

# Treatment Adherence and Differentiation in Individual Versus Family Therapy for Adolescent Substance Abuse

Aaron Hogue  
Temple University

Howard A. Liddle and Cynthia Rowe  
University of Miami School of Medicine

Ralph M. Turner  
Allegheny University of the Health Sciences

Gayle A. Dakof  
University of Miami School of Medicine

Karin LaPann  
Temple University

Treatment adherence and differentiation in dynamic cognitive-behavioral therapy and multidimensional family therapy for adolescent substance abuse were evaluated with a treatment adherence process measure. Full-length videotapes of 90 treatment sessions (36 clients) were reviewed by nonparticipant raters. Adherence scales for each treatment generated through factor analysis of observational ratings demonstrated sound interrater reliability and internal consistency. Therapists in each condition used techniques unique to their own model and avoided those unique to the competing model. Individual therapists emphasized behavioral and substance-use interventions, whereas family therapists focused on interactional and affective interventions. Challenges in conducting adherence research that compares individual and family treatments are addressed, as are implications of these results for advancing treatment development for adolescent drug users.

Treatment fidelity is a fundamental element of contemporary psychotherapy research (Lambert & Bergin, 1994). Treatment fidelity consists of two related yet distinct components: treatment integrity and treatment differentiation (Moncher & Prinz, 1991; Waltz, Addis, Koerner, & Jacobson, 1993). Treatment integrity, also known as treatment adherence, refers to the degree to which a given therapy is implemented in accordance with essential theoretical and procedural aspects of the model. Integrity has important implications for the strength, replicability, and transportability of therapy models (Yeaton & Sechrest, 1981). Treatment differentiation, an aspect of fidelity unique to comparative efficacy research, refers to the degree to which competing

treatment conditions actually differ from one another as intended. Fidelity is a particularly salient issue for studies that use manual-based ("manualized") treatments, which are designed to facilitate internal consistency and model specificity in the delivery of interventions (Luborsky & DeRubeis, 1984).

Treatment adherence evaluation is aimed at specifying which ingredients of a given therapy model have been practiced by therapists as preached in theory. Such evaluation can provide valuable insight into successes and failures in model delivery, as well as into the practicalities of implementing treatments with various client populations. In this regard, adherence evaluation represents an important step in the development and articulation of effective treatments (Kazdin, 1994). Several psychotherapy traditions have produced rigorous adherence research that helped sharpen treatment integrity, including cognitive-behavioral therapy (DeRubeis, Hollon, Evans, & Bemis, 1982), brief psychodynamic models (Butler, Henry, & Strupp, 1995; Shapiro & Startup, 1992), and interpersonal therapy (Rounsaville, O'Malley, Foley, & Weissman, 1988). However, family therapy models have been largely overlooked. In fact, although family therapy has begun to build an empirical foundation (Hazelrigg, Cooper, & Borduin, 1987; Pinosof & Wynne, 1995), there has been relatively little attempt to specify guidelines and standards for practice (Mann & Borduin, 1991). This study highlights the unique challenges and rewards of adherence evaluation with a family therapy model.

In keeping with the contemporary emphasis on treatment integrity in clinical research, it is now commonplace for psychotherapy studies to report procedures for monitoring

---

Aaron Hogue and Karin LaPann, Center for Research on Adolescent Drug Abuse, Temple University; Howard A. Liddle, Cynthia Rowe, and Gayle A. Dakof, Department of Psychiatry and Behavioral Sciences, University of Miami School of Medicine; Ralph M. Turner, Department of Clinical and Health Psychology, Allegheny University of the Health Sciences.

Preparation of this article was supported by Grants P50-DA07697 and T32-DA07297 from the National Institute on Drug Abuse. We thank the talented team of process coders who made this study possible: Jean Cazorla, Bianca Ferreira, Cara Johnston, Jessica Lease, Caroline Leopold, and Ronald Marmon.

Correspondence concerning this article should be addressed to Aaron Hogue, Center for Research on Adolescent Drug Abuse, 3rd Floor, Weiss Hall (TU 265-66), Temple University, Philadelphia, Pennsylvania 19122 or to Howard A. Liddle, Center for Family Studies, Department of Psychiatry and Behavioral Sciences, University of Miami School of Medicine, 3rd Floor, 1425 Northwest 10th Avenue, Miami, Florida 33136. Electronic mail may be sent via Internet to ahogue@aol.com or to hliddle@mednet.med.miami.edu.

treatment adherence and, in some cases, to evaluate the level of adherence achieved. In addition, a few recent studies have made treatment adherence evaluation itself the centerpiece of investigation. These adherence research studies have explored a variety of issues: the technology of identifying and discriminating manualized treatments (Butler et al., 1995; DeRubeis et al., 1982), gains in adherence afforded by manual-driven training of therapists (Multon, Kivlighan, & Gold, 1996), the relation between adherence and client outcome (DeRubeis & Feeley, 1990; Luborsky, Woody, McLellan, O'Brien, & Auerbach, 1985), and the relative contributions of adherence and therapist competence to outcome (Barber, Crits-Christoph, & Luborsky, 1996).

Two studies focused directly on levels of treatment adherence and differentiation achieved in comparative efficacy trials. Hill, O'Grady, and Elkin (1992) examined treatment fidelity for three manualized approaches tested in the National Institute of Mental Health's Treatment of Depression Collaborative Research Program: cognitive-behavioral therapy, interpersonal therapy, and clinical management. Using a previously validated measure of adherence, they found that the treatments could be discriminated almost perfectly. Likewise, Startup and Shapiro (1993) verified the success of therapists in two treatment conditions (cognitive-behavioral and psychodynamic-interpersonal) in practicing model-specific, and eschewing model-proscribed, interventions at different stages of therapy for depression. These studies share two important methodological features. First, both tracked levels of nonspecific, facilitative therapist behaviors (e.g., warmth, rapport building) that play a meaningful role in virtually every therapy model (Lambert & Bergin, 1994). Second, both used nonparticipant raters who reviewed audiotapes of entire sessions and coded a roster of intervention techniques according to a Likert-type scale. This approach yields quantitative data that are highly nonsubjective and detail specific with regard to how therapists differentially execute therapy protocols in session. Such methodological features enable adherence researchers to stretch beyond simple confirmation of model-congruent therapist behavior and toward a process-based assessment of therapeutic operations in session (Hogue, Liddle, & Rowe, 1996). As a result, these methods greatly facilitate the task of critiquing and refining therapy models.

In the current study we used adherence process methodology to evaluate the fidelity of two promising treatments for adolescent substance abuse and related behavioral problems. One, dynamic cognitive-behavioral therapy (DCBT; Turner, 1991), is a behavioral, individual-based approach. The other, multidimensional family therapy (MDFT; Liddle, 1991), is a multisystemic, family-based approach. Both treatments belong to the tradition of integrative psychotherapy models with principle-driven treatment manuals that endorse flexible application of therapeutic techniques to meet the needs of a given case and session (Havik & VandenBos, 1996; Jacobson et al., 1989). The study used observational ratings that measured the extensiveness (i.e., frequency and thoroughness) of therapeutic interventions in session. Thus, in addition to basic information about treatment fidelity, the study offers a portrait of strategic nuances that emerged in

applying two different manualized treatments to the complex and intransigent problem of adolescent substance abuse (Newcomb & Bentler, 1988).

