

Parent-Child Interaction Therapy for Treatment of Separation Anxiety Disorder in Young Children: A Pilot Study

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Research suggests that Parent-Child Interaction therapy (PCIT) works to improve the child's behavior by changing the child-parent interaction. PCIT has been effective in treating disruptive behavior in young children. This article describes a pilot study to apply PCIT to the treatment of separation anxiety disorder (SAD). A multiple-baseline design was used with 3 families with a child between the ages of 4 and 8 who had a principal diagnosis of SAD. Following treatment with PCIT, clinically significant change in separation anxiety was observed on all measures. Disruptive behaviors also decreased following treatment. Treatment gains were maintained at a 3-month follow-up interval. These findings suggest that PCIT may be particularly useful for treatment of young children with SAD, the most prevalent yet underresearched anxiety disorder of childhood. The results of this study support research delineating the important contribution of family factors to anxiety in childhood. Several mechanisms are proposed that may account for the dramatic decrease in separation-anxious behaviors seen in children during PCIT, including increased levels of child control, increased social reinforcement of brave behaviors, improved parent-child attachment, and decreased levels of parent anxiety. Results of this study provide promising initial evidence that PCIT may be efficacious for treating young children with SAD. A randomized clinical trial is warranted to further elucidate the efficacy of PCIT for treatment of SAD in young children.

SEPARATION ANXIETY DISORDER (SAD) is characterized by “developmentally inappropriate and excessive anxiety concerning separation from home or from those to whom the individual is attached” (American Psychiatric Association, 1994, p. 75). Children who experience SAD are significantly distressed by separation from an attachment figure, usually a parent, and seek to avoid separation at all costs. Research suggests that 3.5% to 4.1% of children may develop SAD (Benjamin, Costello, & Warren, 1990; Schniering, Hudson, & Rapee, 2000). Although SAD is relatively common, it can have serious repercussions throughout the child's life. For example, the child, out of fear that negative consequences will occur upon separation from the parent, may refuse to participate in play activities or even to attend school. SAD also affects family life and parental stress because the child's anxiety may limit the activities of siblings and parents (Fischer, Himle, & Thyer, 1999).

Current treatments of SAD primarily focus on cognitive-behavioral methods to treat separation anxiety (Fischer et al., 1999). The treatments generally include elements of exposure in which children gradually face situations in a hierarchical fashion (Albano, Chorpita, & Barlow, 1996; Dadds, Heard, & Rapee, 1991). A list of feared situations is established, and the child practices facing the situations to counteract the avoidance that

often co-occurs with separation fears (Albano et al., 1996). In addition, relaxation training, modeling, coping self-statements, and contingent reinforcement strategies have been used in SAD treatment (Fischer et al., 1999). Available studies suggest that cognitive-behavioral strategies have been effective in reducing separation anxiety, with changes that have been maintained during follow-up periods of up to 2 years (Fischer et al., 1999). Additional studies examining treatment effects of CBT on child anxiety disorders including SAD have found sustained treatment gains at 6 years following treatment (e.g., Barrett, Duffy, Dadds, & Rapee, 2001). Study children have typically been between the ages of 8 and 12, although successful behavioral treatment of a 6-year-old child with SAD has also been reported (Fischer et al., 1999).

The factors that lead to the development of SAD have not been fully identified. Current theories suggest that separation anxiety develops from an interaction of factors that include genetic vulnerabilities to experience anxiety, temperamental and biological vulnerabilities, stressful transition events (like beginning school), insecure attachment relationships, and negative family experiences (Chorpita, 2001; Tonge, 1994). In particular, research has begun to examine the effects of family interactions on childhood anxiety (Barrett, Rapee, Dadds, & Ryan, 1996). Similarly, research on anxiety suggests that early experiences that foster a sense of diminished control over the environment may contribute to a vulnerability to develop anxiety (Chorpita & Barlow, 1998).

Family factors identified as significant contributors to the development of anxiety in children are important

to consider when treating anxiety in children. For example, parental-anxious rearing strategies have been positively related to anxiety symptomatology in nonclinical children (Muris & Merckelbach, 1998). In addition, anxious mothers have been found to be more critical and less granting of autonomy with their children than nonanxious mothers (Whaley, Pinto, & Sigman, 1999). Thus, Whaley et al. suggest that treatment interventions should incorporate a component that targets the interaction between mothers and their children. Treatment studies with anxious children between the ages of 7 and 14 have demonstrated enhanced effectiveness when a parent training component is included in which parents are taught specific skills for helping their anxious children (Cobham, Dadds, & Spence, 1998; Mendlowitz et al., 1999). A parent training component is likely to be even more essential for children under the age of 7, as young children typically spend more time with their parents than older children, who are usually in school and are beginning to spend more time with peers.

