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Treating a Heterogeneous Set of Anxiety Disorders in Youths With Group Cognitive Behavioral Therapy: A Partially Nonconcurrent Multiple-Baseline Evaluation

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This study investigated the efficacy of Group Cognitive Behavioral Therapy (GCBT) in the treatment of a heterogeneous set of anxiety disorders in children and adolescents using a partially nonconcurrent multiple-baseline across groups design with 12 clinically referred youth between 6 and 16 years of age who met *DSM-IV* criteria for an anxiety disorder. Targeted diagnoses included specific phobia, separation anxiety disorder, social phobia, generalized anxiety disorder, and obsessive-compulsive disorder, with 3 of the children also presenting with school refusal behavior. Duration of baseline for each of the 3 groups varied and ran for 1, 2, or 3 weeks. Dependent measures included diagnostic status, daily child and parent ratings of child anxiety severity, and child- and parent-completed questionnaires. Results indicated that GCBT was generally efficacious in reducing anxious symptoms in youth treated in diagnostically heterogeneous groups, and that gains were generally maintained at 6 and 12 month follow-ups. Findings are discussed in terms of their theoretical and practical implications for the efficient treatment of children and adolescents with anxiety disorders.

The purpose of the present study is to extend the knowledge base of the treatment of anxiety disorders in youth using group cognitive behavioral therapy (GCBT). Past group treatment studies focused on including and treating

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a restricted set of anxiety disorders in children: Albano, Marten, Holt, Heimberg, and Barlow (1995), Hayward et al. (2000), and Spence, Donovan, and Brechman-Toussaint (2000) treated only primary diagnoses of social phobia; Silverman et al. (1999) treated primary diagnoses of generalized anxiety/overanxious disorder and social phobia; Barrett (1998) and Flannery-Schroeder and Kendall (2000) treated primary diagnoses of overanxious disorder, social phobia, and separation anxiety disorder. In this study, *no* constraints were placed on the type of anxiety disorder that would be included: *Any* type of anxiety or phobia children presented with at a childhood anxiety disorders specialty clinic was treated in a group format. Thus, the study can be viewed as contributing empirically/conceptually and practically to the research literature by showing that GCBT can be successfully used to treat an even more heterogeneous set of anxiety disorders in youth than in previous studies. By so doing, the study can be viewed as an initial step toward examining the issue of not just efficacy but also effectiveness.

This study also contributes to the research literature on a methodological level by using a *partially nonconcurrent multiple-baseline across groups design* to evaluate the efficacy of the group treatment. This is a variation on the nonconcurrent multiple-baseline across individuals proposed by Watson and Workman (1981) as an alternative to the original concurrent multiple-baseline across subjects design. In the *concurrent multiple-baseline design*, all participants share a single baseline start date, and treatment is applied in a time-lagged fashion to each participant due to the increasing length of each baseline (Barlow & Hersen, 1984). The time-lagged introduction of treatment controls for extraneous factors (e.g., historical effects) that might be responsible for observed changes. The *nonconcurrent* alternative is useful when participants are only available in succession for practical reasons. Such situations are common in clinical settings. A number of baseline lengths are determined prior to the study, and as participants become available, they are randomly assigned to baseline lengths. The usual observations are then made during both the baseline and treatment phases, similar to a simple A-B design. Because the nonconcurrent multiple-baseline design's ability to control for the effects of history is attenuated, it has been recommended that the design not be used when participants can be assessed concurrently (Barlow & Hersen).

The *partially* nonconcurrent multiple-baseline across subjects design used in the present study has advantages over a purely nonconcurrent multiple-baseline design because the two concurrent baselines provide control for the effects of history *and* the third nonconcurrent baseline provides a further replication. The partially nonconcurrent multiple-baseline design would thus seem ideal for use in clinical settings where it is often not possible to run different group treatments concurrently due to practical considerations (e.g., insufficient numbers of clients to begin running groups at the same time; an obligation not to delay treatment inordinately). Although the pure nonconcur-

rent multiple-baseline design has been used in a number of studies (e.g., Jahr, Eldevik, & Eikeseth, 2000; Jensen, 1994; Jones, Young, & Friman, 2000; Painter, Cook, & Silverman, 1999; Spurdle & Giles, 1990), to our knowledge, this would be the first clinical research study to use the *partially nonconcurrent* multiple-baseline design for treatment evaluation purposes.

