EFFECT OF THERAPIST PROCESS VARIABLES ON TREATMENT OUTCOME FOR PARENT-CHILD INTERACTION THERAPY (PCIT)

By

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The role of specific therapist process variables in predicting treatment outcome for Parent-Child Interaction Therapy (PCIT) was examined in 22 families, including 11 families that completed treatment and 11 that discontinued treatment prematurely. The children were 3 to 5 years old and diagnosed with Oppositional Defiant Disorder (ODD). Chamberlain’s Therapy Process Code was used to measure therapist verbalizations during therapist-parent interactions at the clinical intake 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 indicate that an early therapist-parent alliance is essential for successful treatment outcome in PCIT.
CHAPTER 1
INTRODUCTION

Therapy process has been broadly defined in terms of elements common to all treatments, relatively independent of theoretically based techniques, which comprise the experiences of the therapist and patient during therapy sessions. Therapist factors include displays of empathy, positive regard, and warmth (Sexton, 1993). An important focus within therapy process research is the development of the therapeutic relationship, with a particular emphasis on the quality of the therapeutic alliance. A strong therapeutic alliance consists of agreement between the therapist and patient about the specific treatment interventions and goals of treatment and a positive affective relationship (Muran, Segal, Samstag, & Crawford, 1994).

Therapy process is thought to play an essential role in the outcome of adult psychotherapy. Process variables have been found to account for treatment outcome better than preexisting patient characteristics (Kolb, Beutler, Davis, Crago, & Shanfield, 1985), and the strength of the therapeutic alliance early in treatment has distinguished treatment dropouts from completers (Piper et al., 1999). The important influence of process variables at the beginning of treatment was highlighted by the finding that therapist process ratings better predicted intersession outcome in the first half of treatment than in the second half of treatment (Sexton, 1993). In a more recent study, patients who dropped out of group therapy reported significantly less positive affect about the treatment than completers after the first session of therapy. Furthermore,
therapist ratings of dropouts have been found to be more negative after the first third of therapy (McCallum, Piper, Ogrodniczuk, & Joyce, 2002). Although these studies emphasize the strong connection between therapy process and outcome, research on general aspects of therapy process and the therapeutic alliance does not clarify the specific constructs that influence treatment outcome (Marmar, 1990).

It is important to consider the specific therapist behaviors that influence the development of the therapeutic relationship to determine the role of therapy process in predicting treatment outcome. Both directive and supportive behaviors have been studied. Evidence of the influence of directive therapist behaviors, such as interpretation, confrontation, and advice giving, has been mixed. A recent review of process research found that interpretation was associated with positive outcomes in 63% of the studies examined (Orlinsky, Grawe, & Parks, 1994). Transference interpretations, however, have consistently been found to have a negative influence on therapeutic alliance and treatment outcome (Sigal, 1993). One early study showed a positive association between high rates of transference interpretations in the second session of therapy and early dropout in conjoint family therapy (Postner, Guttman, Sigal, Epstein, & Rakoff, 1971).

In a recent study, interpretation was examined prospectively by comparing outcome for adults randomly assigned to either interpretive or supportive therapy conditions (Piper, Joyce, McCallum, & Azim, 1998). In the interpretive condition, the interpretations were related to transference as well as intrapsychic and interpersonal conflicts. Results indicated significantly higher dropout for interpretive (23%) than supportive (6%) psychotherapy (Piper et al.). It is possible that an interaction between the interpretations and participants’ acceptance of the interpretations influenced the outcome.
in this study, or that the timing of the interpretations influenced their effect. According to Orlinsky et al. (1994), variables such as these have not been examined in treatment outcome research, and therefore it is not possible to determine how they may have affected studies of therapeutic interpretation.

The effects of confrontational behavior during treatment have been mixed as well, with some studies showing potential benefits of confrontation and others demonstrating significant risk to therapy outcome. A review of adult psychotherapy by Orlinsky et al. (1994) found that confrontation was associated with positive outcome in 70% of the research studies and with negative outcome in only 9% of studies. Confrontation may have negative effects for specific patient problems. For example, one study found that initially aggressive and defensive patients tended to become more so in response to directive interventions whereas reflective interventions elicited more positive responses in these patients (Beutler, Crago, & Arizmendi, 1986).

Giving advice in psychotherapy, as part of a cognitive-behavioral focus, has been considered to have either a neutral or a negative effect (Beutler et al., 1986). In the review by Orlinsky et al. (1994), providing advice was found to be generally unhelpful or harmful to the therapeutic alliance whereas exploration with open-ended questions had a benign influence. In family therapy, both teaching and confrontation have been found to have a negative effect on outcome during early sessions, but no effect later in therapy (Alexander, Barton, Schiavo, & Parsons, 1976). In general, although the findings for directive therapist behaviors have varied somewhat, it appears that there is a potential risk for these behaviors to influence the therapeutic relationship negatively.
Supportive therapist behaviors, such as affirming patient comments, praising, and showing empathy, have been commonly associated with positive treatment outcomes in adult psychotherapy (Orlinsky et al., 1994). In a recent study of substance abusing adolescents, a 98% completion rate was achieved in home-based multisystemic therapy that concentrated on praising the strengths of the teen and parents, and these supportive behaviors were assumed to play a major role in the high success rate (Henggeler, Pickrel, Brondino, & Crouch, 1996). Kolb et al. (1985) found that adult patients who dropped out of treatment rated their therapists lower on facilitative relationship skills than did patients who completed treatment, and their therapists reported providing less support to these patients.

Supportive therapist behaviors have been examined for their influence on treatment session productivity as well as therapy outcome. Empathic focus on the affective content of patient comments has been found to elicit greater patient responsiveness during the initial interview and to be related to higher ratings of therapist attractiveness, expertise, and trustworthiness later in treatment (Beutler et al., 1986). Furthermore, evidence has shown that therapist support and facilitation of a positive relationship are associated with decreased patient resistance (Gurman, Kniskern, & Pinsof, 1986).

Despite research endorsing the positive effects of support, evidence of neutral and occasionally detrimental effects of support on therapy outcome have also been reported. For example, high levels of support and empathy were associated with less improvement in paranoid symptomatology (Kolb et al., 1985). In a review by Orlinsky and Howard (1986), about 75% of studies did not find a significant relation between therapist use of
support and patient outcome. In addition, reflection and clarification were not related to
treatment outcome, suggesting a neutral effect for these expressions of support.

Overall, the therapy process literature has shown more positive outcomes
associated with facilitative therapist behaviors than with directive behaviors.
Considerable variability among studies continues, however, as to the influence of specific
behaviors on treatment outcome. Both macroanalytic and microanalytic approaches to
process research have been used, which probably has been responsible for some of the
inconsistent findings in the literature. In macroanalytic approaches, large units of time are
examined, which requires greater need for inference, whereas microanalytic approaches
examine units over short time periods with minimal need for inference (Hogue, Liddle, &
Rowe, 1996). One macroanalytic method used in investigating process has involved
comparisons between various types of psychotherapy, such as interpretive versus
supportive therapy (Piper et al., 1998). Specific behaviors are taken into account only to
the extent that they are considered integral components of these therapies.