Research from developmental psychology also supports an understanding that parent factors may be important to consider in treatment of separation anxiety (Bowlby, 1973; Hoffman, 2000; Rutter, 1980). For example, Reiss et al. (1995) suggest that healthy child adjustment is associated with parental warmth, acceptance, and parental encouragement of psychological autonomy. Difficulties in child adjustment, such as the development of anxiety, are likely associated with low parental warmth and little encouragement of autonomy. This finding is consistent with research on attachment, which has consistently shown that children with early insecure attachment relations are significantly more likely to develop psychopathology, including both emotional and behavior problems (Foote, Eyberg, & Schuhmann, 1998; Warren, Huston, Egeland, & Sroufe, 1997). Similarly, research on anxiety suggests that early experiences that foster a sense of diminished control over the environment may contribute to a vulnerability to develop anxiety (Chorpita & Barlow, 1998). As described, current anxiety treatments for SAD do not specifically address the interaction between parents and their children. A treatment that addresses the parent-child attachment and fosters a sense of control in the child may be beneficial in targeting early forms of separation anxiety.

Young children with SAD may display disruptive, oppositional behaviors in addition to the avoidance behaviors that can cause significant interference in child and family functioning and in normal social development (Tonge, 1994). For example, children may refuse to sleep in their own rooms, refuse to attend school, may tantrum when presented with situations that might involve separation, and may outright refuse to comply with parents' commands. While some parents report that their chil-

dren display comorbid oppositional behaviors, other parents state that their children are in fact very compliant except for when situations involving separation arise. Comorbid SAD and oppositional behavior may arise due to parents inadvertently reinforcing children's misbehavior (in the case of oppositional behavior) or to parents inadvertently reinforcing children's avoidance (in the case of SAD). In addition, a high frequency of aversive parent-child interactions may be at the root of both disorders. A treatment for SAD in early childhood that specifically targets parents by instructing them in ways to reduce negative parent-child interactions would likely be helpful in also reducing children's oppositional behaviors.

Parent-child interaction therapy (PCIT; Eyberg, 1988) is a treatment approach that integrates traditional and behavioral techniques in the treatment of behavior problems in young children. PCIT has two equally important components: child-directed and parent-directed interactions (Hembree-Kigin & McNeil, 1995; Herschell, Calzada, Eyberg, & McNeil, 2002). PCIT is based on the assumption that improving parent-child interactions results in improvement in child and family functioning (Foote et al., 1998). Research has demonstrated the effectiveness of PCIT for treating disruptive behavior in young children (Nixon, Sweeney, Erickson, & Touyz, 2003; Schuhmann, Foote, Eyberg, Boggs, & Algina, 1998). In addition, PCIT directly targets the parents' overcontrolling behavior, which has been identified as an important factor in anxiety development (Chorpita, Brown, & Barlow, 1998).

As PCIT addresses the parent-child interaction, it may also be effective in treating separation anxiety behaviors in young children. Some evidence suggests that the parent's reaction to the child's anxiety serves to maintain SAD (Thyer, Himle, & Fischer, 1993). Positive and negative reinforcement patterns surrounding the child's distress at separation may reinforce or escalate fears. PCIT teaches the parent how to change those reinforcement contingencies. Similarly, the improved attachment following PCIT (Neary, Harwood, Bell, Adams, & Eyberg, 2002) may help the child to be more secure when away from the parent and thus able to separate without distress. The child-directed interaction component of PCIT focuses on allowing the child to lead the interaction, which may foster a sense of control within the child, thus reducing separation anxiety. The parent-directed interaction component of PCIT also allows the child to have some control in the interaction, as a child can prevent a time-out by choosing to obey the parent's command or rule. Application of PCIT with young children may prevent further development of more severe anxiety as children become older.

This article describes a pilot study designed to examine the effects of PCIT with children presenting for treat-

ment of SAD. We hypothesized that, relative to baseline levels, children with SAD would show fewer separation-anxiety behaviors and that SAD would be at a subclinical level at the end of treatment. We further hypothesized that these treatment gains would be maintained during a 3-month follow-up period. We also expected these children to show fewer oppositional behaviors after PCIT.

