Exposure-Based Cognitive-Behavioral Treatment for Phobic and Anxiety Disorders: Treatment Effects and Maintenance for Hispanic/Latino Relative to European-American Youths

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ABSTRACT

Objective: To examine treatment response and maintenance to exposure-based cognitive-behavioral therapy (CBT) for Hispanic/Latino relative to European-American youths with phobic and anxiety disorders. **Method:** A total of 131 Hispanic/Latino and European-American youths (aged 6–16 years) who participated in two previous clinical trials for phobic and anxiety disorders were compared along diagnostic recovery rates, clinically significant improvement, and youth- and parent-completed questionnaire scores using traditional hypothesis tests, including effect sizes, and statistical equivalence tests. **Results:** After treatment, Hispanic/Latino and European-American youths responded similarly to exposure-based CBT in their diagnostic recovery rates and questionnaires. Effect sizes for questionnaire data were also more similar than different across the two groups. With regard to treatment maintenance, Hispanic/Latino and European-American youths also responded more similarly than differently, albeit with some variations within specific assessment points in questionnaire data. **Conclusions:** Exposure-based CBT for phobic and anxiety disorders produced positive treatment gains and maintenance for Hispanic/Latino youths who participated in the trials. The treatment response that can be expected is generally similar (i.e., favorable) and equivalent to that found with European-American youths based on all the available indices of change. *J. Am. Acad. Child Adolesc. Psychiatry,* 2003, 42(10):1179–1187. **Key Words:** Hispanic, anxiety, children, cognitive-behavioral therapy.

The 1990s witnessed a flurry of clinical trials aimed at developing and evaluating psychosocial treatments for youths with phobic and anxiety disorders (referred to herein as anxiety disorders). The treatments were downscaled adaptations of treatments found to be efficacious with adults (e.g., Barlow et al., 1989, 1992; Borkovec and Costello, 1993; Heimberg et al., 1985), namely exposure-based cognitive-behavioral treatments. Thus all the treatments evaluated in the child randomized clinical trials strongly emphasize youths' involvement in graded exposures to anxiety-provoking situations, objects, or images coupled with behavioral (e.g., positive reinforcement) and cognitive procedures (e.g., self-evaluation and self-reward) (Silverman and Kurtines, 1996), with variations existing across some of the treatments (e.g., degree of parental involvement, individual format, group format).

Table 1 presents a listing of the exposure-based cognitive-behavioral therapy (CBT) randomized clinical trials conducted with youths that have empirically demonstrated that anxiety disorders can be significantly reduced via this type of psychosocial intervention. Because of the consistent and positive evidence produced in these trials, CBT has been earmarked as an "empirically supported treatment" for anxiety disorders in

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TABLE 1
Proportion of Hispanic/Latino Participants in Child Phobic and Anxiety Trials

Trial	Proportion of Hispanics/Latinos (%)
Kendall (1994)	None
Barrett et al. (1996)	None
Kendall et al. (1997)	2
Last et al. (1998)	5.4
Cobham et al. (1998)	None
Barrett (1998)	None
Mendolwitz et al. (1999)	None
Silverman et al. (1999a)	37
Silverman et al. (1999b)	46
Beidel et al. (2000)	4
Hayward et al. (2000)	None
Spence et al. (2000)	None
Shortt et al. (2001)	None
Flannery-Schroeder and Kendall (2000)	—[a]
Ginsburg and Drake (2002)	None
Manassis et al. (2002)	None

[a] Not reported.

youths (American Psychological Association, Division 12 Task Force on Psychological Interventions; Chambless and Hollon, 1998). Similarly, in "Official Action" taken by the American Academy of Child and Adolescent Psychiatry (1997) regarding "practice parameters" for anxiety disorders, it was indicated that "pharmacotherapy should not be used as the sole intervention" (p. 75S); rather, the types of procedures used in CBT (e.g., graded exposures, positive reinforcement, self-evaluation) were recommended (American Academy of Child and Adolescent Psychiatry, 1997).

Relevant to the present article are the rates of participation by ethnic minority groups, particularly Hispanics/Latinos, in the clinical trials listed in Table 1. Most of the trials included either no Hispanic/Latino participants or an extremely small proportion. This low Hispanic/Latino participation rate reflects, in part, the zeitgeist during which the trials were conducted; that is, prior to Kendall (1994) there was no evidence from clinical trials that anxiety disorders in youths could even be reduced. Thus it was deemed critical for researchers to produce this empirical evidence (e.g., Kendall, 1994) and/or replicate or extend the evidence (e.g., Barrett et al., 1996; Kendall et al., 1997).

Because the clinical trials' research activities during the 1990s were therefore mainly directed at producing and/or replicating or extending empirical evidence, researchers began by working with samples drawn from the population that were most readily available, namely the "mainstream" (i.e., European-American youths and their families; U.S. Department of Health and Human Services, 1994). This was viewed as a reasonable and practical way to proceed, not just because of the absence of empirical research evidence with the "mainstream," but also because little was known empirically about acculturation- and culture-specific issues relating to ethnic minority youths in general and ethnic minority youths with anxiety disorders in particular.

As Table 1 also shows, the two trials conducted by Silverman et al. (1999a,b) were exceptions in that they had sizable proportions of Hispanic/Latino participants (37% and 46%, respectively). The higher rates of Hispanic/Latino participation in these two trials relative to the other trials occurred because Silverman et al. drew from the population of Miami-Dade County, Florida, which has one of the largest populations of Hispanics/Latinos in the United States (1.3 million, 57.3% of the total county population).

