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BRIEF REPORT

Indicated Prevention and Early Intervention for Childhood Anxiety: A Randomized Trial With Caucasian and Hispanic/Latino Youth

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Objective: This trial of a randomized indicated anxiety prevention and early intervention explored initial program effects as well as the role of ethnicity and language on measured outcomes. ***Method:*** A total of 88 youth (M = 10.36 years; 45 girls, 52 Latino) received 1 of 2 protocols with varying degrees of parent involvement, and response was measured at posttest and 6-month follow-up. ***Results:*** Findings showed that child anxiety symptoms improved significantly across protocols, although additional gains were found for children in the child plus parent condition. Program effects did not vary by Latino ethnicity or Spanish language use in the intervention. ***Conclusions:*** The cognitive and behavioral strategies established for Caucasian children may be promising for Hispanic/Latino children when applied in a culturally responsive manner.

Keywords: anxiety, prevention, therapy, child, Hispanic/Latinos

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Anxiety disorders are not only among the most prevalent psychiatric disorders in children and adolescents, they are typically chronic and lead to significant impairment, including poor academic performance, depression, and the early initiation of the use of alcohol, tobacco, and other illicit drugs (Costello, Egger, & Angold, 2005; Kessler, Ruscio, Shear, & Wittchen, 2009). This constellation of negative outcomes has led to the development of evidence-based interventions aimed at preempting anxiety disorders (Fisak, Richard, & Mann, 2011) as well as treatments for clinically anxious children (Silverman, Pina, & Viswesvaran, 2008). The Arizona Anxiety Resilience Building Project builds on this past literature and aims at developing and evaluating theory-driven, culturally robust interventions to reduce anxiety and prevent the onset and exacerbation of anxiety disorders in children. In this study, a main objective was to conduct an initial evaluation of an indicated prevention and early intervention protocol for anxiety with Hispanic/Latino and Caucasian children. Focusing on Hispanic/Latino children is important because census data show that Hispanic/Latinos comprise the largest ethnic minority group in the United States (Humes, Jones, & Ramirez, 2011) and also because this segment of the U.S. population appears to suffer from anxiety significantly more than Caucasians (Pina & Silverman, 2004; Roberts, Roberts, & Xing, 2006). Regrettably, there is no randomized trial evaluating anxiety program effects among Hispanic/Latino children, although evidence from secondary data analyses corresponding to highly acculturated English-speaking Cuban American children shows that cognitive-behavior treatment is promising (Pina, Silverman, Fuentes, Kurtines, & Weems, 2003).

Building on this work, the focus of the present study was on degree of caregiver involvement and the role of ethnicity/language. In terms of caregiver involvement, evidence supporting the role of parents in child anxiety treatment appears equivocal (Barmish & Kendall, 2005), and when it comes to anxiety prevention, every program to date has included some degree of caregiver training, making it unclear whether parent training enhances program effects on anxiety (Fisak et al., 2011). Why involve caregivers in child anxiety interventions? Typically, anxious children are found to have anxious parents, and parents of anxious children often model and reinforce anxious behaviors (Ginsburg, Silverman, & Kurtines, 1995; Hudson & Rapee, 2005). As such, including parents in child anxiety interventions appears indispensable, at least conceptually. Moreover, when it comes to Hispanic/Latinos, qualitative data from parent focus groups and in-depth interviews (in English and Spanish) show a preference for parental involvement in child-focused interventions (Dumka, Gonzales, Wood, & Formoso, 1998; Pina, Villalta, & Zerr, 2009), perhaps because Hispanic/Latinos place great emphasis on caregiving and family (cf. *Familismo*). Continuing with ethnicity (Caucasian/Latino) and language (Spanish/English), in Griner and Smith's (2006) meta-analyses of adult psychotherapy studies, Latinos treated in Spanish appeared to benefit greatly from adapted interventions but no study has examined this issue in children. Also, some Hispanic/Latino

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parents involved in interventions prefer/require delivery in Spanish, rendering it important for program effects to remain robust in translation. Thus, this study examined program effects for Hispanic/Latino and Caucasian children with anxiety across two conditions with varying degrees of parent involvement and via clinician, child, and parent measures. The role of ethnicity and language on program effects also was explored.