Thus, in the present study, for the practical reasons indicated above, Group 1 (1-week baseline) and Group 3 (3-week baseline) ran concurrently, and Group 2 (2-week baseline) began prior to the last session of Group 3. Hence, the two concurrent baselines provide control for the effects of history and the third nonconcurrent baseline provides a further replication. Dependent measures included diagnostic status, child- and parent-completed questionnaires, and daily severity ratings. Follow-up assessments were conducted at 6 and 12 months after the intervention.

Method

Participants

Eighteen children (10 boys and 8 girls) and their parents participated. The children's ages ranged from 6 to 16 years old[1] (mean = 9.56 years). All participants were referred to a childhood anxiety disorders clinic by school counselors, local health professionals, or were self-referred. Inclusion criteria included a primary diagnosis of *any* anxiety disorder (*DSM-IV*; American Psychiatric Association, 1994). Exclusion criteria included participation in another ongoing psychosocial or pharmacological therapy for anxiety disorders, as well as meeting diagnostic criteria for one (or more) of the following: mental retardation, selective mutism, a pervasive developmental disorder, schizophrenia and other psychotic disorders, and organic mental disorders.

Of the 18 children initially assigned to the three groups, 12 (66.67%) completed the treatment program. This rate is comparable to those reported in previous childhood anxiety trials (e.g., Kendall, 1994; Silverman et al., 1999). Chi-squares and *t* tests were performed comparing completers (n = 12; 66.67%) with noncompleters (n = 6; 33.33%) on demographic, group, and pretreatment (type and severity of primary diagnoses at intake) variables. There were no significant differences between completers and noncompleters

[1] In the absence of any empirical data showing that groups should be homogeneous in terms of age, the age range for participants in this study was not restricted, and was similar to the Barrett (1998) study (ages 7 to 14) and the Silverman et al. (1999) study (ages 6 to 16). Within each group, the age differences (for completers) ranged from 2 to 7 years. The specific breakdown of the participants' ages was as follows: three 6-year-olds, three 7-year-olds, one 8-year-old, three 9-year-olds, one 10-year-old, three 11-year-olds, and one each from 12 to 16 years old (though there were zero 15-year-olds). In each group, care was taken to ensure that even the youngest children in the group understood the material. As indicated in the results section, age was not found to moderate the treatment outcome.

on any of these variables, except that more completers than noncompleters had annual incomes over $31,000.

Measures

The major analyses are based on the data obtained from the child and parent daily severity ratings of anxiety from the first day of the applicable baseline period (i.e., 1 week for Group 1, 2 weeks for Group 2, and 3 weeks for Group 3) through the last day of treatment (i.e., the posttreatment assessment point). Additional analyses are based on the data obtained from the child- and parent-completed measures from five assessment points: (1) upon child and parent initial presentation at the child anxiety disorders clinic (i.e., intake); (2) the first day of the applicable baseline period, either 1 week for Group 1, 2 weeks for Group 2, or 3 weeks for Group 3 (i.e., baseline); (3) the last day of treatment (i.e., posttreatment); (4) 6 months following the last day of treatment (i.e., 6-month follow-up); and (5) 12 months following the last day of treatment (i.e., 12-month follow-up).

Diagnosis and clinically significant change. The Anxiety Disorders Interview Schedule for Children–IV (child and parent versions; ADIS-IV-C/P; Silverman & Albano, 1996) was used to assign diagnoses at the initial assessment, as well as at the posttreatment, 6-month, and 12-month follow-up assessments. Research has found the interview schedules to yield reliable (both interrater and retest) diagnoses (e.g., Silverman & Nelles, 1988), including the *DSM-IV* version (Silverman, Saavedra, & Pina, 2001), and to be sensitive to treatment effects (e.g., Kendall, 1994; Silverman et al., 1999). (See Silverman et al., 2001, for procedures used in training interviewers and in ascertaining primary diagnoses.) In this study we collected retest reliability for 25% of the participants using an average retest interval of 8 weeks. Findings indicated 100% agreement in primary diagnoses. The clinicians were unaware of the participants' progress in treatment as well as the diagnoses targeted in treatment.