Because the Silverman et al. clinical trials were conducted during the same zeitgeist as the other trials listed in Table 1, the specific aims of these two trials were similar to these others: to produce empirical evidence for overall treatment efficacy. Thus, in Silverman et al. (1999a,b), the overall positive findings from the respective clinical trials were reported. In the present article, findings from post hoc comparisons across the two studies that show how the Hispanic/Latino youths fared relative to the European-American youths are reported. Specifically, the article reports the two groups' diagnostic recovery rates, youth- and parent-completed questionnaire scores, obtained effect sizes, and clinically significant improvements in normative comparisons on the Child Behavior Checklist (Achenbach, 1991). Because statistical nonsignificance does not imply equivalence, in addition to "traditional" hypothesis tests (e.g., repeated measures analyses), statistical equivalence tests (Jaccard and Guilamo-Ramos, 2002; Rogers et al., 1993) are reported. Treatment maintenance of Hispanic/Latino relative to European-American participants also is reported in terms of youth- and parent-completed questionnaire scores from pre- to posttreatment, 3-, 6-, and 12-month follow-up using hierarchical linear modeling (Raudenbush et al., 2001).

Reporting these results in the present article is a response to calls for data that speak to the issue of whether empirically supported treatments (in this case, exposure-based CBT for use with anxiety disorders in

youths) can be generalized for use with various segments of minority populations (Hohmann and Parron, 1996; Rogler et al., 1987). In other words, does an empirically supported treatment "work" with a nonmainstream or a specific ethnic minority group (or subgroup) as it does with the mainstream group (Rogler et al., 1987; Sue, 1999; U.S. Department of Health and Human Services, 1994)? Reporting these results also is a step toward assisting investigators who are required in current NIH grant applications for phase III clinical trials (i.e., trials designed to provide evidence for a change in health policy or standard of care) to either (1) enroll sufficient numbers of minority groups to be adequately powered to test outcomes within these subgroups or (2) review the research evidence regarding whether ethnocultural differences are expected in the intervention effects.

Investigating the efficacy of an empirically supported treatment among Hispanic/Latino youths is important, given that Hispanics/Latinos are the fastest-growing and second largest minority group in the United States (about 28.6 million, or 11.9% of the entire population). Investigating a treatment for use with Hispanic/Latino youths with anxiety disorders is particularly important, given that anxiety disorders are the most prevalent psychiatric disorders in young people (about 4.1–9.2%) (Bernstein et al., 1996), and given that anxiety disorders do not seem to spontaneously remit (Flakierska-Prakin et al., 1997; Woodward and Fergusson, 2001).

The present evaluation of exposure-based CBT is based on the samples that participated in the Silverman et al. (1999a,b) clinical trials. The Hispanics/Latinos recruited and selected for participation in Silverman et al. agreed to receive the assessment and intervention procedures largely in English and did not request receiving the procedures in Spanish. No more than 4% were referred for assessment and treatment in Spanish. Overall, the findings reported in this article may be viewed as stepping stones for future treatment research aimed at reducing anxiety disorders in Hispanic/Latino youths.

METHOD

Participants

Data from a total of 131 youths (46% girls) and their parents (one parent for each youth participant; 90% mothers) who had participated in one of two randomized clinical trials for phobic or anxiety disorders (Silverman et al., 1999a, 1999b) were included in the present set of analyses. All youths were between 6 and 16 years of age, with an average age of 10.21 years (SD 2.84). Across the two trials, 79 (60%) were European-American and 52 (40%) were Hispanic/Latino (Table 2). Across the two trials there were no statistically significant differences between European-American and Hispanic/Latino participants with respect to the sociodemographic characteristics shown in Table 2. For Hispanics/Latinos, 45% of families reported Cuba as their country of origin; 18% reported other Central and South American nations as their countries of origin (e.g., Nicaragua, Colombia, Venezuela). The remaining Hispanic/Latino families reported mixed-Hispanic origin (e.g., Colombia + Mexico).

Diagnosis

The Anxiety Disorders Interview Schedules for Children (ADIS-C and ADIS-P) (Silverman and Nelles, 1988) were used to derive diagnoses. Previous research demonstrated satisfactory interrater diagnostic reliability (e.g., $\kappa = 0.84$ for the ADIS-C, $\kappa = 0.83$ for ADIS-P, and $\kappa = 0.78$ for the composite diagnosis) (Silverman and Nelles, 1988) and test–retest reliability (e.g., 10- to 14-days retest yielded $\kappa = 0.76$ for the ADIS-C, $\kappa = 0.67$ for ADIS-P, and $\kappa = 0.75$ for the composite diagnosis; Silverman and Eisen, 1992). To determine diagnoses, separate interviews with the child and parent using the child and parent versions of the ADIS-C were conducted. The clinicians assigned diagnoses that both sources agreed were most interfering, as delineated in the ADIS-C/P guide (Albano and Silverman, 1996). The diagnosis/disorder that was deemed most interfering or disturbing was rendered primary.