Our main purpose in this study was to evaluate the treatment adherence and differentiation demonstrated by therapists practicing DCBT and MDFT with adolescent substance users. Adherence was evaluated with a 26-item observational rating instrument that measured the extent to which DCBT-specific, MDFT-specific, theoretically shared, and facilitative interventions were used in treatment sessions. First, we conducted an analysis of the underlying factor structure of the adherence measure in order to derive empirically based intervention scales that captured how each treatment model was actually delivered. This empirical verification is a key component of adherence feedback loops, and therapy development more generally, whereby evaluations of therapists trained to implement manualized treatments shape further development of the treatment model and training of new therapists (Waltz et al., 1993). Second, we predicted that naive raters could be trained to recognize and discriminate core therapeutic operations within the two conditions in a reliable manner and that therapists would practice greater amounts of model-prescribed interventions and lesser amounts of model-proscribed interventions. Third, we addressed unique challenges related to item generalizability and session composition that arise for manipulation checks that compare individual and family approaches.

## Method

### Participants

*Clients.* This adherence evaluation study was conducted in conjunction with a larger study for treating adolescent substance abuse in adolescents residing in a large northeastern city. Treatment referrals were generated primarily from the city's probation offices, juvenile justice system, and collateral mental health agencies. The sample ( $N = 36$ ) consisted of 26 boys (72%) and 10 girls (28%) with the following self-identified ethnicities: 61% African American, 25% European American, and 14% Hispanic. Yearly household income for their families was as follows: 38% earned less than \$10,000; 23% earned between \$10,000 and \$20,000; 20% earned between \$20,000 and \$34,000; and 19% earned over \$35,000. A total of 60% were from single-parent households, 23% were from two-parent households, 11% had one step-parent, and 6% had various other family compositions. The average age of the adolescent substance abuser was 15.2 years ( $SD = 1.34$ ). A total of 58% of the sample had been arrested or questioned by police in the past year, 53% were on probation at intake, and 28% had been court-ordered to attend treatment. Structured diagnostic interviews based on the third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R)*; American Psychiatric Association, 1987) were conducted with adolescents and parents separately, and a clinical diagnosis was given if either source reported symptom levels in the adolescent that met diagnostic criteria. Most prevalent were substance abuse diagnoses (61% marijuana dependence, 17% alcohol dependence, 6% other substance dependence, 17% marijuana abuse), conduct problems (56% conduct disorder, 47% oppositional defiant disorder), and mood problems (8% dysthymia, 14% major depression).

**Therapists.** Four therapists participated in the DCBT condition. Two were male African Americans and 2 were female European Americans (age range = 29–54 years,  $M = 40.3$  years,  $SD = 9.2$ ). Two had achieved doctoral degrees in psychology, 1 a master's degree in psychology, and 1 a master's in social work. Together, they averaged approximately 3.5 years ( $SD = 1.7$ ) of clinical experience in cognitive-behavioral therapy.

Six therapists participated in the MDFT condition. Two were female African Americans, 2 were male European Americans, 1 was a male African American, and 1 was a female European American (age range = 33–48 years,  $M = 40.7$  years,  $SD = 5.3$ ). Two had doctoral degrees in psychology, 3 had master's degrees in social work, and 1 had a master's degree in psychology. Together, they averaged approximately 7.7 years ( $SD = 4.5$ ) of clinical experience in family therapy.

Prior to receiving study cases, therapists in both conditions completed a training regimen that included 32 hours of didactics (reading the manuals and related articles), review of videotaped sessions with supervisors and previously trained therapists, and completion of two pilot cases that were supervised by the developers of the treatment models (Ralph M. Turner for DCBT and Howard A. Liddle for MDFT). Therapists were given study cases only after achieving satisfactory levels of adherence and competence in pilot cases as judged independently by the model developers. Training lasted approximately 6 months for each therapist.

**Raters.** Coding was completed by a team of 2 graduate and 4 advanced undergraduate students (2 men and 4 women). Raters (age range = 22–34 years;  $M = 27.8$  years) included 1 African American and 5 European Americans. Raters had no prior experience in observational coding or in the treatment modalities being observed. One rater had worked for 2 years as an addictions counselor with adult drug abusers; no other rater had counseling experience.

## Measure

The Therapist Behavior Rating Scale (TBRS; Hogue, Rowe, Liddle, & Turner, 1994) is a 26-item adherence process coding instrument designed to identify core therapeutic techniques and facilitative behaviors associated with DCBT and MDFT. The items were derived during a three-part instrument development process. First, the two treatment manuals and training materials were reviewed by Aaron Hogue in order to identify a preliminary roster of specific interventions and facilitative techniques endorsed by each model, and these rosters were reviewed and refined by the model developers for accuracy and inclusiveness. Second, observational coding items representing the interventions on each roster were developed by Aaron Hogue and then reviewed by the model developers, and a preliminary adherence instrument was constructed. Third, Aaron Hogue and Cynthia Rowe each coded over 50 hours of videotaped DCBT and MDFT sessions using the pilot items. The final composition of the TBRS was chosen on the basis of the theoretical salience, representativeness, and reliability of each item.

The TBRS rating manual provides general information on adherence process coding procedures as well as detailed descriptions of all 26 items. Raters are asked to estimate the extent to which therapists engage in each intervention during the entire session using a 7-point Likert-type scale with the following anchors: 1 = *not at all*, 3 = *somewhat*, 5 = *considerably*, and 7 = *extensively*. Both thoroughness and frequency are considered in making each rating. Thoroughness refers to the depth, complexity, or persistence with which the therapist engages in a given intervention. Frequency refers to the number of times throughout

the session that a given intervention is executed (regardless of the thoroughness of the intervention in any particular segment). Raters are trained to rate therapist behavior only and to disregard client reactions and behavior as much as possible in making each rating. Raters are also instructed that complex interventions may be characterized by more than one item, although each item is theoretically independent of all others.

## Treatments

**Dynamic cognitive-behavioral therapy.** The DCBT model for multiproblem, adolescent substance abusers is based on a broadly defined cognitive-behavioral framework (Turner, 1992, 1993). It draws on four main sources: Linehan's (1993) dialectical behavior therapy, Beck's (Beck, Rush, Shaw, & Emery, 1979) cognitive therapy, Masters, Burish, Hollon, and Rimm's (1987) compendium of behavior therapy interventions, and Marlatt's (Marlatt & Barrett, 1994; Marlatt & Tapert, 1993) harm reduction model. In addition, DCBT invokes the psychodynamic principles of working with transference aspects of the therapeutic relationship, providing supportive care, and fostering a helping alliance as critical curative factors (Luborsky, 1994).

Treatment is divided into three stages. The first stage, treatment planning and engagement, focuses on identifying and prioritizing adolescent problems and constructing the treatment contract. Parents, or their surrogates, attend the first two sessions to support adolescent participation in treatment and to provide their perspectives on the adolescent's functioning. Problems described by the adolescent and parents, in addition to those reported by school and juvenile court, are then used to develop a treatment plan. The middle stage of treatment begins an intensive cognitive-behavioral treatment program. The goals of this stage are to increase coping competence and reduce problematic behaviors. Intervention selection is based on a modular approach in which clinicians select treatment strategies that are based on the needs of the individual adolescent. Typical therapeutic modules include providing information and education, contingency contracting, self-monitoring, problem-solving training, communication skills training, expressing feelings directly, negotiation and agreement making, training in identifying cognitive distortions, increasing prosocial activities, and homework assignments. Specifically with regard to substance abuse, harm reduction (Marlatt & Tapert, 1993), not abstinence, is the primary goal. Adolescents are taught to increase behavioral self-control over substance use. During the intensive treatment phase therapists also work outside of the therapy hour to advocate for the adolescent in school, vocational, and juvenile justice settings. The final stage of therapy focuses on termination issues and relapse prevention with the goal of enhancing long-term self-management skills. Role rehearsal and problem solving are used to strengthen the adolescent's resistance against peer pressure to use drugs and engage in delinquent behavior.