Part of the inconsistency may be due to different methods used to measure therapy
process. Measurement has varied in terms of the respondent, time of the recording, focus
of the analysis, and specificity. In previous process research, 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 to have the measures of process completed. Therapy
process has been evaluated by using rating scales measuring therapist behaviors, patient
behaviors, and the interaction between therapist and patient. Research has examined
specific behaviors and broad classes of process behavior.
Rating scales used to measure process variables vary in the specificity of the behaviors measured, the time during the course of treatment that the ratings are made, the frequency with which the behaviors are evaluated, and the informant who completes the scale. One example of a patient-completed rating scale is the Barrett Lennard Relationship Inventory (RI; Barrett-Lennard, 1962). This instrument measures the patient’s opinion of the therapist’s regard, empathy, unconditionality, and congruence (Kolb et al. 1985). Another patient-completed rating scale is the Working Alliance Inventory (WAI; Horvath & Greenberg, 1994). This instrument evaluates the patient-therapist relationship in terms of emotional bond, agreement on treatment goals, and agreement on treatment tasks (Woody & Adessky, 2002).

An example of a rating scale completed by the therapist is the Psychotherapy Process Inventory (PPI; Baer et al., 1980), which requires that therapists rate their own use of directive support and their patient’s involvement in therapy. Independent observers are used to complete the Vanderbilt Psychotherapy Process Scale (VPPS; Suh, Strupp, & O’Malley, 1986). This rating scale evaluates both the patient’s and therapist’s positive and negative behavior and attitudes thought to influence progress made in therapy, and it includes subscales such as patient exploration and negative therapist attitude (Piper et al., 1999).

In contrast to rating scales, observational coding systems provide a more objective measure of process variables. Coding systems provide microanalytic measures of process that are considered to be more reliable, valid, and interpretable than the more abstract, macroanalytic measures (Chamberlain & Baldwin, 1988). The Therapy Process Code
(TPC; Chamberlain et al., 1986), an observational coding system, was therefore chosen to measure process variables in this study.

**Therapy Process Code**

The TPC is a multidimensional system for observing therapist and patient interactions that was created to capture the moment-by-moment interactions between the therapist and patient (Chamberlain et al., 1986). This observational coding system was developed for use in examining a parent training program for families of children and adolescents with disruptive behavior. Specifically, it was used to determine the relationship between therapist behaviors and patient resistance. The therapist behavior categories included in the TPC were chosen based on observation of taped therapy sessions, group discussions, and literature review.

The TPC has been used in research examining the associations between therapist behaviors, parent resistance, and response to treatment. In the first study using the TPC (Patterson & Forgatch, 1985), 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. By manipulating the therapist behaviors within individual sessions, the researchers found higher parent resistance during conditions of increased teaching and confronting than during conditions emphasizing support. In a more recent study, parent resistance was found to be positively related to therapist teaching, confronting, and reframing. In addition, the resistant parents were found to be more likely to drop out early in treatment. Although the hypothesis was not tested, it appeared that it was the patient resistance behaviors that were influencing the therapist’s use of confront, reframe, and support behaviors (Patterson & Chamberlain, 1994). In other research, a single therapist’s behaviors were examined during systemic
family therapy, and the results indicated that therapist support and teach increased patient cooperation during the second session of family therapy (Barbera & Waldron, 1994). The discrepant finding that the Teach category increased cooperation was thought to have resulted from the different focus of teaching in family therapy, where these statements are aimed at the entire family rather than just the parent during parent training.

**Parent-Child Interaction Therapy**

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 that is founded on principles of both attachment and social learning theory (Bell & Eyberg, 2002). PCIT research has focused on the treatment of young children with Disruptive Behavior Disorders, many whom display comorbid externalizing and internalizing disorders. In PCIT, parents learn skills to establish a secure, nurturing relationship with their child, increase their child’s prosocial behavior, and decrease negative behavior. Treatment consists of two distinct phases. The first phase, Child-Directed Interaction (CDI), is designed to improve the parent-child relationship through positive interactions in which the parent responds to the child’s behaviors with differential social attention. In the second phase, Parent-Directed Interaction (PDI), parents learn to establish consistent contingencies to reduce child noncompliance, aggression, and other disruptive behaviors.

PCIT begins with an assessment session, which includes a clinical interview with the parents followed by administration of parent rating scales and observations of parent-child interactions. Treatment is conducted in weekly one-hour sessions, lasting approximately 13 weeks. Treatment continues until the parents demonstrate mastery of the skills used in each treatment phase and the child’s behavior is within normal limits.
Each treatment phase begins with one teaching session with the parents alone to explain and role-play the principles and skills of that phase. In subsequent sessions, therapists first review the previous week, and then coach the parents in the treatment skills as they play with their child. The parents practice the skills at home during daily 5-minute play sessions.

During the CDI phase, the parents learn to follow the child’s lead in play by using the non-directive PRIDE skills: Praising the child, Reflecting the child’s statements, Imitating the child’s play, Describing the child's behavior, and using Enthusiasm in the play. Parents learn to change child behavior by directing the PRIDE skills to the child’s appropriate play and consistently ignoring undesirable behavior. Within the context of CDI coaching, therapists convey important developmental expectations for child behavior and point out specific effects of the parents’ behavior on the child.

In the Parent-Directed interaction phase, parents learn to direct the child’s behavior using effective commands and specific consequences for compliance and noncompliance. Coaching may also teach stress-management or anger-management skills to parents as they interact with their child. In PDI coaching sessions, mastery criteria involve consistent use of the PDI skills by the parents and compliance by the child. Throughout PDI, parents gradually learn to generalize the skills taught in CDI and PDI to deal with the child’s behavior at home and in public.

**PCIT Research on Attrition**

In an earlier study, Werba, Eyberg, Boggs, & Algina (2003), examined a large number of demographic, child, and family variables for their ability to predict dropout from PCIT. Maternal parenting stress and maternal criticism and sarcasm during parent-child interactions were the only variables associated with treatment outcome, and even
those associations were weak. The authors suggested that perhaps variables within the therapeutic relationship were responsible for significant variance in outcome.

In a subsequent outcome study, from which participants for this study were drawn, several new practices were implemented to reduce attrition. To encourage the development of rapport between patient and therapist and maximize early engagement, the clinician who served as the family’s therapist also conducted the clinical interview during the initial assessment. In addition, based on results from the Werba et al. (2003) study and research by Prinz and Miller (1994) in which dropout was reduced by adding to parent training a component of attention to parent stressors unrelated to child management, a similar component was added to PCIT. Therapists discussed individual parent concerns briefly during each treatment session. These modifications were based on the assumption that improving the therapist-parent relationship would have a positive association with increased rates of treatment completion.

The purpose of this study was to examine the influence of early engagement on the outcome of PCIT. Therapy process in PCIT has not been empirically examined previously, and this study was intended to build upon the earlier research seeking predictors of PCIT outcome by examining how therapist behaviors, measured by the TPC, influence dropout versus completion of PCIT. The categories of the TPC correspond to process variables demonstrated to predict outcome in adult psychotherapy, and because it was designed specifically for use in parent training, it appeared particularly promising for use in studying PCIT.

Therapist behaviors were examined at the initial assessment interview and the first CDI coaching session to determine the influence of the early parent-therapist alliance on
treatment completion versus dropout. Based on findings from previous research and pilot testing, we expected that outcome (dropout versus completion of treatment) would be predicted by the categories Questions, 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 were inconsistent with previous research findings on the role of Support, this behavior was examined as an exploratory variable.
CHAPTER 2
METHOD

Participants

Participants were 22 mother-child dyads drawn from a larger PCIT outcome study. They included the first 11 families to complete treatment and the first 11 families to drop out of treatment, excluding three dropout families and two completer families that were excluded either because different therapists conducted the observed assessment and treatment interviews \( n = 3 \) or because of technical problems with the videotapes \( n = 2 \).