Method

Participants

Three families were recruited through the regular treatment flow of child cases referred to the Child and Adolescent Fear and Anxiety Treatment Program at the Center for Anxiety and Related Disorders (CARD) in Boston, Massachusetts. Inclusion criteria for a child's participation in the study were age between 4 and 8 years and a primary diagnosis of SAD. Children with developmental disorders or who were at risk of harming themselves or their family were excluded from the study. Children taking medication for anxiety or behavioral disorders were required to be on a stable dose of the medication, as measured by 1 month of continuous medication treatment at the same dose, to participate in the study. All families who arrived at CARD between September 2000 through March 2001 and who met the inclusion criteria were offered participation. One family who qualified for the study declined participation as they chose to pursue treatment for additional concerns unrelated to separation anxiety. All study participants were Caucasian, with an annual family income that was greater than \$75,000. The education level for all parents ranged from completion of some college to graduate degrees. None of the children participating in the study were prescribed any medications at any point during the study. Treatment was conducted with both parents in all cases. Participants were treated in accordance with the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 1992).

The first child, Mark,¹ was a 5-year-old boy with a principal diagnosis of SAD and an additional provisional diagnosis of panic disorder. At intake, his father, age 35, and mother, age 33, explained that Mark constantly worried about his mother. His mother noted that when she left Mark at school, he would stop her and ask her repeatedly for a kiss and a hug prior to departure. She expressed anxiety leaving her son with other caregivers because he typically became highly upset while she was away. Prior to her leaving, he would ask repeated questions about where she was going, how long she would be gone, and what time she would return. She noted that she and her

husband had rearranged their plans on some evenings to placate Mark's anxiety about their going out. Mark's mother explained that Mark was able to go to friends' houses as long as he knew that his parents were not leaving his home. She reported that Mark worried that she would die if he were not with her.

The second child, Melissa, was an 8-year-old girl with a principal diagnosis of SAD and an additional diagnosis of oppositional-defiant disorder (ODD). Her parents, both age 38, reported that Melissa experienced extreme anxiety sleeping over at friends' homes. They noted that she was also very anxious about falling asleep at home if her mother was away from the home. Melissa's parents explained that Melissa typically would ask her mother to lie down with her prior to falling asleep. Her parents noted that on evenings when Melissa's mother returned from work at an hour that was past Melissa's bedtime, Melissa remained awake until her mother came home. In addition, Melissa would call her mother repeatedly on the cell phone at work to find out when she was returning home.

The third child, Jared, was a 7-year-old boy with a principal diagnosis of SAD and no additional diagnoses. His father, age 39, and mother, age 34, explained that he experienced difficulty leaving his parents in the morning prior to going to school. His parents reported that Jared worried about getting picked up from school on time. Jared repeatedly expressed concerns that stormy weather or a parent's forgetfulness would interfere with a prompt pickup from school. Jared's parents also noted that the anxiety Jared experienced from being away from them was increasingly interfering with his ability to attend birthday parties and other events. For example, they explained that Jared was unable to participate in a sports practice if they were not in Jared's range of vision. Jared reported that he worried that his parents would die or that he would be taken and not see them again.

Procedure

The study was performed using a natural multiple-baseline experimental design with three families. The multiple baseline design controls for some of the threats to internal validity that occur when treatment is introduced as a phase change, or a change in the component of treatment being implemented (Hayes, Barlow, & Nelson-Gray, 1999). This design permitted an evaluation of whether changes that occurred after treatment completion were a result of PCIT or simply due to the passage of time. All families monitored separation anxiety behaviors before beginning treatment. The length of the pretreatment monitoring phase was staggered among the three families, with the first family beginning treatment after a 1-week monitoring phase. The second family began treatment after a 2-week monitoring phase. The third family

¹Names and identifying information for all three children have been changed.

monitored anxiety for 4 weeks before beginning treatment, thus resulting in a multiple-baseline design across families.

Families were contacted 3 months after the completion of treatment for a follow-up assessment, and a follow-up interview was conducted by telephone. Self-report measures were mailed to the families to be returned in a self-addressed, stamped envelope. The first two families completed the follow-up assessment at the 3-month interval. However, the third family was not available to complete the assessment at the 3-month point because of logistical reasons. This family completed their follow-up assessment 6 months after the conclusion of treatment.