Method

Participants

Participants were referred to the study by school staff (teachers, school counselors, nurses, school psychologists, or social workers) due to excessive anxiety. Inclusion and exclusion criteria were ascertained via the Anxiety Disorders Interview Schedule for *DSM-IV*: Child and Parent Versions (ADIS-C/P; Silverman & Albano, 1996). Exclusion criteria were developmental delays, psychosis, schizophrenia, suicidal ideation, or current involvement in another intervention. Inclusion criteria were anxiety symptoms or diagnoses as the primary problem. Based on the ADIS-C/P, 16 youth exhibited anxiety disorder symptoms as the principal problem but did not meet criteria for an anxiety disorder diagnosis. More specifically, five children showed social anxiety symptoms, four separation anxiety symptoms, three generalized anxiety symptoms, and three specific phobia (SP) symptoms. Turning to those who met diagnostic criteria, 32 showed separation anxiety disorder (SAD), 14 generalized anxiety disorder (GAD), 11 social anxiety disorder (SoP), and 10 SP. In terms of ADIS-C/P clinical severity ratings (CSRs), 16 children had CSRs < 4, and 72 had CSR ≥ 4. As shown in Figure 1, 88 youth ($M = 10.36$ years, $SD = 2.73$; 45 girls) were randomized to one of two conditions. In this sample, 36 youth (40.9%) were Caucasian, and 52 (59.1%) were Hispanic/Latino (mostly Mexican origin; 48% or 25 chose/participated in Spanish; 52% or 27 in English). Median annual incomes ranged from $21,000 to $41,000.

Measures

Measures included the ADIS-C/P (Silverman & Albano, 1996), administered to children and parents as described in its manual (Albano & Silverman, 1996). The ADIS-C/P yields reliable anxiety symptom counts (intraclass correlation coefficients [ICCs] = .78–.95 for ADIS-C, .81–.96 for ADIS-P), diagnoses ($\kappa = .80$–.92), and CSR ($rs = .80$–.84; Silverman, Saavedra, & Pina, 2001). Similar to past research, the ADIS-C/P was the primary anxiety measure (Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008). In addition, children completed the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978) and the Children's Depression Inventory (CDI; Kovacs, 1981). The RCMAS contains 28 items rated yes or no, and items are summed to yield a Total Anxiety score. Pela and Reynolds (1982) reported a

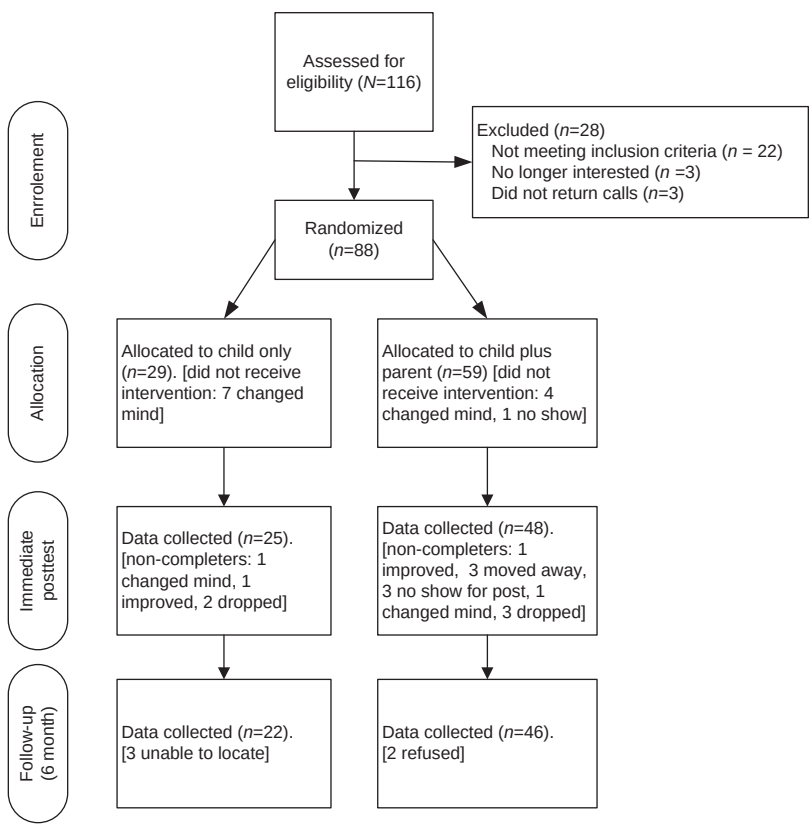

Figure 1. CONSORT flowchart: recruitment, randomization, and assessments of the prevention and early intervention child anxiety pilot trial.

