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Effects of Parent and Family Characteristics on Treatment Outcome of Anxious Children

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Abstract

This study examines relations between family functioning, parenting stress, parental psychopathology, and treatment outcome. Participants included 61 children (ages 7 to 11) with features or diagnoses of separation anxiety disorder, generalized anxiety disorder, and/or social phobia. Treatment conditions included group cognitive behavioral therapy (CBT) and no-treatment control. Higher family cohesion at baseline was associated with significantly greater decreases in child anxiety at posttreatment for participants who received CBT, while no association was found for the no-treatment control participants. Parenting stress and parental psychopathology were not associated with treatment outcome for either condition. Post hoc analyses examining relations between family cohesion, parenting stress, and parental psychopathology showed that parents from families low in cohesion reported significantly higher levels of parenting stress and psychopathology compared to parents from families high in cohesion. These results will facilitate development and implementation of effective interventions with anxious children.

Keywords

Anxiety; Families; Children; Treatment Outcome

Childhood anxiety disorders are highly prevalent in clinical and community samples (Bernstein, Borchardt, & Perwien, 1996). Childhood anxiety is associated with substantial psychosocial difficulties, including impairment in social relationships, academic difficulties, and low self-esteem (e.g., Messer & Beidel, 1994; Essau, Condradt, Petermann, 2000). Many children diagnosed with anxiety disorders are successfully treated with cognitive-behavioral therapy (CBT); however, some children show minimal response to treatment (e.g., Kendall, Flannery-Schroeder, Panichelli-Mindel, Southam-Gerow, Henin, & Warman, 1997; Southam-Gerow, Kendall, & Weersing, 2001). Given the differences in treatment response, it is crucial to identify factors that contribute to successful treatment outcomes. Research has begun to examine the potential contribution of parenting stress, parental psychopathology, and family functioning in the treatment outcome of anxious children, which will aid in the development of more effective treatment programs.

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Relations between Childhood Anxiety and Parenting Stress and Parental Psychopathology

Previous research has examined parental factors, specifically parenting stress (e.g., Mash & Johnston, 1990) and parental psychopathology (e.g., McClure, Brennan, Hammen, & Le Broque, 2001), associated with childhood anxiety disorders. Parenting stress has not been shown to be directly related to childhood anxiety disorders, but appears to be related to child temperament (Mash & Johnston, 1990). Mothers of children with difficult temperaments report higher levels of parenting stress and less confidence in parenting abilities (Gelfand, Teti, & Fox, 1992). Furthermore, children who express more negative emotions are reported to cause greater stress per parental reports (McBride, Schoppe, & Rane, 2002).

There is evidence that parental psychopathology is related to childhood anxiety disorders. Studies consistently demonstrate that children of mothers with anxiety disorders are at greater risk of being diagnosed with anxiety disorders compared to children of mothers without anxiety disorders (e.g., Manassis & Hood, 1998; McClure et al., 2001). Beidel and Turner (1997) demonstrated that children were nearly five times more likely to be diagnosed with an anxiety disorder when parents met criteria for an anxiety diagnosis.

Relations between Childhood Anxiety and Family Functioning

Studies consistently demonstrate a higher frequency of problematic relationships in families with anxious compared to nonanxious children (e.g., Rapee, 1997; Hudson & Rapee, 2001). These results typically show that greater childhood anxiety is associated with higher levels of perceived parental control and rejection (Rapee, 1997). Parents of anxious children were more likely to support avoidant strategies and least likely to encourage autonomy in order to protect their children from distress (Dadds, Barrett, Rapee, & Ryan, 1996; Whaley, Pinto, & Sigman, 1999). During problem-solving tasks, mothers of anxious children exhibited more involved, intrusive, and negative behaviors compared to mothers of nonanxious children (Hudson & Rapee, 2001). In summary, there appears to be an association between an overinvolved, overprotective parent-child interactional style and childhood anxiety.

In addition to maladaptive parent-child interactions, the overall functioning of families with anxious children tends to be problematic. Families of anxious children were found to be more involved, more controlling, more rejecting, and less intimate (Messer & Beidel, 1994; Rapee, 1997). Messer and Beidel (1994) found that family control was associated with higher levels of trait anxiety and temperamental rigidity in children, as well as lower perceived self-competence. Similarly, Stark and colleagues (1990) characterized families of anxious children as more enmeshed and less supportive than families of nonanxious children.