PCIT

Treatment was provided following standard PCIT procedures (Herschell et al., 2002). To maintain internal validity, the same two cotherapists administered the PCIT protocol to all three families. The lead therapist was a professor who had several years of clinical experience, including 2 years of training in the administration of PCIT; the cotherapist was a doctoral student with 1 year of graduate training. During the first phase of PCIT, called the child-directed interaction (CDI) phase, parents were taught to follow their child's lead in play by giving positive attention in the form of praise, reflection, imitation, and behavior description. Parents were instructed to ignore negative behaviors and avoid criticism, questions, and commands. One instruction session introduced the rules of CDI, and parents were given an opportunity to role-play the CDI skills with the therapists. In subsequent sessions, the therapists observed the parents through a one-way mirror while parents practiced the CDI with their child for 10-minute intervals, giving each parent 10 minutes of coaching in each session. Therapists provided continuous verbal feedback and instruction to the parents during the interaction using a "bug-in-the-ear" communication system, a small microphone earpiece worn on the parent's ear. When providing feedback, the therapists encouraged the parents to restate questions as descriptions, and praised the parents for using the CDI skills correctly. Parents were specifically taught to increase their enthusiasm for the child, to give the child choices and control, and were praised for not asking questions. Parents were also praised for reflecting children's emotions and behaviors. Parents were instructed to practice the skills daily with their children for at least 5 minutes, monitoring their practices on a homework sheet.

When the parents demonstrated mastery of the CDI skills by meeting specific "mastery criteria"—using no more than 3 questions, commands, or criticisms, using at least 10 behavioral descriptions, 10 reflections, and 10 labeled praises, the parent-directed interaction (PDI) phase of treatment was introduced. All families met CDI mastery

criteria within 5 sessions. Parents were also instructed to use CDI skills during their child's anxiety episodes, by praising and attending to nonanxious, "brave" behaviors that their child demonstrated while ignoring anxious or oppositional behaviors, such as crying, whining, or asking questions concerning the parents' return.

The PDI phase of PCIT treatment began with a teaching session in which parents learned skills for leading the parent-child interaction, including how to phrase effective directions to children, how to follow through with praise for listening and how to implement a time-out procedure if needed for disobedience. In subsequent sessions, the parents practiced using the PDI procedure during interactions with their child. Parents were instructed to continue the CDI practices for homework, while implementing PDI during the day when commands were required. Two to three PDI sessions were conducted with each family. Treatment was completed when parents met criteria demonstrating effective use of CDI and PDI skills and reported that the child's separation anxiety behaviors decreased to less than two incidents per week. Sessions were conducted on a weekly basis. Length of treatment ranged from 6 to 7 sessions for these families, which is substantially shorter than the average 13-session length of treatment for children with ODD (Brinkmeyer & Eyberg, 2003).

Measures

Diagnostic Interview

Anxiety Disorders Interview Schedule for DSM-IV—Child and Parent Versions (ADIS-IV-C/P; Silverman & Albano, 1996). This semistructured interview entails child and parent interviews focusing on the diagnosis of anxiety and accompanying mood disorders. The child and parents are interviewed separately by a single interviewer and the diagnosis is determined based on the composite information from both interviews using guidelines outlined by the authors of the measure (Silverman & Nelles, 1988). The ADIS-C/P has satisfactory test-retest reliability and interrater reliability and has been used in many studies to assess anxiety in children (Silverman, Saavedra, & Pina, 2001; Westenberg, Siebelink, Warmenhoven, & Treffers, 1999).

An independent evaluator (a graduate-level therapist trained in the ADIS-C/P) administered the semistructured interview to both the child and the parent before treatment, after treatment, and at the 3- to 6-month follow-up assessment to track the effects of treatment on the diagnosis of SAD. Based on information obtained in the ADIS-C/P, a Clinician Severity Rating (CSR) that could range from 0 to 8 was assigned to the child's anxiety diagnosis and to all other diagnoses assessed in the interview. A CSR of 4 or greater indicates a clinical level of anxiety severity. Because the ADIS-C/P is not standardized for

administration to children below age 7 (Silverman & Nelles, 1988), only the parent version of the ADIS-C/P was conducted with the 5-year-old participant.

Parent Monitoring Measures

Weekly Record of Anxiety at Separation (WRAS; Choate & Pincus, 2005). Parents monitored daily anxiety behaviors using the WRAS, a measure designed using *DSM-IV* criteria to monitor frequency and severity of 22 SAD behaviors. Parents began daily monitoring using the WRAS during the pretreatment phase and continued monitoring throughout all treatment phases. From the parent monitoring forms, average weekly separation anxiety ratings were provided by parents using a 0- to 8-point scale. At the follow-up telephone interview, parents estimated the number of separation anxiety incidents that occurred during the previous week and reported the severity of each separation anxiety episode that their child displayed during the previous week.

