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A R T I C L E

One-Year Follow-up of Family versus Child CBT for Anxiety Disorders: Exploring the Roles of Child Age and Parental Intrusiveness

Jeffrey J. Wood · Bryce D. McLeod · John C. Piacentini · Marian Sigman

Abstract *Objective* To compare the relative long-term benefit of family-focused cognitive behavioral therapy (FCBT) and child-focused cognitive behavioral therapy (CCBT) for child anxiety disorders at a 1-year follow-up. *Method* Thirty-five children (6–13 years old) randomly assigned to 12–16 sessions of family-focused CBT (FCBT) or child-focused CBT (CCBT) participated in a 1-year follow-up assessment. Independent evaluators, parents, and children rated anxiety and parental intrusiveness. All were blind to treatment condition and study hypotheses. *Results* Children assigned to FCBT had lower anxiety scores than children assigned to CCBT on follow-up diagnostician- and parent-report scores, but not child-report scores. Exploratory analyses suggested the advantage of FCBT over CCBT may have been evident more for early adolescents than for younger children and that reductions in parental intrusiveness may have mediated the treatment effect. *Conclusion* FCBT may yield a stronger treatment effect than CCBT that lasts for at least 1 year, although the lack of consistency across informants necessitates a circumspect view of the findings. The potential moderating and mediating effects considered in this study offer interesting avenues for further study.

Keywords Cognitive behavioral therapy · Child anxiety disorders · Therapy process · Parenting

Introduction

Anxiety disorders are among the most common psychiatric problems experienced by children [1]. Related functional impairments can include school refusal, failure to make and keep friends, and family conflict [2, 3]. If left untreated, child anxiety disorders can be pernicious as they often do not remit over time [4]. The presence of anxiety disorders in

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childhood is linked with the development of depression and substance use [5]. Given the potential for negative long-term outcomes, psychosocial treatments that produce lasting changes in child anxiety may serve an important preventive function affecting the course of later mental health and functioning [6]. Toward this end, it is important to know whether treatments produce lasting reductions over time [7].

Reviews of the child and adolescent psychotherapy literature consistently identify cognitive-behavioral therapy (CBT) as an efficacious intervention for child anxiety [8]. A typical CBT program involves anxiety management skills training (e.g., psychoeducation, relaxation, cognitive skills) and exposure interventions. Both family-focused (FCBT) and child-focused (CCBT) approaches have received extensive empirical support, with neither approach consistently outperforming the other at posttreatment [9]. Moreover, evidence suggests that treatment-generated effects produced by CCBT and FCBT are maintained at 1 year [10] and 6- to 7.4-year follow-ups [11, 12]. Both approaches therefore appear to produce lasting reductions in child anxiety. The few clinical trials that have compared CCBT and FCBT and presented follow-up data have generated inconsistent results, with most findings suggesting nonsignificant group differences [10, 11, 13–15]. Questions therefore remain about the relative long-term benefit of FCBT and CCBT for child anxiety.

In the present study, we investigate the relative long-term efficacy of FCBT versus CCBT. The FCBT program, Building Confidence [16] outperformed a CCBT program at posttreatment on diagnostician's ratings of anxiety severity and clinical global impressions, as well as a parent report measure of anxiety, though not on child-reported anxiety or diagnostic status [17]. This FCBT program (a) involves parents as co-clients rather than merely supports for the child's coping skills and (b) targets parental intrusiveness, a parenting behavior theorized to maintain child anxiety [18, 19]. Thus, the Building Confidence program is characterized by features that might enhance the impact of parental involvement on outcomes in CBT for child anxiety.

A unique feature of the Building Confidence program is that it targets parental intrusiveness. Parents who act intrusively tend to take over tasks that children are (or could be) doing independently and impose an immature level of functioning on their children [20, 21]. Whereas a low level of parental intrusiveness is hypothesized to foster children's perceptions of control and mastery [22], heightened intrusiveness is hypothesized to maintain elevated levels of child anxiety [23, 24]. Developmentally, the impact of intrusive parental behaviors may be most pronounced during the transition into adolescence. In early adolescence, autonomy becomes an increasingly important need [25, 26] and parental behavior that restricts autonomy can be particularly salient. The benefit of reducing intrusive parenting may therefore be most significant in early adolescence.

This pattern of findings has led experts to speculate that parental involvement in CBT may be important for child outcomes only under certain conditions [6, 9]. Relevant parameters include the amount and type of parental involvement, the child's level of development, and the extent to which interventions target parental behaviors that maintain child anxiety [9, 10]. However, though these parameters might affect the impact parental involvement has on clinical outcomes, more empirical evidence is needed. Relatively little is yet known about the mediators and moderators of CBT treatment among children with anxiety disorders [27]. Although reductions in self-reported anxious self-talk have been found to mediate reductions in self-reported anxiety symptoms in CCBT [28], parenting has not been tested as a mediator of treatment effects in FCBT. Moderators of treatment effects in CCBT and FCBT have been studied on an exploratory basis, with preliminary evidence suggesting that an FCBT program focusing on parent anxiety management, co-parenting, and child management parenting skills may have been more effective than

CCBT for younger children (7–10 years old) but not older children (11–14 years old) [10]. On the whole, little is known about the factors that produce change in treatment or for whom CCBT and FCBT are most effective [27].

The principle goal of this study was to compare the relative efficacy of FCBT and CCBT for children at a 1-year follow-up assessment. A secondary aim was to test hypotheses about the mechanisms that might account for differential effects. Specifically, it was hypothesized that FCBT might be superior to CCBT for early adolescents rather than for younger children. An exploratory test was conducted examining the role of changes in intrusiveness as a mediator of treatment effects. Because of the relatively small sample employed in this study, these secondary analyses were considered as a hypothesis-generating mechanism to guide future research, not as definitive tests of moderation and mediation.