To be included in the outcome study, children had to be between 3 and 6 years of age and meet diagnostic criteria for Oppositional Defiant Disorder (ODD)\(^1\). Both children and parents had to receive a standard score of 75 or higher on a cognitive screening measure. Children were excluded from the outcome study if they had severe sensory or mental impairment (e.g., deafness, autism).

For children taking psychotropic medications to manage behavior problems, the medications had to be stabilized for at least one month before enrolling in the study, and parents were asked not to alter their child’s medication or dosage during treatment. Nevertheless, for completers, 2 of the 5 children taking medication at pretreatment reported altering their medication regimen during treatment. Specifically, one child discontinued medication and one child increased the medication dosage. No information

\(^{1}\)One 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 CBCL (aggression T score = 81) and had 3 ODD symptoms on the DISC-IV, for which 4 symptoms are necessary for a diagnosis of ODD.
was available for the dropout group on medication change during treatment. For children not taking psychotropic medication, parents were asked not to begin medications while participating in the treatment. No child in the completer group began taking psychotropic medication during treatment. All families that did not meet criteria for study participation were referred to the Health Center Psychology Clinic for appropriate services.

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

The children in this study had severe behavior problems with a high degree of comorbidity. The mean number of independent diagnoses per child was 2.18 (SD = 1.14). Although the DSM-IV (American Psychiatric Association, 1994) states that ODD is not diagnosed if criteria are met for Conduct Disorder (CD), we did not consider the criteria for CD when screening children for inclusion in the study based on the presence of ODD. The percent of children who also met the criteria for CD was 32%. Nine percent of children met criteria for only CD and ODD. In addition to meeting diagnostic criteria for the disruptive behavior disorders, 55% of the children met criteria for additional diagnoses: 41% for Attention Deficit Hyperactivity Disorder (ADHD), 32% for
Separation Anxiety Disorder (SAD), and 18% for Major Depressive Disorder (MDD).

Fourteen percent of the 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 outcome in this study was defined dichotomously as treatment completion or treatment dropout. In PCIT, treatment continues until the family achieves termination 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. Specifically, to meet criteria for termination, the child had to (a) score within \( \frac{1}{2} \) standard deviation of the normative mean on a parent rating scale of disruptive behavior, (b) comply to \( \geq 75\% \) of parent commands during the 5-minute PDI observation, and (c) no longer meet diagnostic criteria for ODD based on a brief parent interview of ODD symptoms. In addition, the parents had to demonstrate mastery criteria for both the CDI and PDI skills. In the 5-minute CDI observation, each parent had to give at least 10 behavioral descriptions, 10 reflective statements, 10 labeled praises, and no more than 3 questions, commands, or criticisms. In the 5-minute PDI observation, at least 75% of the parents’ commands had to meet the PDI criteria for effective commands and 75% of their initial follow through behaviors had to meet PDI criteria as well.\(^2\)

\(^2\) Effective 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 labeled praise if the child complies, giving a timeout warning if the child does not comply within 5 seconds, and following the specific time-out procedure if the child does not comply within 5 seconds of the warning.
Treatment dropout in this study was defined as attending at least one treatment session and then discontinuing treatment before reaching termination criteria. The treatment completers attended an average of 13.36 (SD = 3.55) sessions, with a range of 9 to 25 sessions. The treatment dropouts completed an average of 6.73 (SD = 4.80) sessions, with a range of 2 to 12 sessions.

**Measures**

The preschoolers in this study were assessed for five diagnoses (ODD, CD, ADHD, SAD, and MDD) using procedures described by Jensen et al., 1996. These procedures involved administration of the Diagnostic Interview Schedule for Children-IV-Parent (NIMH-DISC-IV-P; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), the Child Behavior Checklists (CBCL/2-3; Achenbach, 1992; CBCL/4-18; Achenbach, 1991), and for ADHD, the Conners’ Teacher Rating Scale: Revised-Long Form (CTRS: R-L; Conners, 1997).

The *NIMH-DISC-IV-P* is a structured diagnostic interview that requires a child’s parents to answer questions about the duration and frequency of symptoms associated with children’s disorders. One-week test-retest reliability has been reported for parents of 9- to 17-year-old children to be 0.54 for ODD, 0.79 for ADHD, 0.43 for CD, 0.58 for SAD and 0.66 for MDD. (Shaffer et al., 2000). The *CBCL/2-3* is a parent report instrument that includes scales to assess behavior problems of 2- and 3-year-olds during the previous 2 months in areas similar to the five diagnostic categories of interest on the DISC. One-week test-retest reliability for the individual problem scales has ranged from 0.79 to 0.92, and one-year test-retest reliability has ranged from 0.56 to 0.76 (Crawford & Lee, 1991). The *CBCL/4-18* examines the child’s behavior during the previous 6 months. For this version of the CBCL, mean test-retest reliability of the problem scales has been
reported to be .89 for one week and .75 for one year (Achenbach, 1991). The CTRS-R: L is a teacher report measure of ADHD and comorbid disorders. The CTRS-R: L has shown test-retest reliability coefficients between 0.60 and 0.90 (Conners, 1997).

Individual diagnoses identified as present on the DISC were additionally required to meet specified cutoff scores on the corresponding problem scale of the CBCL to be assigned to the child. For the diagnosis of ADHD, children enrolled in school were also required to obtain a $T$ score of 65 or higher on the DSM-IV Hyperactive-Impulsive or Inattention subscale of the CTRS: R-L.

The children and their parents completed cognitive screening measures to determine eligibility for the treatment study, including the Peabody Picture Vocabulary Test-III (PPVT-III; Dunn & Dunn, 1997) and the Wonderlic Personnel Test (WPT; Dodrill, 1981). The PPVT-III is a measure of receptive language that requires a child to point to one of four pictures that corresponds to a word orally presented by the examiner. Scores on this measure correlate .90 with the Wechsler Intelligence Scale for Children-III (WISC-III) Full Scale IQ (Dunn & Dunn, 1997). The Wonderlic Personnel Test is a 12-minute timed test used to screen adult intellectual ability, with questions covering general knowledge in areas such as vocabulary, reasoning, and mathematical calculations. Performance on the Wonderlic is highly correlated (.93) with the WAIS Full Scale IQ score (Dodrill, 1981).

Two variables found in an earlier study (Werba et al., 2003) to predict dropout from PCIT were used in this study: maternal distress, measured using the Parent Distress subscale from the Parenting Stress Index-Short Form (PSI-SF; Abidin, 1995) and maternal inappropriate behavior, consisting of the categories Criticism and Smart Talk
from the Dyadic Parent-Child Interaction Coding System-II (DPICS-II; Eyberg, Bessmer, Newcomb, Edwards, & Robinson, 1994). The PSI-SF 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) has reported a Cronbach’s alpha of 0.87 and 6-month test-retest reliability of 0.85 for the Parental Distress subscale.

The DPICS-II is a behavioral coding system that measures the quality of parent-child social interaction during three 5-minute standard situations (child directed interaction, parent directed interaction, and clean-up) that vary in the degree of parental control required. Observations of the three situations were conducted twice, one week apart, during the pretreatment assessment, and data were averaged across the three situations and two occasions, providing 30 minutes of data for this study. Two categories of maternal behavior coded during these parent-child interaction observations were analyzed for this study. Intraclass correlations of 0.92 for Criticism and 0.92 for Smart Talk, and kappas of 0.57 for Criticism and 0.56 for Smart Talk have been reported previously (Brestan, Foote, & Eyberg, 2003). In this study, kappa was 0.62 for Criticism and 0.55 for Smart Talk. The DPICS-II category occurrences were summed across the three five-minute standard situations recorded twice on separate days (30-min of observed behavior for each mother-child dyad).