Clinician rating scales. The ADIS-IV-C/P contains a 0- to 8-point clinician rating scale to assess the degree of severity of the disorder and the amount of interference it causes in the child's overall functioning. Ratings for each child's target diagnosis were used to indicate severity from intake to posttreatment and 6- and 12-month follow-ups. Satisfactory interrater and test-retest reliability has been demonstrated for the scale score (correlations ranging from .74 to .88; Silverman & Eisen, 1992; Silverman & Nelles, 1988).

Child and parent rating scales. The same 0- to 8-point rating scale was used to assess the children's and parents' subjective views of the degree of severity of the disorder and the amount of interference it causes in the child's overall functioning. In addition to obtaining these ratings at intake and posttreatment, and at 6- and 12-month follow-up, the children and parents were asked to make daily ratings from the beginning of the baseline period until the last session of treatment. Similar to previous investigations (e.g., Knox, Albano, & Barlow, 1996), the ratings were combined and these data were

graphed for visual inspection. Supplementary analyses were conducted using hierarchical linear models (HLM; Byrk & Raudenbush, 1987), as described further below.

Daily Measures

Child and parent rating scales. Daily ratings were obtained by undergraduate students via telephone each day from the beginning of baseline through the last day of treatment. The children and parents were instructed not to collaborate in giving these ratings.

Daily diary. The daily diary was completed by the child (with help from parents, as needed) during the course of treatment. The information obtained from the diaries was particularly useful in the beginning of the program to construct each child's fear hierarchies.

Child- and Parent-Completed Measures

Several reliable, valid, and widely used child-completed measures were administered at the five assessment points mentioned above. The child measures included the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), State-Trait Anxiety Inventory for Children (A-Trait) (STAIC; Spielberger, 1973), Revised Fear Survey Schedule for Children (FSSC-R; Ollendick, 1983), and Childhood Anxiety Sensitivity Index (CASI; Silverman, Fleisig, Rabian, & Peterson, 1991). Similar to previous investigators who have adapted child self-rating scales for use with parents (e.g., Kendall et al., 1997; Silverman et al., 1999), modified versions of the RCMAS and FSSC-R were completed by the parents. For the parent version of the RCMAS (i.e., RCMAS/P), alpha reliability coefficients for both total anxiety and lie scale scores have been found to be similar to those found with the child versions (Pina, Silverman, Saavedra, & Weems, 2001). The parent version of the FSSC-R (i.e., FSSC-R/P) has been shown to discriminate among different types of phobias in youth (Weems, Silverman, Saavedra, Pina, & Lumpkin, 1999).

Procedure

Following the informed consent/assent procedures, the children and parents (for each of the 12 completers, the participating parent was the mother) were interviewed using the ADIS-IV-C and ADIS-IV-P, respectively, and they completed the questionnaires.

Formation of groups. The three groups were initially comprised of five to eight participants each. The number of participants who completed the group treatment ranged from two to six. For Groups 1 and 3 (which ran concurrently), parents were given a choice of the two days of the week, and selected the group in which their child would be placed, based on their convenience. Group 2 (which began just prior to treatment completion for Group 3) was

comprised of all children who were assessed, deemed appropriate, and ready for treatment when it began.

Treatment integrity. Treatment integrity was assessed by means of a checklist developed for the treatment protocol. The checklist contained the main tasks or goals to be accomplished each session. Twenty-five percent of the tapes (for both children and parents) were randomly selected for review. Therapists were unaware of the sessions to be evaluated.