Method

Participants

Participants included 35 children and their families who had completed treatment in a randomized, controlled trial comparing CCBT and FCBT for children with anxiety disorders [17]. The original paper reported immediate posttreatment outcomes [17]. This paper presents 1-year follow-up outcomes; hence, the two papers overlap with respect to baseline scores for participants, but not for treatment-related outcome data. The initial sample included 40 children with anxiety disorders and their primary parents (i.e., the parent responsible for overseeing the child's daily activities) living in a major metropolitan area of the western United States [17]. Key details about the sample are summarized here. Children were referred by local school psychologists and principals (who received a letter about the study) and by a medical center-based child anxiety clinic. Thirty-eight (95%) children completed the intervention and participated in the posttreatment assessment; thirty-five of these (92%) participated in the 1-year follow-up assessment (FCBT $n = 18$; CCBT $n = 17$). The 35 children ranged in age from 6 to 13 years (FCBT $M = 9.67$, CCBT $M = 10.35$, ns) and about two-thirds were boys ($n = 23$; 66%). Most primary parents were mothers ($n = 30$; 86%) and most were married ($n = 32$; 91%). Over half of the parents had graduated from college ($n = 26$; 64%). The 1-year follow-up sample was 69% Caucasian, 21% multi-racial, 3% Latino/Latina, 3% African–American, and 3% Asian.

Participants met *DSM-IV* criteria for a diagnosis of: separation anxiety disorder (SAD), social phobia (SP), or generalized anxiety disorder (GAD) based on a semi-structured interview. They were not taking any psychiatric medication at the initial assessment or were taking a stable dose of psychiatric medication and stated an intention to maintain the same dose throughout the study.

Families were excluded if (a) the child was currently in child-focused psychotherapy, (b) the family was currently in family therapy or a parenting class, (c) either the child or the parents evidenced psychotic symptoms, (d) the child began taking psychiatric medication or increased his/her dose of medication during the intervention, or (e) for any reason the child or parents appeared unable to participate in the intervention program.

Intervention Programs

Therapists included nine psychology doctoral students and one doctoral-level psychologist. All therapists were in (or had graduated from) an accredited clinical psychology doctoral

program at a major research university, had at least 1 year of previous clinical training, and had experience working with children and families. Therapists received 8 h of training on FCBT and CCBT, read the treatment manuals, and attended weekly meetings with a clinical supervisor (doctoral level psychologists with expertise in the protocols). The number of sessions in both conditions ranged from 12 to 16, lasting 60–80 min each. These treatment parameters draw from Kendall's Coping Cat treatment which permits up to four additional sessions for youth who have a clinical need for additional exposure therapy prior to termination [29] and Barrett's Coping Koala treatment [10] which permits a range in the length of session time to accommodate variations in the complexity of clinical content from week to week.

CCBT Condition

The CCBT intervention was based on a manual-based empirically supported child-focused intervention [29] divided into two phases: skills training and graded in vivo exposure tasks. During skills training, children were taught coping strategies such as affect recognition, relaxation, cognitive restructuring, and self-reward. In the graded exposure phase (involving at least eight sessions), a hierarchy was created in which feared situations were ordered from least to most distressing. Children worked their way up the hierarchy and were rewarded as they attempted increasingly fearful activities. Contact with the parents in the CCBT condition was minimal.

FCBT Condition

The Building Confidence program was developed and manualized for this study [16] and was developed in the tradition of other FCBT programs [10] by combining CCBT interventions with parent-training. This program is unique in its emphasis on changing parental communication patterns hypothesized to maintain child anxiety, particularly intrusiveness. For example, sessions focused on increasing children's independence in self-help skills and privacy in daily routines, foci which are unique to this FCBT program. FCBT sessions were structured differently than CCBT sessions: individual meetings with the child were scheduled for the initial 25–30 min, the therapist then met with the parents for 25–30 min, and the final 10–15 min was used for a family meeting. The child-focused component of FCBT paralleled the CCBT condition and was comprised of skills training and graded in vivo exposures. Further, parents were taught childrearing strategies to increase autonomy-granting and reduce intrusiveness; these strategies included (a) giving choices when children are fearful (rather than making choices for the children), (b) allowing children to struggle and learn by trial and error rather than take over tasks for them, (c) labeling and accepting children's feelings (rather than criticizing them), (d) promoting children's acquisition of novel self-help skills, and (e) increasing children's privacy in developmentally appropriate contexts (e.g., dressing). A behavioral rewards system was initiated to reinforce target behaviors and parents were taught the principle of selective attention to reduce excessive anxious behavior (e.g., crying, repetitive questions).

The original clinical trial [17] provides evidence of treatment fidelity and differentiation between FCBT and CCBT. To summarize, independent evaluators coded randomly selected sessions using the therapy process observational coding system for child psychotherapy—strategies scale [30]. The results indicated that family intervention strategies were absent in CCBT but were frequent in FCBT. The CCBT and FCBT conditions did not differ in number of sessions (Ms = 14.25 and 14.94, SDs = 1.34 and 1.16, respectively; t [32] = 1.62, ns).

Measures

Anxiety Measures

Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions (ADIS-C/P)

The ADIS-C/P is a semi-structured interview protocol with favorable psychometric properties [31]. Independent evaluators were trained using procedures recommended by the ADIS-C/P authors (A. M. Albano, personal communication). Trained independent evaluators (i.e., graduate students in psychology) naïve to the intervention condition of each family conducted diagnostic interviews before and 1 year after intervention. Children's *DSM-IV* disorders were assessed by the independent evaluator on the basis of separate interviews with the caregiver(s) and the child [32]. Positive reports from either parent or child (the "or" rule) were considered sufficient for rating a criterion as present at both the pre-intervention and follow-up assessments. Evaluators made ratings on the ADIS-C/P Clinician's Severity Rating scale (CSR; 0 = *not at all*, 4 = *some*, 8 = *very, very much*) for each assigned diagnosis. Ratings of 4 or above are considered to be of a clinical level. Details of the ADIS-C/P interviewing procedures and evidence of the reliability of this interview are provided elsewhere [31].