**Multidimensional family therapy.** MDFT is a multicomponent, developmentally based treatment for adolescent drug abuse and related behavior problems (Liddle, Dakof, & Diamond, 1991). Part of the still-evolving movement of multisystemic family treatments that focuses on changing within-family interactions as well as interactions between the family and relevant social systems (Henggeler, 1996; Liddle, 1996; Szapocznik & Coatsworth, in press), MDFT identifies several pathways to change within the multiple systems involved in maintaining dysfunctional interactions in families of adolescent drug users. MDFT is grounded in developmental and ecological theory (Liddle, 1994, 1995), and the overall intervention strategy is phasic and epigenetic. Particular intervention outcomes (e.g., emotional reconnection of parents with their adolescents) are understood to be the platforms from

which other, more complex outcomes are attempted (e.g., changes in parenting practices). Interventions target individual family members, various family subsystems, and extrafamilial systems.

The approach includes four interdependent therapeutic modules that target multiple domains (affective, behavioral, and cognitive) of adolescent and family functioning. The *adolescent module* focuses on the individual adolescent within the family, as well as on his or her membership in other social systems, principally peer groups. Normative developmental functioning issues such as identity formation and renegotiation of the adolescent–parent relationship, social and problem-solving skills, and consequences of drug use receive attention in both individual and family sessions (Liddle et al., 1991). Developing a therapeutic alliance with the adolescent, distinct from that developed with the parent, is a cardinal feature of the MDFT approach. The *parent module* enhances parenting skills in the areas of monitoring and limit setting, rebuilding emotional attachments with the adolescent, and increasing participation in the adolescent's life outside the family (Schmidt, Liddle, & Dakof, 1996). This module explores the intrapersonal and interpersonal functioning of parents apart from the parenting role, so that personal resources are cultivated and impediments to effective parenting addressed. The *family interaction module* facilitates change in family relationship patterns by providing an interactional context wherein families develop the motivation, skills, and experience to revitalize interpersonal bonds and interact in more adaptive ways. Family members are helped to validate the values and perspectives of other members, and family interactions are influenced to decrease conflict, increase communication effectiveness, and promote improved problem solving—all elements of productive attention to core parent–adolescent relationship issues (Diamond & Liddle, 1996). The *extrafamilial module* establishes collaborative relationships among all systems to which the adolescent is connected (e.g., school, juvenile justice, recreational). The influence of these systems on the adolescent's behavior is examined, the past and current functioning of all family members vis à vis these systems are assessed, and sessions are convened between family members and extrafamilial figures (e.g., teachers, probation officers, peers) to address key developmental challenges.

### Procedure

**Sampling design.** Approximately 20% ( $N = 36$ ; 17 DCBT and 19 MDFT) of 181 cases receiving treatment in a larger intervention study were randomly selected for adherence evaluation as part of the present study; cost and time considerations precluded evaluation of all 181 cases. Both treatment conditions specified a maximum duration of 25 sessions per case; however, 33% ( $n = 12$ ) of selected cases dropped from therapy prior to completing a full dose of treatment. Selected cases averaged a total of 17.0 sessions ( $SD = 8.2$ , range = 2–28) across conditions. For adherence evaluation purposes, cases were divided into thirds according to the following scheme: Sessions 1–5 (beginning), Sessions 6–14 (middle), and Sessions 15 and over (late). One session was randomly chosen for coding within each phase (beginning, middle, and late) for which at least one treatment session occurred. If, because of dropout from treatment, only one session had occurred within a given phase, then that session was selected (e.g., for cases that dropped after only six sessions, the sixth session by default represented the middle third of treatment). In all, 36 sessions from the beginning, 30 from the middle, and 24 from the late phase of treatment were available, so that a total of 90 sessions across both conditions were selected for study.

**Treatment adherence monitoring.** Adherence monitoring for each case consisted of the following: (a) The model developers

served as supervisors on most cases, and a few cases in each condition had supervisors who were themselves monitored by the model developers; (b) every therapy session (with a few exceptions owing to technical malfunction, client refusal, or off-site location) was videotaped, and several sessions from every case were reviewed in weekly individual supervision for each therapist; and (c) therapists in each condition met in groups on a bimonthly basis for supportive training and recalibration to their respective treatment manuals.

**Training raters.** Raters trained in a group format for 2 hours per week over a 4-month period to reach adequate prestudy reliability (an intraclass correlation coefficient [ $ICC_{(2,6)}$ ] > .70). Training consisted of didactic instruction and discussion of the coding manual, trainer and peer review of practice scales using pilot cases, and coding exercises designed to test and expand understanding of each scale item. Once coding of study-sample tapes commenced, raters reconvened on a weekly basis for the duration of the study for supportive training and to prevent rater drift.

**Ratings.** Raters were (a) kept unaware of the intent of the study, (b) naive to all theoretical and procedural differences between the two modalities, (c) instructed that family involvement and session composition would vary according to the contingencies of each case, and (d) informed that each intervention could arise in every session. Raters coded entire videotaped therapy sessions, which ranged from 30 to 90 min and averaged approximately 60 min per session. In order to ensure that each of the six raters coded only one session from every case, we used the following videotape assignment scheme: For cases lasting 15 sessions or more (so that three tapes were selected for coding), 2 raters were assigned to each tape; for cases lasting 6–14 sessions (two tapes selected), 3 raters were assigned to each tape; for cases lasting only 1–5 sessions (one tape), all 6 raters coded the single session. Raters were randomly assigned to sessions. As a result of this assignment scheme, each rater was assigned the same number of tapes from each condition, therapist, and case.

## Results

### Scale Definition, Treatment Adherence, and Treatment Differentiation

We conducted a principal-components analysis on all TBRS items to identify empirical groupings of intervention techniques that characterized each treatment condition as it was practiced over the course of the intervention study. The analysis used mean scores that we generated for each TBRS item by calculating the mean of the item scores (1 through 7) across every rater for a given item. Prior to conducting principal-components analysis, we converted all scores of NA (not applicable) assigned to TBRS Items 9, 17, and 19 to scores of 1 for this analysis only. For reasons described in detail below, NA was commonly scored on these three items for single-participant sessions. Because principal-components analysis deletes cases that contain missing values, the existence of numerous NA scores would have caused a significant reduction in sample size for this analysis; furthermore, if a large number of single-participant sessions were eliminated, then multiparticipant sessions (and hence the MDFT condition) would have been vastly overrepresented. In addition, we carried out principal-components analysis on all participants simultaneously (i.e., an across-modalities analytic strategy) rather than on each treatment condition

separately (within-modality strategy). We did this to capitalize on large bivariate correlations among items that were predominant in each condition, thereby highlighting differences between the two conditions' use of intervention techniques.