Therapists. All groups were facilitated by the same pair of therapists, doctoral-level psychology graduate students (including the first author). Training of therapists was similar to that in Silverman et al. (1999), involving such elements as observational learning, role-playing, and supervision. The same therapist worked with the children in all three groups, and the other worked with the parents.

Treatment. All groups met once a week. The group treatment intervention consisted of 12 sessions, which were begun after the completion of each group's baseline period (as described previously, the groups met and completed measures during baseline sessions). Each group session lasted about 50 minutes, with an additional conjoint meeting (about 20 minutes) with the children, parents, and therapists at the beginning and end of each session.

Parallel content was presented in the child and parent groups. The treatment presented was GCBT, as described in Silverman et al. (1999; see Silverman & Kurtines, 1996).[2] In both the child and parent sessions, the group format was used to emphasize natural group processes, including peer modeling, feedback, support, reinforcement, and social comparison. Both the similarities in general treatment approach as well as the differences were emphasized in the group meetings. In terms of similarities, all children were expected to conduct exposures to anxiety-provoking objects or situations, and all children and parents received training in using behavioral and cognitive procedures. In terms of differences, the content of exposures varied across children/disorders as well as particular adjunctive therapeutic strategies (e.g., social skills training for social phobia, response prevention for obsessive-compulsive disorder, generating more probable, less threatening outcomes for excessive worry for generalized anxiety disorder).

Analysis of Data

Visual inspection of graphed daily severity ratings. A composite of the daily severity ratings provided by the children and parents (using the Child and Parent Rating Scales) was graphed and visually inspected (collapsed within groups) for trends as one method of evaluating treatment efficacy. A decreasing trend was considered preliminary evidence of treatment efficacy.

HLM. As a second way to examine improvement, a composite of the daily child and parent child ratings of global severity (using the Child Rating

[2] The material presented at each session for both parents and children is described in detail in a separate treatment manual, available on request from the authors.

Scales and Parent Rating Scales) was analyzed using HLM (Byrk & Raudenbush, 1987). HLM is particularly useful in a study such as the present one wherein there are unequal numbers or spacing of observations for repeated measures for different participants (e.g., there are delays in scheduling a follow-up assessment for a participant). In addition, HLM was used to estimate within-group change curves for the child- and parent-completed measures across five time points (intake assessment, first day of baseline, posttreatment assessment, and 6- and 12-month follow-ups).

Results

Treatment Integrity

An examination of the treatment sessions that were randomly selected indicated that in all instances the major goals or tasks were accomplished during the child and parent group treatment sessions.

Diagnosis and Reductions in Severity Ratings

Intake to posttreatment. Improvement was defined as no longer meeting diagnostic criteria for the anxiety disorder targeted in treatment. Of the 12 treatment completers, 6 of the completers (50%) no longer met diagnostic criteria for their primary diagnosis at the posttreatment assessment. These participants also did not meet criteria for *any* of their top three pretreatment (at intake) diagnoses (the primary diagnosis and the next two most severe comorbid anxiety diagnoses). Five (42% of the completers) continued to meet criteria for their primary diagnosis, but it was reduced in severity (by 1 point, $n = 1$; by 2 points, $n = 3$; by 3 points, $n = 1$). The primary diagnoses and severity for each completer at the intake, post, 6- and 12-month follow-up time points are shown in Table 1.

Six and 12-month follow-up. At the 6-month follow-up, 10 of the 12 treatment completers (83%) no longer met diagnostic criteria for their primary diagnosis. Seven of these 10 completers (70%) also did not meet criteria for *any* of their top three pretreatment (at intake) diagnoses. At the 12-month follow-up, 9 of the 12 completers (75%) no longer met criteria for their primary diagnosis. The primary diagnoses and severity for each completer at each of the time points are shown in Table 1.

Visual Inspection of Graphs for Child and Parent Daily Severity Ratings

Figure 1 presents a composite[3] of the parent and child daily ratings of severity (using the Child and Parent Rating Scales) collapsed for each group

[3] A composite of the daily severity ratings for parents and children is presented here to maintain consistency with the composite diagnoses. However, visual inspections of separate graphs of the children's and parents' daily severity ratings (collapsed across groups) also provide evidence for the efficacy of this treatment.

