or CRT; Sisson & Azrin, 1986), is an outgrowth of the behavioral "Community Reinforcement Approach" for alcoholism (Hunt & Azrin, 1973). Based on the same behavioral principles of CRA, and the basic assumption that substance abuse is maintained through a variety of environmental contingencies that must be rearranged for lasting recovery, CRAFT works with loved ones (concerned significant others or CSOs) of treatment refusing substance abusers to encourage the drug abuser's treatment participation and recovery (Meyers, Villanueva, & Smith, 2005). CRAFT teaches family members to implement behavioral principles to discourage substance use, decrease stress and increase positive activities, increase self-care practices, and encourage treatment seeking "in a manner that typically is very different from their past attempts to influence their loved one's substance using behavior" (Meyers et al., 2005, p. 255). Although CRAFT has been most often used with families of alcoholics, Kirby, Marlowe, Festinger, Garvey, and LaMonaca (1999) reported encouraging results of CRAFT in a small ($n = 32$) randomized pilot study with drug abusers and their families. Retention of CSOs in treatment and treatment engagement of drug abusers was higher in CRAFT than a 12-step approach 10 weeks after intervention, yet no significant differences were found between the conditions on the CSOs' social or emotional functioning. A second randomized trial of CRAFT similarly showed greater engagement of the drug abuser into treatment (67%) than an AlAnon facilitation approach (29%), but no difference in the functioning of CSOs and no added benefit of a CRAFT aftercare component (Meyers, Miller, Smith, & Tonigan, 2002). Thus, CRAFT appears to be effective in engaging the drug abuser into treatment through work with family members, but does not appear to have greater benefits for CSOs than AlAnon facilitation or participation.

In sum, there is strong evidence for the ability of specialized family-based interventions to assist in engaging drug abusers into treatment. Enlisting these natural supports to motivate drug abusers into treatment is clearly an important end in itself, and EMP also shows effects on other important outcomes in a recent trial, including reduced substance use.

Behavioral Couples Therapy and Behavioral Family Counseling. The collaborative research program of Fals-Stewart, O'Farrell, and colleagues on BCT and its variations (O'Farrell & Fals-Stewart, 2006) has contributed significantly to this specialty area in recent years. BCT, which aims to shape relational patterns conducive to drug and alcohol abstinence, is now regularly highlighted in reviews of the most effective treatments for drug abuse as well as alcoholism (Carroll & Onken, 2005; Morgenstern & McKay, 2007). The BCT approach involves an initial agreement for the drug abuser to commit to sobriety and the partner to reinforce this commitment daily, as well as strategies to help the drug abuser cope with cravings and for the couple to deal with crises concerning relapse, communicate more effectively, and increase enjoyable activities that do not involve substance use. A recent meta-analysis of 12 BCT trials determined that the model achieved an average medium effect size over individual comparison treatments, showed particularly strong effects at follow-up points, and has made great strides in the treatment of drug abuse in the past decade (Powers, Vedel, & Emmelkamp, 2008).

The first trial of BCT with drug abusers (Fals-Stewart, Birchler, & O'Farrell, 1996) demonstrated the efficacy of BCT in comparison with individual-based therapy in terms of relationship outcomes, drug use, drug-related arrests, partner violence, and hospitalizations up to 1-year follow-up, as well as greater cost-effectiveness and relative benefits and costs of BCT (Fals-Stewart et al., 2009). New studies have replicated these initial promising results with other populations. For instance, BCT demonstrated greater abstinence and compliance with naltrexone medication treatment and fewer legal and family problems at 12 months posttreatment

than individual therapy for opiate addicts (Fals-Stewart & O'Farrell, 2003). More recently, Fals-Stewart and Lam (2008) developed and tested a brief version of BCT and demonstrated that it had comparable effects to standard BCT at less cost. A recent clinical trial with 207 substance abusing men and their partners demonstrated that BCT was more effective than individual treatment in reducing IPV and drug use up to 12 months (Fals-Stewart & Clinton-Sherrod, 2009).

