

Therapist Verbal Behavior Early in Treatment: Relation to Successful Completion of Parent–Child Interaction Therapy

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We examined the role of specific therapist verbal behaviors in predicting successful completion of Parent–Child Interaction Therapy (PCIT) in 22 families, including 11 families that successfully completed treatment and 11 that discontinued treatment prematurely. The children were 3 to 6 years old and diagnosed with oppositional defiant disorder (ODD). Chamberlain et al.'s (1986) Therapy Process Code (TPC) was used to measure therapist verbalizations during therapist–parent interactions during the initial clinical interview and the second treatment session. Results indicated that therapists' use of the categories Question, Facilitate, and Support during these sessions accurately predicted treatment dropout versus completion for 73% of families. Findings suggest that the early therapist–parent relationship in PCIT may be critical to successful treatment completion.

The interaction between therapist and patient during the process of therapy is essential to outcome in all psychological therapies. Interaction elements that affect the quality of the therapist–patient relationship are often called *therapy process variables*. Research examining specific therapy process variables has historically addressed the relation of these variables to outcomes within traditional adult psychotherapy. These studies have shown that process variables influence treatment outcomes more strongly than preexisting patient characteristics (Kolb, Beutler, Davis, Crago, & Shanfield, 1985). Further, the strength of the therapeutic relationship early in treatment has distinguished treatment dropouts from completers (Piper et al., 1999). For example, compared to adults who completed group therapy, adults who dropped out rated the treatment more negatively after the first session (McCallum, Piper, Ogrodniczuk, & Joyce, 2002). In that same study, therapists rated dropouts more negatively than completers after the first third of therapy (McCallum et al., 2002).

Examination of process variables in child therapy is more recent. The affective bond between the mother and

therapist has been associated with mothers' beliefs about the efficacy of child psychotherapy (DeVet, Kim, Charlot-Swilley, & Ireys, 2003). In family therapy, the relationship between the therapist and parent has been described as critical to families' attendance and participation in treatment (Diamond, Diamond, & Liddle, 2000). A meta-analysis of process research in child therapy revealed a small but significant association between the therapist–child relationship and treatment outcome across all types of treatment (Shirk & Karver, 2003). Finally, the therapeutic relationship has been significantly associated with dropout from child therapy (Kazdin, Holland, & Crowley, 1997). Although these studies make evident the importance of the therapeutic relationship to therapy outcome, research on general aspects of therapy process does not clarify the specific behaviors that influence treatment outcome (Marmar, 1990).

Specific therapist verbal behaviors are important therapy process variables that both affect and are affected by patient verbal behaviors in the transactions that constitute the therapeutic relationship. In a review of traditional adult psychotherapy process research, Orlinsky Grawe, and Parks (1994) found therapist interpretation and confrontation were associated with positive outcomes in most of the studies examined, whereas therapist advice-giving was found generally unhelpful or harmful to the therapeutic relationship (Orlinsky et al., 1994). In contrast, transference interpretations have consistently shown a negative influence on the therapeutic alliance and treatment outcome (Sigal, 1993). Open-ended questions were found to have a generally benign influence on outcome in traditional adult psychotherapy (Orlinsky et al., 1994), although in cognitive-behavioral therapy higher rates of questioning have been related to observer ratings of lower quality emotional experiences in therapy. Higher quality emotional experi-

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ences were predictive of better outcomes for this type of treatment (Wiser & Goldfried, 1998). In addition, receiving clinical training focused on enhancing therapy process skills was associated with lower rates of asking questions, suggesting this skill is emphasized by clinicians (Shiffman, 1987).

Supportive therapist behaviors, such as affirming patient comments, praising, and expressing empathy, were related to positive treatment outcomes in most studies (Orlinsky et al., 1994). Kolb et al. (1985) found adults who dropped out of treatment rated their therapists lower on facilitative relationship skills than adults who completed treatment, and their therapists reported providing less support to those patients. In a review by Orlinsky and Howard (1986), however, only 25% of studies found therapist support related to positive treatment outcomes, and 75% found no significant relations among these variables.

Little research on the relation between specific process variables and treatment outcome has been conducted in the child therapy literature. In a review of therapist-child interactions, therapeutic gains were associated with therapist verbalizations seeking new information, continuing a topic, or providing causal narratives (Russell & Shirk, 1998). High-quality sessions have also been characterized by therapist responses that involve active listening (Russell, Bryant, & Estrada, 1996). Within family therapy, directive therapist behaviors have demonstrated a generally negative effect, whereas supportive therapist behaviors have shown a positive effect (Alexander, Barton, Schiavo, & Parsons, 1976). Both confrontation and advice-giving had a negative effect on outcome during early sessions, with no effect later in family therapy (Alexander et al., 1976). Using the Therapy Process Code (TPC; Chamberlain et al., 1986), a microanalytic observational coding system of therapist-parent interaction, therapist confronting, teaching, and reframing were all associated with increased resistance during parent training, whereas supporting and facilitating were related to decreased levels of resistance (Patterson & Forgatch, 1985). A more recent study found resistant parents were more likely to drop out early in treatment (Patterson & Chamberlain, 1994). Although the hypothesis was not tested, the authors speculated that parent resistance was influencing therapists' use of more confronting, more reframing, and less supportive behaviors. In other research with the TPC, a single therapist's behavior was examined during systemic family therapy, and results indicated therapist support and teaching increased cooperation during the second family therapy session (Barbera & Waldron, 1994).

Some of the inconsistency in the effects of specific therapist verbal behaviors in therapy may be due to differences in types of treatments studied and goals of therapy. Inconsistency may also be due to different methods used to measure therapy process. Measure-

ment has varied in terms of the respondent, time of recording, focus of the analysis, and specificity, with much therapy process research using rating scale measures. Respondents have included therapists, patients, independent observers, or a combination of these individuals. Some studies have used ratings completed at the end of each therapy session whereas others have waited until the end of therapy. Therapy process rating scales measure therapist behaviors, patient behaviors, and the interaction between therapist and patient. Ratings have examined specific behaviors as well as broad classes of process behavior.