Youth-Completed Measures

The Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds and Richmond, 1978) consists of 37 items that describe anxious symptoms to which the child indicates "yes" or "no." Ex-

TABLE 2
Demographic and Diagnostic Information for Hispanics/Latinos and European-Americans

	Hispanics/Latinos (n = 52)	European-Americans (n = 79)
Gender, n (%)		
Male	29 (55.8)	35 (44.3)
Female	23 (44.2)	44 (55.7)
Mean age (yr)	10.21	9.51
Income, n (%)		
<$21,000	23 (44.4)	12 (14.5)
$21,000–40,000	17 (33.3)	14 (18.2)
>$40,000	12 (22.3)	53 (67.3)
Noncompleters, n (%)	14 (27)	17 (22)
Primary diagnosis, n (%)		
GAD/OAD	10 (19.2)	15 (18.9)
SAD	4 (7.8)	4 (5.1)
SOP	10 (19.2)	7 (8.9)
SP	23 (44.2)	46 (58.2)
Other	5 (9.6)	7 (8.9)

Note: GAD/OAD = generalized anxiety disorder/overanxious disorder; SAD = separation anxiety disorder; SOP = social phobia; SP = specific phobia.

tensive work has supported the validity and reliability of the RCMAS (Reynolds and Richmond, 1985). The Fear Survey Schedule for Children-Revised (FSSC-R) (Ollendick, 1983) consists of 80 items to which the child rates his or her level of fear ("none," "some," or "a lot"). Ollendick (1983) reported satisfactory reliability as well as validity for the FSSC-R.

Parent-Completed Measures

The RCMAS Parent (RCMAS/P) was used. As done by other investigators working in the child fear/anxiety area (Kendall, 1994; Strauss et al., 1989), parents were asked to rate the occurrence of anxious symptoms in their children using a parent-completed anxiety rating scale. In this study, the stem of each item on the RCMAS was changed from "I…" to "My child..." Parents also completed the FSSC-R and were asked to rate their children's fears, as in past research (Matson and Love, 1990; Weems et al., 1999). The instructions in the FSSC-R/P were changed to read "your child's fears" instead of "your fears." The Child Behavior Checklist (CBCL) (Achenbach, 1991) is a 113-item measure that assesses children's behavior problems. Each item is scored on a 0- to 2-point scale ("not true," "somewhat or sometimes true," or "very true or often true"). The CBCL provides scores for the total scale, as well as for the Internalizing and Externalizing subscales. CBCL scaled scores and clinical cut-points have been found to discriminate between clinic-referred and nonreferred children, and normative data are available (Achenbach, 1991).

Procedures

After parents and children signed informed consent and assent, respectively, assessment measures (i.e., diagnostic interviews and questionnaires) and treatments were administered at the Child Anxiety and Phobia Program housed within the Child and Family Psychosocial Research Center, Florida International University, Miami-Dade. Trained advanced doctoral-level graduate students administered the assessment during two separate sessions within a 2-week period. After completing the assessment procedures, participants were offered an intervention for youths with anxiety disorders and were assigned to treatment.

All participants were enrolled in one of two time-limited (10–12 sessions), exposure-based psychosocial treatments administered using consistent and similar experimental procedures (e.g., manualization, trained therapists) at the Child Anxiety and Phobia Program. The treatments made similar requirements on the clients (e.g., completion of forms, in-session assignments, out-of-session assignments) and required similar skill levels on the part of therapists (Silverman et al., 1999a,b). Therapy was administered primarily in English. Therapy was offered in the Silverman et al. (1999a) trial in individual format and in the Silverman et al. (1999b) trial in group format. There were no significant differences in outcome as a function of therapy format. All therapists were European-Americans, though two were also Spanish-speaking; steps were taken to ensure that therapy was delivered in a culturally competent and sensitive manner (Kurtines and Szapocznik, 1996) in both trials. This included sensitizing therapists to issues specific to working with multicultural populations, such as cultural differences in models of coping and definitions of anxiety-provoking objects or events. In both trials, after treatment completion, participants were reassessed at posttreatment and 3-, 6-, and 12-month follow-up.

Data Analytic Strategy to Evaluate Equivalence

Equivalence testing analyses (Rogers et al., 1993) were used because failure to reject the null hypotheses using conventional statistical inference procedures does not allow for the conclusion that groups are the same. Equivalence testing is designed to test for group equivalence. Of the two approaches described by Rogers et al. (1993) for presenting and interpreting data when determining the equivalence of two groups, the confidence interval approach was chosen because it provides data more descriptive of the relation between the groups. Two equivalence intervals around a difference of zero (i.e., ±10%, ±20%, with the former being more stringent than the latter; Rogers et al., 1993) were defined using the outcome for the mainstream (i.e., European-American sample) as the standard. Any difference small enough to fall within the equivalence interval was considered of dubious clinical relevance.

RESULTS

Group Comparability

Chi-square analyses and *t* tests revealed no statistically significant differences between Hispanic/Latino and European-American participants in gender and age. A statistically significant difference was found for family income, with Hispanics/Latinos reporting lower family incomes than European-Americans (χ^2_2 = 27.95, $p < .01$). Seventy-three percent of the Hispanics/Latinos completed treatment; 78% of the European-Americans completed treatment. There were no significant differences on any of the sociodemographics or pretreatment youth- and parent-completed measures between completers and noncompleters. There also were no statistically significant gender and age differences between Hispanic/Latino and European-American youths who completed treatment. A statistically significant difference was found for family income for those who completed treatment: Hispanic/Latino participants who completed treatment had a lower family income than European-Americans participants who completed treatment (χ^2_2 = 18.37, $p < .01$). There were no statistically significant differences on any of the pretreatment youth- and parent-completed measures between Hispanic/Latino and European-American participants who completed treatment following Bonferroni-based corrections.