Behavioral Family Counseling (BFC) is a natural extension of BCT with alcoholics, drug abusers, and their partners. O'Farrell et al., (2010) conducted a treatment development study to design this adaptation of BCT for substance abusing adults living with adult family members other than spouses or partners—potentially doubling the number of drug abusers who could benefit from the intervention. The BFC manual was developed, and a small nonrandomized pilot study was conducted with promising pre-post effects (large effect sizes) on days abstinent, substance abuse problems, and relationship adjustment. In a follow-up randomized pilot study with 29 cases, BFC plus individual treatment was more effective than IBT alone in retaining patients in treatment and had significantly greater impact (medium effect sizes) on substance use reductions and abstinence rates, and equivalent positive effects on relationship quality (O'Farrell, Murphy, Alter, & Fals-Stewart, 2010). These encouraging results suggest that a larger-scale randomized trial of BFC is warranted.

Another behavioral family approach that extends earlier work of O'Farrell and colleagues is Brief Family Treatment (BFT; O'Farrell, Murphy, Alter, & Fals-Stewart, 2007), designed to work with families during the substance abuser's inpatient detoxification in order to promote participation in aftercare. The intervention is delivered in one session, either in the inpatient unit or by phone conference, and includes the drug abuser and a family member living with the patient (either a spouse or an adult family member). A small quasi-experimental study, conducted with 14 substance abusers receiving BFT matched with 14 receiving standard detox services, showed promising trends favoring BFT for participation in aftercare and reductions in substance use in the 3 months after detoxification (O'Farrell et al., 2007). Pilot work has also focused on the application of BFT with alcoholic patients and their families, and the stage is set for a larger randomized trial of BFT (O'Farrell et al., 2010).

Taken together, this impressive series of studies conducted in the last decade suggests that BCT now has solid evidence at attest to its impact on both male and female drug abusers' substance use, intimate partner violence, and relationships with partners and overall family functioning. Pilot studies on BFC and BFT support continued investigation of both approaches in larger randomized trials to increase the range of behavioral family therapy. More details will be presented below related to BCT's positive effects on children's adjustment.

Working with Drug Abusing Parents and Improving Children's Functioning. A more recent innovation in family-based interventions with drug abusers has been the concurrent focus on both parents who are drug abusing and their children who have been affected by drug abuse in the home. Different approaches have been taken, yet common themes include a combined focus on both the drug abusing parent's need to achieve abstinence and implement positive self-care practices, psychoeducational and skills-based interventions to improve parenting, and case management services and in-home services to reduce barriers to treatment success and increase effective negotiation with external systems of influence such as child welfare (Gruber & Fleetwood, 2004). The approaches differ regarding the involvement of children directly in the intervention versus working indirectly to impact children's behavior through parenting skills development. Much of this research has focused on women, who are often stressed by the demands of single parenting, court, and/or child welfare system involvement (Marsh, Ryan, Choi, & Testa, 2006), yet fathers may be appropriate targets as well.

The "Focus on Families" (FOF) program (Catalano, Haggerty, Gainey, & Hoppe, 1997), now called "Families Facing the Future" (FFF; Haggerty, Skinner, Fleming, Gainey, & Catalano, 2008), seeks to reduce relapse among drug abusers in methadone maintenance, reduce risk of drug abuse among children of methadone-treated patients, and increase protective factors against drug abuse among children of methadone-treated patients. FFF, based on the social development model, uses a combination of group parent and child skills training sessions and individualized in-home case management services to increase family bonding,

utilization of supports outside of the family, and set clear family policies against drug use. Children attend 12 of the 32 group parenting sessions with parents to practice skills together. Catalano et al. (1997) originally tested the model with 130 families who had a parent enrolled in methadone maintenance. The children averaged 8 years of age at intake (between 1991 and 1993). Posttest analyses revealed greater relapse prevention skills and self-efficacy in FFF than controls, and at 12 months, FFF parents had significantly lower drug use, domestic conflict, and deviant peer networks, as well as more rules for children's behavior (Catalano, Gainey, Fleming, Haggerty, & Johnson, 1999). Two-year follow-up analyses revealed trends in reduced children's drug use, delinquency, and aggressive behavior as well as maintenance of parents' relapse skills. Most recent reports on children at aged 15–29 suggest that boys in FFF were less likely than controls to develop Substance Use Disorder (SUD) as young adults, yet the interventions did not differ overall or for girls in rates of SUDs (Haggerty et al., 2008). Another recent report did not show significant effects of FFF on children's resilience in work/school functioning, SUDs, or crime (Skinner, Haggerty, Fleming, & Catalano, 2009). Thus, the developers suggest that more work may be needed with parents earlier in childhood to reduce emotional and behavioral problems to increase resilience.