Multidimensional Anxiety Scale for Children (MASC)

The MASC was administered to children and the parent version of the MASC (MASC-P) was administered to parents. The MASC is a 39-item, 4-point Likert-type scale with robust psychometric properties [33]. The MASC-P also appears to have excellent psychometric properties [31]. Alphas ranged from 0.79 to 0.86 for the total score for the MASC and MASC-P. T-scores are not available for the MASC-P; thus, raw scores were used for analyses for both the MASC and MASC-P.

Child Behavior Checklist (CBCL)

Parents also completed the CBCL [34]. Following Kendall [29], the Internalizing scale was used as an indicator of child anxiety.

Clinical Global Impressions—Improvement Scale (CGI)

The CGI provided a global rating of improvement in anxiety symptoms ranging from 1 (*completely recovered*) to 5 (*no change*) to 8 (*very much worse*). The independent evaluator provided a rating on this scale at follow-up.

Composite Anxiety Scale

For the exploratory analyses of moderation and mediation, a composite measure of anxiety was formed from the individual measures in order to reduce the likelihood of Type I error by minimizing the number of statistical tests. Candidate measures for the composite scale included the ADIS Clinician's Severity Rating scale, the MASC, the MASC-P, and the CBCL Internalizing scale. Diagnostic reliability statistics were run, indicating that the ADIS, MASC-P, and CBCL cohered together well into a composite anxiety scale, while

the MASC did not. Cronbach's alpha was reduced from 0.83 to 0.73 by including the MASC; furthermore, the corrected item-total scale correlation was large for the ADIS, MASC-P, and CBCL (range 0.58–0.68) and low for the MASC (0.22). Therefore, the composite anxiety measure included the ADIS Severity scale, the MASC-P, and the CBCL.

The composite anxiety scale was constructed by arranging the dataset in long form (i.e., the format used for multilevel modeling) so that both pre-intervention and 1-year follow-up assessment scores were incorporated into a single column for each variable (i.e., with 70 rows rather than 35, representing 2 scores per child). While in long form, each anxiety indicator variable—ADIS Severity scale, MASC-P, and CBCL Internalizing scale—was standardized. An average of the three standardized anxiety indicator variables was then computed. This single average score represents the *composite* anxiety score. Then, the dataset was transformed back to wide form (i.e., with separate variables for the pre-intervention and 1-year follow-up composite anxiety scores). Composite anxiety scores from 1-year follow-up were then subtracted from composite anxiety scores from pre-intervention to generate simple change scores, which were used for the exploratory tests of moderation and mediation $\left(\Delta_{\text{anxiety}} = \text{Composite Anxiety}_{\text{pre-intervention}} - \right.$ $\left.\text{Composite Anxiety}_{1-\text{yearfollow-up}} \right)$. This set of transformations and computations resulted in a composite scale that represents *absolute* rather than *relative* changes in anxiety from pre-intervention to 1-year follow-up because the composite variable is scaled identically at both timepoints.

Services Questionnaire

Parents were asked to list the amount, type, and frequency of any psychotherapy, group therapy, and psychoactive medication their child had received during the follow-up period.

Parental Intrusiveness

A composite measure of parental intrusiveness was used in this study [35]. The composite is based on four measured variables, including an observational laboratory procedure rated by independent evaluators, child- and parent-report measures of intrusiveness (two separate indicators), and a parent-report measure of assistance with children's self-help routines. This measure is summarized here; the development study, which examined cross-sectional interrelations among the four measured variables, as well as indices of reliability and validity, is described elsewhere [35].

Contemporary principles of measure development for the assessment of parenting [36, 37] guided the construction of the intrusiveness measure, including aggregating multiple measures of the same parenting behavior from different informants into a single composite measure; focusing on specific behaviors (e.g., "mom gave me help in putting on or taking off clothes") rather than vague concepts (e.g., "mom invades my privacy"); focusing on a short, specific time-frame; using items that are relevant to the age-group being studied; and including observational methods. Each of the four component measures, as well as the psychometric properties of the composite scale, is now described.

Belt-buckling Task

A laboratory-based observational measure of intrusiveness was developed in consultation with Sroufe [35, 38, 39]. During the assessment, an adjustable belt with a small case

attached to it containing a 10-ounce metal weight was given to the child, who was told that a heart-rate monitor would be attached to it momentarily (for a psychophysiological assessment unrelated to the present study). Children were asked to put the belt over their shirt. They were instructed, "It doesn't have to be tight. You can probably do it by yourself." Parents were then told, "But, Mr. /Mrs. ___, you can help ___ (child) if she/he needs it." Parent–child interactions during the belt-buckling process were videotaped and observed remotely by the research assistant. The task was designed to be difficult for most participants and elicited varying degrees of parental assistance. To minimize reactivity to the task, children and parents were given a practical reason for doing the task (as a first step of attaching a heart rate monitor). The task was administered in an identical manner at pre- and post-intervention, and the rationale provided for the task was the same at both times (preparing to attach the heart rate monitor).

Because the amount and type of parental assistance provided during this task had the potential to be influenced by the child's developmental level, the coding system was devised to isolate and focus on the portions of the child's behavior that were equivalent across the entire age-span and range of ability levels. Initial review of all pre-intervention tapes revealed that some children eventually requested help, either verbally or nonverbally (e.g., "I can't figure this thing out," or by simply putting the belt down in front of the parent and implicitly asking for help). We did not code the portions of the task *after* the child asked for help in an effort to distinguish intrusiveness from helpful responsiveness and in consideration of differences in how parents of older versus younger participants might be expected to respond to such a request.