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retest reliability of .98. The CDI contains 27 items, and children respond by choosing one of three options per item assessing depression. Retest reliabilities for the CDI ranged from 0.74 to 0.77 in Smucker, Craighead, Craighead, and Green (1986). In the present study, the alpha for the RCMAS was .89, and for the CDI, it was .87. Both the RCMAS and CDI showed cross-ethnic/gender measurement equivalence in Pina, Little, Knight, and Silverman (2009). Parents completed the Child Behavior Checklist (CBCL-I; Achenbach, 1991), and the internalizing scale was used in this study. Alpha coefficients for internalizing scale scores ranged from .89 to .92.

Procedure

Procedures were approved by the university's Institutional Review Board. In this study, school staff corresponding to 79 public schools participated in a 2-hr student anxiety workshop. The objective of the workshop was to provide information about (a) the various types of anxiety problems in children (i.e., SAD, GAD, SoP, SP), (b) the clinical phenomenology of anxiety in Hispanic/Latino children, and (c) referring anxious children to this study from the schools' regular classes. A handout summarizing information from the workshop was provided to help school staff identify and refer students for this study. The handout included paraphrased stem questions from the ADIS-C/P, but no cutoff criterion was used. Referrals to the study were made at the discretion of the school. After parents provided consent (children assent), the ADIS-C/P was administered along with the questionnaires. Children meeting the study's criteria were invited to participate and were randomized using a 1:2 ratio (child only:child plus parent) to facilitate exploration of the role of ethnicity/language within the child plus parent condition as necessary. Assessment and intervention procedures were implemented at a university clinic, with measures readministered at posttest and 6-month follow-up (FU) by blinded research assistants.

Conditions

Conditions were manualized for standardization and replication. Strategies for reducing child anxiety consisted of systematic and gradual exposures to anxiety-provoking situations and cognitive-behavioral strategies to facilitate the exposures (Silverman & Kurtines, 1996). In the child only condition, the mother was involved at the end of each session to review progress (~10 min). In the child plus parent condition, the child and mother met together with the interventionist for the entire session (60 min) in the same room, with each child and mother actively engaged by the interventionist. In the plus parent condition, the focus was on reducing parental reinforcement of the child's anxious behavior and guiding the parent to help the child practice the skills learned in session. Each condition lasted 12 weeks and was implemented based on our conceptual approach to cultural sensitivity. This cultural sensitivity approach emphasizes core therapeutic components (e.g., systematic and gradual exposures) and the use of culturally responsive implementation strategies (Pina, Villalta, & Zerr, 2009). In this study, a focus was on manual development (Pina, 2006). Interventionists were seven doctoral students (two bilingual) trained by Armando A. Pina, who held weekly on-site supervision meetings (licensed psychologists provided oversight). Sessions were recorded, and independent evaluators rated 20% of randomly selected tapes to yield an overall rating of protocol adherence. Ratings for parent involvement yielded 100% for child plus parent and 5% for child only. Interrater reliability was acceptable (90%).

Results

Program Effects

Program effects were evaluated using SAS 9.2 with PROC MIXED. Pretest to posttest and pretest to FU changes were estimated via repeated measures analysis of variance (RM-ANOVA) on the ADIS CSR, ADIS-C, ADIS-P, RCMAS, CDI, and CBCL-I. Decomposition of program effects were pursued using single degree of freedom contrasts (Jaccard, 1998), and clinically significant change was evaluated as suggested by Kendall and Grove (1988). Preliminary analyses showed no outliers, no attrition biases, and no significant pretest differences between conditions. Correlations among the outcomes showed no evidence of potential redundancy (no rs $>$ .85; Kazdin, 1995). Table 1 shows least squares means and standard errors, whereas Table 2 shows results from analyses of program effects. As detailed in Table 2, significant improvements across all measures for the child plus parent condition as well as significant improvements on the ADIS-C/P CSR, ADIS-C, and CBCL-I for the child only condition were found. There was some deterioration on the CDI for some children in the child only condition, but scores remained below the clinical