Developers of BCT have also combined a parent training component with drug-focused interventions to maximize the positive impact of the treatment on children affected by parental drug abuse and alcoholism. Lam, Fals-Stewart, and Kelley (2008) developed a parenting skills component and pilot tested the Parent Skills with Behavioral Couples Therapy (PSBCT) program in a small randomized trial with 30 fathers undergoing alcoholism treatment. In this program, children aged 8–12 were assessed to determine treatment outcomes, but did not participate in the treatment. Results revealed that only the PSBCT intervention had consistent impact on children's internalizing and externalizing symptoms between intake and 12-month follow-up, with medium to large effect sizes relative to individual treatment with the fathers and small to medium effect sizes relative to standard BCT. A second report on this pilot study showed that PSBCT was superior to BCT and individual treatment in improving parenting and reducing child protective services involvement; both PSBCT and BCT were superior to individual treatment in reducing fathers' drug use, partner violence, and couples' relationship adjustment (Lam, Fals-Stewart, & Kelley, 2009).

The findings reviewed here on family-based treatments for adult drug abusers clearly show tremendous strides since 2002. New studies show significant promise of different family-based approaches to engage and retain drug abusers in treatment by mobilizing the support and leverage of family members, strong effects of behavioral approaches that work with couples and families to reduce drug use, IPV, and improve relationships, as well as integrative approaches designed to impact both parents' drug use and children's functioning.

Sensitivity of Family-Based Drug Treatment Approaches for Minorities

There is strong evidence from both treatment outcome and process research that family-based treatments for adolescent drug abuse are sensitive to the cultural needs of minority youth and families and appropriate for a range of racial and ethnic groups. For instance, Huey and Polo (2008) recently completed a comprehensive review of evidence-based treatments for minority youth and designated family-based interventions as among the most efficacious for drug abuse and conduct problems. In this review, MDFT was identified as the only substance abuse treatment that was "probably efficacious" for minority adolescents, and MST was considered "possibly efficacious." MST and BSFT were also identified as being "probably efficacious" in treating conduct problems in minority youth. In a recent review of family-based interventions for adolescent drug abuse, Hogue and Liddle (2009) reported that nine of 14 rigorous controlled trials of family interventions recruited at least half minority samples. Specifically, BSFT, MDFT, and FFT have been validated with Hispanic families (Liddle et al., 2009, 2011; Santisteban et al., 2006; Waldron et al., 2001). MDFT and MST have also demonstrated strong effects with African American families (Henggeler, Clingempeel, Brondino, & Pickrel, 2002; Liddle et al., 2008, 2009).

Important research has also been conducted by family-based treatment researchers on the impact of ethnicity, race, and cultural themes on treatment process and outcomes. For instance,

early treatment development efforts in MDFT focused specifically on cultural theme development to foster engagement and participation of African American youth (Jackson-Gilfort, Liddle, Tejada, & Dakof, 2001). More recently, Foster et al. (2009) found that in MST, caregiver engagement and positive response within session were predicted by core therapist interventions and not moderated by race or racial matching; however, therapists overall used more storytelling with Black families, and therapists focused more on strengths and reinforcement of parents when they were racially mismatched. These results differ from a study that showed therapist and caregiver ethnic similarity predicted youth's outcomes in MST (Halliday-Boykins, Schoenwald, & Letourneau, 2005). Flicker, Waldron, Turner, Brody, and Hops (2008b) showed that ethnic matching impacted substance use outcomes for Hispanic but not Anglo clients in FFT. Flicker, Turner, Waldron, Brody, and Ozechowski (2008a) found that imbalances in alliance between parents and teens predicted early dropout from FFT for Hispanic but not Anglo families.