Fear and Avoidance Hierarchy (FAH). The therapist helped the family complete an FAH at the beginning of treatment. Together with the therapist, the family created a list of separation situations that were feared and avoided by the child. Parents then rated the child's fear and avoidance of each situation using a 0- to 8-point scale. These scores were summed to create a fear and avoidance score for the child at the beginning of the CDI and PDI treatment phases, at the end of treatment, and at the follow-up assessment. The FAH has become a standard clinical measure of treatment outcome in SAD because cognitive-behavioral treatments for SAD typically focus on exposure to feared SAD situations (Heard, Dadds, & Conrad, 1992).

Parent Questionnaires

Because the children included in the study were between the ages of 5 and 8, rating scale measures were collected only from the parent. Typically, self-report information is not collected from children under the age of 7 because there is doubt as to whether children this young can report accurately on their own internal states (Eyberg, 1992; Glennon & Weisz, 1978). To maintain consistency, self-report questionnaires were also not collected from the 8-year-old child.

Child Behavior Checklist (CBCL; Achenbach, 1991). Parents completed the CBCL to measure the child's improvement in both externalizing and internalizing behaviors. The CBCL consists of 112 items of child behavior, which are scored on two broad subscales, of externalizing and internalizing behaviors. The CBCL has been widely used and extensively evaluated and is considered to be a reliable and valid measure of children's externalizing and internalizing behaviors (Daugherty & Shapiro, 1994; Lowe, 1998). The child's scores on the subscales can be compared to norms established with other children of their

same age and gender. Parents completed the CBCL at pretreatment and posttreatment.

Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999). The parents also completed the ECBI, a measure of disruptive behavior. The ECBI consists of statements that describe common child behavior problems, such as "interrupts parent" and "argues with parents about rules." Parents rate the frequency of the behavior on an intensity scale that ranges from 1 (*never*) to 7 (*always*). Parents also rate whether the behavior is problematic for them on a yes-no scale, providing a measure of parent tolerance for the child's misbehavior. Research has demonstrated that the ECBI has good reliability and is a valid measure of disruptive behavior in children (Boggs, Eyberg & Reynolds, 1990; Funderburk, Eyberg, Rich, & Behar, 2003; Rich & Eyberg, 2001). Parents completed the ECBI before the CDI phase of treatment, before the PDI phase of treatment, at posttreatment, and at follow-up.

Results

We expected clinically significant change in separation anxiety and oppositional behaviors following treatment with PCIT. As shown in Figure 1, none of the three children met criteria for a clinical diagnosis of SAD following treatment. Normative levels of separation anxiety were maintained through the follow-up period for all three children. For Jared and Mark, the follow-up interval was 3 months. For Melissa, the follow-up interval was extended to 6 months because her family was unavailable for follow-up at an earlier time. In addition, the CSR for Melissa's comorbid ODD diagnosis was rated at a subclinical level following treatment and remained within normal limits at the follow-up assessment.

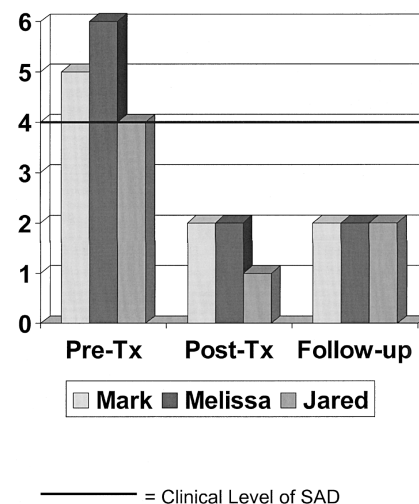


Figure 1. Clinical severity rating of separation anxiety throughout treatment.

Table 1
Total Fear and Avoidance Ratings at Each Assessment Point

	Pre-CDI	Pre-PDI	Posttreatment	Follow-up
Mark	59	46	15	9
Melissa	69	32	24	12
Jared	64	32	9	10

As is indicated in Table 1, the fear and avoidance ratings for the children decreased substantially during the initial CDI phase of treatment, and these decreased levels continued throughout treatment. For all three children, the total fear and avoidance ratings were approximately 85% lower at follow-up than at pretreatment. In addition, at the end of treatment, parents' ratings indicated that the children were avoiding few situations and expressing little fear in those situations they were previously avoiding. The children's gains were maintained or improved through the follow-up period.