Therapist codes from the Therapy Process Code (TPC; Chamberlain et al., 1986) were used to measure the initial therapeutic alliance. This coding system classifies therapist and parent verbal behavior into categories relevant to the psychotherapy process. The parent verbal behavior codes from this system focus on various forms of resistance and were not included in this study because pilot data revealed almost no
occurrence of these codes in the initial interview or first coaching session of PCIT.

Interobserver reliability for the therapist codes ranged from .75 to .85 for the various verbal content codes (Chamberlain & Ray, 1988). The seven categories of therapist verbal behavior in this coding system include: Support (“It’s really good that you are coming in for help with those behaviors”), Teach (“It is important to be consistent”), Information Seek/Questions (When did you first notice these kind of problems”), Structure (“Now I am going to ask some questions 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”). Any parent verbalization not included in one of these categories is recorded as Talk, described as a “wastebasket” code by Chamberlain et al. (1986).

Inclusion of this category permitted calculation of total verbalization scores. These therapist codes permitted analysis of the therapist process skills and, more specifically, for analysis of the skills that may engage the parent early in the treatment process.

The Coder Impressions Scale, a process rating scale for completion by observers of the therapist-parent interaction, is included in the TPC manual (Chamberlain et al., 1986). Independent observers completed selected items from this scale after viewing the same videotaped segments of parent-therapist interaction that had been 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. There were nine items from the original Coder Impressions Scale that were not included because they were not relevant to the therapist-parent interaction; these items addressed marital interactions, parent-child interactions, child behavior, and father behavior. Inter-observer reliability was calculated using percent agreement between raters
for 32% of sessions, consisting of 7 initial assessment interviews and 7 first CDI coaching sessions. Reliability was calculated by transforming the responses to all questions into a 3-point Likert scale format, creating categories that consisted of negative, neutral, and positive responses. The Coder Impressions Scale was included to provide a rough comparison of the information provided by this method of rating observed interactions versus the relatively costly method of coding the moment-to-moment interactions.

**Procedures**

All families in this study had participated in a pretreatment assessment that involved two clinic visits, one week apart, and five telephone assessments between these visits to obtain daily diary information. During the first, four-hour, clinic visit, the parents participated in a semi-structured clinical interview, the screening measures (DISC-IV-P, CBCL, CTRS: R-L, PPVT-III, and WPT), a behavioral observation of parent-child interactions (DPICS-II), and several questionnaire measures that were part of the larger outcome study. During the second clinic visit, the DPICS-II observations were repeated and other assessment procedures, not a part of this study, were completed. The second assessment visit lasted approximately three hours.

After completing the pre-treatment assessment, the parents returned the following week for the first treatment session, a didactic session in which the therapist explained, modeled, and role-played with the parents the basic principles and skills used in the first phase of treatment, Child Directed Interaction (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 the daily CDI homework, including problems and progress. The
treatment manual instructed the therapists to provide individual support to the parent during this time as well, by briefly addressing issues or stressors unrelated to the child’s behavior or the PCIT skills. Following the initial discussion, the therapist coached the parents in the CDI skills as they played with their child (see Appendix for a complete description of this treatment session). After this session, the families in this study either completed treatment or dropped out at some point prior to meeting the treatment termination criteria.

The focus of this study was the early therapeutic relationship between the therapist and the child’s parents. The relationship was assessed twice, once during the semi-structured 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 of the clinical interview and the first 10 min 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 the PCIT skills with their child at home.

**Pilot Testing of the TPC**

Pilot testing was conducted to examine the utility of the TPC as a process measure for PCIT and to assist in development of hypotheses. It was determined that using the TPC to code therapist verbalizations was an effective means for examining the relationship between the therapist and parent. Based on this initial sample of 2 dropouts
and 3 completers, therapists used less facilitation and more questioning, support, and reframing/interpretation with dropouts than with completers. These differences did not correspond with stylistic differences between therapists.

Pilot testing was conducted by coding videotaped segments of the initial clinical interview, first CDI didactic session, and first CDI coaching session of PCIT to determine if the TPC system would be appropriate for measuring the relationship between therapist and parent in PCIT. Tape segments were coded by the primary investigator for 5 participants in the study, 2 dropouts and 3 completers. The tapes for these participants were later re-coded by independent observers for use in this study. The first decision made from pilot testing was not to use data from the CDI didactic session because the degree of structure during that session limited the variability in therapist behaviors, with most verbalizations falling in the “Teach” category and many fewer occurrences of other therapist verbalization categories.

The second decision was to code only the therapist behavior categories and not the parent categories of the TPC. The parent codes were designed to distinguish among specific types of resistant behavior, and all other parent behaviors were classified under a single “non-resistant” category. The parents showed little resistance during the initial interview, and therefore little could be determined about the contribution of parent behavior to the therapy process. Although some parent resistance occurred during the first CDI coaching session, coding during this session still resulted primarily in use of the “non-resistant” code.

A third decision that resulted from pilot testing was to include only the content codes of the TPC. Subjective “Qualifier Codes,” such as “black or white thinking” and
“laugh,” and the valence codes examining emotional intensity were found to relate to parent behaviors more than to therapist behaviors. Simplifying the coding system to include only the objective content categories was considered important because increased complexity in coding systems is associated with lower levels of reliability (Reid, Baldwin, Patterson, & Dishion, 1988). Additionally, previous TPC research had reported findings only for the content codes (Patterson & Forgatch, 1985; Barbera & Waldron, 1994; Patterson & Chamberlain, 1994).

Pilot testing was first conducted using the TAPE 1.1 program (Celebi & Eyberg, 1993), which allows for “real-time” coding in which behaviors can be coded within a half-sec of their actual occurrence. Two tapes were then re-coded using a hand-coded 10-sec interval method. The frequency of the codes was lower using this method than using “real-time” coding because the individual behaviors often occurred more than once during a 10-sec interval. The tapes were then coded a third time using a 5-sec interval method. Visual inspection of the resulting data showed that this method captured frequencies very similar to real-time coding. A 5-sec interval coding system was selected for use in this study because interval coding allows for greater efficiency in coding than “real-time” coding and allows reliability to be based more on agreement of content than on the precise time of recording.

According to the guidelines set forth by Reid, Baldwin, Patterson, and Dishion (1988), it is important to select a coding system in which the categories are mutually exclusive and exhaustive. During pilot testing, the therapist content categories in the TPC accounted for all therapist verbal behaviors, and none of their statements simultaneously
fit into more than one category. Thus, pilot testing suggested that the therapist codes would meet these requirements for coding therapeutic alliance in this study.

Reliability Training

Three undergraduate research assistants learned the therapist codes by first 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. After written tests, they trained with videotaped therapist-parent interactions. Training continued until the research assistants obtained 80% accuracy with a criterion tape, developed for this study, that included the first 10 minutes from an initial clinical interview and 10 minutes from the beginning of a first CDI coaching session. Coder training required a total of 42 hours over 7 weeks to achieve 80% accuracy.

Coding for the study was conducted on the first 20-min segment of the initial clinical interview and the first 10-min segment of the first CDI coaching session. These time durations were selected to maximize the amount of therapist-parent interaction time early in treatment while minimizing instances in which the length of a segment exceeded the actual length of a therapist-parent interaction. When an actual interaction was shorter than the time required for coding, the codes were prorated for the remainder of the time interval.