Clinically Significant Change

Chi-square analyses revealed no statistically significant differences between the proportions of Hispanic/Latino (84.2%) and European-American youths (83.9%) who had recovered at posttreatment (i.e., no longer met primary diagnoses using the ADIS-C/P). The CBCL was used to evaluate clinically significant change using normative comparison (i.e., changes that return clinical scores to the nonclinical range; Kendall and Grove, 1988). As done in previous child anxiety

clinical trials (e.g., Kendall, 1994; Kendall et al., 1997; Silverman et al., 1999a,b), clinically significant improvement was defined as meeting a minimum criterion *T* score on the CBCL Internalizing scale of less than 70 (adjusted according to age norms). At posttreatment, 86.4% Hispanic/Latino participants whose initial *T* scores were above 70 were within the normative range; 81.8% of European-American participants whose initial *T* scores were above 70 were within the normative range. Chi-square analyses showed no statistically significantly differences between the groups.

Equivalence testing analyses showed that the diagnostic recovery rates at posttreatment for Hispanics/Latinos and European-Americans (84.2% and 83.9%, respectively) were statistically equivalent using the 10% criterion (± 0.84; lower confidence level –0.13, upper confidence level 0.12). The proportions of Hispanic/Latino and European-American participants who showed clinically significant improvement on the CBCL Internalizing scale were not statistically equivalent using the 10% criterion. Use of the 20% criterion showed a statistically significant equivalent treatment gain between Hispanic/Latino and European-American participants (± 0.16; lower confidence level –0.14, upper confidence level 0.05).

Youth- and Parent-Completed Measures

Means, standard deviations, and within-group effect sizes (Lipsey and Wilson, 2001) corresponding to the youth- and parent-completed measures are presented in Table 3. Significant main effects for time were found for the RCMAS ($F_{1,87}$ = 17.13, p < .01; η^2 = .17), RCMAS/P ($F_{1,92}$ = 9.05, p < .01; η^2 = .09), FSSC-R/P ($F_{1,76}$ = 6.30, p < .01; η^2 = .07), CBCL Internalizing ($F_{1,36}$ = 94.88, p < .01; η^2 = .73), and CBCL Externalizing ($F_{1,33}$ = 352.87, p < .01; η^2 = .91). No significant time × ethnicity interactions were found for any of these measures following Bonferroni based-

TABLE 3

Means and Standard Deviations at Pretreatment and Posttreatment on the Youth- and Parent-Completed Measures for Hispanics/Latinos and European-Americans

	Hispanics/Latinos			European-Americans			*t*-Value for Effect Size	Posttreatment				
								Traditional 95% CI		Equivalence		
										10%	90% CI	
	Pre	Post	Effect Size	Pre	Post	Effect Size		LCL	UCL	Criterion	LCL	UCL
Youth-completed measures												
RCMAS			0.19			1.02	4.53**					
Mean	9.44	8.21		13.05	6.89			–3.53	0.89	±0.69	–3.18	0.54
SD	6.89	6.18		7.03	5.02							
FSSC-R			–0.04			0.20	1.35					
Mean	116.23	117.49		122.33	115.82			–12.55	9.21	±11.58	–10.80	7.46*
SD	31.59	27.11		38.66	26.86							
Parent-completed measures												
RCMAS/P			0.43			0.52	0.50					
Mean	14.25	11.33		13.40	10.48			–15.79	14.09	±1.05	–13.39	11.69
SD	6.77	6.82		5.69	5.59							
FSSC-R/P			0.98			0.78	1.09					
Mean	136.00	133.00		136.49	119.57			–22.51	–4.35[a]	±11.96	–21.05	–5.81
SD	27.34	26.73		23.87	19.51							
CBCL-Internalizing			2.10			2.28	0.81					
Mean	85.43	55.21		84.13	54.92			–5.61	5.03	±5.50	–4.76	4.18*
SD	16.40	12.41		12.98	13.63							
CBCL-Externalizing			4.50			4.60	0.03					
Mean	113.61	48.00		114.14	51.41			–1.68	8.50[a]	±5.14	–0.86	7.68
SD	18.47	10.75		13.70	13.62							

Note: RCMAS = Revised Children's Manifest Anxiety Scale; FSSC-R = Fear Survey Schedule for Children-Revised; RCMAS/P = Revised Children's Manifest Anxiety Scale/Parent Version; FSSC-R/P = Fear Survey Schedule for Children-Revised/Parent Version; CBCL = Child Behavior Checklist; UCL = upper confidence level; LCL = lower confidence level; CI = confidence interval.

[a] The 95% confidence interval contains the 80% confidence interval for equivalence.

* p < .05 for equivalency, per each one-tailed test; **p < .01.

corrections. Neither pretreatment nor posttreatment CBCL Externalizing scores were in the clinical range. Mean within-group effect sizes across the youth- and parent-completed measures were 1.36 (SD 1.72) for Hispanics/Latinos and 1.57 (SD 1.65) for European-Americans. Effect sizes for the child- and parent-completed measures were more similar than different, with only the effect size for the RCMAS being significantly larger for European-American youths (Table 3).

Table 3 shows the 95% confidence interval, the 10% criterion for equivalence, and the 90% confidence interval for the posttreatment youth and parent scores. With regard to statistical equivalency, use of the 10% criterion showed equivalency of treatment gains at posttreatment between Hispanic/Latino and European-American youths on the FSSC-R and CBCL Internalizing scale. Use of the 20% criterion resulted in statistically significant equivalency at posttreatment between Hispanic/Latino and European-American youths for two additional measures: the FSSC-R/P (±1.95; lower confidence level –0.93, upper confidence level 0.77) and CBCL Externalizing scores (±10.28; lower confidence level 0.08, upper confidence level 6.74). No additional statistically significant equivalences were found.