In contrast to rating scales, observational coding systems provide objective microanalytic measures of therapy process considered more reliable, valid, and interpretable (Chamberlain & Baldwin, 1988). The TPC (Chamberlain et al., 1986) is a multidimensional coding system for observing therapist-parent interactions developed to capture the moment-by-moment interactions in parent training, specifically to examine relations between therapist behaviors and parent resistance.

In this study, the TPC was used to examine the interaction between parents and therapists in the context of Parent-Child Interaction Therapy (PCIT). PCIT is an evidence-based treatment for young children with disruptive behavior and their parents, based on developmental theory (Brinkmeyer & Eyberg, 2003). In the first phase of treatment, parents learn the Child-Directed Interaction (CDI), which resembles traditional play therapy and focuses on strengthening the parent-child attachment, increasing positive parenting, and improving child social skills. In the second phase, parents learn the Parent-Directed Interaction (PDI), which resembles clinical behavior therapy and focuses on improving parents' expectations, ability to set limits, consistency and fairness in discipline, and reducing child noncompliance and other negative behavior.

PCIT begins with an assessment session, including a clinical interview with the parents followed by parent rating scales and observations of parent-child interactions. Treatment is conducted in weekly 1-hr sessions, taking approximately 12 to 16 weeks to complete. Treatment continues until parents demonstrate mastery of the treatment skills and rate their child's behavior within normal limits. Each treatment phase begins with one teaching session with the parents alone to explain and role-play principles and skills of that phase. In subsequent sessions, therapists first discuss with parents their progress at home and then coach the parents in their use of treatment skills as they play with their child. The parents practice the skills at home in daily 5-min play sessions.

The purpose of this study was to examine the relation between therapist verbal behaviors early in treatment and successful completion of PCIT. In an earlier study, a large number of pretreatment demographic, child, and family variables were examined for their ability to pre-

dict dropout from successful completion of PCIT (Werba, Eyberg, Boggs, & Algina, in press). Maternal reports of distress and maternal criticism and sarcasm observed during parent–child interactions were the only variables associated with treatment dropout, and those associations were statistically weak. The authors suggested the therapist–parent relationship in PCIT might account for significant variance in treatment dropout versus completion. Therapy process variables have rarely been studied in family skills training interventions and never in PCIT. The TPC appeared particularly suitable for use in studying therapist verbal behaviors in PCIT because the categories correspond to process variables demonstrated to predict outcome in adult psychotherapy, and this coding system was designed specifically for use in parent training.

Therapist behaviors were examined at the initial clinical interview and first CDI coaching session. Based on findings from the adult process literature reviewed here and pilot testing, we expected PCIT outcome (dropout versus successful treatment completion) would be predicted by the categories *Question*, *Facilitation*, and *Reframing/Interpretation*. Specifically, it was hypothesized that dropout would be predicted by low rates of Facilitation, high rates of Questions, and high rates of Reframing/Interpretation. Because results from pilot testing contrasted with previous research findings on the role of *Support*, this behavior was examined as an exploratory variable.

Method

Participants

Participants were 22 mother–child dyads drawn from an ongoing PCIT outcome study. At the time of data collection, 14 families had dropped out of treatment, 11 with usable data. To create groups equal in size, the first 11 families with usable data who had completed treatment were selected (from the first 13 treatment completers). Data were not usable if different therapists conducted assessment and treatment interviews ($n = 3$) or technical problems occurred with videotapes ($n = 2$). For inclusion in the original study, children were 3 to 6 years of age and met diagnostic criteria for oppositional defiant disorder (ODD).¹ Cognitive screening standard scores of at least 75 were required for children and parents on the Peabody Picture Vocabulary Test–III and Wonderlic Personnel Test, respectively. Children were excluded if parents

described severe sensory or mental impairment (e.g., deafness, autism) during the clinical interview. Children taking psychotropic medications to manage behavior problems had to be stabilized on a consistent medication regimen and dosage schedule for at least 1 month before enrolling in the study, and parents were asked not to alter their child’s medication or dosage during treatment. Parents of children not taking psychotropic medication were asked not to begin medication during treatment. All families not meeting criteria for study participation were referred to the Health Science Center Psychology Clinic for appropriate services.

Mean age of the 22 children was 55.09 months ($SD = 13.18$), and 73% were boys. The mothers’ mean age was 33 years ($SD = 12$). Fathers lived at home in 68% of families and participated in assessment and treatment in 59% of families. Fathers’ mean age was 38 years ($SD = 14$). The children were 86% White, 5% African American, and 9% biracial White/African American. Family socioeconomic status was 37.77 ($SD = 11.22$) as measured by Hollingshead’s (1975) Four-Factor Index, with families predominantly from the social strata of skilled craftsman, clerical employees, and sales workers. Forty-five percent of children were taking psychotropic medications.

All 22 children had severe behavior problems with a high degree of comorbidity. Mean number of independent diagnoses per child was 2.18 ($SD = 1.14$). Although the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. [DSM–IV], American Psychiatric Association, 1994) states that ODD is not diagnosed if criteria are met for conduct disorder (CD), we did not consider CD when screening children for inclusion based on presence of ODD. Seven (32%) children also met criteria for CD. Two (9%) children met criteria for only CD and ODD. In addition to disruptive behavior disorders, 41% met criteria for attention deficit hyperactivity disorder (ADHD), 32% for separation anxiety disorder (SAD), and 18% for major depressive disorder (MDD). In terms of specific combinations of comorbidities, 14% of children met criteria for ODD, ADHD, and CD; 14% for ODD, SAD, and MDD; 5% for ODD and ADHD; 5% for ODD, ADHD, and SAD; 5% for ODD and SAD, 5% for ODD, ADHD, CD, and SAD; and 5% for ODD, ADHD, CD, SAD, and MDD.