Peleg-Popko and Dar (2001) used parental responses on the Family Adaptability and Cohesion Evaluation Scale III (FACES III) to examine the relations between child anxiety, family adaptability, and family cohesion in a community sample of young children (5 to 6 years old) in Israel. Children from families low in adaptability (i.e., rigid) demonstrated a greater fear of strangers, and children from families high in cohesion (i.e., enmeshment, overprotective) exhibited higher levels of overall anxiety, general social avoidance, and inhibition. These results suggest that overprotective and rigid families are associated with higher levels of anxiety in young children. In contrast, Bernstein and colleagues (1999) found that anxious-depressed adolescents (12 to 18 years old) with school refusal characterized their families as disengaged and rigid based on their responses on the FACES II. The difference in findings related to family cohesion may be due to the ages of the participants in each study. Parents may be more likely to exhibit overprotective behaviors with younger children and disengaged behaviors with adolescents. However, it appears that each extreme of cohesion (i.e., overprotection versus

disengaged) may lead to anxious behavior and anxious coping strategies in children and adolescents. While the research described thus far has identified relations between child anxiety and parent and family variables, little research has examined the impact of these relations on treatment outcome.

Parent & Family Factors Related to Treatment Outcome in Anxious Children

Cobham, Dadds, and Spence (1998) explored the relation between parent anxiety and treatment outcome in anxious children. Their results indicated that anxious children with one or more anxious parent showed less improvement following group CBT treatment compared to anxious children without an anxious parent. The addition of a parent treatment component improved the treatment outcome for anxious children with an anxious parent, but not for anxious children without an anxious parent. Furthermore, Southam-Gerow and colleagues (2001) reported that severity of maternal depression was predictive of poorer CBT treatment response in anxious children.

In contrast, Crawford and Manassis (2001) did not find that parental psychopathology was related to CBT treatment outcome in anxious children. They found that poorer treatment response was associated with overall family dysfunction, parental frustration, and parenting stress. To our knowledge, the Crawford and Manassis (2001) study is the only study that explored the effects of family functioning on treatment outcome in anxious children. Based on their results, family functioning appears to play a significant role in treatment outcome. However, Crawford and Manassis examined overall family functioning and did not examine specific aspects of family functioning. Furthermore, other research consistently demonstrates impaired functioning and maladaptive parent-child interactions in families of anxious children (e.g., Messer & Beidel, 1994; Bernstein, Warren, Massie, & Thuras, 1999; Peleg-Popko & Dar, 2001). Thus, additional research is needed to identify family variables that are most strongly associated with treatment outcome in anxious children.

In an effort to advance knowledge in this area, the current study examines the effects of parenting stress, parental psychopathology, and specific components of family functioning (adaptability and cohesion) on treatment outcomes of anxious children. Previously published findings using the current sample demonstrated that the group CBT utilized in the treatment phase of this study was effective in reducing anxiety and associated impairment in anxious children (Bernstein, Layne, Egan, & Tennison, 2005). The primary objective of the present investigation is to examine the role of baseline parent and family characteristics in treatment outcome. We hypothesized that parenting stress, parental psychopathology, and family functioning would each have an effect on treatment outcome in anxious children from a nonclinical sample. Specifically, it was expected that children from families low in adaptability and cohesion, as measured by the FACES II, would demonstrate poorer treatment outcomes. In addition, it was hypothesized that higher levels of parenting stress and parental psychopathology would result in poorer treatment response in anxious children.

METHOD

Procedure

This study was approved by the University Institutional Review Board. Consent forms were sent home with second through fifth grade students (1,037 children) from three elementary schools. Seventy-eight percent ($n=809$) of these consent forms were returned, with positive consent given by 61% ($n=497$) of parents. Students participated in a screening for anxiety symptoms after written parental consent and written child assent were obtained. The screening included completion of the Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings, & Conners, 1997) and teacher nomination of the three most anxious

children in the classroom from among those with parental consent to participate in the screening. If the MASC Total Anxiety T-score was > 57 and/or the child was nominated by a teacher, families were invited to complete the Anxiety Disorders Interview Schedule for DSM-IV: Child Version (ADIS; Silverman & Albano, 1996). The ADIS is conducted as a semi-structured interview with the child, as well as with the parent about the child. One-hundred and one participants identified in the screening completed the ADIS interview.