Treatment Maintenance

Hierarchical linear modeling (HLM) (Raundenbush et al., 2001) was used to test whether the model that best fits the pattern of change exhibited from pretreatment to posttreatment, 3-, 6-, and 12-month follow-up was linear (i.e., one of continuous symptom decline), quadratic (i.e., curvilinear with a single change in direction) or cubic (i.e., curvilinear with two or more changes in direction). HLM also was used to evaluate whether differences in these patterns of change varied between Hispanics/Latinos and European-Americans.

The pattern of change exhibited from pretreatment to posttreatment, 3-, 6-, and 12-month follow-up is depicted in Figures 1 and 2 for the youth- and parent-completed measures, respectively. Results of the HLM analysis indicated a significant quadratic component for the RCMAS (χ^2 [50, n = 100] = 70.97, $p < .05$), CBCL Internalizing (χ^2 [19, n = 99] = 30.57, $p < .05$), and CBCL Externalizing (χ^2 [17, n = 98] = 34.51, $p < .05$). A significant cubic component was found for the RCMAS/P (χ^2 [54, n = 100] = 92.28, $p < .01$), FSSC-R (χ^2 [50, n = 100] = 69.31, $p < .05$), and FSSC-R/P (χ^2 [45, n = 100] = 62.88, $p < .05$).

Between-group analyses showed a significant effect for ethnicity on the quadratic trend for the RCMAS (t ratio = –2.87, $p < .01$). European-American youths showed more improvement than Hispanic/Latino youths from pretreatment to posttreatment, followed by a greater degree of improvement from 6- to 12-month follow-up (Fig. 1). A significant effect for ethnicity on the cubic trend was found for the FSSC-R (t ratio = 2.36, $p < .05$). European-American youths showed significantly more improvement from pretreatment to posttreatment relative to Hispanic/Latino youths on the FSSC-R. Through the 3- to 6-month follow-up assessments, European-American youths showed a continued decline in fear levels that resulted

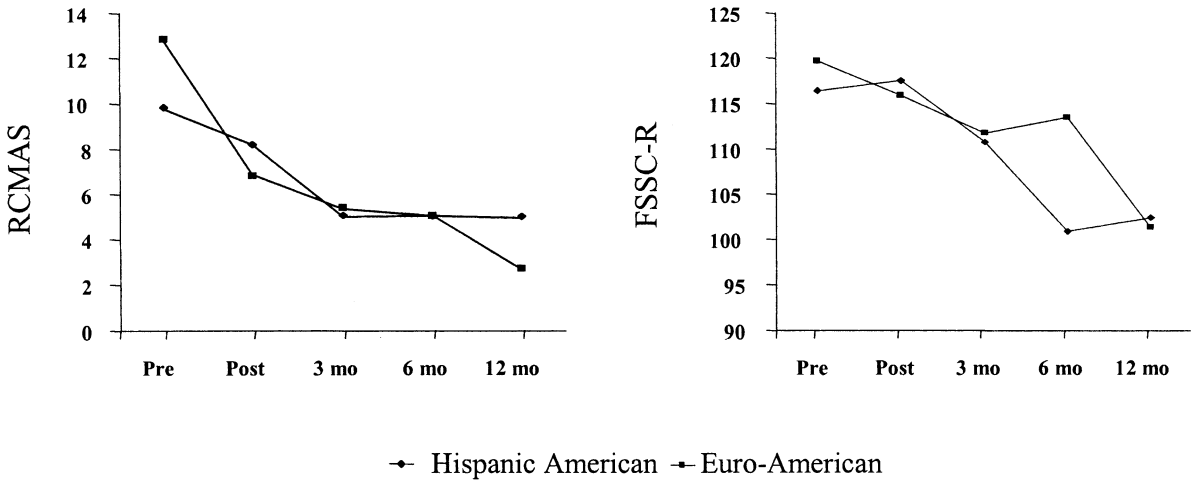

Fig. 1 Mean scores for youth-completed measures across pretreatment, posttreatment, 3-, 6-, and 12-month follow-up. RCMAS = Revised Children's Manifest Anxiety Scale; FSSC-R = Fear Survey Schedule for Children-Revised.