Treatment Dropout Versus Successful Treatment Completion

Treatment outcome was defined dichotomously as successful treatment completion or treatment dropout. In PCIT, treatment continues until the family achieves treatment graduation criteria that include parent mastery of the PCIT skills and parent ratings of child behavior within normal limits. Therefore, *treatment completion* is synonymous with *treatment success*.

¹One child was included in the study who did not meet full criteria for ODD because of a scoring error. The child met diagnostic criteria on the Child Behavior Checklist (CBCL; aggression T score = 81) and had three ODD symptoms on the Diagnostic Interview Schedule for Children (DISC–IV), for which four symptoms are necessary for a diagnosis of ODD.

Specifically, to meet completion criteria, the child had to (a) score within $\frac{1}{2}$ *SD* of the normative mean on the Eyberg Child Behavior Inventory, a parent rating scale of disruptive behavior; (b) comply to > 75% of parent commands during the 5-min PDI observation; and (c) not meet diagnostic criteria for ODD based on the *DSM-IV* Rating Scale, a brief parent interview. In addition, parents had to meet mastery criteria for both CDI and PDI skills: In the 5-min CDI observation, each parent had to give at least 10 behavior descriptions, 10 reflective statements, 10 labeled praises, and no more than 3 questions, commands, or criticisms. In the 5-min PDI observation, at least 75% of parent commands and follow-through behaviors had to be employed correctly.²

Treatment dropout was defined as attending at least one treatment session and then discontinuing treatment before reaching graduation criteria. In PCIT, therapists work to prevent dropout; dropout occurs unilaterally and is classified as treatment failure. Successful treatment completers in this study attended an average of 13.36 (*SD* = 3.55) sessions (range: 9 to 25 sessions). Treatment dropouts completed an average of 6.73 (*SD* = 4.80) sessions (range: 2 to 12 sessions). For treatment dropouts, there were no significant correlations between number of sessions completed and therapist use of Support, Question, or Facilitate.

Measures

The preschoolers were assessed for five diagnoses (ODD, CD, ADHD, SAD, and MDD) using procedures described by Jensen et al., 1996. These procedures involve (a) meeting diagnostic criteria for the disorder on the *DISC-IV-Parent Version* (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000); (b) exceeding the clinical cutoff score on the corresponding narrowband scale from a CBCL (CBCL/2–3 [Achenbach, 1992]; CBCL/4–18 [Achenbach, 1991]), and for ADHD, obtaining a *T* score of 65 or higher on the *DSM-IV* Hyperactive–Impulsive or Inattention subscale of the Conners Teacher Rating Scale–Revised: Long Form (CTRS–R:L; Conners, 1997).

The *DISC-IV-Parent Version* is a structured diagnostic interview that requires parents to answer questions about duration and frequency of symptoms associated with children's disorders. One-week test–retest reliability for parents of 9- to 17-year-olds is .54 for ODD, .79 for ADHD, .43 for CD, .58 for SAD, and .66

for MDD (Shaffer et al., 2000). The CBCL/2–3 is a parent rating scale assessing behavior problems of 2- to 3-year-olds during the previous 2 months. One-week test–retest reliability for individual problem scales ranges from .79 to .92, and 1-year test–retest reliability ranges from .56 to .76 (Crawford & Lee, 1991). The CBCL/4–18 examines child behavior during the previous 6 months. Mean test–retest reliability of the problem scales is reported as .89 for 1 week and .75 for 1 year (Achenbach, 1991). The CTRS–R:L is a teacher-report measure of ADHD and comorbid disorders. The CTRS–R:L has test–retest reliability coefficients between .60 and .90 (Conners, 1997).

Cognitive screening measures included the Peabody Picture Vocabulary Test–III (Dunn & Dunn, 1997) for children and the Wonderlic Personnel Test (Dodrill, 1981) for adults. The Peabody Picture Vocabulary Test–III is a measure of receptive language that requires pointing to the picture corresponding to a word presented orally by the examiner. Scores correlate .90 with the Wechsler Intelligence Scale for Children–III Full Scale IQ (Dunn & Dunn, 1997). The Wonderlic Personnel Test is a 12-min screener of intellectual ability, with general knowledge questions in areas such as vocabulary, reasoning, and mathematics. Performance on the Wonderlic Personnel Test correlates .93 with Wechsler Adult Intelligence Scale Full Scale IQ scores (Dodrill, 1981).

Based on earlier findings (Werba et al., in press), two variables were examined as possible additional predictors of outcome in this study: maternal distress, measured using the Parent Distress subscale from the Parenting Stress Index–Short Form (Abidin, 1995) and maternal inappropriate behavior, consisting of the categories Criticism and Smart Talk from the Dyadic Parent–Child Interaction Coding System (DPICS; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994). The Parenting Stress Index–Short Form is a 36-item parent-report scale that contains three factor analytically derived subscales (Parental Distress, Parent–Child Dysfunctional Interaction, and Difficult Child). Abidin (1995) reported a Cronbach's α of .87 and 6-month test–retest reliability of .85 for the Parental Distress subscale.

The DPICS is a behavioral coding system that measures quality of parent–child social interaction during three 5-min standard situations (child-led play, parent-led play, and clean-up) that vary in the degree of parental control required. Observations of the three situations were conducted twice, 1 week apart, during the pretreatment assessment, and data were averaged across the three situations and two occasions, providing 30 min of data per child. Two categories of maternal behavior coded during these parent–child interaction observations were analyzed for this study. Intraclass correlations of .92 for Criticism and .92 for Smart Talk, and kappa's of .57 for Criticism and .56 for Smart Talk, have been reported (Brestan, Foote, & Eyberg, 2004). In this

²Effective commands are direct, positively stated, polite, developmentally appropriate, single commands given in a neutral tone of voice that provide the child with instructions to complete a specific behavior. Appropriate follow-through behavior includes providing a labeled praise if the child complies, giving a time-out warning if the child does not comply, and taking the child to the time-out chair if he or she does not comply to the warning.

study, kappa was .62 for Criticism and .55 for Smart Talk.