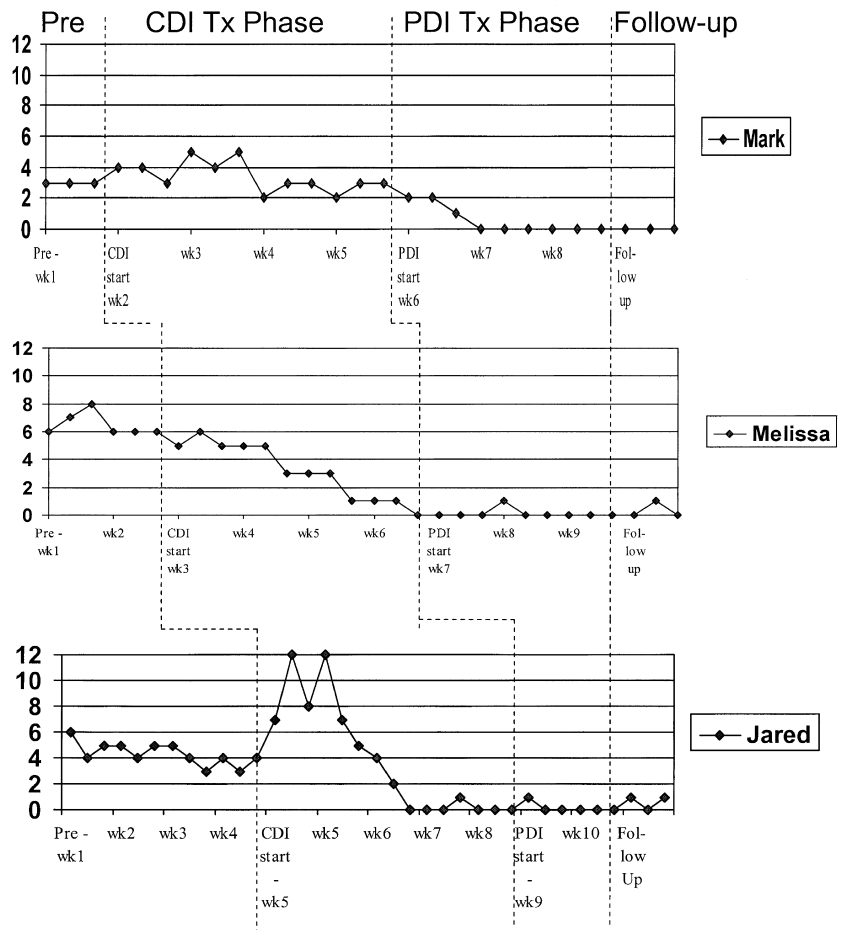
In single-case design experiments, the behaviors targeted for change are graphed at regular intervals to illustrate how the behavior frequencies change over time as new elements are introduced (Kazdin, 1998). Figure 2 shows the weekly changes starting during the pretreatment monitoring period and continuing throughout treatment and again at follow-up by plotting the average number of weekly separation incidents reported by the parents.

In addition to weekly monitoring of separation anxiety, all three mothers completed the CBCL at the pre- and posttreatment assessments. Only Jared's father completed the CBCL at both time periods. As shown in Table 2, the mothers of both Mark and Melissa rated their children's internalizing and externalizing behaviors at subclinical levels at pretreatment, and these levels decreased during treatment. Jared's mother rated both his internalizing and externalizing behaviors at clinical levels before treatment, and these behaviors decreased to subclinical levels by the end of treatment. Jared's father rated his internalizing behaviors at clinical levels and his externalizing behaviors at subclinical levels at pretreatment. Both Jared's internalizing and externalizing behaviors decreased following treatment and were at subclinical levels.

As shown in Table 3, the ECBI Intensity and Problem Scale scores for all of the children were in the subclinical range at pretreatment. Nevertheless, the children's scores on these measures declined during treatment. The in-

tensity ratings of Jared's mother and Melissa's father showed minimal change (less than 10%) during treatment. All other parent ratings on the Intensity Scale decreased 27% to 37% from pretreatment to posttreatment. Both of Mark's parents and Jared's father reported having no problems with their children's behavior at posttreatment. All other Problem Scale scores decreased 50% to 67% from pre- to posttreatment.

Visual inspection of Figure 2 indicates that separation anxiety behaviors showed little variation during the baseline monitoring period before treatment. Tick marks on the horizontal axis refer to an average of 2 or 3 days of monitoring. Thus, three data points represent 1 week of separation anxiety behaviors. During the baseline monitoring period, the mean number of separation incidents remained constant for Mark, increased slightly for Melissa, and decreased slightly for Jared. For all three children, the majority of the decreases in separation incidents occurred during the initial CDI phase of treatment. Mark



*Note: Each data point represents an average number of separation behaviors over two (M/T, W/Th) or three (F/Sat/Sun) days

Figure 2. Average number of separation anxiety incidents throughout treatment.