Observer training involved an introductory meeting with the PI, reading the coding manual, review of five training tapes that exemplified various aspects of the coding procedures with the PI explaining the rationale behind each coding decision, practice coding of ten training tapes selected to have a range of coding intricacies, and review of the coding with direct feedback from the PI. Upon successful completion of the training, coders were required to code three gold standard tapes and if they did so accurately, they began coding the tapes for this study. For ongoing training purposes and to prevent rater drift, coding meetings were held each week or as needed with the PI; the coding manual was reviewed pertaining to different coding decisions and coders were encouraged to think through and explain their decisions.

Trained observers blind to intervention condition watched the entire belt-buckling episode two times for each family. On the second viewing, observers recorded the total number of seconds (prior to the child requesting help) that the parent spent engaging in intrusive physical help or touch, such as wrapping their arms around the child to help put the belt on, sitting the child on their lap while wrapping the belt around the child, picking the child up to put her/him in an optimal position to attach the belt, or initiating moderate or intense physical affection (e.g., a kiss) before completing the task (which was intrusive and distracting in a task requiring children's full attention). As established in the measure development study, raw scores were the total number of seconds of intrusive physical help or touch [35]. Two observers rated all tapes independently and interrater reliability was acceptable (mean ICC = 0.73).

In the initial study of this task, there was no evidence that the amount of parental intrusiveness was related to the level of difficulty children experienced with the task [35]. In that study, children were grouped according to those who struggled during the belt-buckling task and those who did not. There were no statistically significant differences between these groups in the amount of intrusiveness, suggesting that parents were not merely scaffolding by providing help for their children when they struggled.

Parent–Child Interaction Questionnaire (PCIQ)

The second and third components of the composite intrusiveness measure involved corresponding eight-item parent- and child-report forms (the PCIQ) [35]. The PCIQ addresses concrete, observable parent–child interactions that have occurred during a 1-week timeframe using a rating scale based on the frequency of each behavior. Items focus on parental help with children's private daily routines that most school-age youth are capable of performing independently (e.g., dressing) and infantilizing behavior that places children in less mature roles (e.g., using baby words). Cronbach's alpha ranged from 0.71 to 0.73 for both child- and parent-report. Parent–child agreement was high (ICC = 0.73).

Skills of Daily Living Checklist (SDLC)

The SDLC is an 11-item parent-report questionnaire measuring caregivers' level of involvement and assistance in children's self-care routines such as threading belts or zipping zippers [35]. Cronbach's alpha was 0.86.

Construct Validity

The initially reported psychometric properties of this composite measure were favorable [35]. As a further check of the construct validity of the intrusiveness measures, a multitrait-multimethod matrix (MTMM) [40] was evaluated. In addition to the four intrusiveness indicator variables, two measures of parenting and family processes assumed to differ from intrusiveness were included: parental involvement [41] and positive coparenting [42]. Using an MTMM, the four intrusiveness measures should correlate with one another more strongly than with the involvement and coparenting measures, particularly when matching for method. This criterion was met in all cases. Correlations among the intrusiveness measures ranged from 0.22 to 0.65 ($M = 0.49$; median = 0.54; 5 of 6 $ps < 0.05$). In contrast, correlations between the intrusiveness measures and the parent involvement and coparenting measures ranged from 0.00 to 0.28 ($M = 0.12$; median = 0.09; all ns). Only a heterotrait-monomethod correlation in the latter group (0.28) surpassed the magnitude of the lowest correlation in the former group (0.22), which was a monotrait-heteromethod correlation and thus not necessarily expected to exceed a heterotrait-monomethod correlation [40]. This MTMM provides evidence of the convergent and discriminant validity of the intrusiveness measure. A table with the coefficients for this MTMM is available upon request from the first author.

The Composite Intrusiveness Scale

The four measures of intrusiveness are not intended to be used separately for hypothesis testing, but rather, are combined into a composite scale to increase the precision of measurement [35]. Following the procedures described above for creating the composite anxiety scale, the four indicators of intrusiveness were transformed into long form including both pre- and post-intervention scores in the same column, standardized and combined into a four-component composite scale by computing an average standardized score, and then re-transformed back into separate pre- and post-intervention variables in wide form, which were used to form a single change-score ($\Delta_{\text{intrusiveness}} = $ Composite Intrusiveness$_{\text{pre-intervention}} - $ Composite Intrusiveness$_{\text{post-intervention}}$). As with the composite anxiety scale, this approach allowed us to test for absolute rather than relative changes in

intrusiveness by keeping the composite variable's scaling identical at pre- and post-intervention. Cronbach's alpha for the composite scale was 0.79, showing that the four intrusiveness indicators cohered well in a single aggregate variable.

Procedure

This study was approved by a university-based IRB. Parents gave written informed consent and children gave written or verbal assent to participate in the study. Both families and diagnosticians administering measures were blind to children's treatment condition. At the pre-intervention assessment, families completed interviews, the parent–child interaction task, and self-report forms (i.e., anxiety and intrusiveness measures). Children who met all inclusion/exclusion criteria were randomized by a research assistant using a computer randomization program (the randomization sequence was concealed from investigators until interventions were assigned). Children were randomly assigned to a therapist; therapists treated children in both conditions, and alternated between treating children in FCBT and CCBT. Assessment procedures were repeated at posttreatment. Treatment completers were contacted by phone 12 months posttreatment and asked to participate in a phone interview (the ADIS-C/P) and fill out questionnaires (parent and child MASC, CBCL) at home and return them by mail. Families were offered $50 for participating in the follow-up assessment.

Results

Table 1 presents descriptive information on outcome measures for children in CCBT and FCBT. Recruitment began in March 2000 and ended in December 2002; posttreatment assessments were completed by March 2003; follow-up assessments were completed by April 2004. There were no statistically significant pre-intervention group differences on any of the demographic, child anxiety, or parenting variables.

Ten children (five in FCBT and five in CCBT) received psychotherapy, social skills training, and/or anxiety medication during the follow-up period. Of these, three of the five children who had been in FCBT had had an anxiety diagnosis at post-treatment and continued to meet criteria for an anxiety disorder at follow-up. Of the five service-users who had been in CCBT, three had carried a post-treatment diagnosis; two of these remitted at follow-up and one did not.