Therapist codes from the TPC (Chamberlain et al., 1986) were used to measure therapist verbal behaviors. Parent verbal behavior codes from this system focus on forms of resistance during therapy and were not included because pilot data revealed rare occurrence in the initial interview or first PCIT coaching session. Chamberlain and Ray (1988) reported interobserver reliability for the therapist verbal codes from .75 to .85. These seven categories include: *Support* ("It sounds like you have been dealing with a lot of difficult problems at home"); *Teach* ("It is important to be consistent"); *Information Seek/Question* ("When did you first notice these problems?"); *Structure* ("Now I am going to ask you about his development"); *Disagree* ("I don't think that is a good idea"); *Interpret/Reframe* ("He is doing that to get attention"); and *Facilitate* ("Okay," "Yeah," "Uh-huh," "Um-humm," "Right," "I see"). Any therapist verbalization not included in one of these categories is recorded as *Talk*, described as a "wastebasket" code by Chamberlain et al. Inclusion of this category permitted calculation of total verbalization scores. These therapist codes permitted analysis of therapist verbal behaviors that may engage parents early in the treatment process.

The Coder Impressions Scale (CIS; Chamberlain et al., 1986), a process rating scale for observers of the therapist–parent interaction, is included in the TPC manual. Independent observers completed selected items from this scale after viewing the same videotaped segments of parent–therapist interaction that were coded. The shortened scale consisted of 6 items addressing therapist behavior and 10 items addressing maternal behavior. Each question contained either a 7-point or a 3-point Likert scale response format. Nine CIS items not relevant to therapist–parent interactions were deleted; these items addressed marital interactions, parent–child interactions, child behavior, and father behavior. Interobserver reliability was calculated using percentage agreement between raters for 32% of sessions, seven initial assessment interviews and seven first CDI coaching sessions. Reliability was calculated by transforming responses to all questions into a 3-point Likert scale format, creating categories that consisted of negative, neutral, and positive responses. The CIS was included to provide a rough comparison of information provided by rating observed interactions versus the relatively costly method of coding moment-to-moment interactions.

Procedures

All families participated in a pretreatment assessment involving two clinic visits, 1 week apart, and five telephone daily diary assessments between visits. During the first, 4-hr clinic visit, parents participated in a

semistructured clinical interview, screening measures (DISC–IV–Parent Version, CBCL, CTRS–R:L, and Wonderlic Personnel Test), behavioral observation of parent–child interactions (DPICS), and several questionnaire measures for the larger study. During the second, 3-hr clinic visit, DPICS observations were repeated and additional assessment procedures, not part of this study, were completed. To encourage development of rapport between parent and therapist and maximize early engagement, the clinician who served as the family's therapist conducted the initial assessment.

After completing the pretreatment assessment, parents returned the following week for the first treatment session, a didactic session in which the therapist explained, modeled, and role-played with parents basic principles and skills used in the first treatment phase, CDI. Parents were asked to practice these skills at home with their child for 5 min each day. The following week, families attended the second treatment session (the first CDI coaching session), which began with a 10- to 15-min discussion about CDI sessions at home during the preceding week. The treatment manual instructed therapists also to provide individual support to parents during this time, briefly addressing issues or stressors unrelated to child behavior or PCIT skills. This brief parent support component was added to PCIT based on research by Prinz and Miller (1994) showing that attending to parent stressors reduced dropout rates in parent training. Following initial discussion, the therapist coached parents in CDI skills as they played with their child. After this session, families either completed treatment successfully or dropped out before meeting graduation criteria.

Weekly 1-hr PCIT sessions were videotaped for later treatment integrity checking. Therapists were seven graduate students in clinical psychology who had taken a course in PCIT and had earlier experience as PCIT co-therapists. Therapists attended weekly group supervision sessions with the second author. The treatment manual provided session checklists used by undergraduate research assistants to code treatment integrity for a randomly selected 50% of session tapes from each family. Treatment integrity, calculated as percentage agreement with the session checklists, was 91% in both groups. A randomly selected 50% of the coded session tapes were recoded by a second undergraduate research assistant to assess reliability of treatment integrity coding. Interrater reliability was 99% for treatment dropouts and 95% for successful completers.

The focus of this study was the early communication between the therapist and the child's parents. The therapists' verbal behavior was assessed twice, once during the semistructured clinical interview conducted at the first assessment session and once during the initial review of the past week during the first CDI coaching session. TPC coding was conducted during the first

20-min segment of the clinical interview and the first 10-min segment of the initial discussion with the parent(s) during the coaching session. The initial clinical interview was selected for coding because it was the first contact between the therapist and parents. It served not only as a means of gathering information about the family but also as an opportunity for the therapist to begin to engage the parents in the treatment process. The homework review during the first CDI coaching session was selected because this was the first opportunity for interaction regarding the parents' adherence to the therapist's instructions to practice PCIT skills with their child at home.

Length of coding segments was selected based on estimates of the longest time possible without exceeding the actual therapist–parent interaction time in any case. Although the 20-min coding segment during the assessment interview was longer than the 10-min segment from the first CDI coaching session, the difference was consistent with the actual difference in direct interaction time during these two sessions. On the four occasions that an interaction ended before the designated coding time, the behavior frequencies were prorated for the remainder of the time interval.