Table 1
Means and Standard Errors for the Total Sample and for Each Condition

	Total sample			Child only			Child plus parent		
Measures	Pre	Post	FU	Pre	Post	FU	Pre	Post	FU
ADIS-CSR									
M	5.20	1.42	1.26	5.10	0.93	0.85	5.31	1.90	1.66
SE	0.25	0.30	0.37	0.42	0.53	0.66	0.26	0.28	0.34
ADIS-C									
M	4.31	1.29	0.97	4.35	0.99	0.52	4.26	1.58	1.43
SE	0.56	0.35	0.43	0.96	0.63	0.79	0.56	0.32	0.36
ADIS-P									
M	5.00	2.05	1.91	4.06	1.42	1.30	5.95	2.67	2.53
SE	0.57	0.61	0.69	0.98	1.09	1.22	0.59	0.56	0.63
RCMAS									
M	12.75	7.82	9.48	13.56	10.18	13.33	11.93	5.46	5.64
SE	1.14	1.32	1.58	1.99	2.42	2.95	1.10	1.04	1.13
CDI									
M	25.19	18.81	18.38	24.86	28.63	26.91	25.53	8.99	9.85
SE	0.45	1.91	2.06	0.78	3.49	3.79	0.45	1.57	1.63
CBCL-I									
M	21.70	7.53	12.19	22.70	7.10	14.53	20.70	7.95	9.85
SE	1.99	1.13	1.66	3.43	2.02	3.04	2.02	1.03	1.34

Note. Least squares means are reported. Pre = pretest; Post = immediate posttest (3 months); FU = follow-up (6 months); ADIS-CSR = Anxiety Disorders Interview Schedule–Clinician's Severity Rating; ADIS-C = Anxiety Disorders Interview Schedule–child symptom count; ADIS-P = Anxiety Disorders Interview Schedule–parent symptom count about the child; RCMAS = Revised Children's Manifest Anxiety Scale (Total Anxiety); CDI = Children's Depression Inventory; CBCL-I = Child Behavior Checklist–Internalizing.

Table 2
Program Effects for the Total Sample and for Each Condition

	Total sample		Child only		Child plus parent	
Measures	Pre to post	Pre to FU	Pre to post	Pre to FU	Pre to post	Pre to FU
ADIS-CSR						
PE	3.59	3.79	4.17	4.25	3.41	3.65
SE	0.30	0.35	0.62	0.74	0.34	0.40
t value	12.05***	10.95***	6.77***	5.74***	9.98***	9.18***
Lower CI	2.99	3.10	2.94	2.77	2.73	2.85
Upper CI	4.18	4.48	5.40	5.73	4.09	4.44
ADIS-C						
PE	2.85	3.05	3.36	3.83	2.69	2.84
SE	0.57	0.53	1.16	1.14	0.65	0.60
t value	5.04***	5.8***	2.91**	3.38**	4.11***	4.73***
Lower CI	1.72	2.00	1.05	1.57	1.38	1.64
Upper CI	3.98	4.10	5.67	6.10	3.99	4.03
ADIS-P						
PE	3.13	3.26	2.63	2.76	3.28	3.42
SE	0.67	0.72	1.39	1.51	0.77	0.83
t value	4.67***	4.52***	1.89	1.82	4.26***	4.14***
Lower CI	1.79	1.82	−0.15	−0.26	1.74	1.77
Upper CI	4.46	4.70	5.41	5.77	4.81	5.07
RCMAS						
PE	5.93	5.44	3.39	0.23	6.47	6.29
SE	1.10	1.29	2.67	3.34	1.22	1.40
t value	5.41***	4.21***	1.27	0.07	5.31***	4.5***
Lower CI	3.74	2.86	−1.94	−6.43	4.04	3.50
Upper CI	8.12	8.03	8.72	6.90	8.91	9.09
CDI						
PE	13.07	12.67	−3.77	−2.05	16.54	15.68
SE	1.87	1.86	3.59	3.92	1.65	1.74
t value	7.01***	6.82***	−1.05	−0.52	10.02***	9.03***
Lower CI	0.93	8.96	−10.92	−9.86	13.25	12.22
Upper CI	16.37	16.37	3.39	5.77	19.83	19.14
CBCL-I						
PE	13.69	11.23	15.60	8.17	12.75	10.85
SE	2.87	2.71	3.85	3.88	2.17	1.89
t value	4.78***	4.14***	4.05***	2.11*	5.86***	5.74***
Lower CI	7.97	5.82	7.91	0.43	8.41	7.08
Upper CI	19.41	16.64	23.29	15.91	17.09	14.63