Inclusion criteria for the treatment phase of the study required DSM-IV diagnoses of separation anxiety disorder (SAD), generalized anxiety disorder (GAD), and/or social phobia (SP) or “features” (one or more, but not all criteria) of one of these anxiety disorders based on ADIS interviews, as well as associated composite clinician severity rating (CSR) from two to six on the ADIS. The range of CSR is zero to eight; however, since the study was an intervention study for anxious children with mild to moderate severity, the children with minimal and severe symptomatology were excluded. For further details of the screening process, see Bernstein et al., 2005.

Participants and parents completed baseline measures prior to treatment. Parents received packets of rating scales, completed the scales at home, and returned them to the independent evaluators at the time of their ADIS interviews. Of parents completing baseline rating scales and ADIS interviews, 93% ($n=57$) were mothers and 7% ($n=4$) were fathers. These measures, as well as the ADIS interviews, were completed again following the nine-week treatment.

Participants

Sixty-one children (21 males, 40 females) ranging in age from 7 to 11 years ($M=9.0$, $SD=1.0$) were included in the treatment phase. Forty-six participants met DSM-IV criteria for SAD, GAD, and/or SP; 15 had “features” of SAD, GAD, and/or SP but did not meet full criteria. In terms of primary diagnosis (i.e., associated with highest CSR), 20 children had GAD, 12 had SP, 9 had SAD, 12 had GAD and SP, 3 had SP and SAD, 3 had GAD and SAD, and 2 had GAD, SP, and SAD. When there was a tie in composite CSR scores, then two or three primary diagnoses were listed. The treatment and control groups were balanced in terms of diagnostic status and severity. Exclusionary diagnoses were attention-deficit/hyperactivity disorder, conduct disorder, obsessive-compulsive disorder, posttraumatic stress disorder, alcohol/drug abuse, schizophrenia, major depression, and autism spectrum disorders. The race/ethnicity distribution for the sample was 97% ($n=59$) Caucasian, 1.5% ($n=1$) Caucasian/Hispanic, and 1.5% ($n=1$) Asian. Sixty-two percent ($n=38$) of the children resided in two-parent homes, 33% ($n=20$) resided in homes with a divorced parent, and 5% ($n=3$) resided with mothers who were never married. Socioeconomic status (SES) was determined by the Hollingshead Four Factor Index (Hollingshead, 1975) and ranged from 22 to 58 with a mean of 40.5 ± 8.4 , indicating primarily middle class status for participants.

The children were from three schools that were matched on size of student body, percentage of minority students, and percentage of students who receive free or reduced-rate lunches (measure of lower SES). Participants were allocated to condition by school. This methodology was used to prevent cross-contamination that may occur when multiple interventions are administered in the same school. In addition, there were not enough participants to complete all three conditions at each school. Schools were randomly assigned to one of three conditions: child group CBT ($n=20$), child group CBT plus parent training ($n=17$), or no-treatment control ($n=24$).

Measures

ADIS, Parent and Child Interview Schedules—The ADIS is a semi-structured interview that uses DSM-IV criteria to assess anxiety and other disorders (e.g., major depression,

dysthymia, attention deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder). Child and parent were interviewed separately, and independent evaluators integrated information to determine composite diagnoses. The DSM-IV version of the ADIS has been shown to have good to excellent test-retest reliability (Silverman, Saavedra, Kurtines, & Pina, 2001), and the DSM-III-R version has moderate to strong interrater reliability for anxiety disorders (Rapee, Barrett, Dadds, & Evans, 1994).

CSR is obtained during the ADIS child and parent interview, and is a measure of severity and impairment due to reported symptoms. It is collected from the parent and child using the ADIS Feelings Thermometer that ranges from 0 to 8 (anchors: 0 = not at all, 2 = a little bit, 4 = some, 6 = a lot, and 8 = very, very much). Child, parent, and composite CSRs were obtained for each diagnosis in which symptoms were endorsed. Composite CSR, the primary outcome measure, is based on the independent evaluators' overall impression of severity and impairment through integration of information from the child and parent interviews.