Three undergraduate research assistants served as TPC coders. They learned therapist codes by reading the TPC manual (Chamberlain et al., 1986) and completing four written coding exercises included in the manual until they achieved 90% accuracy on each test. Then coders trained with videotaped therapist–parent interactions. Training continued until coders obtained 80% accuracy with a criterion tape. Coder training required 42 hours over 7 weeks to achieve 80% accuracy. To evaluate interobserver reliability, a second reliability observer coded 34% of total sessions. Reliability was calculated using percentage agreement among coders for seven initial assessment interviews and eight first CDI coaching sessions. Weekly meetings were held with coders to discuss problems that arose during coding sessions. Coders were not informed of group status of the families (treatment dropout or successful completion) or study hypotheses. Coders were balanced across treatment completion versus dropout groups to minimize error resulting from observer drift and imperfect reliability.

Data Analysis

Frequency of occurrence of TPC codes was calculated first together and then separately for the initial interview and first CDI coaching session. Independent sample *t* tests were used to determine if significant group differences existed for demographic or individual therapist variables. A *p* value of .05 was used to determine statistical significance for all analyses. Discriminant function analysis (DFA) was used to examine whether group membership (i.e., successful

completer or dropout) could be predicted reliably from the set of hypothesized variables. This analysis method was selected because of its robustness with limited sample sizes. Predictors of dropout in an earlier PCIT study (ratings of maternal parenting distress and observed maternal inappropriate behavior during parent–child interactions; Werba et al., in press) were examined for differences between groups to determine if these variables would be included in the model. Finally, scores on the CIS were analyzed using independent sample *t* tests to explore potential predictive value of this rating scale.

Results

There were no significant differences between dropouts and successful completers for either variable previously found to predict PCIT dropout. For the Parenting Stress Index–Short Form Parental Distress subscale, mean scores were 31.40 (*SD* = 10.70) for dropouts and 31.55 (*SD* = 11.00) for successful completers, $t(19) = .03$, $p = .976$. The mean number of observed maternal Criticisms plus Smart Talks was 32.00 (*SD* = 19.92) for dropouts and 34.55 (*SD* = 25.72) for successful completers, $t(20) = .26$, $p = .798$.

Comparison of demographic characteristics in the two groups (Table 1) showed that treatment dropouts had significantly lower family socioeconomic scores and fewer child MDD diagnoses than successful treatment completers. No significant group differences were found for other diagnostic variables, medication status, or father involvement in PCIT, and no significant correlations were found between family socioeconomic status and any therapist verbal behavior. For the assessment interview alone, child MDD diagnosis correlated negatively with therapist use of Questions, $r(22) = -.447$, $p = .037$.

The total number of therapist verbal behaviors coded during the 20-min segment of the assessment interview was not significantly different between dropouts ($M = 154$, *SD* = 52.30) and successful completers ($M = 146.91$, *SD* = 31.76), $t(20) = .38$, $p = .705$. Similarly, the mean number of therapist behaviors coded during the initial 10-min segment of the CDI coaching session was not significantly different between treatment dropouts ($M = 89.73$, *SD* = 25.00) and successful completers ($M = 102.18$, *SD* = 14.66), $t(20) = 1.42$, $p = .170$. The dropout and successful completer families were distributed among seven advanced graduate student therapists, and assignment to a particular therapist did not significantly predict treatment completion versus dropout. In addition, there were no significant differences in the use of Support, Facilitate, or Question among the seven individual therapists in either the interview or coaching session segments.

Table 1. Pretreatment Demographic Variables for PCIT Dropouts and Successful Completers

Category	Successful Completers		Dropouts		<i>t</i> or χ^2	<i>df</i>	<i>p</i>
	<i>M</i> or %	<i>SD</i>	<i>M</i> or %	<i>SD</i>			
Child age in months	60.00	12.00	50.18	12.94	1.84	20	0.080
Mother age in years	35.71	10.18	30.13	13.69	1.08	20	0.291
Father age in years	38.54	10.58	36.49	18.22	0.27	13	0.791
Father in attendance (%)	45		73		1.69	1	0.193
Family Hollingshead ^a	43.55	9.82	32.00	9.73	2.77	20	0.012
Male child (%)	64		82		0.92	1	0.338
Child minority (%)	0		27		3.47	1	0.062
Mother minority (%)	9		18		0.39	1	0.534
Father minority (%)	0		0		0.00	1	1.000
Child on medications (%)	45		36		0.19	1	0.665
ODD (%)	91		100		1.05	1	0.306
CD (%)	27		36		0.21	1	0.647
ADHD (%)	45		36		0.19	1	0.665
MDD (%)	27		0		4.89	1	0.027
SAD (%)	45		18		1.89	1	0.170
Total no. diagnoses	2.45	1.21	1.91	1.04	1.13	20	0.272
Maternal ECBI Intensity	174.18	20.48	172.73	33.88	0.12	20	0.904
Maternal ECBI Problem	22.82	6.75	22.91	6.38	0.03	20	0.974
PSI-SF Parental Distress	31.55	11.00	31.40	10.70	0.03	19	0.976
Maternal DPICS: CR + ST	34.55	25.72	32.00	19.93	0.26	20	0.798

Note: PCIT = Parent–Child Interaction Therapy; ODD = oppositional defiant disorder; CD = conduct disorder; ADHD = attention deficit hyperactivity disorder; MDD = major depressive disorder; SAD = separation anxiety disorder; ECBI = Eyberg Child Behavior Inventory; PSI-SF = Parenting Stress Index–Short Form; DPICS: CR + ST = Dyadic Parent–Child Interaction Coding System Criticism and Smart Talk.

^aThe Hollingshead (1975) Index is an index of family socioeconomic status.