To evaluate inter-observer reliability, a second, reliability observer coded 34% of total sessions. Reliability was calculated using percent agreement between coders for seven initial assessment interviews and eight first CDI coaching sessions. Inter-observer reliability was measured using percent agreement between coders. Weekly meetings were held with the coders to discuss any problems that arose during coding sessions. The coders were not informed of the group status of the families (treatment dropout or
completion) or the hypotheses of the study. As suggested by Reid et al. (1988), coders were balanced across treatment outcome groups to minimize error resulting from observer drift and imperfect reliability.

**Data Analysis**

Frequency of occurrence of the TPC codes was calculated separately for the two sessions: the initial interview and first CDI coaching session. Independent sample $t$ tests were conducted to determine if significant differences existed between groups for demographic variables or individual code categories. Discriminant function analysis was used to examine whether treatment outcome group (i.e. completer or dropout) could be predicted reliably from the set of hypothesized variables. Predictors of dropout in an earlier PCIT study (maternal ratings of parenting stress and observed maternal inappropriate behavior during parent-child interactions; Werba et al., 2003) were examined for differences between groups to determine whether these variables would be included in the model. Finally, scores on the Coder Impressions Scale were analyzed using independent sample $t$ tests to explore the predictive value of this rating scale.
CHAPTER 3
RESULTS

There were no significant group differences for either variable previously found to predict dropout from PCIT. For the PSI-SF Parent Domain, the mean score for dropouts was 31.40 ($SD = 10.70$) and the mean score for completers was 31.55 ($SD = 11.00$), $t(19) = 0.03, p = 0.976$. For maternal inappropriate behavior during DPICS observations, the mean number of Criticisms plus Smart Talks was 32.00 ($SD = 19.92$) for dropouts and 34.55 ($SD = 25.72$) for completers, $t(20) = 0.26, p = 0.798$.

Table 1 shows the demographic characteristics for each of the two groups. Compared to the treatment completers, the treatment dropouts had significantly lower family SES and lower prevalence of MDD. No significant differences existed for other demographic variables. Correlational analyses indicated no significant correlations between family SES and any of the therapist process variables. For the assessment interview, there was a significant negative correlation between diagnoses of child depression and the number of questions asked by the therapist, $r = -.447, p = 0.037$.

The total number of therapist verbalizations coded during the 20-min segment of the assessment interview was not significantly different between treatment dropouts ($M = 154, SD = 52.30$) and completers ($M = 146.91, SD = 31.76$), $t(20) = .38, p = 0.705$. Similarly, the mean number of verbalizations coded during the initial 10-min segment of the CDI coaching session was not different between treatment dropouts ($M = 89.73, SD = 25.00$) and completers ($M = 102.18, SD = 14.66$), $t(20) = 1.42, p = 0.170$. The dropout
and completer families were distributed among seven therapists, and the assignment to a particular therapist did not significantly predict treatment outcome. Furthermore, there were no significant differences in the use of Support, Facilitate, and Question between the individual therapists in the initial interview or CDI coaching session.

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Completers</th>
<th>Dropout</th>
<th>t or χ² (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child age in months</td>
<td>60.00 12.00</td>
<td>50.18 12.94</td>
<td>1.84 (20)</td>
<td>0.080</td>
</tr>
<tr>
<td>Mother age in years</td>
<td>35.71 10.18</td>
<td>30.13 13.69</td>
<td>1.08 (20)</td>
<td>0.291</td>
</tr>
<tr>
<td>Father age in years</td>
<td>38.54 10.58</td>
<td>36.49 18.22</td>
<td>0.27 (13)</td>
<td>0.791</td>
</tr>
<tr>
<td>Family Hollingshead</td>
<td>43.55 9.82</td>
<td>32.00 9.73</td>
<td>2.77 (20)</td>
<td>0.012</td>
</tr>
<tr>
<td>Male child (%)</td>
<td>64</td>
<td>82</td>
<td>0.92 (1)</td>
<td>0.338</td>
</tr>
<tr>
<td>Child minority (%)</td>
<td>0</td>
<td>27</td>
<td>3.47 (1)</td>
<td>0.062</td>
</tr>
<tr>
<td>Mother minority (%)</td>
<td>9</td>
<td>18</td>
<td>0.39 (1)</td>
<td>0.534</td>
</tr>
<tr>
<td>Father minority (%)</td>
<td>0</td>
<td>0</td>
<td>0.00 (1)</td>
<td>1.000</td>
</tr>
<tr>
<td>Child on medications (%)</td>
<td>45</td>
<td>36</td>
<td>0.19 (1)</td>
<td>0.665</td>
</tr>
<tr>
<td>ODD (%)</td>
<td>91</td>
<td>100</td>
<td>1.05 (1)</td>
<td>0.306</td>
</tr>
<tr>
<td>CD (%)</td>
<td>27</td>
<td>36</td>
<td>0.21 (1)</td>
<td>0.647</td>
</tr>
<tr>
<td>ADHD (%)</td>
<td>45</td>
<td>36</td>
<td>0.19 (1)</td>
<td>0.665</td>
</tr>
<tr>
<td>MDD (%)</td>
<td>36</td>
<td>0</td>
<td>4.89 (1)</td>
<td>0.027</td>
</tr>
<tr>
<td>SAD (%)</td>
<td>45</td>
<td>18</td>
<td>1.89 (1)</td>
<td>0.170</td>
</tr>
<tr>
<td>Total no. of diagnoses</td>
<td>2.45 1.21</td>
<td>1.91 1.04</td>
<td>1.13 (20)</td>
<td>0.272</td>
</tr>
<tr>
<td>Maternal ECBI Intensity</td>
<td>174.18 20.48</td>
<td>172.73 33.88</td>
<td>0.12 (20)</td>
<td>0.904</td>
</tr>
<tr>
<td>Maternal ECBI Problem</td>
<td>22.82 6.75</td>
<td>22.91 6.38</td>
<td>0.03 (20)</td>
<td>0.974</td>
</tr>
<tr>
<td>PSI Parent Domain</td>
<td>31.55 11.00</td>
<td>31.40 10.70</td>
<td>0.03 (19)</td>
<td>0.976</td>
</tr>
<tr>
<td>Maternal DPICS: CR+ST</td>
<td>34.55 25.72</td>
<td>32.00 19.93</td>
<td>0.26 (20)</td>
<td>0.798</td>
</tr>
</tbody>
</table>

The percent agreement reliabilities for the 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 discriminant function analyses, Support, Question, and Facilitate. Reframe was not included in the discriminant function analysis.
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 outcome.

**Overall Findings**

The first set of analyses was conducted on total therapist verbalizations combined across segments coded during the initial assessment interview and the first CDI coaching session. Independent samples \( t \) tests were used to examine group differences for the individual process variables. A \( p \) value of .05 was used to determine statistical significance for all analyses.

Table 2 shows the mean frequency of occurrence of each code category. Therapists used significantly more supportive statements and fewer facilitative statements with families who later dropped out of treatment than with families who completed treatment. The higher rate of therapist questioning in the treatment dropout group almost reached statistical significance. Differences between groups showed large effect sizes (> .80) for all three of these process variables. There were no significant differences between groups for the other process categories.