TABLE 1
INTAKE, POST, 6- AND 12-MONTH FOLLOW-UP PRIMARY DIAGNOSES AND SEVERITY FOR EACH PARTICIPANT

Participant	Intake Diagnoses and Severity Ratings	Posttreatment Diagnoses and Severity Ratings	6-Month Diagnoses and Severity Ratings	12-Month Diagnoses and Severity Ratings
1	GAD 6	GAD 4	No diagnosis	GAD 4
2	SP (doctors) 6	No diagnosis	No diagnosis	No diagnosis
3	SAD 7[a] SOP 6[a]	SAD 4	No diagnosis	No diagnosis
4	GAD 6[b] SOP 6[b] (school refusal)	GAD 7 SOP 6 (school refusal)	No diagnosis (in school)	No diagnosis (in school)
5	SP 6 (dark, enclosed places)	No diagnosis	No diagnosis	No diagnosis
6	SOP 6	No diagnosis	No diagnosis	No diagnosis
7	SOP 6	No diagnosis	No diagnosis	No diagnosis
8	SAD 6	SAD 4	No diagnosis	No diagnosis
9	OCD 5	OCD 4	OCD 5	OCD 5
10	SP (doctors) 7[c] SP (shots/blood tests) 6[c]	SP (doctors) 5 SP (shots/blood tests) 5	SP (doctors) 4 SP (shots/blood tests) 5	No diagnosis
11	SAD 8[d] (school refusal)	No diagnosis	No diagnosis	SAD 5
12	SAD 7 (school refusal)	No diagnosis (in school)	No diagnosis (in school)	No diagnosis (in school)

Note. The severity ratings were based on a scale ranging from 0 (*no anxiety*) to 8 (*severe anxiety*). GAD = Generalized Anxiety Disorder; SP = Specific Phobia; SAD = Separation Anxiety Disorder; SOP = Social Phobia; OCD = Obsessive-Compulsive Disorder.
[a] Since both diagnoses were contributing to her problems in going to school and functioning in social situations, both diagnoses were used to provide target behaviors.
[b] Since both diagnoses were contributing to his failure to go to school, both diagnoses were used to provide target behaviors in working on returning Participant 4 to school.
[c] Because of the potential threat to her health if one of the diagnoses was left untreated and the related nature of therapeutic exposures, this participant worked on both her specific phobia of doctors and shots during the program.
[d] Although child was in school, a great deal of effort was needed each morning to get child to attend. In addition, child endured attendance in school with excessive distress.

from the beginning of the baseline period through the last day of treatment.[4] For each of the three groups, no trends downward, the direction that provides evidence of treatment efficacy after treatment begins, were demonstrated dur-

[4] Group 1 (1-week baseline) ended up having the same number of days (92) as Group 2 (2-week baseline) because one of its sessions fell on a holiday and daily severity ratings were obtained as usual through that vacation week. Group 3 (106 days) also had one vacation week.

ing baseline.[5] For each group, inspection of the composite graphs (Figure 1) reveals a downward trend during the treatment phase. In Group 1, the trend began approximately 2 to 3 weeks after the beginning of the treatment phase; for Groups 2 and 3, the trends become apparent somewhat later, at approximately 6 and 5 weeks, respectively, after the beginning of treatment.

HLM Analysis of Daily Ratings of Severity

An analysis by HLM of the composite of the daily child and parent ratings of severity of child anxiety (collapsed across all 12 participants who completed treatment) demonstrated a decreasing trend after the baseline period. HLM was used to model within-subject change curves for the composite daily global ratings of child anxiety for the pooled participants from the beginning of baseline until the day of the posttreatment assessment. The model tested predicted no trend for the applicable baseline period, and then a linear trend from the end of baseline until the end of treatment. The results of the HLM trend analysis indicated that the model was a good fit, χ^2 $(7, N = 12) = 67.61, p < .01$, and there were no significant differences among the between-subjects variables included in Level 2 of the analysis (i.e., group, gender, or age).[6]