Only a few family-based treatments for adult drug abusers have been validated with minority populations. The most extensively studied family-based treatment for ethnic and racial minority adult drug abusers is the EMP (Dakof et al., 2003). The model was designed and tested specifically with Black women (mainly African American, but also Haitian, Jamaican, and Bahamian) and was subsequently validated in the Dependency Drug Court setting with Black women as well as Hispanics (Dakof et al., 2010). Further validation of family-based treatments for adult drug abusers with minorities is an important area of study.

Long-term Effects of Family-Based Treatments for Drug Abuse

Researchers increasingly emphasize the chronic relapsing nature of drug abuse throughout adolescence and adulthood (McLellan, O'Brien, Lewis, & Kleber, 2000) and the importance of developing treatment models that have long-term impact on this often debilitating condition (Waldron & Turner, 2008). Surprisingly, while establishing the sustainability of intervention effects seems fundamental to the development of better service delivery models for adolescents, well-controlled research on long-term treatment effects of drug treatment is virtually nonexistent. However, research on family-based interventions has demonstrated more abstinence from marijuana 4 years after MST in comparison with usual community services (Henggeler et al., 2002). The most impressive long-term findings to date show 14-year sustained effects of MST on arrests and days incarcerated (Schaeffer & Borduin, 2005).

Studies with adult drug abusers have generally also limited investigation of follow-up effects to the year following treatment. For instance, the effects of CRAFT on engagement of drug abusers into treatment and the functioning of CSOs have only been evaluated up to 12 months posttreatment (Meyers et al., 2005). While early studies of BCT with drug abusers showed dissipating effects on relationship functioning after 6 months (Fals-Stewart et al., 1996), a recent meta-analysis concludes that the effects of BCT are more pronounced over time (Powers et al., 2008). Dakof et al. (2010) extended the evaluation of treatment effects to 18 months in their most recent study of EMP, demonstrating more positive child welfare dispositions and stronger effects on mothers' alcohol use, mental and physical health status, and the risk for child abuse and family problems than intensive case management over time. While the FOF/FFF intervention (Catalano et al., 1999) has conducted the longest follow-ups to date (approximately 20 years after the sample was first recruited), the initial effects of FFF on youths' drug use has been sustained with males but not females into young adulthood (Haggerty et al., 2008), and long-term effects of FFF on youths' resiliency has not been demonstrated (Skinner et al., 2009). Thus long-term evaluation of family-based drug treatment models is a critical area.

Mechanisms of Change in Family-Based Treatments for Drug Abuse

Family therapy process research has been guided by a fundamental premise that treatments can be greatly enhanced if they can systematically identify and implement during treatment procedures that reliably promote posttreatment protective factors and maintain good outcomes. These efforts help to identify the common ingredients or core elements of family-based treatments that predict outcomes across models (Sprenkle & Blow, 2004). Recent studies have

explored treatment mechanisms in four areas: (a) therapeutic alliance and treatment outcomes; (b) therapist adherence and competence; (c) conducting mediational analyses of within-treatment parent and family changes linked to positive outcomes for adolescents; and (d) the role of ethnicity and race in treatment process and outcomes (these findings were presented above).

Almost all of the research conducted on the therapeutic alliance with adolescent drug abusers has investigated family-based models, and several studies have linked alliance to premature dropout (Hogue & Liddle, 2009). Robbins et al. (2006) showed that families completing fewer than eight sessions of MDFT (dropouts) could be reliably distinguished from completers by declining therapeutic alliance ratings for both teens and parents between sessions one and two. In addition, links between therapeutic alliance and treatment outcomes have been demonstrated in several recent studies. Hogue, Dauber, Faw, Ceccro, and Liddle (2006a) linked early parent alliance in MDFT to less drug use and acting-out among adolescents, as well as improved adolescent alliance by the middle of treatment to more significant reductions in externalizing symptoms at 6-month follow-up. Several examinations of the CYT data have also examined alliance–outcome relationships. First, Tetzlaff et al. (2005) linked adolescents' reports of therapeutic alliance to reduced drug use up to 6 months posttreatment in all five treatments (including MDFT), whereas ratings of treatment satisfaction were not related to outcomes. Second, Shelef, Diamond, Diamond, and Liddle (2005) utilized more in-depth analysis of observers' ratings of alliance to study alliance–outcome links in MDFT. Among cases with high ratings of parental alliance, adolescent alliance predicted drug use and psychological symptoms up to 3 months posttreatment. Finally, Diamond et al. (2006) showed that early-session self-reported adolescent alliance ratings predicted reduced drug use and behavior problems.