<table>
<thead>
<tr>
<th>Category</th>
<th>Completers</th>
<th>Dropout</th>
<th>( t (20) )</th>
<th>( p )</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Support</strong></td>
<td>32.00</td>
<td>44.36</td>
<td>2.33</td>
<td>.031</td>
<td>.90</td>
</tr>
<tr>
<td><strong>Teach</strong></td>
<td>33.09</td>
<td>29.18</td>
<td>.46</td>
<td>.651</td>
<td>.20</td>
</tr>
<tr>
<td><strong>Question</strong></td>
<td>35.00</td>
<td>51.55</td>
<td>2.02</td>
<td>.057</td>
<td>.81</td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td>9.91</td>
<td>9.91</td>
<td>.00</td>
<td>1.000</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Disagree</strong></td>
<td>.45</td>
<td>.55</td>
<td>.26</td>
<td>.800</td>
<td>.11</td>
</tr>
<tr>
<td><strong>Interpret/Reframe</strong></td>
<td>9.36</td>
<td>10.73</td>
<td>.59</td>
<td>.560</td>
<td>.25</td>
</tr>
<tr>
<td><strong>Facilitate</strong></td>
<td>118.45</td>
<td>82.64</td>
<td>2.49</td>
<td>.022</td>
<td>.95</td>
</tr>
<tr>
<td><strong>Talk</strong></td>
<td>11.45</td>
<td>15.00</td>
<td>.68</td>
<td>.502</td>
<td>.29</td>
</tr>
</tbody>
</table>
Discriminant function analysis was used to determine the extent to which therapist use of the code categories hypothesized to affect outcome (Support, Question, and Facilitate) during the early interactions between therapist and parent predicted treatment dropout versus completion. According to the Box-M test, there was no significant violation of the homogeneity of variance-covariance assumption, $p = .439$. Actual group membership was correctly classified by Facilitate, Support, and Question for 73% of cases. The linear combination of these three variables correctly classified the treatment outcome group better than the chance probabilities of 50% correct classification. Eight of eleven families in each group were accurately predicted by this model, Wilk’s $\lambda = .602$, $\chi^2 (3, 19) = 9.39$, $p = .024$. Following this analysis, the jackknife procedure was performed as a cross-validation method to account for potential sample bias and to provide a more conservative, replicable estimate of classification. According to this procedure, in which an average classification rating is created by performing multiple discriminant function analyses with one participant removed each time, 68% of participants were correctly classified.

The loadings of the three variables on group membership (i.e., the function structure matrix) resulted in correlations of -.68 for Facilitate, .64 for Support, and .56 for Question. Although the three code categories represent sufficiently independent constructs, there was a correlation of -.42 between Facilitate and Support, .20 between Facilitate and Question, and .19 between Question and Support. Therefore, standardized discriminant coefficients were examined to determine the unique contributions that each variable had on group classification. The relative contribution of each variable from greatest to least was Facilitate (-.73), Question (.66), and Support (.22). These results
indicate that treatment dropout was predicted primarily by lower rates of *Facilitate* and higher rates of *Question*. The higher rates of *Support* provided to dropouts appears to have less important independent predictive value than the other variables.

**Initial Clinical Interview**

The two sessions were then analyzed separately to determine the relative contributions of each of these interactions to treatment outcome. Using independent samples *t* tests for the individual variables, *Question* was the only category that showed a significant difference between groups during the initial clinical interview. As shown in Table 3, therapists used the *Question* category more often with treatment dropouts than with treatment completers during this session. Although there were no other significant differences between groups for specific code categories, the effect sizes were above 0.70 for both *Support* and *Facilitate*.

<table>
<thead>
<tr>
<th>Category</th>
<th>Completers</th>
<th>Dropout</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>t (20)</th>
<th>p</th>
<th>ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>17.00</td>
<td>11.74</td>
<td>25.64</td>
<td>.90</td>
<td>1.87</td>
<td>.077</td>
<td>.077</td>
<td>.75</td>
<td></td>
</tr>
<tr>
<td>Teach</td>
<td>4.73</td>
<td>6.34</td>
<td>6.64</td>
<td>10.11</td>
<td>.53</td>
<td>.602</td>
<td>.029</td>
<td>.91</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>26.91</td>
<td>14.21</td>
<td>44.18</td>
<td>19.71</td>
<td>2.36</td>
<td>.029</td>
<td>.602</td>
<td>.23</td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td>4.82</td>
<td>2.60</td>
<td>4.45</td>
<td>3.11</td>
<td>.30</td>
<td>.769</td>
<td>.23</td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>0.09</td>
<td>0.30</td>
<td>.27</td>
<td>.47</td>
<td>1.09</td>
<td>.291</td>
<td>.291</td>
<td>.46</td>
<td></td>
</tr>
<tr>
<td>Interpret/Reframe</td>
<td>3.36</td>
<td>2.58</td>
<td>6.18</td>
<td>6.65</td>
<td>1.31</td>
<td>.205</td>
<td>.205</td>
<td>.46</td>
<td></td>
</tr>
<tr>
<td>Facilitate</td>
<td>89.45</td>
<td>35.62</td>
<td>64.73</td>
<td>27.88</td>
<td>1.81</td>
<td>.085</td>
<td>.085</td>
<td>.73</td>
<td></td>
</tr>
<tr>
<td>Talk</td>
<td>.55</td>
<td>.52</td>
<td>2.09</td>
<td>4.18</td>
<td>1.22</td>
<td>.238</td>
<td>.238</td>
<td>.51</td>
<td></td>
</tr>
</tbody>
</table>

Using discriminant function analysis to examine the hypothesized predictors of outcome from the initial interview alone, therapist use of the process variables *Support*, *Question*, and *Facilitate*, again significantly predicted outcome above chance probabilities, Wilk’s $\lambda = .619, \chi^2 (3, 19) = 8.88, p = .031$. For this analysis, there was
homogeneity of variance-covariance across outcome groups for each of the variables according to the Box M test \((p = .244)\). Treatment outcome was accurately predicted for seven of eleven families who dropped out of treatment and eight of eleven families who completed treatment. Of all cases, 68% were correctly predicted. Using the jackknife procedure, 64% of cases were correctly classified.

For the initial assessment interview, correlations between the therapist process variables and treatment outcome were .67 for Question, .53 for Support, and -.52 for Facilitate. The correlations between individual code categories were -.35 between Support and Facilitate, .25 between Facilitate and Question, and .09 between Question and Support. The unique contribution to the discriminant function classification was highest for Question (.81), next for Facilitate (.64), and lowest for Support (.24). According to these analyses, higher rates of questioning, and lower rates of facilitation are the primary factors that independently predicted treatment dropout.

**First CDI Coaching Session**

Using independent samples \(t\) tests, none of the therapist process variables showed statistically significant group differences in the first CDI coaching session, although Facilitate approached statistical significance and showed a large effect size (see Table 4). According to results of the Box-M test, there was no significant violation of the homogeneity of variance-covariance assumption \((p = .406)\). Discriminant function analysis indicated that, for the 10-min discussion at the beginning of the first CDI coaching session, the three hypothesized therapist process variables did not significantly predict treatment outcome, Wilk’s \(\lambda = .769\), \(\chi^2 (3, 19) = 4.87\), \(p = .182\).
Table 4: Differences in Therapist Behaviors During the First CDI Coaching Session with Parents Who Later Complete or Drop Out of Treatment

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

Post Hoc Analysis of Questions

Because questions are important to the process of gathering information in an initial interview and yet were associated with treatment dropout in our study, we re-coded the Question category into open- and closed-ended questions to examine differences between treatment dropouts and completers. Many clinicians recommend that therapists use open-ended questions and avoid closed questions to obtain rapport (Boggs & Eyberg, 1990).

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

**Coder Impressions**

Across both sessions, the mean inter-rater reliability was 85%. For the initial assessment interview, there were no significant differences between dropouts ($M = 73.36$, $SD = 4.90$) and completers ($M = 75.45$, $SD = 5.43$) on the total score of the Coder Impressions scale, $t(20) = 0.95, p = 0.355$. There were no significant group differences when examining only the ten maternal behavior items on this process rating scale, with a mean score of 42.00 ($SD = 3.80$) for dropouts and a mean score of 41.91 ($SD = 4.18$), $t(20) = 0.05, p = 0.958$.