Table 2
Scores on the Child Behavior Checklist Before and After Treatment

	Pretreatment	Posttreatment
Internalizing scores—mother		
Mark	6	1
Melissa	5	2
Jared	30*	1
Externalizing scores—mother		
Mark	1	0
Melissa	14	6
Jared	13*	2
Internalizing scores—father		
Mark	3	a
Melissa	a	a
Jared	18*	6
Externalizing scores—father		
Mark	4	a
Melissa	a	a
Jared	9	3

* Score is in the clinical range.

^a Measure not returned from the family.

and Jared showed an initial increase in separation incidents in the first few sessions. The dramatic increase in separation incidents that Jared demonstrated at the beginning of CDI can most likely be attributed to the start of school, which coincided with the start of treatment. Melissa demonstrated a steady decrease in separation incidents during CDI. During the PDI phase, the average

Table 3
Scores on the Eyberg Child Behavior Inventory
at Each Assessment Point

	Pre-CDI	Pre-PDI	Post-treatment	Follow-up
Intensity scores—mother				
Mark	59	50	38	35
Melissa	101	88	74	a
Jared	70	57	64	a
Problem scores—mother				
Mark	3	3	0	0
Melissa	14	a	7	a
Jared	8	4	4	a
Intensity scores—father				
Mark	54	49	34	39
Melissa	119	96	115	a
Jared	73	72	46	a
Problem scores—father				
Mark	2	1	0	0
Melissa	12	6	4	a
Jared	5	2	0	a

Note. All scores are within normal limits of disruptive behavior.

^a Measure not returned by family.

number of separation incidents per week dropped to zero for all three children, and remained at or close to zero at follow-up.

Discussion

Results of this study show clinically significant decreases in separation anxiety behaviors following PCIT for three young children with diagnosed SAD. Following this treatment, none of the children met diagnostic criteria for SAD. In addition, incidents of separation anxiety dropped to zero within 6 weeks after beginning treatment for all three children and remained at or close to zero at short-term follow-up. These results suggest that PCIT may be an effective treatment for SAD in young children.

Currently, there is not an empirically established treatment for young children with SAD. CBT has been confirmed as an empirically supported treatment for anxiety disorders in childhood, but treatment studies have targeted children over the age of 7 (Albano & Kendall, 2002; Ginsburg & Schlossberg, 2002). PCIT may provide a viable treatment option for young children, as it was specifically designed for this population. Separation-anxious behaviors are common among preschool children. Traditional CBT techniques used with older children of evaluating the evidence for feared situations or using brave talk are not developmentally appropriate for this age group. A treatment that provides the parent with behavior-management skills and also improves their relationship with their child, as PCIT does, would seem to be recommended for children of this age group.

The results of this study are promising in suggesting that PCIT may be an effective treatment for preschoolers experiencing SAD, and indicate that a larger scale study incorporating randomized assignment to treatment versus wait-list control children is warranted. A group design study would provide more information on the effectiveness of PCIT by comparing treatment gains across a number of children. A randomly assigned wait-list condition would help to further distinguish treatment gains from gains due to maturation and development. Although the PCIT treatment occurred over approximately a 2 month time period, it is possible that some of the decreases in separation anxiety would have occurred naturally.

In future research, it may be useful to counterbalance the introduction of CDI versus PDI, to help further elucidate the mechanism of change. In the current study, CDI was introduced first in all cases to be consistent with the PCIT protocol. From the results, it appears that the warmth, control, and social reinforcement of brave behaviors provided to the child in the CDI phase may have been the catalysts for change, as most of the behavior change took place during that phase. It is possible that the PDI phase

may not be necessary for children who experience SAD without comorbid disruptive behaviors. Anecdotally, only the parents of Melissa (Melissa also had a clinical diagnosis of ODD) reported that the PDI instruction was very beneficial. Future research could further clarify the particular changes elicited by CDI and PDI and the utility of PDI among children with SAD without disruptive behaviors.

The results from the study intimate several possible mechanisms by which separation anxiety was reduced during treatment. For two of the children, separation incidents declined to near zero during CDI. For the third child, separation incidents actually increased during CDI and then plummeted to zero shortly following the introduction of PDI. For all children, the positive interactions that occurred during the CDI phase seemed to have a significant impact on the separation anxiety. Many elements of CDI seemed to contribute to this anxiety reduction. Parents were instructed to praise brave behaviors and ignore anxiety-related behaviors, which likely contributed to the observed behavior changes. In addition, it is possible that as the parent-child relationship improved through positive interactions, parents experienced less anxiety when anticipating a negative interaction upon separation. At these times, they may have been able to better model nonanxious behavior. Alternatively, as parents experienced a more secure attachment to their child following CDI, they may have been able to separate more easily when necessary. Future research could examine changes in observed parent-child attachment and parental anxiety following PCIT as possible mechanisms of change for children with SAD.