Multidimensional Anxiety Scale for Children (MASC)—The MASC is a 39-item self-report questionnaire administered to youths ages 8 to 18. It has been used in 6- to 8-year olds by reading the items to the children (J. March, personal communication, 1998). The measure consists of five scales: Physical Symptoms, Harm Avoidance, Social Anxiety, Separation/Panic, and Total Anxiety. The MASC has demonstrated strong convergent validity, divergent validity (March et al., 1997), and internal consistency (March, 1997).

Family Adaptability and Cohesion Evaluation Scale, 2nd Edition (FACES II)—The FACES II is a 30-item questionnaire completed by the parent. The instrument measures dimensions of cohesion and adaptability within the family. Cohesion is defined as the emotional bonding that family members have towards one another and the degree that family members are connected (Olson, 2000). The cohesion dimension categorizes families across a continuum that includes disengaged [raw score (rs) = 15–50; n=2], separated (rs=51–59; n=11), connected (rs=60–70; n=34), and very connected (rs=71–80; n=14). Unlike FACES III, the FACES II does not measure enmeshment, and families who score high on cohesion are considered to be within a healthy range. Adaptability is defined as the extent the family is able to change in response to stress (Olson, 2000). The adaptability dimension categorizes families across a continuum that includes rigid (rs=15–39; n=5), structured (rs=40–45; n=15), flexible (rs=46–54; n=36), and very flexible (rs=55–70; n=5) families. Raw scores on the cohesion and adaptability dimensions are translated into linear scores, which are then added and divided by two to calculate family type (range = 1–8). Higher scores on each dimension contribute to a more balanced family type. The cohesion and adaptability scales have demonstrated adequate test-retest reliability (.83 and .80), respectively, and Cronbach's alpha (.87 and .78), respectively (Olson et al., 1983).

Parental Stress Index – Short Form (PSI-SF)—The PSI-SF is a 36-item questionnaire completed by the parent that consists of three subscales: Difficult Child Temperament, Dysfunctional Parent-Child Interaction, and Parental Distress. The instrument measures difficulties associated with child temperament, dysfunctional interactions between the parent and child, stress related to the parent-child relationship, and the source of parenting stress. Internal consistency (.65 to .96) and test-retest reliability (.70 to .83) are within the acceptable to good ranges (Abidin, 1997).

Brief Symptom Inventory (BSI)—The BSI is a 53-item self-report questionnaire that is completed by parents in order to examine their global distress and psychological symptoms. Nine areas of psychopathology are assessed (e.g., phobic anxiety, depression, and somatization) and parents rate specific symptoms.

Training of Independent Evaluators

Independent evaluators received four to eight weeks of training on administration of the ADIS interview, depending on their previous experience and education. Except for one independent evaluator, all interviewers had substantial clinical experience with children and had a Master's Degree in psychology or were advanced students in a doctoral psychology program. Training was provided by the fourth author who was trained by Anne Marie Albano, Ph.D., an author of the ADIS. All ADIS interviews were audiotaped and reliability checks were completed on 20% of the interviews. Interrater reliability for each inclusionary diagnostic category was calculated using Kappa coefficients, and agreement was determined by presence or absence of diagnosis and composite CSR within one point. Kappas demonstrated excellent agreement, ranging from 0.80 to 1.00.

Independent evaluators were blind to the participants' treatment condition. Participants were randomly assigned to evaluators at baseline and again at posttreatment due to research staff turnover. All evaluators completed interviews with children from each of the three schools, and families were instructed not to disclose their condition assignment to the evaluators.

Interventions

Two active treatment conditions were included in the study: child group CBT and child group CBT with concurrent parent training. Groups were held after school hours in classrooms at the children's schools. The child group CBT intervention was a nine-week manualized intervention for anxious children using the FRIENDS program (Barrett, Webster, & Turner, 2000). In the child group CBT plus parent training, parents participated in a nine-week parent training group that met concurrently but separately from the child groups and used an expanded version of the FRIENDS program. Eight to ten children participated in each group, and at least one parent for each child was required to participate in the parent training group. In addition to the two CBT treatment conditions, there was a no-treatment control group. For further details regarding the treatment phase, refer to Bernstein et al. (2005).