Table 2. Differences in Therapist Behaviors During the Assessment Interview and First CDI Coaching Session With Parents Who Later Complete or Drop Out of Treatment

Category	Successful Completers		Dropouts		<i>t</i> (20)	<i>p</i>	<i>ES</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Support	32.00	13.55	44.36	11.26	2.33	.031	.90
Teach	33.09	14.97	29.18	23.90	.46	.651	.20
Question	35.00	16.12	51.55	21.82	2.02	.057	.81
Structure	9.91	6.44	9.91	5.05	.00	1.000	.00
Disagree	.45	.93	.55	.69	.26	.798	.11
Interpret/reframe	9.36	3.98	10.73	6.53	.59	.561	.25
Facilitate	118.45	38.17	82.64	28.69	2.49	.022	.95
Talk	11.45	14.14	15.00	9.83	.68	.502	.29

Note: CDI = Child-Directed Interaction; ES = effect size as measured by Cohen’s *d*.

Percentage agreement reliabilities for individual TPC code categories were as follows: 89% for Talk, 82% for Facilitate, 81% for Question, 69% for Support, 66% for Teach, 51% for Structure, and 47% for Interpret/Reframe. Reliability was not calculated for Confront because this category was coded less than once per family. Mean reliability was 77% for the three variables used in the DFA, Support, Question, and Facilitate, although individual levels of agreement for Support and Question were somewhat modest. Interpret/Reframe was not included in the DFA because it was not a reliable code in this study. It also occurred infrequently (see Table 2) relative to other code categories hypothesized to predict completion versus dropout.

Overall Findings

Therapist verbal behaviors during the assessment interview and first CDI coaching session were combined for the first set of comparisons. Differences between the dropout and successful completer groups in therapist verbalization frequency for each code category are shown in Table 2. Therapists used significantly more supportive statements and fewer facilitative statements with families who later dropped out of treatment than with families who successfully completed treatment. The higher rate of therapist questioning in the dropout group almost reached statistical significance. Differences between groups showed effect sizes (*ES*) greater than .80 for all three

of these process variables. There were no significant differences between groups for other verbal behavior categories.

DFA was used to test the hypothesis that therapist use of code categories Support, Question, and Facilitate during early interactions between therapist and parent would predict treatment dropout versus successful completion. According to the Box-M test, there was no significant violation of the homogeneity of variance-covariance assumption. Actual group membership was correctly classified by Facilitate, Support, and Question for 73% of families. The linear combination of these three variables correctly classified treatment completion versus dropout better than chance probability of 50%. Eight of 11 families in each group were accurately predicted by this model, Wilks's $\lambda = .602$, $\chi^2(3, 19) = 9.39, p = .024$. The jackknife procedure was performed as a cross-validation of this analysis to account for potential sample bias and provide a more conservative, replicable estimate of classification. Using this procedure, which creates an average classification rating by performing multiple DFAs with 1 participant removed each time, 68% of participants were correctly classified.

Loadings for the three variables on group membership (i.e., the function structure matrix) resulted in correlations of $-.68 (p < .001)$ for Facilitate, $.64 (p = .001)$ for Support, and $.56 (p = .006)$ for Question. Although the three code categories represent sufficiently independent constructs, there were partial correlations of $-.42 (p = .059)$ between Facilitate and Support, $.20 (p = .387)$ between Facilitate and Question, and $.19 (p = .414)$ between Question and Support. Therefore, standardized discriminant coefficients were examined to determine unique contributions each variable had on group classification. The relative contribution of each variable from greatest to least was Facilitate ($-.73$), Question ($.66$), and Support ($.22$). Results indicate that treatment dropout was predicted primarily by lower rates of Facilitate and higher rates of Question.

Initial Clinical Interview

The two sessions were analyzed separately to determine the relative contribution of each interaction to treatment completion versus dropout. As shown in Table 3, Question was the only category that showed a significant group difference during the initial interview, with therapists using the Question category more often with treatment dropouts than completers. Although there were no other significant group differences for specific code categories, ESs were above .70 for both Support and Facilitate.

Using DFA to examine the hypothesized set of predictors of completion versus dropout from the initial interview alone, therapist use of Support, Question, and Facilitate were again found to predict outcome above chance, Wilks's $\lambda = .619$, $\chi^2(3, 19) = 8.88, p = .031$. For this analysis, there was homogeneity of variance-covariance across completion versus dropout groups for each of the variables according to the Box-M test. Treatment dropout versus completion was accurately predicted for 7 of 11 families who dropped out and 8 of 11 families who completed treatment. Correct prediction occurred for 68% of all families. Using the jackknife procedure, 64% of cases were correctly classified.

For the initial assessment interview, correlations between therapist verbal behaviors and treatment completion versus dropout were $.67 (p < .001)$ for Question, $.53 (p = .011)$ for Support, and $-.52 (p = .012)$ for Facilitate. Correlations between individual code categories were $-.35 (p = .122)$ between Support and Facilitate, $.25 (p = .271)$ between Facilitate and Question, and $.09 (p = .700)$ between Question and Support. The unique contribution to DFA classification was highest for Question ($.81$), then Facilitate ($.64$), and lowest for Support ($.24$). These analyses indicate higher rates of questioning and lower rates of facilitation are the primary factors that independently predicted treatment dropout.

Table 3. Differences in Therapist Behaviors During the Initial Assessment Interview With Parents Who Later Complete or Drop Out of Treatment

Category	Successful Completers		Dropouts		<i>t</i> (20)	<i>p</i>	ES
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Support	17.00	11.74	25.64	.90	1.87	.077	.75
Teach	4.73	6.34	6.64	10.11	.53	.602	.23
Question	26.91	14.21	44.18	19.71	2.36	.029	.91
Structure	4.82	2.60	4.45	3.11	.30	.769	.13
Disagree	.09	0.30	.27	.47	1.09	.291	.46
Interpret/reframe	3.36	2.58	6.18	6.65	1.31	.205	.46
Facilitate	89.45	35.62	64.73	27.88	1.81	.085	.73
Talk	.55	0.52	2.09	4.18	1.22	.238	.51

Note: ES = effect size as measured by Cohen's *d*.