Other studies of intervention techniques (e.g., Shapiro & Startup, 1992) have partialled out therapist effects prior to conducting factor analysis in order to (a) diminish the impact of therapist differences in implementation and (b) enhance the generalizability of results to other groups of therapists. However, because this study was concerned with exploring nuances of therapist behavior in the context of treating this particular sample of clients, we did not partial out therapist effects. In general, our strategy represented a variation of exploratory, chained P-technique factor analysis whereby participants are sampled on multiple occasions (in this case, multiple sessions) in order to discover latent dimensions (Jones & Nesselroade, 1990; Russell, Bryant, & Estrada, 1996). Finally, it is important to note that the observations-to-variables ratio (90 sessions/26 TBRS items) was 3.5/1, which is less than the minimum ratio generally recommended for establishing reliable findings in conventional factor analysis (Tabachnick & Fidell, 1996) and P-technique factor analysis (Jones & Nesselroade, 1990). Thus, the reliability of the results from the principal-components analysis reported below must be considered preliminary pending replication with a larger treatment sample measured across more treatment sessions.

Principal-components analysis was conducted on the mean scores of all 26 TBRS items for all 90 treatment sessions. The Kaiser-Meyer-Olkin measure of sampling adequacy was .64, indicating that correlations within the factor matrix were sufficiently robust to support the procedure; in addition, examination of the partial correlation matrix confirmed the presence of coherent factors underlying observed item correlations (Tabachnick & Fidell, 1996). Based on the spread of eigenvalues derived from the correlation matrix, four-factor, five-factor, and six-factor solutions were all extracted and subjected to varimax rotation so that the solution which optimally represented the matrix could be identified. The four-factor solution clearly represented the best combination of interpretability and strength in predicting variance within the matrix. Eigenvalues for the four factors were as follows: Factor 1, 5.16; Factor 2, 2.88; Factor 3, 2.25; and Factor 4, 1.82. Each eigenvalue is greater than 1.0, which indicates that each factor accounted for a substantial amount of variance in the overall solution. Furthermore, inspection of the scree plot of eigenvalues revealed increasingly small changes in successive eigenvalues after the fourth factor, which confirmed the viability of the four-factor solution. Then, following inspection of the four-factor solution, we selected a baseline factor loading of .45 as the cutoff point for including items in a given factor. This relatively conservative inclusion criterion requires a 20% overlap in variance between candidate variables and their factors (Tabachnick & Fidell, 1996), and it preserved the integrity and interpretability of each factor in this study.

The principal-components analysis generated four fac-

tors, from which we derived five coherent intervention scales. The items composing each scale and their factor loadings are contained in Table 1. The first factor, Modality, is clearly a bipolar factor whose subdimensions correspond to the DCBT and MDFT treatment conditions. The DCBT scale contains two items concerning drug use by the target adolescent and three items related to behavioral and session-structuring interventions. The MDFT scale contains four items related to systemic intervention with multiple family members. The Modality factor explained 15% of TBRS variance. The second factor, which accounted for 13% of overall scale variance, was named the Affect/Systems-Focused (A/S) factor. Highest loadings belong to items representing therapist efforts to develop a supportive relationship with the client and to encourage the expression of affect in sessions. Interventions aimed at participants other than the target adolescent and interventions that introduce normative developmental expectations of adolescent functioning also load strongly on this factor. The third factor, which accounted for 11% of TBRS variance, was named the Behavior/Skills-Focused (B/S) factor. Highest loadings on this factor belong to interventions aimed at exploring alternative behavior choices and teaching new coping skills. This factor also includes therapist efforts to foster recognition of how client behavior impacts others and the future, as well as appreciation for alternative interpretations of events. The fourth factor, which accounted for 8% of TBRS variance, was called the Cognition-Focused (CGN) factor. This factor is characterized by interventions aimed at identifying tacit and explicit patterns of cognition and cognitive distortions exhibited by clients and by therapist efforts to stimulate alternatives to these patterns.

We calculated intercorrelations among the five intervention scales using Pearson's  $r$ . Correlations of the DCBT scale with the other scales were as follows: MDFT,  $-.49$ ; A/S,  $-.17$ ; B/S,  $.31$ ; and CGN,  $.16$ . Correlations of the MDFT scale with the other scales were as follows: A/S,  $.60$ ; B/S,  $-.20$ ; and CGN,  $.16$ . Correlations of the A/S scale with the B/S and CGN scales were  $-.10$  and  $-.05$ , respectively. The B/S scale correlated  $.71$  with the CGN scale. The large positive correlations between the MDFT and A/S scales and between the B/S and CGN scales reflect the fact that each set of scales has two TBRS items in common. This overlap of items presents few difficulties for interpreting the results of the principal-components analysis given that the treatments under investigation are both multimodule, flexibly delivered, synthetic models with complex structures that call for integrated case formulation and intervention strategies.

We estimated interrater reliability across all raters for each of the five TBRS scales using the ICC (Shrout & Fleiss, 1979). The reliability coefficients represent the model ICC<sub>(2,6)</sub>, which is based on random-effects two-way analysis of variance, provides a reliability estimate of the mean ratings of all raters considered as a whole, and allows for generalizability of the results to other samples of raters. Interrater reliability was strong for the two Modality scales (.91 for DCBT and .86 for MDFT) and adequate for the nonmodality scales (.76 for A/S, .58 for B/S, and .60 for CGN). These results are comparable to reliabilities reported

Table 1  
*TBRS Intervention Scales: Item Content and Factor Loadings*

Factor and item	Factor loading <sup>a</sup>			
	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1: Modality				
Subscale 1: DCBT				
1. Establishes agenda at beginning of session	<b>.63</b>	.21	.11	-.08
15. Explores feelings, thoughts, and personal costs of adolescent's drug use	<b>.68</b>	.10	.18	.21
16. Utilizes behavioral interventions (e.g., structured protocols, reward systems)	<b>.69</b>	-.08	.01	.11
20. Helps adolescent develop activities/relationships that are not drug-related	<b>.57</b>	.11	.38	.21
25. Incorporates homework assignments into session	<b>.47</b>	-.16	.35	-.11
Subscale 2: MDFT				
9. Participants other than target adolescent are focus of intervention <sup>b</sup>	<b>-.70</b>	.57	.02	-.13
17. Helps functional parents shape parenting practices <sup>b</sup>	<b>-.66</b>	.59	.03	-.13
19. Coaches multiparticipant interactions in session	<b>-.61</b>	.34	.06	.00
23. Prepares participants individually for upcoming in-session interactions	<b>-.48</b>	.24	-.09	.03
Factor 2: Affect/Systems-Focused scale				
4. Validates feelings and beliefs/Supports needs and goals	-.16	<b>.61</b>	.12	-.07
7. Actively engages client in collaborative effort	.01	<b>.61</b>	-.20	.25
8. Encourages client to express affect in session	.11	<b>.52</b>	-.18	.24
9. Participants other than target adolescent are focus of intervention <sup>b</sup>	-.70	<b>.57</b>	.02	-.13
17. Helps functional parents shape parenting practices <sup>b</sup>	-.66	<b>.59</b>	.03	-.13
18. Responds to client in warm and compassionate manner	.02	<b>.63</b>	-.16	-.19
22. Presents knowledge about normative adolescent development	-.19	<b>.58</b>	.21	-.16
Factor 3: Behavior/Skills-Focused scale				
5. Refers to themes/events from previous sessions	.00	.05	<b>.45</b>	-.29
10. Challenges behavioral solutions/Presents behavioral alternatives <sup>b</sup>	-.03	-.13	<b>.69</b>	.47
11. Engages client in examining alternatives to current attributions <sup>b</sup>	.12	.01	<b>.57</b>	.58
14. Helps client develop future orientation	.28	.12	<b>.58</b>	.11
21. Tries to understand client's unique perspective	.07	.40	<b>-.54</b>	.09
24. Teaches client new problem-solving, coping, and communication skills	.16	.03	<b>.63</b>	.08
Factor 4: Cognition-Focused scale				
6. Explores tacit schemas that underlie/organize client behaviors	-.14	.11	-.12	<b>.71</b>
10. Challenges behavioral solutions/Presents behavioral alternatives <sup>b</sup>	-.03	-.13	.69	<b>.47</b>
11. Engages client in examining alternatives to current attributions <sup>b</sup>	.12	.01	.57	<b>.58</b>
13. Helps client recognize and amend cognitive distortions	.04	-.12	.10	<b>.71</b>

Note. Item loadings for the identified factor appear in boldface. TBRS = Therapist Behavior Rating Scale; DCBT = Dynamic Cognitive-Behavioral Therapy scale; MDFT = Multidimensional Family Therapy scale.