Data Analytic Strategy

Pearson product-moment correlations were computed first to examine associations among parent and family factors including family functioning (FACES II), parenting stress (PSI), and parental psychopathology (BSI) and treatment outcome (CSR difference score). Correlations were computed separately for the treatment and control groups. The variables that were significantly correlated with the CSR difference score were then included in multiple regression models.

Separate models were conducted for each potential predictor. Three variables were included in each model: the predictor variable, treatment condition, and the interaction term. The interaction term was the variable of interest and assessed whether the relationship between the predictor and the outcome varied by condition. Finally, post-hoc analyses were conducted to further examine the relations among family cohesion and parenting stress and parental psychopathology. Families in the current study were categorized as low or high in cohesion, with a cohesion score of 60 and greater representing families high in cohesion (connected and very connected). The cut-off score of 60 was used in the current study based on the categories across the cohesion dimension. Due to the small number of families in the disengaged and separated categories, the families were divided into two cohesion groups rather than four groups for the post-hoc analyses. T-tests were used to examine the difference between families low and high in cohesion on demographics (i.e., age, SES, family structure), parenting stress, and parental psychopathology.

For the purpose of the current study, the two treatment groups (CBT alone and CBT plus parent training) were combined in the analyses and compared to the no-treatment control group. The power was increased by collapsing the two treatment groups, as the sample size in each treatment group was relatively small. When the results indicated that there were significant differences between the collapsed treatment and no-treatment control groups, then further statistics were computed to compare the separate treatment groups (group CBT alone and group CBT plus parent training) to the no-treatment control group.

RESULTS

Association between Family Factors and Treatment Outcome

Table one provides overall descriptive statistics for the study variables, including demographics of the study sample, family functioning (FACES II), parenting stress (PSI), parental psychopathology (BSI), and treatment outcome (CSR difference score). There were no significant differences in the means across the treatment and no-treatment control groups; therefore, the means and standard deviations for the total sample are presented.

Correlations show a significant relation between family functioning and treatment outcome in children who received group CBT (see Table 2). Specifically, significant positive correlations were found between family type and treatment outcome ($r=.33, p<.05$) and family cohesion and treatment outcome ($r=.50, p<.01$). These results suggest that more balanced families and families higher in cohesion at baseline demonstrated greater treatment effects at posttreatment, measured by decreases in child anxiety and associated impairment (composite CSR difference score). No relations were found between family adaptability, parenting stress, and parental psychopathology, and treatment outcome for the children who received the CBT intervention. For the no-treatment control group, no relations were found between family factors, parenting stress, and parental psychopathology, and treatment outcome.

Only family functioning factors (FACES II) were included in the multiple regression models because the correlations showed no significant association between parenting stress, parental psychopathology, and treatment outcome. The overall model for family type was significant ($F(3,57)=3.46, p=.02$). A significant interaction was found for family type and treatment condition ($t(57)=2.17, p=.03$), suggesting that the effect of family type on treatment outcome significantly varied by condition. The overall model for family cohesion was also significant ($F(3,57)=5.97, p=.001$). The interaction between family cohesion and treatment condition was statistically significant ($t(57)=2.98, p=.004$), suggesting that the effect of family cohesion on treatment outcome varied by condition. The r -square values for the family type and family cohesion models were .11 and .20, respectively. These results indicate that family type and family cohesion are associated with treatment outcome in the treatment condition, but not in the no-treatment control. Children from more balanced families and families who were higher in cohesion demonstrated a greater treatment response. The overall regression model for family adaptability was not significant ($F(3,57)=1.95, p=.13$). Results from the multiple regression models predicting treatment outcome are shown in Table 3.

The effect of family cohesion on treatment outcome was also examined separately in each treatment group because significant differences were found between the collapsed treatment group and the no-treatment control. Correlations were computed between baseline family cohesion (FACES II) and treatment outcome (CSR difference score) for each condition. Results showed that family cohesion was associated with treatment outcome in the child CBT plus parent training condition ($r=.65, p=.004$). Family cohesion was not associated with treatment outcome in the child CBT condition ($r=.35, p=.13$) or the no-treatment control ($r=-.09, p=.67$). These results indicate that family characteristics (e.g., family cohesion) may be more important in influencing treatment outcome when the family is involved in the treatment.