First CDI Coaching Session

None of the therapist variables differed significantly between treatment dropouts and successful completers in the first CDI coaching session alone, although Facilitate was almost significant and showed an ES of .82 (see Table 4). According to the Box-M test, there was no significant violation of the homogeneity of variance–covariance assumption. DFA indicated that, for the 10-min discussion beginning the first CDI coaching session, the three hypothesized therapist verbal behaviors did not significantly predict treatment completion versus dropout, Wilks's $\lambda = .769$, $\chi^2(3, 19) = 4.87$, $p = .182$.

Post Hoc Analysis of Questions

Because questions are important to the process of gathering information in an initial interview and yet are associated with treatment dropout, we recoded the Question category into open- and close-ended questions to examine differences between treatment dropouts and successful completers. Many clinicians recommend therapists use open-ended questions and avoid close-ended questions to obtain rapport (Querido, Eyberg, Kanfer, & Krahn, 2001).

For the combined condition, consisting of the initial assessment interview and first CDI coaching session, close-ended questions occurred significantly more often with dropouts ($M = 39.36$, $SD = 17.65$) than completers ($M = 24.73$, $SD = 10.06$), $t(20) = 2.39$, $p = .027$. There were no significant group differences in use of open-ended questions. The same pattern was seen in the initial assessment interview alone. There were no significant differences for open-ended questions, but therapists used more close-ended questions with parents who later dropped out of treatment ($M = 34.45$, $SD = 15.48$) than with successful treatment completers ($M = 19.55$, $SD = 9.82$), $t(20) = 2.70$, $p = .014$. No group differences occurred for either close-ended or open-ended questions in the first CDI coaching session, in which no overall group differences in Questions had been found.

CIS

Across both sessions, mean interrater reliability of the CIS was 85% ($SD = 13\%$). For the initial assessment interview, there were no significant differences between dropouts ($M = 73.36$, $SD = 4.90$) and successful completers ($M = 75.45$, $SD = 5.43$) on the total CIS score, $t(20) = .95$, $p = .365$. When examining only the 10 maternal behavior items on this process rating scale, there were no significant differences between dropouts ($M = 42.00$, $SD = 3.80$) and successful completers ($M = 41.91$, $SD = 4.18$), $t(20) = .05$, $p = .966$.

For the six therapist behavior items on the CIS during the initial interview, treatment dropouts ($M = 31.36$, $SD = 2.16$) scored significantly lower than successful treatment completers ($M = 33.55$, $SD = 1.97$), $t(20) = 2.48$, $p = .022$, with an ES of .95. Examining individual scale items revealed only one item significantly different between groups: "Rate how well the therapist 'reached' the client during this session (e.g., did the session have an impact on the client?)." For this item, families that later dropped out of treatment received a lower mean score ($M = 4.36$, $SD = .50$) than families that completed treatment ($M = 4.91$, $SD = .70$), $t(20) = 2.10$, $p = .049$, ES = .84. For the first CDI coaching session, there were no significant group differences for the CIS total score, therapist behavior subscore, maternal behavior subscore, or any of the individual items.

Discussion

The number of families for which treatment outcome (dropout versus successful completion) was correctly predicted from a brief early period of therapist–parent interaction is striking. Specifically, a high rate of facilitative statements along with a low rate of questioning and supportive statements by the therapist predicted treatment success. Although therapist reframing was also expected to relate to therapy success, we were unable to maintain adequate interrater reliability in coding this category; therefore, conclusions

Table 4 Differences in Therapist Behaviors During the First CDI Coaching Session With Parents Who Later Complete or Drop Out of Treatment

Category	Successful Completers		Dropouts		<i>t</i> (20)	<i>p</i>	ES
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Support	15.00	7.71	18.73	8.49	1.08	.294	.46
Teach	28.36	11.75	22.55	16.40	.96	.350	.41
Question	8.09	5.74	7.36	4.18	.34	.737	.19
Structure	5.09	5.43	5.45	3.36	.19	.852	.08
Disagree	.36	.92	.27	.65	.27	.792	.12
Interpret/reframe	6.00	3.90	4.55	3.53	.92	.370	.39
Facilitate	29.00	16.04	17.91	7.84	2.06	.053	.82
Talk	10.91	14.28	12.91	9.41	.39	.700	.17

Note: CDI = Child-Directed Interaction; ES = effect size as measured by Cohen's *d*.

about the influence of therapist reframing on treatment completion versus dropout cannot be drawn from this study. Nevertheless, with only three salient therapist process variables, completion versus dropout from PCIT was predicted from just 30 min of therapist–parent interaction at the beginning of treatment. These results extend findings from the adult psychotherapy literature (Kolb et al., 1985; Piper et al., 1999) to family skills training interventions for young children. Additional analysis revealed therapist behaviors in 20 min of assessment interview alone predicted outcome, highlighting the importance of establishing rapport at first contact with families.

As in the adult psychotherapy literature, evidence of fewer facilitative therapist verbalizations with dropouts than successful completers demonstrates the universal importance of engaging patients by active listening (Kolb et al., 1985). Our findings on therapist facilitation converge with findings by Patterson and Forgatch (1985) showing that high facilitation lessens parent resistance and by Prinz and Miller (1994) showing that brief discussion of personal concerns decreases attrition. The use of these “minimal encouragers” (Heaton, 1998, p. 129) may maintain the parents’ willingness to discuss relevant topics further. The significant predictive role of therapist facilitation highlights the importance of following the lead of parents in early sessions to gain a better understanding of their treatment goals (Corsini & Wedding, 2000).