HLM Analyses of the Child-Completed Measures

Each child-completed measure was analysed using HLM to estimate within-subject change curves for the mean scores (of all participants who completed treatment) across each of the five time points. The results were generally positive. For the RCMAS-C, CASI, and STAIC, the analyses indicated that the data fit a model in which there was no trend from intake to baseline, then a linear trend from post to 12 months: RCMAS-C, χ^2 $(7, N = 12) = 28.07, p = .01$; CASI, χ^2 $(7, N = 12) = 34.90, p < .01$; and STAIC, χ^2 $(7, N = 12) = 55.94, p < .01$. The results indicated no significant linear com-

[5] Of the three groups, Group 2 showed the most fluctuation during the baseline period. Participants and their parents in this group reported particular difficulty in the beginning in giving the daily ratings based on a global assessment (as opposed to a rating of that day's events) of the severity of and interference caused by their primary diagnosis, and the baseline reflects this difficulty in conceptualization. For example, Participant 4 gave a daily rating of 1 on each of the second and third days of baseline and a 2 on the ninth day because he noted that "nothing" happened, although he was still unable to attend school. Nevertheless, the baseline for this group demonstrated no downward trend, inclining somewhat upward in level, if anything.

[6] The daily global child ratings of child anxiety (collapsed across all 12 participants) and the daily global parent ratings of child anxiety (collapsed across all 12 participants) were also analyzed separately. Here again, the model tested predicted no trend for the applicable baseline period, and then a linear trend from the end of baseline until the end of treatment. The results of the HLM trend analysis indicated that the model was a good fit for both the child data, χ^2 $(7, N = 12) = 124.94, p < .01$, and the parent data, χ^2 $(7, N = 12) = 204.17, p < .01$, and that there were no significant differences among the between-subjects variables included in Level 2 of each of the analyses (i.e., group, gender, or age), although for the parent data, gender approached significance at $p = .08$.