The effect of family type on treatment outcome was also significantly different between the collapsed treatment group and the no-treatment control. Family type, however, is determined by scores on the family adaptability and family cohesion dimensions of the FACES II, and the effect of family type was mainly driven by family cohesion scores. Thus, further analyses were not conducted using family type.

Post-hoc analyses

Overall, families low and high in cohesion did not differ by age of the child, SES, and gender of the child. Results showed a marginally significant relationship between family cohesion and single parent family status ($\chi^2=3.47$, $p=.06$), with a higher percentage of single parent families classified as low in cohesion. On the PSI, parents from families high in cohesion reported significantly lower levels of parenting stress ($t(59)=2.44$, $p=.02$) compared to parents from families low in cohesion (see Table 4). Specifically, parents from families high in cohesion reported lower scores on the following PSI scales: difficult child ($t(59)=1.97$, $p=.05$), parental distress ($t(59)=2.59$, $p=.01$), and parent/child dysfunctional interaction ($t(59)=2.64$, $p=.01$) than parents from families low in cohesion. Similarly, parents from families high in cohesion reported less overall parental psychopathology on the BSI compared to parents from families low in cohesion ($t(56)=2.04$, $p<.05$). Specifically, parents from families high in cohesion reported fewer overall symptoms ($t(56)=2.45$, $p=.02$), lower depression ($t(56)=2.21$, $p=.03$), and lower anxiety ($t(56)=2.12$, $p=.04$) than parents from families low in cohesion.

DISCUSSION

Research has examined the relations between parent and family variables and child anxiety, and has shown that parenting stress, parental psychopathology, and family functioning are associated with child anxiety (e.g., Beidel & Turner, 1997; Manassis & Hood, 1998; Hudson & Rapee, 2001). The current study further explored these relations by examining the effect of parent and family variables on treatment outcome in anxious children. It was hypothesized that parenting stress, parental psychopathology, and family functioning would be related to treatment outcome. Family cohesion, as measured with the FACES II, emerged as the variable with the strongest relationship to treatment outcome. Family adaptability, parenting stress and parental psychopathology did not emerge as significant predictors of treatment outcome.

Crawford and Manassis (2001) found that overall family functioning was related to treatment outcome. The present study expanded these results by examining specific components of family functioning, namely cohesion and adaptability dimensions on the FACES II. The results indicated that children from families high in cohesion demonstrated significantly greater decreases in anxiety severity and associated impairment compared to children from families low in cohesion. When the treatment groups were separated, family cohesion was only related to treatment outcome in the child CBT plus parent training condition and not in the child CBT condition. These results indicate that family cohesion is a strong predictor of positive treatment outcome, especially when the family is involved in the treatment process. Family cohesion was the only variable examined that demonstrated a significant relation with treatment outcome.

The FACES II defines cohesion as the emotional bonding that family members have towards one another and the degree to which family members are connected (Olson, 2000). The specific areas used to examine family cohesion on the FACES II include: emotional bonding, boundaries, coalition, time, space, friends, decision-making, and interests and recreation. The FACES II (unlike FACES III) does not measure enmeshment; therefore, families who are high on cohesion are considered to be within a healthy range as opposed to being enmeshed. The results suggest that more connected families provide an environment that is more conducive to promoting a positive response to treatment of anxious children. Family adaptability, which refers to the extent the family system is flexible and able to change (Olson, 2000), was not

found to be related to treatment outcome. Family adaptability may be more important when working with adolescents because they are autonomy seeking and more likely to challenge parents' decisions. In contrast, younger children are less focused on seeking autonomy from their parents.

The present study did not identify parenting stress as directly related to treatment outcome. This is in contrast to Crawford and Manassis (2001), who found that increased parenting stress predicted poorer treatment outcome. It is notable that parents' scores on the Total Stress Index from the current study appear lower and less variable compared to parents from the Crawford and Manassis study, which is likely due to differences in samples. The current study used a nonclinical sample, whereas, the Crawford and Manassis study used a clinical sample. Differences in baseline parenting stress levels may partially explain the conflicting results regarding parenting stress and treatment outcome. Differences in results may also be accounted for by measurement, as the Crawford and Manassis study (2001) utilized the full PSI (120 items), and the present study utilized the short version of the PSI (36 items).