Hogue and colleagues conducted two recent studies exploring the extent to which therapist adherence and competence account for outcomes. First, Hogue, Dauber, Samuolis, and Liddle (2006b) demonstrated that adherence to family-focused techniques, given sufficient focus on adolescent-focused techniques, was linked to less internalized distress and greater family cohesion 1 year following MDFT. Extensive use of adolescent-focused MDFT techniques also predicted less family conflict and more cohesion at the 1-year follow-up. Hogue et al. (2008) showed a linear effect for treatment adherence in predicting behavior problems at the 1-year follow-up, and a curvilinear effect linking adherence and internalized distress in MDFT and CBT. These results suggest that overly loose or overly rigid use of manualized techniques in both drug treatment approaches was not conducive to changing anxiety and depression symptoms.

Two recent studies used mediational analyses to link theorized mechanisms of change in family-based treatments to posttreatment outcomes. Henderson, Rowe, Dakof, Hawes, and Liddle (2009) demonstrated that changes in parental monitoring mediated reductions in early adolescents' substance use 1 year following MDFT. Henggeler et al. (2009) studied mediators of MST outcomes in juvenile sex offenders. Reductions in adolescents' antisocial and deviant sexual behaviors at 1-year follow-up were accounted for by improvements in parenting practices, particularly greater follow through with discipline, as well as reductions in parents' concerns about the adolescents' negative peers. Both studies highlight the importance of altering negative parenting practices and bolstering parenting skills to change adolescent problem behaviors—a central tenet and goal of virtually all of the family-based approaches for adolescent drug abuse, and possibly a common factor that may predict outcomes (Sprenkle & Blow, 2004).

Research on family-based drug treatment models for adults has not examined mechanisms or processes of change. Fals-Stewart et al. (2009, p. 122) admit that “although BCT is efficacious, very little research has been conducted to determine *how* it works.” Similarly, Carroll and Onken (2005, p. 1456) suggest that research is needed to “isolate the components that are associated with the treatment effects” and “determine if some components can be eliminated without weakening outcomes overall.” There is certainly more to be done to account for the positive effects of both adolescent- and adult-focused family-based drug treatment models.

Economic Evaluations of Family-Based Treatments for Drug Abuse

By many estimations, the costs of drug abuse are astounding. The costs of drug abuse to the juvenile justice system (e.g., law enforcement, courts, detention, residential placement) are over \$14 billion a year, and drug abuse treatment accounts for only 1% of these costs (CASA,

2004). Rigorous economic evaluations of drug abuse treatment, particularly with adolescents, have been rare (Zavala et al., 2005). French et al. (2002) conducted a cost analysis of the CYT study (Dennis et al., 2004) and found average weekly cost estimates of outpatient family-based therapy, MDFT (Liddle, 2002), to compare favorably to current cost parameters of standard outpatient adolescent treatment (\$164 vs. \$365). However, the Adolescent Community Reinforcement Approach (ACRA) was more cost-effective than MDFT in terms of cost per day of abstinence and cost per person in recovery (Dennis et al., 2004).

The challenges of economic evaluation of adolescent drug treatment have been highlighted in several recent studies. For instance, Zavala et al. (2005) demonstrated that MDFT had lower weekly costs than residential treatment and established guidelines for estimating costs and benefits of adolescent drug treatments, yet also discussed difficulties in estimating the full range of benefits associated with adolescent drug treatment (assigning costs to fewer school absences, improved family relationships, less drug use). French et al. (2008) investigated the cost-effectiveness of four treatment models, including FFT, and found that group treatment was the most cost-effective, given that FFT's effects on substance use dissipated over time and the group treatment had similar delinquency and substance use outcomes at the 7-month assessment. In summarizing results, these investigators discuss the inherent limitations of applying cost-effectiveness methodology to adolescent treatment because the analysis is limited to one or two outcomes (in this case, substance use and delinquency). Similarly, McCollister, French, Sheidow, Henggeler, and Halliday-Boykins (2007) highlighted the significant challenges in quantifying criminal activity with teens as compared to adults. The juvenile drug court conditions (including MST) together demonstrated greater reduction of adolescents' overall criminal activity and costly crimes, but did not show statistically significant differences over family court in actual criminal activity costs. Taken together, these different studies highlight the considerable difficulty in arriving at accurate and complete economic evaluations of adolescent drug treatment, in part because many of the areas of an adolescent's life that are assumed to be important outcomes are impossible to assign costs to (e.g., improvements in family functioning).