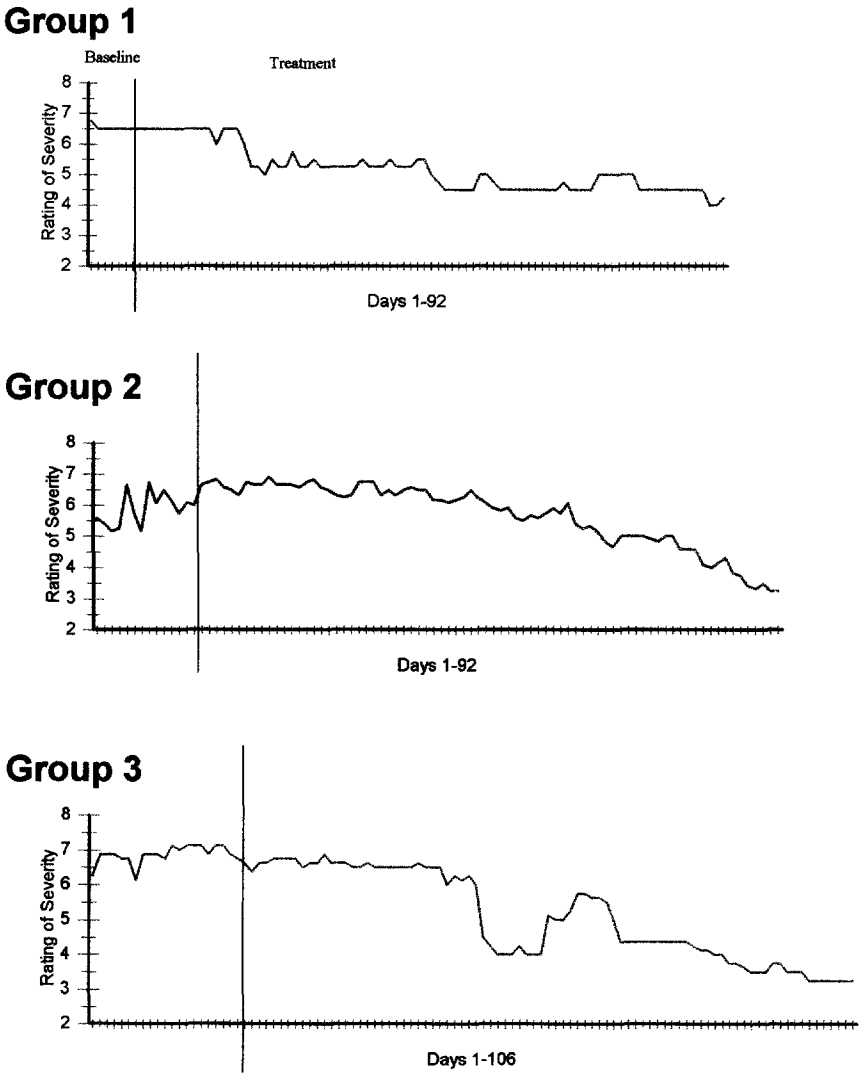

FIG. 1. Composite parent and child daily severity ratings.

ponents in the FSSC-R data, χ^2 (7, N = 12) = 9.20, $p > .24$. The between-group analysis revealed no effects for age, gender, or group number on any of the child-completed measures. The means and standard deviations for the entire sample on each of the measures for each time point are presented in Table 2. As Table 2 shows, the general trend for each of the significant measures as modeled with HLM was toward reduction of anxious symptoms and fears.

TABLE 2
CHILD- AND PARENT-COMPLETED MEASURES

Measures	Intake	Baseline	Post	6 Month	12 Month
RCMAS					
Mean	8.83	10.17	9.33	6.33	4.42
SD	6.24	5.64	6.08	5.00	4.40
RCMAS/P					
Mean	13.00	11.75	9.08	6.92	6.27
SD	5.22	6.00	6.87	5.18	6.34
FSSC-R					
Mean	134.50	118.25	119.67	112.08	104.83
SD	22.63	20.40	31.84	25.74	25.14
FSSC-R/P					
Mean	137.42	130.42	117.42	112.42	110.67
SD	18.41	24.30	27.84	22.73	24.96
STAIC					
Mean	35.83	33.50	33.42	31.67	27.58
SD	5.95	8.05	6.96	8.86	5.74
CASI					
Mean	27.17	26.92	25.83	25.08	23.58
SD	5.54	5.62	5.70	6.37	6.33

Note. RCMAS = Revised Children's Manifest Anxiety Scale (does not include Lie Subscale); RCMAS/P = Revised Children's Manifest Anxiety Scale (does not include Lie Subscale), Parent Version; FSSC-R = Fear Survey Schedule for Children–Revised; FSSC-R/P = Fear Survey Schedule for Children–Revised, Parent Version. CASI = Childhood Anxiety Sensitivity Index; STAIC = State-Trait Anxiety Inventory for Children (A Trait).

HLM Analysis of the Parent-Completed Measures

Each parent-completed measure was analysed using HLM to estimate within-subject change curves for the mean scores (of all participants who completed treatment) across each of the five time points (intake, baseline, post, and 6- and 12-month follow-up). The parent results were more mixed than the child results. For the FSSC-R/P, the analysis indicated that the data fit a model in which there was no trend from intake to baseline, then a linear trend from post to 12 months: FSSC-R/P, χ^2 $(7, N = 12) = 13.82, p = .05$. The results indicated no significant linear components for the RCMAS/P data, χ^2 $(7, N = 12) = 9.86, p > .20$. The between-group analysis revealed no effects for age, gender, or group number on either the FSSC-R/P or RCMAS/P. The means and standard deviations for the entire sample on these two measures for each time point are presented in Table 2.

Discussion

The study's findings contribute empirically/conceptually and practically to the current research literature by showing that GCBT can be used success-

fully to treat anxiety disorders in children without placing constraints on the type of disorder treated. The study can therefore be viewed as an initial step toward examining the issue of not just efficacy but also effectiveness. This extension of the literature has empirical and practical implications.