Positive diagnostic status was defined as a child meeting ADIS-C/P criteria for SAD, GAD, or SP (i.e., the three diagnoses in the inclusion criteria) anywhere in his/her diagnostic profile (not just as the principal diagnosis). In the FCBT condition, 14 of 18 (77.78%) children were diagnosis-free at follow-up. In the CCBT condition, 8 of 16 (50%) children (ADIS data were not available for one child) were diagnosis-free. The group difference was nonsignificant, $\chi^2 = 2.86$, $df = 1$, $p = 0.09$. During the follow-up period in the FCBT condition, 1 (5.6%) treatment responder relapsed; 1 (5.6%) child who met criteria at post-treatment no longer met diagnostic criteria; and 3 (16.7%) children maintained a clinically significant anxiety disorder from the post-treatment assessment. During the follow-up year in the CCBT condition, 3 (18.8%) of the children relapsed; 2 (12.5%) children who met criteria at post-treatment no longer met diagnostic criteria; and 5 (31.3%) children maintained their anxiety disorder.

A rating of 1 or 2 (*completely recovered* or *very much better*) on the CGI was also used as a criterion for treatment response. In the FCBT condition, 12 of 18 (66.67%) children

Table 1 Means and standard deviations for anxiety and parenting measures

Measure	Pre-intervention		Post-intervention		1-Year follow-up	
	CCBT	FCBT	CCBT	FCBT	CCBT	FCBT
ADIS-C/P						
M	4.88	4.83			2.75	1.06
SD	0.72	0.71			1.77	1.77
Child MASC						
M	48.93	55.35			38.17	37.43
SD	13.73	15.12			13.12	19.84
Parent MASC						
M	61.44	64.44			56.20	48.00
SD	12.33	12.33			9.82	20.59
CBCL internalizing						
M	63.88	62.61			60.13	50.07
SD	9.27	9.71			10.81	12.98
Intrusiveness scale						
M	−0.02	0.56	−0.32	−0.24		
SD	0.69	1.05	0.49	0.54		

Raw scores are reported for the parent and child MASC

met the criterion, as compared to only 3 of 16 (18.75%) children in CCBT ($\chi^2 = 7.89$, $df = 1$, $p < 0.01$).

Repeated-measures ANOVAs revealed statistically significant intervention group by time interaction effects for 3 of 4 anxiety outcome variables at 1-year follow-up: ADIS-C/P CSR scores (F [1, 32] = 6.13, $p < 0.05$), MASC-P scale (F [1, 32] = 4.24, $p < 0.05$), and CBCL Internalizing scale (F [1, 32] = 6.97, $p < 0.05$); but not the child MASC (F [1, 32] = 1.21, ns). Cohen's between-groups effect sizes for ADIS-C/P CSR, MASC-P, and CBCL scores were 0.96 ("large"), 0.54 ("medium"), and 0.84 ("large"), respectively [43]. There were greater reductions in child anxiety from pre-treatment to 1-year follow-up for the FCBT group compared to the CCBT group on each measure. Post hoc analyses were conducted on between-groups differences at follow-up, as well as change over time in each intervention group separately, using a Bonferroni correction ($p \le 0.05/3 = 0.017$). For between-groups analyses, post-treatment scores were compared controlling for pre-treatment scores in ANCOVA. For within-groups analyses, within-subjects t-tests were employed. These analyses evidenced robust results for the effect of intervention group at follow-up for the ADIS-C/P CSR and CBCL scores. Pre-treatment to follow-up change in ADIS-C/P CSR and MASC scores emerged as significant in both groups, as well as MASC-P and CBCL scores for the FCBT group only.

Exploratory Analyses

As noted above, exploratory tests of the moderating effect of age and mediating effect of parenting on treatment outcome were planned for hypothesis-generating purposes. These analyses should be viewed as preliminary given the small sample size. Given concerns about extreme values in small N analyses, and to lessen the chance of Type I error the composite anxiety and parenting change-score variables were used in these analyses.

Moderating Effect of Age

To test for moderation, participants were divided into two age-groups: children (ages 6–9 years; $n = 14$) and early adolescents (ages 10–13 years; $n = 21$). A statistically significant main effect of intervention group (F [1, 32] = 7.52, $p = 0.01$) as well as an intervention group by age group interaction effect (F [1, 32] = 4.97, $p < 0.05$) emerged in a 2 × 2 ANOVA (treatment group by age group) on pretreatment-to-follow-up composite anxiety change scores. Age group did not have a significant main effect. With regard to the main effect for intervention group, there was a greater reduction in anxiety from pre-intervention to 1-year follow-up for the FCBT group compared to the CCBT group. An effect size (ES) was calculated, with a between-groups ES of 0.90 ("large") [43] favoring FCBT over CCBT at 1-year follow-up.

The statistically significant interaction effect was explored with two post hoc contrasts with Bonferroni correction. For adolescents, the effect of intervention group on composite anxiety change scores was robust (F [1, 19] = 7.52, $p < 0.01$), with FCBT outperforming CCBT, but for children, the effect was nonsignificant (F [1, 13] = 0.23, $p = 0.64$).

Parenting Outcomes

A statistically significant main effect was obtained for intervention group on composite parental intrusiveness change scores (F [1, 32] = 7.23, $p = 0.01$), reflecting a greater decline at post-intervention in parental intrusiveness in the FCBT condition relative to the CCBT condition (see Table 1). There was no age-by-intervention group interaction effect (F [1, 32] = 0.04, $p = 0.84$), indicating that the effects of FCBT or CCBT on intrusiveness were approximately equivalent for children and early adolescents. The main effect for age group was also nonsignificant (F [1, 32] = 3.51, $p = 0.07$). Although the pre-intervention group difference in intrusiveness scores was not statistically significant, the groups had moderately diverging baseline scores (greater pre-intervention intrusiveness among the FCBT families). As a result, although mean post-intervention intrusiveness scores were actually slightly lower for CCBT families, there was a significantly greater *change* (towards less intrusiveness) among FCBT families as compared to CCBT families at post-intervention. The ES for the FCBT group's pre- to post-intervention improvement was medium (ES = 0.76), while the CCBT group had a small ES for improvement over the same timeframe (ES = 0.44). However, because the pre-intervention means were somewhat (not statistically significantly) lower in the CCBT group, there was a trivial between-groups ES at post-intervention (ES = −0.15).