Adult-focused studies have also begun to examine questions of cost-effectiveness of family-based drug treatment. Specifically, BCT has been shown to be cost-effective in comparison with individual treatment (Fals-Stewart et al., 2009). A recent study of a brief version of BCT showed that Brief BCT was less expensive than full BCT but not less than individual treatment. However, cost-effectiveness analyses revealed that Brief BCT was more cost-effective in terms of reductions in substance use over the 12-month follow-up period (Fals-Stewart & Lam, 2008). In this study, full BCT produced superior substance use outcomes to individual treatment and psychoeducation, but not at less cost. In sum, in the current climate of accountability, managed care, and scarce resources for drug treatment, it is critical that family-based treatments demonstrate cost-effectiveness as well as clinical effectiveness (Fals-Stewart, Yates, & Klostermann, 2005). Although family-based treatments have demonstrated lower costs of delivery (e.g., French et al., 2002), and there is some evidence of greater cost-effectiveness in comparison with standard outpatient treatments (Fals-Stewart & Lam, 2008), rigorous evaluations of the relative benefits and costs of family-based drug abuse interventions are rare.

Dissemination of Research Findings into Practice Settings

With a wealth of new knowledge about the efficacy of family-based drug treatments, one area of needed attention is in the dissemination of these models into practice settings. Reviews in this specialty area routinely bemoan the chasm between research and standard clinical practice (e.g., Carroll & Onken, 2005; Hogue & Liddle, 2009), and initial attempts to implement family-based research-based interventions in practice settings generally conclude that this effort is more complex and difficult than anticipated (e.g., Fals-Stewart, Logsdon, & Birchler, 2004). Clearly, it is naïve to assume that any evidence-based model can be simply "transported" into an existing clinical setting through traditional models of training, given all of the complexities, systems-level and individual-level obstacles to implementation, and limits on time and resources common to agency or clinic life. Implementation science is increasingly systems focused, emphasizing the need for flexibility and adaptation from researchers (Liddle et al., 2002), as well as utilizing interventions to create foundations and readiness to accept and integrate the

new treatments within agencies and among clinicians (Simpson, 2002). On the research side, studies are needed to specify the essential ingredients of family-based interventions to be adopted by practitioners (Hogue & Liddle, 2009), and to develop models for dissemination that appreciate and address the complexity of clinical systems. Additionally, MST researchers have clearly documented that therapist adherence to research-based models has strong effects on outcomes achieved in clinical settings and thus methods for maintaining fidelity must be developed (Henggeler, Pickrel, & Brondino, 1999).

The MST research team describes an approach to treatment dissemination that focuses on modifying preimplementation processes, clinical staff issues, training materials, and service delivery models. Research on MST implementation in 45 clinical programs demonstrates that MST programs have lower therapist turnover rates (20%) than the national workforce (50–60% annually), and that organizational stress and client severity rather than model demands are associated with turnover (Sheidow, Schoewald, Wagner, Allred, & Burns, 2007). This research also shows that therapist adherence, organizational structure, and climate all predict improvements in youths' behavior 1 year after treatment (Schoenwald et al., 2008). However, therapist adherence trumped all organizational variables in predicting reductions in youths' criminality at 4-year follow-up (Schoenwald et al., 2009b), consistent with earlier research by this team. There were also direct effects of high-quality MST supervision, as well as therapist adherence, on youths' outcomes at 1 year following treatment (Schoenwald, Sheidow, & Chapman, 2009a). Progress continues in this impressive dissemination research, which has impacted the field in significant ways.