Our second finding, showing lower rates of therapist questioning with successful treatment completers, offers another way to develop early rapport with parents. Although we found no difference in use of open-ended questions, therapists used more close-ended questions with families who later dropped out of treatment than with successful treatment completers. The importance of differentiating between open- and close-ended questions was demonstrated empirically by Miller and Mount (2001). Based on the coded behavior of expert clinicians in the Miller and Mount study, Miller and Rollnick (2002) recommended asking twice as many open-ended as close-ended questions to achieve an effective interview. Therapists’ early use of close-ended questions with parents who dropped out of treatment in this study may have interfered with development of a therapeutic alliance. Assignment to a particular therapist did not predict dropout, however, suggesting it was the therapist–parent interaction that was related to outcome. Parents who dropped out may have been poor historians or vague in response to open-ended questions, leading therapists to use more close-ended questions to obtain specific information. Sequential analyses examining parent verbalizations that precede and follow therapist open-versus close-ended questions may elucidate the role of therapist questioning in relation to successful treatment completion versus dropout. Until communication

patterns are more precisely understood, results suggest keeping close-ended questions to a minimum, even with parents who may have difficulty recalling or describing events clearly.

Unlike findings from the adult psychotherapy literature showing positive or neutral effects of support (Orlinsky et al., 1994; Orlinsky & Howard, 1986), we found therapist support occurred more frequently with parents who later dropped out of PCIT. Adult psychotherapy research has typically incorporated nonspecific factors such as positive regard and warmth into the definition of support (Sexton, 1993), whereas in this study, support was operationalized by objective verbal behaviors. The different methods of measuring therapist support may account for the inconsistent findings. Earlier research with the TPC also found positive effects of support, however, at least on patient resistance and cooperation within the treatment session (Barbera & Waldron, 1994; Patterson & Forgatch, 1985). Even though supportive statements may increase patient cooperation within treatment sessions, the effects may be temporary or insufficient to engender the degree of motivation or self-efficacy needed to meet the demands of effective skills training programs. In fact, supportive statements early in therapy could actually reinforce expressions of helplessness or pessimism that contribute to later dropout. Alternatively, families who eventually drop out may experience greater levels of distress that elicit more statements of therapist support. The lower income in dropout families is consistent with this interpretation.

In this study, observer ratings of therapy process were substantially less informative than coding the objective process variables. In the initial interview, the overall CIS rating for therapist process variables was more negative for dropouts than successful completers, although the very small score difference between groups may not be clinically meaningful. Further, examination of the individual items addressing therapist behaviors revealed only one item, asking how well the therapist “reached” the parent, that significantly differentiated the dropouts from successful completers. Adjusting the items to target more specific therapist and parent behaviors might improve the utility of this scale as a cost-effective alternative measure of therapy process.

On the other hand, the influence of process variables is probably best examined by studying the behavioral transactions between therapist and parent and how these behaviors influence one another through time. The primary limitation of this study is that it assesses only therapist behaviors without measuring parent behaviors or examining the sequences of verbal exchange. The development of process codes that identify parent behaviors relevant to establishing an effective therapist–parent alliance and using sequential analyses to identify interaction sequences that predict

child therapy outcome will be a difficult undertaking but one that may appreciably advance our understanding of therapy process. The identification of therapist behaviors that can predict treatment success and are not simply a function of therapist style is a promising start.

Another limitation is the low reliability attained for the Interpret/Reframe and Structure code categories of the TPC despite extensive training. Low reliability prohibited inclusion of Interpret/Reframe, one of the categories hypothesized to predict therapy dropout versus successful completion. More detailed decision rules, descriptions of characteristics that distinguish categories, and examples in the TPC manual would be useful for researchers outside the developers' laboratory. However, the overall high reliability of important process categories permitted valid results in this study.

A third limitation of this study is the small sample size. Sample size estimates were based on general guidelines for DFA as well as sample sizes used successfully in earlier TPC research (Chamberlain & Ray, 1988; Patterson & Forgatch, 1985). However, the sample may not have been adequate to test for group differences in the assessment interview alone for Support and Facilitate, which both showed substantial ESs. Replication of this study with a larger sample will be important to validate the usefulness of these categories and permit further study of the unexpected findings. For example, it is difficult to interpret our finding that therapists asked fewer questions of mothers with children diagnosed with MDD, all in the treatment completer group. The 3 mothers did not themselves differ from other mothers on self-rated depressive symptoms, and it is unclear what might have prompted fewer questions with these mothers. This result may be a chance finding that would not replicate in a larger sample.

Although many important questions remain, findings of this study offer preliminary guidelines for therapists using PCIT with families of young children with oppositional behavior. During the initial clinical interview, in particular, it is important for therapists to use active listening skills to guide and maintain parents' responses to open-ended questions. Therapists need to be mindful of close-ended questions, perhaps most with parents who do not readily provide detailed information. Increased monitoring of specific parent behaviors that pull for close-ended questions will be useful in determining how to manage this interview situation effectively. It may also be important to use supportive statements judiciously early in therapy. Positive attention provided by supportive statements may increase the kinds of parent verbalizations they follow. Although parent verbalizations associated with dropout or completion in this study are unknown, therapist use of supportive statements more frequently after expressions of coping and positive intention than after negative expressions of helplessness or hopelessness may

be wise. In summary, this study illustrates important relations between therapist verbal behaviors and treatment dropout versus completion. Although this study does not provide evidence of causal relations between these variables, it is possible that the earliest parent-therapist interactions are critical to successful treatment completion. The TPC provided an effective method for measuring specific therapist process behaviors related to development of the therapeutic alliance. Continued refinement of process categories important in parent training will improve the reliability and validity of this measure. Development of additional parent categories to measure behaviors temporally related to key therapist verbal behaviors is important for understanding the interaction sequences of therapy process that may causally affect treatment outcome. Process studies of child and family treatments will then be able to inform and improve child treatments even further.

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