<sup>a</sup>Only items with a factor loading of .45 or higher were included in composition of the scales. <sup>b</sup>This item loads on two factors.

in similar studies of therapist intervention techniques (e.g., Barber & Crits-Christoph, 1996; DeRubeis & Feeley, 1990; Startup & Shapiro, 1993). The internal consistency of each scale was estimated with Cronbach's alpha. Results indicated that all five scales had acceptable levels of internal consistency: DCBT, .74; MDFT, .77; A/S, .78; B/S, .68; and CGN, .68.

In order to identify main effects in the study design that contributed to variance in the TBRS scales, we conducted variance composition analysis. Variance components represent the proportion of variance in a given scale that can be attributed to each effect of interest. Treatment adherence can be evaluated in part by the strength of the modality effect in predicting each scale: Modality should be a strong determinant of variance in the modality-specific scales (DCBT and MDFT) and a weak determinant in scales that primarily represent theoretically common interventions (A/S, B/S, and CGN). Results confirmed that modality predicted the predominance of variance in both the DCBT scale (.39) and the MDFT scale (.48; see Table 2). For the three nonmodality

scales, scale variance was distributed across multiple effects, with modality accounting for less variance in these scales than in the modality scales.

We examined the modality effect in more detail using profile analysis, an application of multivariate analysis of variance suitable to multivariate analysis in which all levels of the dependent variable are measured on the same scale (Tabachnick & Fidell, 1996). In this study, we used profile analysis to examine whether the two treatment conditions exhibited parallel profiles of scale scores across all five TBRS scales combined. Using Wilks's lambda criterion as the test of significance, we rejected the hypothesis of parallel profiles,  $F(4, 85) = 30.56, p < .001$ . Thus, the two treatments displayed significantly different patterns of peaks and valleys in mean scores across the five scales. The proportion of unique variance attributed to independent variables within profile analysis is indicated by  $\eta^2$ , which is derived from Wilks's lambda and represents the strength of association for tests of parallelism (Tabachnick & Fidell, 1996). The modality effect explained a large amount of

**Table 2**  
*Proportions of Variance in TBRS Scales*

Effect	df	TBRS intervention scale				
		DCBT	MDFT	A/S	B/S	CGN
Modality	1	.39	.48	.16	.07	.02
Phase	2	.01	.02	.02	.07	.01
Therapist (within treatment)	8	.08	.05	.17	.21	.16
Client (within therapist [within treatment])	26	.29	.11	.19	.14	.26
Treatment × Phase	2	.02	.03	.03	.06	.04
Therapist (within treatment) × Phase	15	.06	.16	.16	.17	.15
Residual	35	.15	.15	.27	.28	.36

*Note.* TBRS = Therapist Behavior Rating Scale; DCBT = Dynamic Cognitive-Behavioral Therapy scale; MDFT = Multidimensional Family Therapy scale; A/S = Affect/Systems-Focused scale; B/S = Behavior/Skills-Focused scale; CGN = Cognition-Focused scale.

unique variance,  $\eta^2(1, 1, 41.5) = .59$ , in the weighted combination of the five scales. In sum, variance composition and profile analysis together suggested that therapist behavior was explained to a significant degree by therapist adherence to treatment modality.

To investigate treatment differentiation, we conducted a series of five independent-sample *t* tests to compare the two treatments on each scale, using a Bonferroni-adjusted alpha of .01 (.05/5). The results are summarized in Table 3. As expected, mean levels of DCBT-specific interventions were higher in the DCBT condition than in the MDFT condition,  $t(49) = 6.77, p < .001$ , and mean levels of MDFT-specific interventions were higher in the MDFT condition than the DCBT condition,  $t(56) = 10.22, p < .001$ . This supports the contention that these two modality-specific scales represent clusters of interventions that are meaningfully unique to their respective treatment models. Between-groups differences were also found for two of the remaining scales, even though these scales consist primarily of items representing theoretically shared and facilitative interventions. The DCBT condition showed higher amounts of B/S interventions,  $t(88) = 2.51, p < .01$ , whereas the MDFT condition showed more A/S interventions,  $t(88) = 6.77, p < .001$ . It should be

noted that effect sizes for these latter two comparisons are less than half those derived from comparisons involving the modality-specific scales.

#### *Implications of Session Composition for Interrater Reliability and Scale Generalizability*

Adherence evaluation faces a unique design challenge when individual and family models are compared. Evaluation instruments must be designed and presented so that item scores are not biased by session composition and so that items representing model-prescribed interventions do not betray their allegiance to one model or the other. Of the 26 items in the TBRS, 23 are fully generalizable to any configuration of persons participating in a given session. That is, these items refer to "client" in the broadest possible sense: any person or combination of persons who attend a session as part of the treatment system. However, 3 TBRS items can be scored only if certain conditions obtain regarding composition of the session. To wit, Item 9, "targets others," requires that a person other than the target adolescent attend the session; Item 17, "parenting practices," requires that a member of the adolescent's parental system attend the session; and Item 19, "multiparticipant interactions," requires that two or more persons be present at the same time for some portion of the session. Not coincidentally, each of these items belongs to the MDFT scale. This highlights a confound between session composition and treatment modality that is characteristic of adherence studies that compare individual versus family therapies.

We took several steps to address this confound. First, when session composition criteria were not met for one of these three items, we had a choice between two strategies for coding that item: treat it as a missing datum in all analyses (except principal-components analysis) or assign it an extensiveness score of 1 (*not at all*). We selected the first strategy for both conceptual and empirical reasons. Conceptually, it preserved the unique significance of 1 scores for these items when session composition criteria were fully met: failure to use a prescribed technique in the MDFT condition, or success in avoiding a proscribed technique in the DCBT condition. Empirically, it prevented artificial inflation of ICCs (the result of adding a batch of items with

**Table 3**  
*Mean Comparisons Between Treatment Conditions on the TBRS Scales*

Scale	DCBT condition		MDFT condition		<i>t</i>	Effect size <sup>a</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
DCBT	3.04	1.22	1.62	.54	6.77**	1.61
MDFT	1.18	.30	3.28	1.42	10.22**	2.44
A/S	3.26	.78	4.03	.99	6.77**	0.87
B/S	3.37	.96	2.92	.73	2.51*	0.53
CGN	2.79	.84	2.51	.89	1.50	ns

*Note.* TBRS = Therapist Behavior Rating Scale; DCBT = Dynamic Cognitive-Behavioral Therapy scale; MDFT = Multidimensional Family Therapy scale; A/S = Affect/Systems-Focused scale; B/S = Behavior/Skills-Focused scale; CGN = Cognition-Focused scale.

<sup>a</sup>Pooled Cohen's *d*.