For the six therapist behavior items on the Coder Impressions Scale during the initial interview, the score for treatment dropouts ($M = 31.36$, $SD = 2.16$) was significantly lower than the score for treatment completers ($M = 33.55$, $SD = 1.97$), $t = 2.48, p = 0.022$), with an effect size ($ES$) of 0.95. Examining individual scale items revealed that only one item showed a significant difference between groups for this session: “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 ($M = 4.91$, $SD = .70$), $t(20) = 2.10, p = .049, ES = 0.84$. For the first CDI coaching session, there were no significant group differences on the Coder Impressions Scale total score, therapist behavior subscore, maternal behavior subscore, or any of the individual items.
CHAPTER 4
DISCUSSION

The number of families whose treatment outcome (treatment dropout or completer) was correctly predicted from such 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, and therefore, conclusions about the influence of this variable on treatment outcome cannot be drawn from this study. Nevertheless, with only three salient therapist process variables, the outcome of parent training was predicted from just 30 minutes of therapist-parent interaction at the beginning of treatment. These results extend findings from the adult psychotherapy literature to outcomes for very young children based on the early parent-therapist relationship in assessment and treatment. Additional discriminant function analyses revealed that outcome could be predicted from therapist behaviors during the first 20 min of the assessment interview alone, further highlighting the importance of establishing rapport at the first point of contact with the family.

Similar to findings in the adult psychotherapy literature, the more frequent use of Facilitation by therapists with treatment completers than treatment dropouts suggests that engaging parents by actively listening may be of universal importance. Previous research by Prinz and Miller (1994), showing the powerful effect on dropout prevention of active
listening and providing an opportunity to talk about personal issues of concern, is consistent with our findings on therapist facilitation. Our results also correspond with the Patterson and Forgatch (1985) findings of decreased parent resistance with therapist use of Facilitation. 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 the parent 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 treatment completers, offers another possible means to develop effective early rapport with parents. Although there was no difference in their use of open-ended questions, therapists used significantly more closed-ended questions with families who later dropped out of treatment. The importance of differentiating between open- and closed-ended questions was demonstrated in a study by Miller and Mount (2001) using an observational coding system (partially derived from the TPC) to examine the effectiveness of training workshops for motivational interviewing. Based on the coded behavior of expert clinicians in this study, Miller and Rollnick (2002) recommend asking twice as many open-ended as closed-ended questions to achieve an effective interview. Open-ended questions were considered to be especially important early in therapy because they provide an accepting and trusting environment that encourages patients to discuss their concerns comfortably. It is possible that the therapists’ early use of closed-ended questions with the parents who dropped out in this study interfered with the development of a therapeutic alliance.
It may also be true that the parents who dropped out were poorer historians or responded more vaguely to open-ended questions, leading therapists to increase their use of closed-ended questions to obtain specific information. Findings showing that the frequency of coded behaviors for the hypothesized categories did not differ according to therapist and that assignment to a particular therapist did not predict dropout versus completion suggest that the interaction of parent and therapist verbalizations relate to outcome. Sequential analyses examining parent verbalizations that precede and follow therapist open- versus closed-ended questions may help to elucidate further the role of therapist questioning in relation to treatment outcome. Until the communication patterns are more precisely understood, the results suggest that keeping closed-ended questions to a minimum is wise, even with parents who may have difficulty recalling or describing events clearly.

Our finding that therapist Support occurred more frequently with parents who later dropped out of treatment was inconsistent with earlier research in the adult psychotherapy literature showing either a positive or neutral effect of support during therapy. Adult psychotherapy research has typically incorporated non-specific factors such as positive regard and warmth (Sexton, 1993) into the definition of support. In this study, the definition of Support was limited to objective, verbal behaviors, and this alternative approach to measuring therapist support may account for the inconsistent results. In addition, previous research on therapist support (Orlinsky et al., 1994) has examined outcome as a continuous variable of the relative success of treatment as opposed to the dichotomous measure of treatment completion versus dropout that was used to index outcome in PCIT.
The earlier research with the TPC also found positive effects of Support, at least on patient resistance and cooperation within the treatment session (Patterson & Forgatch, 1985; Barbera & Waldron, 1994). The TPC research has primarily focused on these within-treatment indicators of outcome. Perhaps in this study, the dropouts expressed more perceived helplessness, eliciting statements of empathy from the therapist more often than did the completers. Even though supportive statements may increase patient cooperation within treatment sessions, the effects may be temporary and insufficient to engender the degree of self-confidence or self-efficacy needed to effect child behavior change. Supportive statements early in therapy may actually reinforce attitudes of helplessness or pessimism that contribute to later dropout. Future research should examine the immediate effect of therapist Support throughout the course of treatment in addition to long-term outcome. Furthermore, research including measures of both objective and non-specific supportive behaviors might help to clarify the discrepancy between the findings in this study and those from previous adult process studies.

The Coder Impressions Scale was substantially less informative than the TPC. For the initial assessment interview, the observer ratings for the total therapist behavior score were more negative for dropouts than 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 completers. The difference on this item provides less information about specifically what a therapist could do to improve the therapeutic relationship than was obtained from the coding of therapist behaviors.
Although observer ratings provided some information about therapist process variables, ratings of the parent process variables on the Coder Impressions Scale provided no information to enhance the prediction of treatment outcome. It seems likely that the lack of significant findings for ratings of the mothers’ behavior resulted not from an absence of parental influence on the therapy process, but from the lack of specificity in the Coder Impressions Scale. Thus, although the Coder Impressions Scale was included in this study to provide a rough cost-benefit comparison of rating versus coding of the therapeutic process in parent training, the lack of specificity of the particular rating scale items on the Coder Impressions Scale confounded the comparison. Adjusting the items to target more specific therapist and parent behaviors might help to improve the utility of this scale as a cost-effective alternative measure of therapy process.

Although a modified rating scale may allow for some better understanding of how parent behavior influences the therapy process, it seems likely that the influence of process variables is best explained by examining the transactions of therapist and parent behaviors and how these behaviors influence one another through time. The development of process codes that capture parent behaviors relevant to establishing the therapeutic alliance and using sequential analysis to identify interaction sequences that distinguish dropouts from completers and can predict these outcomes will be essential for gaining a complete understanding of the therapy process.

One limitation of this study of therapist process variables is the low reliability attained for the Interpret/Reframe and Structure code categories of the TPC. The low reliability prohibited inclusion of Interpret/Reframe, one of the categories hypothesized to predict therapy outcome. The problems encountered in coding these TPC categories
seemed to be due to their subjectivity in classification. More detailed decision rules, descriptions of characteristics that distinguish the categories, and examples in the TPC manual would be useful for researchers outside the developers’ laboratory. However, the overall high reliability of salient categories permitted valid results to be obtained in this study.

The coding decision rules did not adequately specify whether separation of statements should be decided based on contextual cues or grammatical rules. Specific rules for the use of “and” and “but” help in making these determinations. Coding of certain categories involved unnecessary subjectivity because they lacked clearly detailed explanations. For example, during the treatment session, it was sometimes difficult for coders to distinguish when therapists were providing a rationale by explaining how a procedure works (Teach) from when they were describing how the activities in a session would proceed (Structure). In addition, both of these categories include verbalizations that are commands for behaviors to be completed in the session. Clarification about the types of commands that should be included in each category is necessary to code these verbalizations reliably. For example, instructing the parent to use all of the PRIDE skills while practicing CDI would be classified as Teach. In contrast, informing the parent that it is now time for them to practice CDI for five minutes would be classified as Structure.