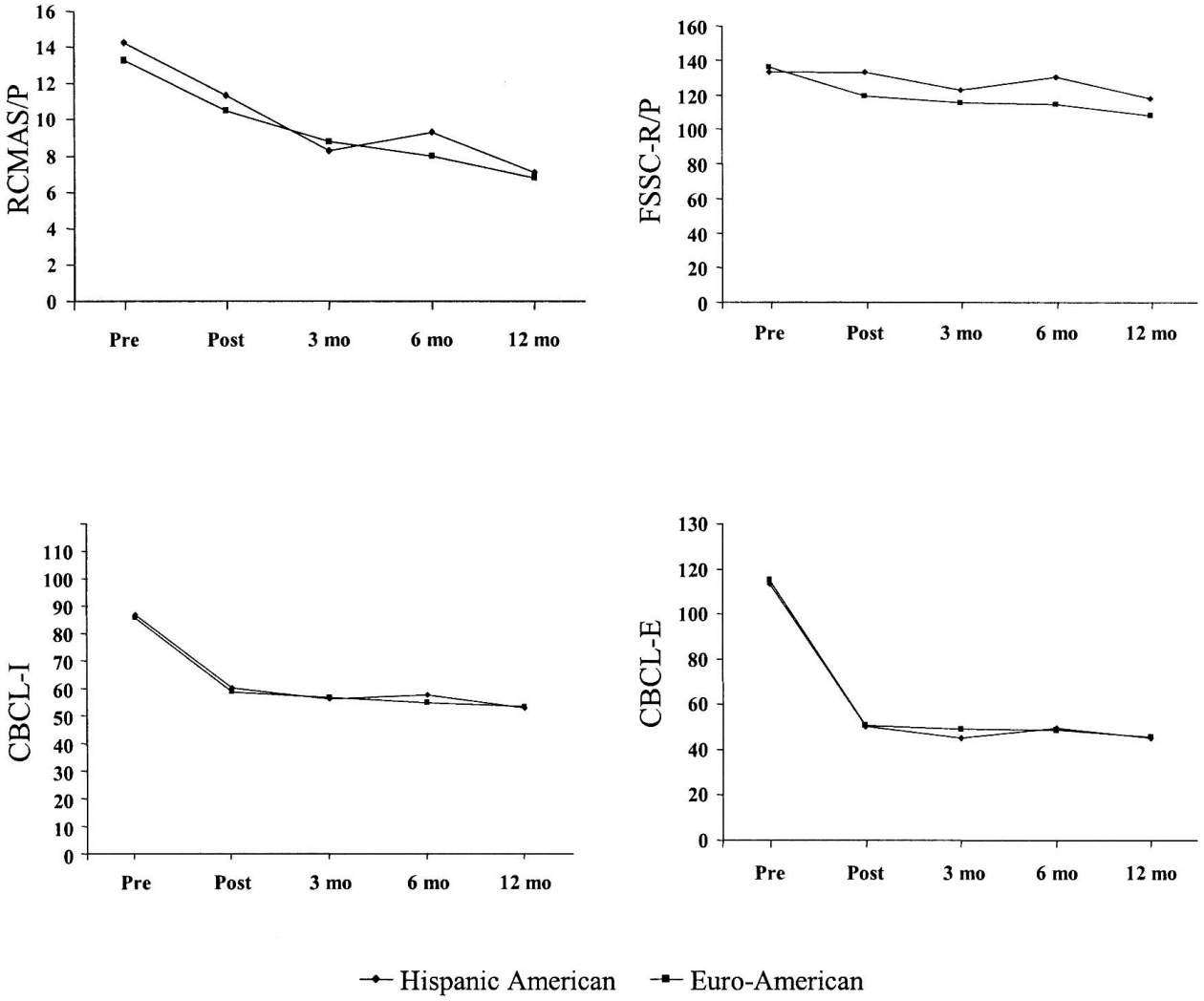

Fig. 2 Mean scores for parent-completed measures across pretreatment, posttreatment, 3-, 6-, and 12-month follow-up. RCMAS/P = Revised Children's Manifest Anxiety Scale/Parent Version; FSSC-R/P = Fear Survey Schedule for Children-Revised/Parent Version; CBCL = Child Behavior Checklist.

in comparable levels to those exhibited by Hispanic/Latino youths at the 12-month follow-up.

DISCUSSION

Because the two Silverman et al. (1999a,b) clinical trials, which evaluated the efficacy of exposure-based CBT for reducing anxiety disorders in youths, contained a substantially higher proportion of Hispanic/Latino participants than any other published clinical trial, the authors were in the unique position to report treatment effects and maintenance (up to 12 months) for Hispanics/Latinos relative to European-Americans. Findings showed that Hispanic/Latino youths responded favorably to CBT, as well as similarly to European-American youths, in treatment gains. This was evident by a remarkably consistent pattern of findings across a variety of outcome indices: diagnostic recovery rates, clinically significant improvement, child- and parent-completed questionnaires, including effect sizes. Statistical equivalence tests (Rogers et al., 1993) provided further support for the positive findings and for the similarity to European-Americans' responses. Specifically, treatment effects were equivalent for both Hispanic/Latino and European-American youths across diagnostic recovery rates, clinically significant improvement, and child- and parent-completed questionnaires.

Hispanic/Latino youths continued to show favorable treatment response over time in treatment maintenance, though there were variations across outcome indices, relative to the European-Americans within spe-

cific assessment time points (e.g., 3- to 6-months follow-up). For example, effect sizes for the RCMAS, a main child self-report outcome measure, revealed greater improvement for European-American youths relative to Hispanic/Latino youths. Whether this finding is replicated in future studies that contain samples of European-American and Hispanic/Latino youths is worth examination prior to speculation on its possible meaning.

Overall, the study's findings showed that an empirically supported intervention approach for use with anxiety disorders in youths (namely exposure-based CBT) works as well with this segment of Hispanic/Latino youths (English-speaking) as with European-Americans. These findings are of considerable public health significance. This is especially so given that people of Hispanic origin are the fastest-growing and second largest minority group in the country (U.S. Department of Health and Human Services, 2002) and that phobic and anxiety disorders are the most prevalent psychiatric disorders of youths that do not spontaneously remit (Bernstein et al., 1996; Flakierska-Prakin et al., 1997; Woodward and Fergusson, 2001).