Empirically, evidence that GCBT is efficacious in a group format with a small set of anxiety diagnoses does not necessarily mean that these procedures also are efficacious when presented in a group format that is open to any type of anxiety diagnosis. The positive results of the study suggest that these deleterious effects on treatment efficaciousness probably did not occur, or that if they did, they have little influence on treatment outcome. It should also be noted that although the participant with OCD did not improve relative to the improvement observed in the other children, having a child with an OCD diagnosis in the group apparently did not have deleterious effects on treatment efficaciousness for the other participants.

On a practical level, the extension of GCBT to diagnostically heterogeneous groups increases the time- and cost-effectiveness offered by group treatment in general; any child assigned an anxiety disorder diagnosis can be offered a place in the group. This increased efficiency (lower financial, administrative, and time requirements to treat each child) benefits HMOs and private practitioners as well as families and children.

The present study also contributes to the research literature on a methodological level. The partially nonconcurrent multiple-baseline across groups design used provides flexibility similar to the nonconcurrent multiple-baseline across individuals proposed by Watson and Workman (1981), but offers additional control, as noted in the introduction. This design offers opportunities for clinical researchers to test interventions in a controlled fashion that is still flexible enough to be responsive to the constraints and demands of a clinical setting.

Although the study's results were generally positive, three areas require further consideration. The first is that the only child in the study who did not improve was the one with OCD (Participant 9). It would be important to conduct further studies including not only children with OCD but also other disorders, such as panic disorder or posttraumatic stress disorder, before drawing conclusions from this one case. Perhaps children with OCD require additional attention in terms of intensive exposures as well as more parent training to assist in response prevention. Whether this type of additional work can be done within the constraints of GCBT or requires additional sessions (e.g., individual appointments) is a question for future research.

The second area that requires further consideration is that two children relapsed at 12-month follow-up after having shown improvement (i.e., not meeting diagnoses) at 6-month follow-up. Once again, caution is needed before drawing conclusions from these findings; but it is possible that relapse would have been reduced if there were maintenance or booster sessions during the follow-up period. It is worth noting that although these two children met diagnoses at 12-month follow-up, the severity of their diagnoses was 4 and 5, respectively, lower than what their severity ratings were at intake.

The third area concerns the apparently delayed effects of the intervention. This manifested in two ways: the length of time it took for a downward trend to begin in the daily ratings of severity, and the changes in diagnostic recovery rates over time. Regarding the former, it may be that the additional variation among participants (gender, age, diagnoses, comorbid diagnoses) attenuated the ability of the design to show a downward trend which is closely linked in time to the onset of treatment, although other studies have also shown delays in treatment effect (Knox et al., 1996). Perhaps longer baseline periods would make the effect more clear since the amount of baseline time and time to downward trend would be more in proportion (both extended), although this raises possible ethical issues of unduly delayed treatment. Regarding the changes in diagnostic recovery rates, although the recovery rate at posttreatment was 50%, other studies of GCBT have been 56% (Barrett, 1998) and 64% (Silverman et al., 1999). However, as in these past GCBT studies, the present findings showed greater diagnostic recovery rates over time. These findings suggest that the intervention's effectiveness is not as apparent following 12 weeks as it is over longer time periods. This may be because participants need to practice and consolidate the information and skills taught in the program over time.

The study has several limitations. First, because the study used a single subject design, the number of participants was necessarily small. The partially nonconcurrent multiple-baseline across participants design provides control for threats to internal validity, valuable information about each individual participant, and evidence that the intervention can work. However, generalizations to a larger population would require a larger controlled group comparison study or multiple replications of the present study. Second, parents and children had difficulty in the beginning in giving daily severity ratings, which were global in nature, for the child's targeted disorder. Perhaps more emphasis needs to be given to training participants and staff in gathering these ratings.

Many further questions remain, but the results of the present study support the promise of effective, efficient GCBT for a broad spectrum of anxiety disorders in children and adolescents and the potential of the partially nonconcurrent multiple-baseline design for evaluating cognitive behavioral interventions.

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