Providing explicit information about the timeframe in which certain verbalizations occur would further reduce confusion between code categories. For example, paraphrasing a parent verbalization is classified as Support, but a reference to something the parent said much earlier in the session or in a previous session is likely to change the
direction of conversation. Without the inclusion of a decision rule in this instance, the verbalization might be classified into either the Support or the Structure categories.

Further confusion between codes occurred in regards to the rule in the TPC manual that verbalizations are classified as Interpret/Reframe if they “tell the meaning or significance of something, unless it is clearly factual information in which case Teach is coded” (Chamberlain et al., 1986, p. 19). Providing additional explanation or examples about what constitutes factual information could help to clarify this definition. For example, explanations of how the child’s behavior corresponds with a particular diagnosis could be considered factual information and, therefore, be coded as Teach.

Some of the wording used in the TPC caused difficulty in discriminating between code categories. The difference between providing information, such as providing general information about developmental phases (Teach) and normalizing a child’s behavior by explaining that it is common for children of that age (Interpret/Reframe) was unclear. Further, the difference between “speculative statements” classified as Questions when the therapist is trying to clarify information and speculations classified as Interpret/Reframe because they were “anticipating” what behaviors had occurred seems vague. Providing specific examples of speculative “Questions” would reduce subjectivity required to interpret these verbalizations.

A second limitation of this study is the small sample size. Sample size estimates were based on general guidelines for performing discriminant analysis as well as sample sizes used in previous TPC research. Specifically, Patterson and Forgatch (1985) found significant TPC predictors of parental resistance with 12 families, and Chamberlain and Ray (1988) found significant differences in TPC categories between groups of 9 and 18
families, respectively. However, in our study the sample sizes may not have been adequate to test for group differences during assessment interview alone for Support and Facilitate, which both showed large effect sizes. Replication of this study with a larger sample will be important to validate the usefulness of these categories and to permit post hoc analyses of suggestive findings, such as the potential effects of fewer therapist questions with parents of children with MDD. It will also be important to examine therapy process in more ethnically diverse samples of young children to enhance the generalizability of these findings.

Overall, this study illustrates the important association between therapist process variables early in parent training and treatment outcome. Although this study does not provide conclusive evidence about the causal relations between these variables, it is possible that an early parent-therapist alliance is critical to successful completion of PCIT. The TPC provided an effective method for measuring the specific therapist process behaviors related to development of the therapeutic alliance. Continued refinement of process codes thought to be important in the context of parent training for disruptive behavior disorders will improve the reliability and validity of this measure. The development of additional parent categories found to be temporally related to salient therapist process variables will be needed for examining the interaction between therapist and parent verbalizations. Finally, the experimental manipulation of specific therapist behaviors to understand how they may affect treatment outcome will be essential for determining how therapists can best provide optimal patient care and increase rates of successful treatment completion.
APPENDIX
FIRST CDI COACHING SESSION OUTLINE

Before This Session

a) Remove all toys from the playroom except for three treatment toys.
b) Have the parents complete the ECBI and the PSI while in the waiting room.
c) While parents are completing the ECBI and PSI, get Dr. Eyberg to observe the session.

Goal(s) of This Session

The goals of this session are to strengthen rapport with the family, continue to provide support, and to reinforce the parent(s) for their use of the skills and their progress (remember, this session should only focus on the positive).

TREATMENT SESSION

___ 1) Re-introduce family to Dr. Eyberg and explain that she will be observing the session.

___ 2) Talk with child briefly about therapy.
    a) why they are in therapy
    b) what therapy will be like
    c) the room (explain the bug-in-the-ear, and one-way mirror)

___ 3) Let child play at table; seat parents.

___ 4) Give parent Behavior Modification Handout. Review briefly, longer only if it seems you need to establish more credibility with parent (i.e., if parent seems skeptical of treatment or of you as an expert). In this case, present this as a leading theory/approach in the area of child behavior problems, and emphasize how effective it is.

___ 5) Ask for homework sheets. Review homework for about 10-15 minutes. Issues might include:
    a) Praising parents for doing homework every day;
    b) Any comment parent wrote on homework sheet;
    c) Any activity on sheet that is likely to be problematic;
    d) Asking how child liked CDI;
    e) Asking what CDI skill parent found hardest to do; in this case, offer reassurance.
Integrity check on parent support:

6) Therapist discussed with parent one issue unrelated to the child’s behavior or the parent’s use of treatment skills or child management.

Coding and Coaching

I. With one parent in treatment:

7a) Give parent bug-in-ear and go into observation room. Explain to parent over the bug:

Okay, we're going to code CDI for the next 5 minutes. Try to use all the skills you've been practicing while you follow along with child's name in his/her game according to his/her rules.

Code parent and child in CDI for 5 minutes.

8a) Coach parent with child for about 30 minutes.
   a) Give parent labeled praises over bug.
   b) Focus primarily on behavioral descriptions.
   c) Give only positive feedback today; don’t point out mistakes.

** See detailed coaching guidelines for this session attached.

Integrity check on coaching over bug:

9a) Therapist praised parent's talk.
10a) Therapist told parent that parent's "descriptions" were good.
11a) Therapist did not tell parent what parent did wrong.

II. With two parents in treatment:

7b) Give mother bug-in-ear, and go into observation room. Explain to mother over the bug:

Okay, we're going to code CDI for the next 5 minutes. Try to use all the skills you've been practicing while you follow along with child's name in his/her game according to his/her rules.

Code mother and child CDI for 5 minutes while father observes.

8b) Coach mother for 15 minutes.
a) Give parent labeled praises over bug.
b) Focus primarily on behavioral descriptions.
c) Give only positive feedback today; don’t point out mistakes.

** See detailed coaching guidelines for this session attached.

Integrity check on coaching over bug:

___ 9b) Therapist praised parent's talk.
___ 10b) Therapist told parent that parent's "descriptions" were good.
___ 11b) Therapist did not tell parent what parent did wrong.

___ 12b) Switch parents and code father for 5 minutes while mother observes.

Okay, we're going to code CDI for the next 5 minutes. Try to use all the skills you've been practicing while you follow along with child's name in his/her game according to his/her rules.

___ 13b) Coach father with child for 10 minutes. (Co-therapist needs to fill in data from this session on summary sheets for each parent during this time.)
a) Give parent labeled praises over bug.
b) Focus primarily on behavioral descriptions.
c) Give only positive feedback today; don’t point out mistakes.

** See detailed coaching guidelines for this session attached.

Integrity check on coaching over bug:

___ 14b) Therapist praised parent's talk.
___ 15b) Therapist told parent that parent's "descriptions" were good.
___ 16b) Therapist did not tell parent what parent did wrong.

With all families

___ 17) Return to playroom with family. Seat family, retrieve bug and take out its battery.

___ 18) Review summary sheets with parents for about five minutes. Focus on their strengths, reassure them that they are doing fine.
19) Give new homework sheets and encourage parents to focus especially on decreasing questions and increasing reflections during their home practice. (Unless these skills are already extremely good and another category is more important.)

20) Confirm next appointment time with parents.

21) Give parents gas money and parking pass, if necessary.
LIST OF REFERENCES


BIOGRAPHICAL SKETCH

Michelle Denise Harwood was born in Augusta, Georgia, on March 4, 1979. She graduated from Seminole High School in 1997 and received her Bachelor of Science degree in psychology from the University of Florida in May of 2001. In July 2001, Michelle Harwood enrolled in the doctoral program in the Department of Clinical and Health Psychology at the University of Florida. Her clinical and research interests are in the area of child clinical psychology.