Findings presented in this article should be viewed mainly as stepping stones for future treatment research aimed at reducing anxiety disorders in Hispanic/Latino youths. For instance, an important step would be to investigate the potential influence of variables such as acculturation stressors on treatment gains as well as the potential influence of variables such as biculturalism and multiculturalism on treatment maintenance. Results from these types of stepping stones could pave the way toward developing empirically informed specialized applications of this intervention in diverse segments of Hispanic youths with anxiety disorders. Similar to Kurtines and Szapocznik (1996), for example, specialized applications targeting clinical presentation (e.g., anxiety disorder symptoms) in the context of immigration and acculturation stressors could also be a stepping stone for future treatment research aimed at reducing anxiety disorders in Hispanic/Latino youths.

Limitations

The present findings should be considered in light of the study's limitations. First, 45% of the Hispanic/Latino participants were Cuban Americans. Because Hispanics/Latinos are not uniform, either in their culture of origin or in the subculture in which they live in the United States, it will be important to evaluate treatment effects and maintenance in samples of other Hispanic/Latino groups (e.g., Mexican immigrants in Chicago or California, Puerto Ricans in New York), as well as in other smaller groups (e.g., Peruvians in Virginia) that might be better integrated into American culture. Second, the treatment sessions were delivered largely in English. It will be important in future research to systematically assess the degree to which therapists and/or clients may have used Spanish on-and-off in session and to evaluate its potential influence on treatment effects and maintenance. Third, treatment maintenance was assessed for up to 12 months. As done with mainstream samples (Barrett et al., 2001; Kendall and Southam-Gerow, 1996), it will be important to evaluate whether gains are maintained using longer follow-up assessment time intervals. We are conducting this evaluation in a NIMH-funded project.

Clinical Implications

The most important clinical implications of the findings are that Hispanic/Latino youths responded favorably to CBT, and similarly to European-American youths, in treatment gains and maintenance. The remarkably consistent pattern of findings that were observed across a variety of outcome indices provides the clinician with increased confidence that Hispanic/Latino youths responded positively. Thus the present study's findings increment the existing strong and positive clinical trial evidence that anxiety disorders in children can be reduced using exposure-based CBT and provide further support for using this treatment with Hispanic/Latino youths who suffer from anxiety disorders.

REFERENCES

Achenbach TM (1991), *Program Manual for the 1991 Child Behavior Checklist/4-18 Profile.* Burlington, VT: University Associates in Psychiatry

Albano AM, Silverman WK (1996), *The Anxiety Disorders Interview Schedule for Children for DSM-IV: Clinician Manual (Child and Parent Versions).* San Antonio, TX: Psychological Corporation

American Academy of Child and Adolescent Psychiatry (1997), Practice parameters for the assessment and treatment of children and adolescents with anxiety disorders. *J Am Acad Child Adolesc Psychiatry* 36:69S–84S

Barlow DH, Craske MG, Cerny G, Klosko JS (1989), Behavioral treatment of panic disorder. *Behav Ther* 20:261–282

Barlow DH, Rapee RM, Brown TA (1992), Behavioral treatment for generalized anxiety disorder. *Behav Ther* 23:551–570

Barrett PM (1998), Evaluation of cognitive-behavioral group treatments for childhood anxiety disorders. *J Clin Child Psychol* 27:459–468

Barrett PM, Dadds MR, Rapee RM (1996), Family treatment of childhood anxiety: a controlled trial. *J Consult Clin Psychol* 64:333–342

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

Beidel DC, Turner SM, Morris TL (2000), Behavioral treatment of childhood social phobia. *J Consult Clin Psychol* 68:1072–1080

Bernstein GA, Borchardt CM, Perwien AR (1996), Anxiety disorders in children and adolescents: a review of the past 10 years. *J Am Acad Child Adolesc Psychiatry* 35:1110–1119

Borkovec TD, Costello E (1993), Efficacy of applied relaxation and cognitive-behavioral therapy in the treatment of generalized anxiety disorder. *J Consult Clin Psychol* 61:611–619

Chambless DL, Hollon SD (1998), Defining empirically supported therapies. *J Consult Clin Psychol* 66:7–18

Cobham VE, Dadds MR, Spence SH (1998), The role of parental anxiety in the treatment of childhood anxiety. *J Consult Clin Psychol* 66:893–905

Flakierska-Prakin N, Lindstroem M, Gillberg C (1997), School phobia with separation anxiety disorder: a comparative 20- to 29-year follow-up study of 35 school refusers. *Compr Psychiatry* 38:17–22

Flannery-Schroeder EC, Kendall PC (2000), Group and individual cognitive-behavioral treatments for youth with anxiety disorders: a randomized clinical trial. *Cogn Ther Res* 24:251–278

Ginsburg GS, Drake KL (2002), School-based treatment for anxious African American adolescents: a controlled pilot study. *J Am Acad Child Adolesc Psychiatry* 41:768–775

Hayward C, Varady S, Albano AM, Thienemann M, Henderson L, Schatzberg AF (2000), Cognitive-behavioral group therapy for social phobia in female adolescents: results of a pilot study. *J Am Acad Child Adolesc Psychiatry* 39:721–726

Heimberg RG, Becker RE, Goldfinger K, Vermilyea JA (1985), Treatment of social phobia by exposure, cognitive restructuring and homework assignments. *J Nerv Ment Dis* 173:236–245

Hohmann AA, Parron DL (1996), How the new NIH guidelines on inclusion of women and minorities apply: efficacy trials, effectiveness trials, and validity. *J Consult Clin Psychol* 64:851–855

Jaccard J, Guilamo-Ramos V (2002), Analysis of variance frameworks in clinical child and adolescent psychology: advanced issues and recommendations. *J Clin Child Adolesc Psychol* 31:278–294