Intrusiveness as a Mediator of Treatment Outcome

A conditional indirect effect (also known as moderated mediation) was tested in the present study, in which the partial effect of change in intrusiveness on change in anxiety was hypothesized to be stronger for early adolescents than children [44, 45]. Preacher and colleagues have developed a bootstrapping strategy for estimating conditional indirect effects which makes no assumption about the shape of the distribution and incorporates bias correction and acceleration that improve the accuracy of confidence intervals. The conditional indirect effect that we tested corresponds with Preacher and colleagues' [45] Model 3, in which the path from the intervening variable (Δ composite intrusiveness) to the DV (Δ composite anxiety) is moderated (by age group), but the path from the IV (treatment

group) to the intervening variable is not moderated (i.e., is the same for both age groups). Following recommended guidelines [45], 5,000 bootstrap resamples were estimated. For early adolescents, the unstandardized conditional indirect effect was 0.51 and the 95% confidence interval (CI) was 0.07–1.34. This CI did not include 0, and thus, the null hypothesis of no indirect effect is rejected for early adolescents. In contrast, for children, the conditional indirect effect was −0.16 and the 95% CI included 0 (−0.53 to 0.13). These findings suggest that for early adolescents only, FCBT may be associated with decreased intrusiveness, which, in turn, may lead to decreased youth anxiety.

Discussion

The primary goal of the present study was to evaluate the relative long-term efficacy of FCBT and CCBT for child anxiety. Towards this end, our findings suggest two conclusions. First, consistent with findings reported in the literature, at the 1-year follow-up, diagnostic profiles for children in both conditions were similar to those at post-treatment, with the majority of children in both FCBT and CCBT no longer meeting criteria for any anxiety disorder. Second, FCBT outperformed CCBT at follow up on some diagnostician and parent-report scales, but not on child-report. A minority of children in both groups sought further therapy or started a new psychiatric medication during the follow-up period, but most of these youngsters had carried a diagnosis at post-treatment. Exploratory analyses suggested a possible mediating role of parenting in treatment outcomes for early adolescents, although this finding is preliminary and requires further exploration and replication. In brief, the present study offers tentative support for the long-term efficacy of FCBT relative to CCBT 1 year following treatment completion.

Previous comparisons of FCBT and CCBT have generated inconsistent findings, with most suggesting equivocal treatment effects [9]. One feature distinguishing this FCBT program as well as the Barrett et al. [10] study from some of the other programs that have been studied is its use of an integrated family-focused format with one clinician working with both the child and parents. Both programs found some advantage of FCBT over CCBT at 1-year follow-up (although the Barrett et al. [11]) trial did not find a continued group difference at 6-year follow-up. In contrast, some FCBT programs that did not significantly differ from CCBT at follow-up have used group therapy formats and separate clinicians for parents and children [14, 15]. There are some possible advantages of using an integrated individual family format with one clinician. First, accuracy of information reporting is promoted; even if one family member misrepresents symptoms or incidents or homework completion, it is likely another family member will disclose supplemental information on the topic in a family meeting format, providing the clinician with greater perspective and allowing him/her to target the most critical elements of the child's symptom profile in a focused manner. Second, the clinician can act as a mediator, helping the child and parents negotiate with each other on such crucial issues as weekly exposure tasks and reinforcers in a forum that ensures actual decisions and agreements are made (promoting follow-through) and that the most pivotal exposure tasks and motivating incentives are chosen (increasing treatment density). Third, the family may learn communication techniques such as problem-solving, active listening, and praise in conjoint meetings that promote anxiety reduction and greater progress on CBT assignments.

Although most results favored FCBT, child-reported anxiety scores did not yield a significant group difference. This pattern has been found in other trials comparing FCBT

and CCBT at follow-up [10] and was also found at post-treatment in the original trial of this FCBT program [17]. This may reflect the limitations of self-report anxiety assessments in school-age samples. However, it may also be that FCBT has particularly beneficial effects on the observable aspects of anxiety and related functional impairments that parents and independent evaluators would be most attuned to, and that both interventions have comparable effects on children's internal experiences of anxiety. On the other hand, the possibility of parent bias due to participating in FCBT cannot be ruled out; and although diagnostician ratings were made by independent evaluators, their ratings were made based on aggregate information attained in separate child and parent interviews. Hence, parental bias could also have affected diagnostician ratings to some extent, leading to artificial inflation of group differences on ADIS and CGI scores.

Our exploratory analyses suggested that changes in intrusive parenting may explain treatment outcomes for early adolescents. Though interesting, this finding must be treated with caution. The modest sample size available in this study necessitates a circumspect view of the data, particularly with regard to the tests of moderation and mediation. Moreover, while intrusiveness changed more for the FCBT group than for the CCBT group, the former group had somewhat (not statistically significantly) higher intrusiveness scores at pre-intervention. Although FCBT families experienced more change than CCBT families from pre- to post-intervention, the post-intervention means were still slightly lower for CCBT. This finding could either mean that a large reduction of intrusiveness (regardless of the intercept) is helpful for adolescents with high anxiety, or that only youth with parents who are especially intrusive to begin with benefit from a reduction of intrusiveness. Only a replication study in which pre-intervention means are more comparable among the two intervention conditions could answer this question more decisively. Also, while the current study used lagged assessments (pre to post intrusiveness; pre to follow-up anxiety), it is possible that intrusiveness changes *during* treatment and exerts an effect on anxiety in a more proximal manner (e.g., before the posttreatment or follow-up assessments). Our measurement approach in this study did not permit clarification of issues of timing and sequencing. Hence, in future research, multiple assessments of parenting and outcomes during treatment would be desirable.