Parental psychopathology did not emerge as a predictor of treatment outcome in anxious children. Previous research has been mixed in regard to the impact of parent mental health and treatment outcome (e.g., Cobham et al., 1998; Southam-Gerow et al., 2001; Crawford & Manassis, 2001). Some studies have shown that the presence of parental psychopathology is related to poorer treatment outcome in anxious children (Cobham et al., 1998; Southam-Gerow et al., 2001), but other studies suggest that parental psychopathology is not related to treatment outcome (Crawford & Manassis, 2001).

The discrepant findings among the current study and past studies that found relations between parental psychopathology and treatment outcome may be accounted for by methodological differences. Cobham et al. (1998) and Southam-Gerow et al. (2001) used clinical samples, whereas, the current study used a nonclinical sample in which parents reported lower levels and limited variability in psychopathology scores. In addition, parental psychopathology was assessed differently across studies. The two earlier studies (Cobham et al., 1998; Southam-Gerow et al., 2001) had parents complete a measure that specifically examined adult anxiety (State-Trait Anxiety Inventory; STAI), and Cobham et al. (1998) found that parental anxiety had a negative impact on treatment outcome for anxious children. Additionally, Southam-Gerow and colleagues (2001) had parents complete another measure that examined symptoms of depression (Beck Depression Inventory; BDI), which showed that maternal depression had a negative impact on treatment outcome for anxious children. In contrast, in the current study parents completed a self-report measure that assessed a range of mood and behavioral symptoms (BSI), which did not result in an association between parental psychopathology and treatment outcome. The BSI may be less sensitive than the STAI and BDI in identifying symptoms of anxiety and depression.

Given that family cohesion was the only significant predictor of treatment outcome in anxious children, post-hoc analyses were conducted to better understand the relations between family cohesion and parent characteristics. The sample was divided into families characterized by low and high cohesion. Families low in cohesion differed from families high in cohesion on several parent characteristics. Parents from families low in cohesion endorsed significantly higher levels of parenting stress and parental psychopathology as compared to parents from families high in cohesion.

Messer and Beidel (1994) hypothesized that parental psychopathology affects family environment, and a conflictual, less cohesive family contributes to the development and maintenance of childhood anxiety. Therefore, parental psychopathology may influence the presence of childhood anxiety via parenting stress and family functioning. In the present study,

treatment outcome was not significantly correlated with either parenting stress or parental psychopathology. Thus, family cohesion does not meet criteria as a mediator in the present sample (Baron & Kenny, 1986). However, as mentioned earlier, families in this nonclinical sample appear to have lower levels of parenting stress and psychopathology. Perhaps family cohesion functions as a mediator of treatment outcome when levels of parenting stress and psychopathology are higher, as in clinical samples.

The current study advances the understanding of relations between parent and family variables and treatment outcome in anxious children. However, there are limitations that should be addressed. Family functioning, parenting stress, and parental psychopathology are measured from the parent perspective only, and the results are based on these measures. Parents' response may have been influenced by social desirability and defensiveness. Further, the data were gathered from only one parent, 93% of whom were mothers. In addition, there was a lack of variability in participant demographics. The sample consisted of primarily Caucasian children from rural, suburban, middle-class families. Therefore, it is unknown whether the findings generalize to urban and non-Caucasian samples. Another limitation within the study was that the results were based on parent questionnaire data (PSI, BSI, and FACES II) from a single time point following identification of child anxiety, which prevents examination of the direction of the effects. Specifically, it is unclear whether high levels of parenting stress and parental psychopathology and low levels of family cohesion are a result of parenting an anxious child or whether children exhibit more symptoms of anxiety due to elevated parenting stress and parental psychopathology.

In summary, the current study provides a closer examination of the relations between parent and family variables and treatment outcome with anxious children. Previous research has examined the effect of overall family functioning (Crawford & Manassis, 2001); however, current results examine specific dimensions of family functioning that affect treatment outcome. Findings from the present study suggest that family cohesion may play an important role in treatment outcome with anxious children. Treatment gains are enhanced for anxious children from families high in cohesion compared to those from families low in cohesion, especially when the family is included in the treatment process. Furthermore, the results of the current study are based on a nonclinical sample rather than a clinical sample, which allows examination of the effects of family functioning in a generally well-functioning sample.