\* $p < .01$ . \*\* $p < .001$ .

perfect rater agreement to calculations) and artificial deflation of mean scores (the result of adding a batch of items with the lowest possible score to calculations) for the MDFT scale. Second, across-modalities interrater reliability was estimated on all five scales for single-participant sessions and then for multiparticipant sessions. For single-participant sessions,  $ICC_{(2,6)}$  was .89 for DCBT, .89 for MDFT, .72 for A/S, .77 for B/S, and .63 for CGN; for multiparticipant sessions, the corresponding correlations were .85, .79, .72, .57, and .51. Though somewhat smaller in magnitude, these reliability coefficients by and large match those derived for the overall sample, indicating that session composition did not substantially affect interrater reliability.

Third, the implications of session composition for generalizability of the modality scales were examined. According to principles of pristine adherence research, session composition should have no bearing on the degree to which modality-specific interventions are used. Thus, for example, DCBT-specific interventions should be equally prevalent in DCBT sessions, and equally eschewed in MDFT sessions, regardless of who attends. To investigate this, we conducted mean comparisons in single- versus multiparticipant sessions for each modality using a Bonferroni-adjusted alpha of .0125 (.05/4). The results are presented in Table 4. The DCBT condition included 9 multiparticipant sessions, and the MDFT condition included 13 single-participant sessions. Results suggest that the DCBT scale did not vary according to session composition; in both conditions, single- and multiparticipant sessions contained roughly equivalent levels of DCBT-specific interventions. However, MDFT-specific interventions were more prevalent in multiparticipant sessions within both the MDFT and DCBT conditions. This suggests that, unlike the DCBT scale, the MDFT scale is sensitive to session composition: If two or more people attend a session, then MDFT-specific interventions are more likely to arise, regardless of therapist allegiance.

## Discussion

This study verified that within a larger randomized trial comparing the efficacy of two integrative treatments for adolescent substance abuse—dynamic cognitive-behavioral

therapy and multidimensional family therapy—high degrees of both treatment adherence and treatment differentiation were achieved by therapists conducting the two interventions. Factor analysis of the TBRS, a treatment adherence process measure, generated empirically derived intervention scales that demonstrated solid reliability and internal consistency, and analyses of modality effects affirmed that therapists in both conditions adhered to their respective treatment approaches. Therapists in each condition emphasized model-unique interventions, avoided model-proscribed interventions, and used a mixture of theoretically shared and facilitative interventions.

This study is one of the first to examine treatment fidelity with a family therapy model and to our knowledge is the first adherence research study involving an adolescent population. Concerns with treatment integrity are especially relevant to treatments for severe adolescent problem behaviors. Adolescents who abuse drugs inevitably exhibit a constellation of psychosocial problems notable for their stable and enduring nature (Jessor, Donovan, & Costa, 1991). The complex symptom picture of adolescent deviancy has prompted the development of multifaceted, flexibly delivered treatment approaches that target several domains of adolescent and family functioning (Henggeler, 1996; Liddle, 1996; Miller & Prinz, 1990). Monitoring the viability and integrity of these models is essential for promoting empirically based model development and improved treatment efficacy (Kazdin, 1993).

In this study, adherence process evaluation contributed greatly to an understanding of successes and failures in model implementation. An interesting and unexpected finding was that therapists in the DCBT condition adhered primarily to structuring techniques specified by the model, deemphasizing interventions rooted in the psychodynamic and cognitive traditions. This could be interpreted to mean that therapists in the DCBT condition adhered to their treatment manual in less consistent fashion than did therapists in the MDFT condition. On the other hand, it can be argued that DCBT therapists made appropriate adjustments in treatment delivery to suit the clinical needs of the population. DCBT therapists routinely reported during the course of the intervention study that the adolescent clients responded poorly to transference interpretations and attempts to identify tacit schema and cognitive distortions. Instead, emphasizing behavior change, decision making, and the practical implications of drug use appeared to be more acceptable and potent for this population. In this sense, therapists in the DCBT condition adhered to selected aspects of the model, and overall, treatment differentiation was not diminished by this development. It is worth noting that the MDFT condition implemented a roster of modality-specific interventions that are prescribed by most systemic therapy models: target multiple members of the client system for change, enhance the parenting skills of functional parents, and prepare for and coach multiparticipant interactions (i.e., enactments) among family members.

It is also worth noting the interesting, but preliminary, findings regarding differences in the use of certain interventions endorsed by both models. In addition to the two

**Table 4**  
*Mean Comparisons on the DCBT and MDFT Scales for Single Versus Multiparticipant Sessions Within Each Treatment Condition*

Scale	Single-participant sessions			Multiparticipant sessions			<i>t</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	
DCBT condition	30			9			
DCBT		3.13	1.27		2.75	1.08	0.81
MDFT		1.06	0.21		1.57	0.20	-6.48**
MDFT condition	13			38			
DCBT		1.70	0.64		1.59	0.50	0.67
MDFT		2.04	1.56		3.70	1.11	-4.18**

*Note.* DCBT = Dynamic Cognitive-Behavioral Therapy scale; MDFT = Multidimensional Family Therapy scale.

\*\**p* < .001.



modality-specific scales, factor analysis generated three coherent scales that, in broad terms, could be identified as having affective, behavioral, and cognitive slants, respectively. Therapists in the family therapy condition showed a propensity to use affectively focused interventions such as establishing a supportive environment and encouraging the expression of affect in session. This finding resonates with family therapy's long tradition of working with relationship themes and attachment bonds in treatment (although many family-based treatments advocate a strongly behavioral approach, e.g., Patterson, Reid, & Dishion, 1992). Therapists in the individual therapy condition, in contrast, demonstrated greater reliance on behavior-focused interventions such as challenging how clients solve problems and teaching new coping skills. These different "slants" assumed by MDFT and DCBT therapists may also reflect certain population-specific immediacies related to treating adolescent substance abusers and their families. Families with an adolescent drug user tend to exhibit elevated levels of emotional distance and discord (Piercy, Volk, Trepper, Sprenkle, & Lewis, 1991; Volk, Edwards, Lewis, & Sprenkle, 1989). Thus, MDFT therapists were typically sitting in a room with a distressed and volatile interpersonal system, which gave rise to their greater focus on collaboration, engagement, and emotional expression. In contrast, DCBT therapists usually worked alone with drug-using clients who had antisocial profiles and histories of negative interactions with various institutions (Donovan, Jessor, & Costa, 1988), which evoked the emphasis of these therapists on imparting new skills, exploring alternative behaviors, and establishing responsiveness to structure and task demands.

In sum, these findings suggest that integrative, multimodule treatment approaches can be successfully implemented in a differentiated manner with adolescent substance abusers. In this study, the family-based model stressed interactional and affective elements, and the individual model emphasized behavioral and drug-focused elements. It is important to note (a) that such differences in therapeutic focus between family and individual models might not obtain for other client populations or other approaches and (b) that successful implementation does not imply, or guarantee, positive outcome.

Confidence in the above findings is bolstered by several methodological strengths of the study. Rigorous process research techniques were used, including nonparticipant ratings by highly trained judges, Likert-type extensiveness ratings of therapist behavior, and random selection of cases within each condition and of sessions within each case. Solid interrater reliabilities and internal consistencies for the TBRs scales helped verify internal validity. External validity was supported by involvement of the model developers for both conditions in every aspect of the study, from instrumentation through data interpretation. This also played a preventive role against investigator allegiance bias, which can arise in comparative studies when one modality receives preferential attention (Gaffan, Tsaousis, & Kemp-Wheeler, 1995).