Though these findings are preliminary, the results suggest that the role of parenting in reducing child anxiety warrants further consideration. It has been suggested that FCBT might outperform CCBT when the FCBT program targets parenting behaviors that maintain child anxiety during critical developmental stages [6, 9]. It is plausible that the transition to early adolescence is a developmental period marked by a confluence between the youngster's general need for mastery experiences and a culturally defined need for children to achieve autonomy from their parents. Such a confluence could explain a beneficial effect of reduced parental intrusiveness (and corresponding increased autonomy) for adolescent (but not child) anxiety problems. The areas emphasized in the FCBT intervention and the intrusiveness measure used in this study (e.g., daily routines and private self-help activities) may be particularly salient domains for autonomous functioning from an early adolescent's perspective.

Summary

This study found evidence of an ongoing advantage of an FCBT program over a CCBT program for child anxiety disorders at a 1-year follow-up assessment. These results should be considered in light of the fact that the study had methodological strengths, including the

use of random assignment, independent evaluators, tests of treatment fidelity, and psychometrically strong measures, as well as limitations, particularly the modest sample size. The exploratory tests of moderation and mediation suggest that reductions in intrusive parenting may explain treatment outcomes for early adolescents and offer interesting directions for future research.

References

1. Cartwright-Hatton S, McNicol K, Doubleday E (2006) Anxiety in a neglected population: prevalence of anxiety disorders in pre-adolescent children. Clin Psychol Rev 26:817–833. doi:10.1016/j.cpr.2005.12.002
2. Langley AK, Bergman RL, McCracken J, Piacentini JC (2004) Impairment in childhood anxiety disorders: preliminary examination of the child anxiety impact scale-parent version. J Child Adolesc Psychopharmacol 14:105–114. doi:10.1089/104454604773840544
3. Wood JJ (2006) Effect of anxiety reduction on children's school performance and social adjustment. Dev Psychol 42:345–349. doi:10.1037/0012-1649.42.2.345
4. Pine D, Cohen P, Gurley D, Brooks J, Ma Y (1998) Risk for early-adulthood anxiety and depressive disorders in adolescents with anxiety and depressive disorders. Arch Gen Psychiatry 55:56–64. doi:10.1001/archpsyc.55.1.56
5. Biederman J, Faraone S, Mick E, Lelon E (1995) Psychiatric comorbidity among referred juveniles with major depression: fact or artifact? J Am Acad Child Adolesc Psychiatry 34:579–590
6. Kendall PC, Ollendick TH (2004) Setting the research and practice agenda for anxiety in children and adolescence: a topic comes of age. Cogn Behav Pract 11:65–74. doi:10.1016/S1077-7229(04)80008-7
7. Chambless DL, Hollon SD (1998) Defining empirically supported therapies. J Consult Clin Psychol 66:7–18. doi:10.1037/0022-006X.66.1.7
8. Chorpita B, Daleiden E (2007) 2007 biennial report: effective psychosocial interventions for youth with behavioral and emotional needs. Child Adolescence Mental Health Division, Hawaii Department of Health, Hawaii
9. Barmish AJ, Kendall PC (2005) Should parents be co-clients in cognitive-behavioral therapy for anxious youth? J Clin Child Adolesc Psychol 34:569–581. doi:10.1207/s15374424jccp3403_12
10. Barrett PM, Dadds MR, Rapee RM (1996) Family treatment of childhood anxiety: a controlled trial. J Consult Clin Psychol 64:333–342. doi:10.1037/0022-006X.64.2.333
11. Barrett PM, Duffy AL, Dadds MR, Rapee RM (2001) Cognitive-behavioral treatment of anxiety disorders in children: long-term (6-year) follow-up. J Consult Clin Psychol 69:135–141. doi:10.1037/0022-006X.69.1.135
12. Kendall PC, Safford S, Flannery-Schroeder E, Webb A (2004) Child anxiety treatment: outcomes in adolescence and impact on substance use and depression at 7.4-year follow-up. J Consult Clin Psychol 72:276–287. doi:10.1037/0022-006X.72.2.276
13. Mendlowitz SL, Manassis K, Bradley S, Scapillato D, Miezitis S, Shaw BF (1999) Cognitive-behaviorial group treatments in childhood anxiety disorders: the role of parental involvement. J Am Acad Child Adolesc Psychiatry 38:1223–1229. doi:10.1097/00004583-199910000-00010
14. Nauta MH, Scholing A, Emmelkamp PMG, Minderaa RB (2003) Cognitive-behavioral therapy for children with anxiety disorders in a clinical setting: no additional effect of a cognitive parent training. J Am Acad Child Adolesc Psychiatry 42:1270–1278. doi:10.1097/01.chi.0000085752.71002.93
15. Spence SH, Donovan C, Brechman-Toussaint M (2000) The treatment of childhood social phobia: the effectiveness of a social skills training-based, cognitive-behavioural intervention, with and without parental involvement. J Child Psychol Psychiatry 41:713–726. doi:10.1111/1469-7610.00659
16. Wood JJ, McLeod BD (2008) Child anxiety disorders: a family-based treatment manual for practitioners. Norton, New York
17. Wood JJ, Piacentini JC, Southam-Gerow M, Chu B, Sigman M (2006) Family cognitive behavioral therapy for child anxiety disorders. J Am Acad Child Adolesc Psychiatry 45:314–321. doi:10.1097/01.chi.0000196425.88341.b0

18. McLeod BD, Wood JJ, Weisz JR (2007) Examining the association between parenting and childhood anxiety: a meta-analysis. Clin Psychol Rev 27:155–172. doi:10.1016/j.cpr.2006.09.002