Additional research is needed to examine the relations between parent and family variables and treatment outcome in anxious children. Research with a larger and more diverse sample will provide further insight into this area. Although there are some contrasting findings across studies regarding the specific relations between parenting stress, parental psychopathology, and treatment outcome, they appear to be interrelated. Therefore, it is important to assess for parenting stress and parental psychopathology when treating anxious children. Development and implementation of treatment techniques to strengthen family cohesion should serve to improve treatment outcome in families with anxious children.

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Table 1
Descriptive statistics for all study variables.

	Range	Mean or %	SD
<i>Demographics</i>			
Age at baseline	7–11	8.98	1.04
SES	22–58	40.45	8.43
% Female	--	66	--
% Single Parent Family	--	28	--
<i>Family Functioning (FACES II)</i>			
Family Type	2–7.5	5.20	1.19
Cohesion	27–77	64.56	7.86
Adaptability	34–59	47.48	5.18
<i>Parenting Stress Index (PSI)</i>			
Total	2–99	58.30	32.75
Difficult Child	1–99	57.56	33.34
Parental Distress	1–98	48.02	28.51
Dysfunctional Interaction	5–99	60.56	30.48
<i>Brief Symptom Inventory (BSI)</i>			
Global Severity	36–71	55.31	7.93
Positive Symptom Total	36–73	56.26	8.53
Depression	42–67	54.14	8.58
Anxiety	38–69	51.43	7.87
<i>Treatment Outcome</i>			
CSR Difference Score	--	1.43	1.78

Note: PSI reported as percentile scores. BSI reported as T-scores.

Table 2
Correlations between study variables and treatment outcome by treatment condition

	CSR Difference Score	
	CBT Treatment	No-Treatment
<i>Family Functioning (FACES II)</i>		
Family Type	.33 [*]	-.21
Cohesion	.50 [*]	-.09
Adaptability	.13	-.18
<i>Parenting Stress Index (PSI)</i>		
Total	-.27	-.16
Difficult Child	-.31	-.18
Parental Distress	-.19	-.09
Dysfunctional Interaction	-.19	-.08
<i>Brief Symptom Inventory (BSI)</i>		
Global Severity	-.21	-.17
Positive Symptom Total	-.27	-.13
Depression	-.15	-.21
Anxiety	-.11	-.14

*
p<.05

Table 3

Regression results for family factors predicting treatment outcomes (n=61).

	β	SE B	P	R ²
Model 1: Family Type				.11
Family Type (FT)	-.16	.26	.36	
Condition (Cond)	-.87	1.96	.11	
FT X Cond	1.19	.37	.03	
Model 2: Cohesion				.20
Cohesion (C)	-.06	.03	.68	
Condition (Cond)	-2.57	3.49	.01	
C X Cond	2.87	.05	<.01	
Model 3: Adaptability				ns
Adaptability (A)	-.13	.06	.46	
Condition (Cond)	-1.02	4.15	.38	
A X Cond	1.30	.09	.26	

Table 4
T-test results comparing families low and high in cohesion on PSI and BSI measures, and baseline severity (CSR).

	Low Cohesion (n=13) M or % (SD)	High Cohesion (n=48) M or % (SD)	P
<i>Demographic Characteristics</i>			
Age at baseline	8.92 (1.19)	9.00 (1.01)	.82
SES	37.69 (7.81)	41.21 (8.51)	.19
% Female	69	65	.75
% Single Parent Family	50	23	.06
<i>Parenting Stress Index (PSI)</i>			
Total	77.15 (26.92)	53.19 (32.55)	.02
Difficult Child	73.31 (27.24)	53.29 (33.80)	.05
Parental Distress	65.38 (24.43)	43.31 (27.92)	.01
Parent/Child Dysfunctional Interaction	79.46 (25.00)	55.44 (30.02)	.01
<i>Brief Symptom Inventory (BSI)</i>			
Global Severity	59.15 (8.30)	54.20 (7.55)	.05
Positive Symptom Total	61.15 (9.49)	54.84 (7.79)	.02
Depression	58.62 (8.19)	52.84 (8.34)	.03
Anxiety	55.38 (7.16)	50.29 (7.77)	.04
<i>Anxiety Severity</i>			
Baseline Composite CSR	4.15 (1.21)	4.52 (.85)	.22

Note. Cohesion was measured by the FACES II (low cohesion ≤ 59 , high cohesion ≥ 60)