Even so, generalizability of the above findings is limited for important reasons. First, the two modality-specific scales

each contain fewer items (4 and 5) than those reported in previous adherence studies (range = 9–28; Barber & Crits-Christoph, 1996; Hill et al., 1992; Startup & Shapiro, 1993). However, this comparison is somewhat misleading given that (a) the two integrative models in this study endorsed a high percentage of shared interventions and (b) the study results imply that more comprehensive modality scales may be expeditiously delineated in future research by incorporating items from the A/S scale into the MDFT scale and items from the B/S scale into the DCBT scale. Second, scores on the MDFT scale were confounded with session composition. In both conditions, MDFT-specific techniques were more prevalent in multiparticipant sessions than in single-participant sessions. On the one hand, this may be taken as a trivial point: Family therapy techniques are, by definition, used in the presence of a family. However, the matter is weighty with regard to adherence research: Treatment differentiation efforts are hampered when therapist behaviors uniquely prescribed by one condition are indicated simply by counting who shows up for a session.

Third, the results of the principal-components analysis must be interpreted with appropriate caution, for several reasons. First, the study sample was smaller than generally recommended for reliable factor analysis. Second, therapist and client effects were not partialled out prior to conducting this analysis, so that all between-therapists and between-clients differences in model implementation were retained. Although this strategy maximized the variance in therapist behavior available for deriving the intervention scales, it diminishes generalizability of these results to other sets of therapist and client populations. Third, conventional factor analysis prohibits use of data obtained from nonindependent observations—in this case, multiple treatment sessions involving the same therapists and clients. Nevertheless, the exploratory nature of the principal-components analysis in this study, the common use of this analytic strategy in various process studies (Russell et al., 1996; Shapiro & Startup, 1992; Stiles et al., 1996), and recent endorsements of P-technique factor analysis in the conduct of treatment process research (Russell, 1995) all mitigate concerns about nonindependence.

Even given these limitations, the results of this study demonstrate that treatment adherence process research can be reliably conducted with family-based approaches. This advances efforts to establish a stronger and more diverse portfolio of empirical support for family therapy models (Coyne & Liddle, 1992), which is crucial for further legitimizing a mode of therapy that is commonly used by practitioners (Kazdin, Siegel, & Bass, 1990) and has shown great promise in the treatment of a variety of clinical populations (Diamond, Serrano, Dickey, & Sonis, 1996; Pinsof & Wynne, 1995). This study also illustrates that adherence process research methods are valuable not only for confirming treatment fidelity but also for investigating complex treatment process elements in a multivariate manner. Thus, adherence process research can be a powerful and flexible tool for examining links between intervention techniques and other aspects of treatment process (e.g., therapist competence, the therapeutic alliance) as well as

links between process and outcome in psychotherapy. These varieties of adherence research enable researchers to develop and refine treatment models over time for greater efficacy with specific client populations.

## References

- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.
- Barber, J. P., & Crits-Christoph, P. (1996). Development of a therapist adherence/competence rating scale for supportive-expressive dynamic psychotherapy: A preliminary report. *Psychotherapy Research, 6*, 81–94.
- Barber, J. P., Crits-Christoph, P., & Luborsky, L. (1996). Effects of therapist adherence and competence on patient outcome in brief dynamic therapy. *Journal of Consulting and Clinical Psychology, 64*, 619–622.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.
- Butler, S. F., Henry, W. P., & Strupp, H. H. (1995). Measuring adherence in time-limited dynamic psychotherapy. *Psychotherapy, 32*, 629–638.
- Coyne, J., & Liddle, H. A. (1992). The future of systems therapy: Shedding myths and facing opportunities. *Psychotherapy, 29*, 44–50.
- DeRubeis, R. J., & Feeley, M. (1990). Determinants of change in cognitive therapy for depression. *Cognitive Therapy and Research, 14*, 469–482.
- DeRubeis, R. J., Hollon, S. D., Evans, M. D., & Bemis, K. M. (1982). Can psychotherapies for depression be discriminated? A systematic investigation of cognitive therapy and interpersonal therapy. *Journal of Consulting and Clinical Psychology, 50*, 744–756.
- Diamond, G. S., & Liddle, H. A. (1996). Resolving a therapeutic impasse between parents and adolescents in multidimensional family therapy. *Journal of Consulting and Clinical Psychology, 64*, 481–488.
- Diamond, G. S., Serrano, A., Dickey, M., & Sonis, W. (1996). Current status of family-based outcome and process research. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*, 6–16.
- Donovan, J. E., Jessor, R., & Costa, F. (1988). Syndrome of problem behavior in adolescence: A replication. *Journal of Consulting and Clinical Psychology, 56*, 762–765.
- Gaffan, E. A., Tsaousis, I., & Kemp-Wheeler, S. M. (1995). Researcher allegiance and meta-analysis: The case of cognitive therapy for depression. *Journal of Consulting and Clinical Psychology, 63*, 966–980.
- Havik, O. E., & VandenBos, G. R. (1996). Limitations of manualized psychotherapy for everyday clinical practice. *Clinical Psychology: Science and Practice, 3*, 264–267.
- Hazelrigg, M. D., Cooper, H. M., & Borduin, C. M. (1987). Evaluating the effectiveness of family therapies: An integrative review and analysis. *Psychological Bulletin, 101*, 428–442.
- Henggeler, S. (1996). Treatment of violent juvenile offenders—We have the knowledge: Comment on Gorman-Smith et al. (1996). *Journal of Family Psychology, 10*, 137–141.
- Hill, C. E., O'Grady, K. E., & Elkin, I. (1992). Applying the Collaborative Study Psychotherapy Rating Scale to rate therapist adherence in cognitive-behavior therapy, interpersonal therapy, and clinical management. *Journal of Consulting and Clinical Psychology, 60*, 73–79.
- Hogue, A., Liddle, H. A., & Rowe, C. (1996). Treatment adherence process research in family therapy: A rationale and some practical guidelines. *Psychotherapy, 33*, 332–345.
- Hogue, A., Rowe, C., Liddle, H., & Turner, R. (1994). *Scoring manual for the Therapist Behavior Rating Scale (TBR5)*. Unpublished manuscript, Center for Research on Adolescent Drug Abuse, Temple University, Philadelphia, PA.
- Jacobson, N. S., Schmalings, K. B., Holtzworth-Munroe, A., Katt, J. L., Wood, L. F., & Follette, V. M. (1989). Research-structured vs. clinically flexible versions of social learning-based marital therapy. *Behavior Research and Therapy, 27*, 173–180.
- Jessor, R., Donovan, J. E., & Costa, F. M. (1991). *Beyond adolescence: Problem behavior and young adult development*. Cambridge, England: Cambridge University Press.
- Jones, C. J., & Nesselroade, J. R. (1990). Multivariate, replicated, single-subject, repeated measures designs and p-technique factor analysis: A review of intraindividual change studies. *Experimental Aging Research, 16*, 171–183.
- Kazdin, A. E. (1993). Adolescent mental health: Prevention and treatment programs. *American Psychologist, 48*, 127–141.
- Kazdin, A. E. (1994). Psychotherapy for children and adolescents. In A. Bergin & S. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 543–594). New York: Wiley.
- Kazdin, A. E., Siegel, T. C., & Bass, D. (1990). Drawing on clinical practice to inform research on child and adolescent psychotherapy: Survey of practitioners. *Professional Psychology: Research and Practice, 21*, 189–198.
- Lambert, M., & Bergin, A. (1994). The effectiveness of psychotherapy. In A. Bergin & S. Garfield (Eds.), *Handbook of psychotherapy and behavior change* (4th ed., pp. 143–189). New York: Wiley.
- Liddle, H. A. (1991). *Multidimensional family therapy treatment manual*. Unpublished manuscript, Center for Research on Adolescent Drug Abuse, Temple University.
- Liddle, H. A. (1994). The anatomy of emotions in family therapy with adolescents. *Journal of Adolescent Research, 9*, 120–157.
- Liddle, H. A. (1995). Conceptual and clinical dimensions of a multidimensional, multisystems engagement strategy in family-based adolescent treatment. *Psychotherapy, 32*, 39–58.
- Liddle, H. A. (1996). Family-based treatment for adolescent problem behaviors: Overview of contemporary developments and introduction to the special section. *Journal of Family Psychology, 10*, 3–11.
- Liddle, H. A., Dakof, G. A., & Diamond, G. S. (1991). Adolescent substance abuse: Multidimensional family therapy in action. In E. Kaufman & P. Kaufman (Eds.), *Family therapy approaches with drug and alcohol problems* (2nd ed., pp. 120–171). Needham Heights, MA: Allyn & Bacon.
- Linehan, M. M. (1993). *Cognitive behavioral treatment of borderline personality disorder*. New York: Guilford Press.
- Luborsky, L. (1994). *Principles of psychoanalytic psychotherapy: A manual for supportive-expressive treatment*. New York: Basic Books.
- Luborsky, L., & DeRubeis, R. (1984). The case of psychotherapy treatment manuals: A small revolution in psychotherapy research style. *Clinical Psychology Review, 4*, 5–14.
- Luborsky, L., Woody, G., McLellan, A., O'Brien, C., & Auerbach, A. (1985). Therapist success and its determinants. *Archives of General Psychiatry, 42*, 602–611.
- Mann, B. J., & Borduin, C. M. (1991). A critical review of psychotherapy outcome studies with adolescents: 1978–1988. *Adolescence, 26*, 505–541.
- Marlatt, G. A., & Barrett, K. (1994). Relapse prevention. In M. Galanter & H. D. Kleber (Eds.), *The American Psychiatric Press textbook of substance abuse treatment* (pp. 285–302). Washington, DC: American Psychiatric Press.