19. Wood JJ, McLeod BD, Sigman M, Hwang WC, Chu BC (2003) Parenting and childhood anxiety: theory, empirical findings, and future directions. J Child Psychol Psychiatry 44:134–151. doi:10.1111/1469-7610.00106

20. Carlson VJ, Harwood RL (2003) Alternate pathways to competence: culture and early attachment relationships. In: Johnson SM, Whiffen VE (eds) Attachment processes in couple and family therapy. Guilford Press, New York, pp 85–99

21. Ispa JM, Fine MA, Halgunseth LC, Harper S, Robinson J, Boyce L, Brooks-Gunn J, Brady-Smith C (2004) Maternal intrusiveness, maternal warmth, and mother–toddler relationship outcomes: variations across low-income ethnic and acculturation groups. Child Dev 75:1613–1631. doi:10.1111/j.1467-8624.2004.00806.x

22. Chorpita BF, Barlow DH (1998) The development of anxiety: the role of control in the early environment. Psychol Bull 124:3–21. doi:10.1037/0033-2909.124.1.3

23. Fox NA, Henderson HA, Marshall PJ, Nichols KE, Ghera MM (2005) Behavioral inhibition: linking biology and behavior within a developmental framework. Annu Rev Psychol 56:235–262. doi:10.1146/annurev.psych.55.090902.141532

24. Rapee RM (2001) The developmental psychopathology of anxiety. In: Vasey MW, Dadds MR (eds) The developmental psychopathology of anxiety. Oxford University Press, New York, pp 481–503

25. Allen JP, Hauser ST, Bell KL, O'Connor TG (1994) Longitudinal assessment of autonomy and relatedness in adolescent-family interactions as predictors of adolescent ego development and self-esteem. Child Dev 65:179–194. doi:10.2307/1131374

26. Soenens B, Vansteenkiste M, Lens W, Luyckx K, Goossens L, Beyers W, Ryan RM (2007) Conceptualizing parental autonomy support: adolescent perceptions of promotion of independence versus promotion of volitional functioning. Dev Psychol 43:633–646. doi:10.1037/0012-1649.43.3.633

27. Silverman WK, Pina AA, Viswesvaran C (2008) Evidence-based psychosocial treatments for phobic and anxiety disorders in children and adolescents. J Clin Child Adolesc Psychol 37:105–130. doi:10.1080/15374410701817907

28. Kendall PC, Treadwell KRH (2007) The role of self-statements as a mediator in treatment for youth with anxiety disorders. J Consult Clin Psychol 75:380–389. doi:10.1037/0022-006X.75.3.380

29. Kendall PC (1994) Treating anxiety disorders in children: results of a randomized clinical trial. J Consult Clin Psychol 62:100–110. doi:10.1037/0022-006X.62.1.100

30. McLeod BD (2001) Therapy process observational coding system for child psychotherapy: unpublished coding manual prepared at UCLA

31. Wood JJ, Piacentini JC, Bergman RL, McCracken J, Barrios V (2002) Concurrent validity of the anxiety disorders section of the anxiety disorders interview schedule for DSM-IV: child and parent versions. J Clin Child Adolesc Psychol 31:335–342

32. Silverman WK, Albano AM (1996) The anxiety disorders interview schedule for DSM-IV-child and parent versions. Graywind Publications, San Antonio

33. March JS, Parker JDA, Sullivan K, Stallings P, Conners K (1997) The multidimensional anxiety scale for children (MASC): factor structure, reliability, and validity. J Am Acad Child Adolesc Psychiatry 36:554–565

34. Achenbach TM (1991) Manual for the child behavior checklist: 4–18 and 1991 profile. Department of Psychology, University of Vermont, Burlington

35. Wood JJ (2006) Parental intrusiveness and children's separation anxiety in a clinical sample. Child Psychiatry Hum Dev 37:73–87. doi:10.1007/s10578-006-0021-x

36. Holden GW, Buck JM (2002) Parental attitudes toward child rearing. In: Bornstein MH (ed) Handbook of parenting: vol 3: being and becoming a parent, 2nd edn. Erlbaum, Mahwah, pp 537–562

37. Holden GW, Edwards LA (1989) Parental attitudes toward child rearing: instruments, issues, and implications. Psychol Bull 106:29–58. doi:10.1037/0033-2909.106.1.29

38. Sroufe LA, Carlson EA, Levy AK, Egeland B (1999) Implications of attachment theory for developmental psychopathology. Dev Psychopathol 11:1–13. doi:10.1017/S0954579499001923

39. Sroufe LA, Jacobvitz D, Mangelsdorf S, DeAngelo E, Ward MJ (1985) Generational boundary dissolution between mothers and their preschool children: a relationship systems approach. Child Dev 56:317–325. doi:10.2307/1129722

40. Campbell DT, Fiske DW (1959) Convergent and discriminant validation by the multitrait-multimethod matrix. Psychol Bull 52:81–105. doi:10.1037/h0046016

41. Wood JJ, Repetti RL (2004) What gets dad involved? A longitudinal study of change in parental child caregiving involvement. J Fam Psychol 18:237–249. doi:10.1037/0893-3200.18.1.237

42. McHale JP (1997) Overt and covert coparenting processes in the family. Fam Process 36:183–201. doi:
    10.1111/j.1545-5300.1997.00183.x
43. Cohen J (1988) Statistical power analysis for the behavioral sciences, 2nd edn. Erlbaum, Hillsdale
44. Muller D, Judd CM, Yzerbyt VY (2005) When moderation is mediated and mediation is moderated.
    J Pers Soc Psychol 89:852–863. doi:10.1037/0022-3514.89.6.852
45. Preacher KJ, Rucker DD, Hayes AF (2007) Assessing moderated mediation hypotheses: theory,
    methods, and prescriptions. Multivariate Behav Res 42:185–227