Research on MDFT dissemination emphasizes that implementation models are interventions (Liddle et al., 2002)—multiple systems-oriented and systems-focused interventions. Dissemination into nonresearch clinical settings has been studied using a multicomponent technology transfer intervention developed to train treatment staff. MDFT was transported successfully into a comprehensive day treatment program, with providers continuing to deliver the approach, clients showing better outcomes, and the organizational climate sustaining positive changes over a year after expert supervision was withdrawn (Liddle et al., 2006).

There have also been important studies on treatment dissemination with adult-focused family-based treatment models. For instance, Fals-Stewart et al. (2004) performed an “organizational autopsy” to identify reasons why four out of five programs that had provided BCT in federally funded research stopped using the model shortly after external funds were exhausted. They found that many of the commonly cited barriers to evidence-based treatment (EBT) adoption accounted for the failure to sustain BCT in these agencies, including funding/billing restrictions, low supervisor and administrator support, and a fundamental mismatch in clinician's beliefs about change (e.g., drug abuse is primarily an individual problem). Subsequently, research on BCT has attempted to address earlier concerns and perceptions of providers that the model was too lengthy and costly by creating a brief, less-expensive version of the approach (Fals-Stewart & Lam, 2008) and demonstrating that the model can be implemented successfully by bachelor's-level as well as master's-level clinicians (Fals-Stewart & Birchler, 2002). Thus, there are signs of progress in transporting family-based EBTs to drug treatment practitioners, but much more work to be done.

CONCLUSIONS AND NEXT STEPS IN THIS RESEARCH SPECIALTY

Exciting advances in family-based treatments for drug abuse are apparent with both adolescents and adults in the relatively short period since 2002. Reviews of both adolescent and adult drug abuse now consistently include family-based models among the most highly regarded and most strongly supported approaches, particularly multiple systems-oriented treatments for adolescents and behaviorally based treatments for adults. In the adolescent field, there has been considerable focus on validating these models and examining therapy processes with racial and ethnic minority groups. Adolescent-focused family-based treatment research has also made strides during the last decade in examining mechanisms of change, long-term effects, and dissemination of the models into practice settings. Work with adults has generated solid support for BCT and EMP on a range of outcomes, and new approaches to concurrently treat drug

abusing parents and reduce risk for drug abuse among their children represent a particularly important breakthrough in addressing multigenerational drug abuse in families.

There are limitations inherent in much of the research despite considerable methodological advances. Small sample sizes still plague the field, as the most powerful statistical models (e.g., latent growth curve modeling and variants) require hundreds of participants to accurately model change over time, and particularly to link within-treatment processes to longer-term outcomes. Most studies examine change up to 12 or 18 months at the most, yet drug abuse is now considered a chronic relapsing condition that may take years to achieve full recovery. Considering the cascading negative momentum created by deepening involvement with drugs, it may be naïve to expect one treatment episode to produce and sustain radical life changes (Dennis & Scott, 2007; McLellan et al., 2000). Yet, participation in an initial treatment episode may increase the likelihood in success in subsequent programs by creating a foundation for change, increasing motivation to change, and initiating the change process. Thus, examining long-term outcomes and continuing care models are important areas of focus for research on family-based drug treatments. Additionally, much more work is needed to close the research–practice gap by elucidating the active ingredients of these models and their mechanisms of change, and to identify moderators of treatment effects so that clinicians may be better informed about which models are most effective for specific client populations (Kazdin, 2008).

Perhaps the area of most consistent and urgent concern is in the dissemination of evidence-based approaches into practice. While progress is evident in certain dissemination efforts and research is demonstrating some of the keys to successful transportation (e.g., Schoenwald et al., 2009a,b), drug treatment continues to be practiced routinely with little use of evidence-based models. And the research–practice gap may actually be widening, with psychology doctoral training showing less emphasis on EBTs. As Weisz and Gray (2008, p. 58) noted in a broad review of child and adolescent psychotherapies, “treatments that clearly have significant benefits for children with oppositional behavior and conduct disorder (e.g., behavioral parent training) are actually being taught and supervised less than was true 10 years ago.” Weisz, Jensen-Doss, and Hawley’s (2006) meta-analysis of youth psychotherapies suggests that EBTs outperform usual care generally with small to medium effects and their effects are not diminished when applied with complex cases or minority samples. However, the authors emphasize that both EBTs (even within a certain category such as “family-based”) and usual care conditions are heterogeneous, thus EBTs must be carefully selected based on quality of evidence as well as the particular context and organizational conditions of the clinical setting.