Kendall PC (1994), Treating anxiety disorders in children: results of a randomized clinical trial. *J Consult Clin Psychol* 62:100–110

Kendall PC, Flannery-Schroeder EC, Panichelli-Mindel SM, Southam-Gerow M, Henin A, Warman M (1997), Therapy for youths with anxiety disorders: a second randomized clinical trial. *J Consult Clin Psychol* 65:366–380

Kendall PC, Grove WM (1988), Normative comparisons in therapy outcome. *Behav Assess* 10:147–158

Kendall PC, Southam-Gerow MA (1996), Long-term follow-up of a cognitive-behavioral therapy for anxiety-disordered youth. *J Consult Clin Psychol* 64:724–730

Kurtines WM, Szapocznik J (1996), Family interaction patterns: structural family therapy in contexts of cultural diversity. In *Psychosocial Treatments for Child and Adolescent Disorders: Empirically Based Strategies for Clinical Practice,* Hibbs ED, Jensen PS, eds. Washington, DC: American Psychological Association, pp 671–697

Last CG, Hansen C, Franco N (1998), Cognitive-behavioral treatment of school phobia. *J Am Acad Child Adolesc Psychiatry* 37:404–411

Lipsey MW, Wilson DB (2001), *Practical Meta-Analysis.* Thousand Oaks, CA: Sage

Manassis K, Mendolwitz SL, Scapillato D et al. (2002), Group and individual cognitive-behavioral therapy for childhood anxiety disorders: a randomized trail. *J Am Acad Child Adolesc Psychiatry* 41:1423–1430

Matson JL, Love SR (1990), A comparison of parent-reported fear for autistic and nonhandicapped age-matched children and youth. *Aust N Z J Dev Disabil* 16:349–357

Mendlowitz SL, Manassis K, Bradley S, Scapillato D, Miezitis S, Shaw BF (1999), Cognitive-behavioral group treatments in childhood anxiety disorders: the role of parental involvement. *J Am Acad Child Adolesc Psychiatry* 38:1223–1229

Ollendick TH (1983), Reliability and validity of the revised Fear Survey Schedule for Children (FSSC-R). *Behav Res Ther* 21:685–692

Raundenbush S, Bryk A, Cheong YF, Congdon R (2001), *Hierarchical Linear and Nonlinear Modeling.* Lincolnwood, IL: Scientific Software International, available at *www.ssicentral.com*

Reynolds CR, Richmond BO (1978), What I Think and Feel: a revised measure of children's manifest anxiety. *J Abnorm Child Psychol* 6:271–280

Reynolds CR, Richmond BO (1985), *Revised Children's Manifest Anxiety Scale: Manual.* Los Angeles: Western Psychological Services

Rogers JL, Howard KI, Vessey JT (1993), Using significance tests to evaluate equivalence between two experimental groups. *Psychol Bull* 113:553–565

Rogler LH, Malgady RG, Constantino G, Blumenthal R (1987), What do culturally sensitive mental health services mean? The case of Hispanics. *Am Psychol* 42:565–570

Shortt AL, Barrett PM, Fox TL (2001), Evaluating the FRIENDS program: a cognitive- behavioral group treatment for anxious children and their parents. *J Clin Child Psychol* 30:525–535

Silverman WK, Eisen AR (1992), Age differences in the reliability of parent and child reports of child's anxious symptomatology using a structured interview. *J Am Acad Child Adolesc Psychiatry* 31:117–124

Silverman WK, Kurtines WM (1996), *Anxiety and Phobic Disorders: A Pragmatic Approach.* New York: Plenum

Silverman WK, Kurtines WM, Ginsburg GS, Weems CF, Lumpkin PW, Carmichael DH (1999a), Treating anxiety disorders in children with group cognitive behavioral therapy: a randomized clinical trial. *J Consult Clin Psychol* 67:995–1003

Silverman WK, Kurtines WM, Ginsburg GS, Weems CF, Rabian B, Serafini LT (1999b), Contingency management, self-control, and education support in the treatment of childhood phobic disorders: a randomized clinical trial. *J Consult Clin Psychol* 67:675–687

Silverman WK, Nelles WB (1988), The Anxiety Disorders Interview Schedule for Children. *J Am Acad Child Adolesc Psychiatry* 27:772–778

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

Strauss CC, Lease CA, Kazdin AE, Dulcan MK, Last CG (1989), Multimethod assessment of the social competence of children with anxiety disorders. *J Clin Child Psychol* 18:184–189

Sue S (1999), Science, ethnicity, and bias: where have we gone wrong? *Am Psychol* 54:1070–1077

US Department of Health and Human Services, Mental Health Report of the Surgeon General: Culture, Race, and Ethnicity Supplement [Internet] [updated 2002 Sept; accessed 2002 Sept 28]. Available from *http://www.mentalhealth.org/cre/*

US Department of Health and Human Services (1994), NIH guidelines on the inclusion of women and minorities as subjects in clinical research. *Federal Register* 59:14507–14513

Weems CF, Silverman WK, Saavedra LM, Pina AA, Lumpkin PW (1999), The discrimination of children's phobias using the Revised Fear Survey Schedule for Children. *J Child Psychol Psychiatry* 40:941–952

Woodward LJ, Fergusson DM (2001), Life course outcomes of young people with anxiety disorders in adolescence. *J Am Acad Child Adolesc Psychiatry* 40:1086–1093