- Marlatt, G. A., & Tapert, S. F. (1993). Harm reduction: Reducing the risk of addictive behavior. In J. S. Baer, G. A. Marlatt, & B. McMahon (Eds.), *Addictive behaviors across the lifespan* (pp. 243–273). Newbury Park, CA: Sage.
- Masters, J. C., Burish, T. G., Hollon, S. D., & Rimm, D. C. (1987). *Behavior therapy: Techniques and empirical findings* (3rd ed.). San Diego, CA: Harcourt Brace Jovanovich.
- Miller, G. E., & Prinz, R. J. (1990). Enhancement of social learning family interventions for childhood conduct disorder. *Psychological Bulletin*, *108*, 291–307.
- Moncher, F. J., & Prinz, R. J. (1991). Treatment fidelity in outcome studies. *Clinical Psychology Review*, *11*, 247–266.
- Multon, K. D., Kivlighan, D. M., & Gold, P. B. (1996). Changes in counselor adherence over the course of training. *Journal of Counseling Psychology*, *43*, 356–363.
- Newcomb, M., & Bentler, P. (1988). *Consequences of adolescent drug use: Impact on the lives of young adults*. Newbury Park, CA: Sage.
- Patterson, G., Reid, J., & Dishion, T. (1992). *Antisocial boys*. Eugene, OR: Castalia.
- Piercy, F. P., Volk, R. J., Trepper, T., Sprenkle, D. H., & Lewis, R. (1991). The relationship of family factors to patterns of adolescent substance abuse. *Family Dynamics of Addictions Quarterly*, *1*, 41–54.
- Pinsof, W., & Wynne, L. (1995). The efficacy of marital and family therapy: An empirical overview, conclusions, and recommendations. *Journal of Marital and Family Therapy*, *21*, 585–613.
- Rounsaville, B. J., O'Malley, S., Foley, S., & Weissman, M. M. (1988). Role of manual-guided training in the conduct and efficacy of interpersonal psychotherapy for depression. *Journal of Consulting and Clinical Psychology*, *56*, 681–688.
- Russell, R. L. (1995). Introduction to the special section on multivariate psychotherapy process research: Structure and change in the talking cure. *Journal of Consulting and Clinical Psychology*, *63*, 3–5.
- Russell, R. L., Bryant, F. B., & Estrada, A. U. (1996). Confirmatory P-technique analyses of therapist discourse: High- versus low-quality child therapy sessions. *Journal of Consulting and Clinical Psychology*, *64*, 1366–1376.
- Schmidt, S. E., Liddle, H. A., & Dakof, G. A. (1996). Changes in parenting practices and adolescent drug abuse during multidimensional family therapy. *Journal of Family Psychology*, *10*, 12–27.
- Shapiro, D. A., & Startup, M. (1992). Measuring therapist adherence in exploratory psychotherapy. *Psychotherapy Research*, *2*, 193–203.
- Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, *86*, 420–428.
- Startup, M., & Shapiro, D. A. (1993). Therapist treatment fidelity in prescriptive vs. exploratory psychotherapy. *British Journal of Clinical Psychology*, *32*, 443–456.
- Stiles, W. B., Startup, M., Hardy, G. E., Barkham, M., Rees, A., Shapiro, D. A., & Reynolds, S. (1996). Therapist session intentions in cognitive-behavioral and psychodynamic-interpersonal psychotherapy. *Journal of Counseling Psychology*, *43*, 402–414.
- Szapocznik, J., & Coatsworth, J. D. (in press). Structural ecosystems theory: An ecodevelopmental framework for organizing risk and protection for drug abuse. *American Psychologist*.
- Tabachnick, B., & Fidell, L. (1996). *Using multivariate statistics* (3rd ed.). New York: Harper Collins.
- Turner, R. M. (1991). *Manual for dynamic cognitive-behavioral therapy for the treatment of adolescent drug use*. Unpublished manuscript, Temple University School of Medicine, Philadelphia, PA.
- Turner, R. M. (1992). Launching cognitive-behavioral therapy for adolescent depression & drug abuse. In S. Budman, M. Hoyt, & S. Friedman (Eds.), *Casebook of brief therapy* (pp. 135–156). New York: Guilford Press.
- Turner, R. M. (1993). Dynamic cognitive-behavioral therapy. In T. Giles (Ed.), *Handbook of effective psychotherapy* (pp. 437–454). New York: Plenum.
- Volk, R. J., Edwards, D. W., Lewis, R. A., & Sprenkle, D. H. (1989). Family systems of adolescent substance abusers. *Family Relations*, *38*, 266–272.
- Waltz, J., Addis, M. E., Koerner, K., & Jacobson, N. S. (1993). Testing the integrity of a psychotherapy protocol: Assessment of adherence and competence. *Journal of Consulting and Clinical Psychology*, *61*, 620–630.
- Yeaton, W. H., & Sechrest, L. (1981). Critical dimensions in the choice and maintenance of successful treatments: Strength, integrity, and effectiveness. *Journal of Consulting and Clinical Psychology*, *49*, 156–167.

Received May 12, 1997

Revision received September 3, 1997

Accepted September 4, 1997 ■