PCIT may be introducing change in the child's anxiety behaviors by influencing the child's perception of control. It is likely that the CDI phase of treatment, in which the child directs the interaction in a warm and supportive environment, increases the child's sense of control by providing the child with opportunities to make decisions regarding play and to feel a sense of mastery as their parent reinforces their choices through imitation, description, or praise. Previous research suggests that a controlling family environment contributes to the development of anxiety (Chorpita et al., 1998). The parenting techniques of CDI may serve to provide a less controlling home environment for the child and lead to anxiety reduction, as parents are instructed to allow the child to lead the interaction, rather than intrude upon the child's play.

Directly targeting the interaction between parents and their children resulted in dramatic anxiety reduction for the children treated, as well as decreases in the frequency of disruptive behaviors, in the relatively short time period of 6 to 8 weeks. Because the length of PCIT was not set but dependent upon parent skill acquisition and child behavior change, it was possible to determine an approximate treatment length among this population. It is possible that anxiety reductions occurred in such a short

time period due to the motivation of the parents, who were very consistent in applying the CDI skills in homework scenarios. It is also possible that early intervention allowed for rapid behavior change among these children. As stated previously, it is also possible that maturation effects resulted in the treatment reductions. A larger treatment study would help to clarify these issues.

Although this is a pilot study, it yields potentially important information. One advantage of the multiple-baseline design is that weekly measures provide information as to precisely when change occurs during treatment. For example, the largest changes in anxiety behaviors for all three patients occurred prior to implementing PDI. The consistent reduction in anxiety behaviors during CDI supports findings in the anxiety literature regarding the importance of perceived control in the development of anxiety, as well as the role of attention and reinforcement in the development and change of anxiety behaviors. It also supports attachment literature, as improved attachment would be expected to decrease separation-anxious behaviors.

Although the parents' anxiety was not measured, the parents of the three children in this study seemed to become less anxious themselves during PCIT. The positive interactions they experienced with their children on a daily basis, combined with the therapist support and encouragement to use their PCIT skills during anxiety incidents, may have decreased parental anxiety when interacting with their child in separation situations. Further, PDI may have contributed to the maintenance of reduced parental anxiety by boosting parents' confidence in their ability to manage their child's behavior problems. When the parent's anxiety decreases, modeling of nonanxious behaviors during separation situations would be expected to lead to nonanxious behaviors in the child. Finally, having new parenting skills may have decreased parents' overall stress. Future studies should include measures of parent anxiety or stress during treatment to track these changes in parent functioning as well as child anxiety during treatment.

The results of this study must be interpreted with some caution. As a multiple-baseline, single-case experimental design, the study is subject to the limitations of the design (Kazdin, 1998). The greatest limitation is the poor generalizability of any findings due to uncontrolled subject characteristics and low external validity (Kazdin, 1998). With children, treatment outcome is often confounded with the developmental effects of maturation as well. However, as a pilot study, there are some advantages to the multiple-baseline design. Only a few cases were required for examination of the feasibility of applying PCIT to SAD on a preliminary basis.

Clinically significant change was observed in separation anxiety following treatment with PCIT. Current, cognitive-

behavioral treatment of separation anxiety focuses on exposure to separation from the parent and tackling successive feared situations in the avoidance hierarchy (Thyer et al., 1993). In that approach, as the child faces increasingly difficult situations and gains confidence, the child's anxiety decreases. However, similar change was observed following PCIT without explicit instruction in exposure, although parents were encouraged to reinforce brave behaviors, including approach behavior to separation situations. Although treatment did not specifically address exposure to feared situations, the children began facing feared situations, as is indicated by the reduction in their FAH.

The results of this study provide further support for the importance of the parent-child interaction in the maintenance of anxiety and may have direct relevance to clinicians. Recently, child anxiety research has begun to highlight the potential importance of including parents in treatment (e.g., Barrett et al., 2001; Galambos, Barker, & Almeida, 2003; Kendall et al., 1996). The results of this study suggest that clinicians should consider the parent-child relationship when treating young children with separation anxiety. Establishing regular intervals in which the parent and child experience a positive interaction, either during scheduled playtime or scheduled activities, may be an important element in treatment as young children develop a sense of mastery and control over their environment.

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