Dissemination itself needs to be an individualized, iterative, and adaptive process considering many factors in integrating EBTs in usual care settings. Weisz and Gray (2008) propose an alternative treatment development model called the “deployment-focused model” to bring more focus on real-world applicability and testing to the process of validating treatments. Effectiveness or implementation research is not seen as a single final step in this model, but rather testing and refining the approach in practice settings is integral to its development. Thus, challenges in implementation in real-world settings are considered part of the territory of treatment development and not as failures of the models themselves. This approach is consistent with how some in the field of family-based interventions have addressed dissemination efforts. Research examining the extent to which systematic adaptations and flexibility of treatment models facilitates dissemination efforts without compromising fidelity and outcomes may be an essential next step in bridging the research–practice gap.

A CLINICIAN RESPONDS

From the perspective of a clinician using family-based interventions, these findings are very encouraging. Intensive work with families using behavioral and systemic approaches pays off in higher-treatment engagement/retention rates, reduced drug use, and better functioning in areas such as delinquency with adolescents and relationship functioning with adults. There appear to be several major conclusions with important implications for clinical practice.

First, these most recent studies highlight the importance of working multisystemically with adolescent drug abusers and their families. The models with the strongest effects on drug use

and broadest effects on different functional domains (e.g., mental health symptoms, delinquency, school behavior) go beyond the clinic walls to do in-home and in-community work with adolescents, families, and the systems that directly impact their lives. These multiple systems-oriented or ecologically based models also appear to be the approaches with most clear effects in working with disadvantaged families (Slesnick & Prestopnik, 2005b), more severe subgroups (Henderson et al., in press), and minority populations (Huey & Polo, 2008).

Second, clinicians can appreciate the accumulation of knowledge on links between treatment alliance and outcome with certain findings in mind. Alliance (and therapist matching on race/ethnicity) appears to be particularly important in work with minorities. Also, mismatches in alliance between adolescents and parents can be particularly detrimental to outcomes. Certainly, this research is consistent with previous work showing that therapeutic alliance is one of the most important ingredients of successful engagement and, ultimately, treatment outcomes.

Third, adherence to EBTs is clearly linked with outcomes in clinical trials research and dissemination. Whether the model is MST or BCT, maintaining fidelity to the model enhances clinical outcomes. Achieving and sustaining adherence is dependent on high-quality training and supervision. This poses a major challenge to many practitioners, and considerable obstacles remain to creating a viable system for the average family therapist to become proficient in these EBTs. More collaboration is needed between EBT developers/disseminators, therapist training programs/institutions, professional organizations, and community-based agencies to develop training models that are workable and efficient for all. Attempts to blend or approximate basic techniques of an EBT may not be providing the full dose or range of interventions and, at this time, cannot be assumed to be as effective as full implementation of the manualized model.

Fourth, there is ample evidence to recommend working with partners and adult family members in the treatment of adult drug abusers using behavioral and systemic approaches to engage the drug abuser and improve outcomes. The mindset that drug abuse is an individual problem has been gradually shifting in the adolescent drug abuse specialty, yet still appears to be firmly entrenched in the adult addictions field. Adult drug abusers are generally connected to family members in important ways and leveraging the power of these relationships can make all the difference in treatment of their drug problems. Attempting to treat adolescent or adult drug abusers outside of the context of the family may seriously handicap therapy efforts.

One of the most exciting clinical implications of this research is that in working with drug abusers, intervening either directly with parents and their children or even without the children in therapy can improve the family environment and parenting, and thus reduce risk for drug abuse among the children. Clinical experience demonstrates that parenting issues are relevant even among teen drug abusers. Although the long-term outcomes of FFF have not been uniformly positive, the knowledge gained from these studies suggests that children of drug abusers can benefit from early intervention through family and parenting interventions. They may also need additional follow-up and booster treatment throughout adolescence in order to sustain the effect of early intervention. Nothing would be more rewarding as scientists or clinicians or beneficial to families and society than averting drug abuse in generations to come.

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