Note. Repeated measures analyses of variance revealed overall significant effects for time across conditions on the ADIS-CSR, $F(2, 70) = 86.86$, $p < .01$; ADIS-C, $F(2, 66) = 17.03$, $p < .01$; ADIS-P, $F(2, 67) = 11.32$, $p < .01$; RCMAS, $F(2, 66) = 14.65$, $p < .01$; CDI, $F(2, 69) = 24.86$, $p < .01$; and CBCL-I, $F(2, 67) = 25.23$, $p < .01$, in the expected direction; The CDI showed a Time × Condition effect, $F(2, 69) = 13.71$, $p < .01$. Pre = pretest; post = posttest (3 months); FU = follow-up (6 months); ADIS-CSR = Anxiety Disorders Interview Schedule–Clinician's Severity Rating; ADIS-C = Anxiety Disorders Interview Schedule—child symptom count; ADIS-P = Anxiety Disorders Interview Schedule–parent symptom count about child; RCMAS = Revised Children's Manifest Anxiety Scale (Total Anxiety Scale); CDI = Children's Depression Inventory; CBCL-I = Child Behavior Checklist–Internalizing; PE = parameter estimate; *SE* = standard error; CI = 95% confidence interval.
* $p < .05$. ** $p < .01$. *** $p < .0001$.

range. Program effects also were evidenced in terms of clinically significant change based on the CBCL-I. In the child plus parent condition, 17 children moved from the clinical to the normal range, three from clinical to borderline, and two from borderline to normal. In the child only condition, three moved from clinical to normal and one from clinical to borderline. Turning to posttest diagnoses based on the ADIS-C/P, one child met criteria for SAD and five for GAD in the plus parent condition (six out of 48, or 13%). One child met criteria for SAD in the child only condition (one out of 25, or 4%). At FU, three children met criteria for SAD and two for GAD in the plus parent condition (five out of 46, or 10%), whereas one met criteria for SAD in the child only condition (one out of 22, or 5%). None of the 16 children with symptoms and no diagnoses at pretest met criteria for an anxiety disorder diagnosis at posttest or FU.

The Role of Ethnicity and Language

The role of ethnicity and language was estimated using PROC REG with PROC MI and PROC MIANALYZE. As shown in Figure 2, moderation was explored using an interaction term between condition and the moderator variable to predict each outcome, with pretest levels of the measured outcome as a covariate (Baron & Kenny, 1986; Kraemer, Wilson, Fairburn, & Agras, 2002). Pretest scores were included in the models as control variables because partialing out these variables converts the posttest scores into a residual change variable (Cole & Maxwell, 2003), which typically helps improve power (Fitzmaurice, Laird, & Ware, 2004). As shown in Table 3, neither Latino ethnicity nor Spanish language moderated program effects measured by the ADIS-C/P CSR or anxiety symptom counts based on the ADIS-C or ADIS-P. In addition, program effects on the additional outcome measures were not moderated by Latino ethnicity or Spanish language. In other words, the cognitive and behavioral procedures applied seem as promising for Latino (including when administered in Spanish) as for Caucasian children with anxiety symptoms or anxiety diagnoses.

Discussion

Building on a substantial body of child anxiety prevention and treatment research, this study is the first to examine the effects of an indicated anxiety prevention and early intervention protocol using a sample of anxious Hispanic/Latino and Caucasian children (Fisak et al., 2010; Silverman et al., 2008). Evaluation of the protocol showed significant improvements at posttest and short-term FU across clinician, child, and parent measures. In addition, gains and maintenance were most evident for children whose parents were more involved in the intervention. Although, improvements also were found for children whose parents were less involved in the intervention across three of the six outcomes

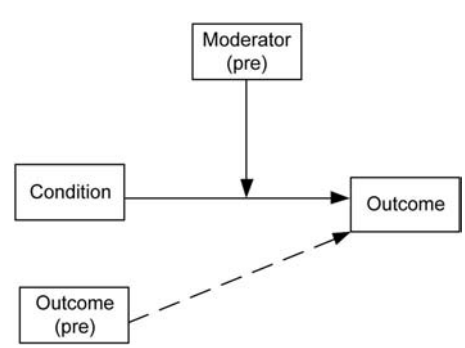

Figure 2. Moderation model with dashed lines denoting the covariate. pre = pretest.

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Table 3
Results From the Ethnicity and Language Moderation Analyses

	Pre to post					Pre to FU				
Measures	Intercept	Outcome (pre)	Ethnicity	Condition	Ethnicity × Condition	Intercept	Outcome (pre)	Ethnicity	Condition	Ethnicity × Condition
ADIS-CSR										
B	0.10	0.30	−0.53	0.66	−0.34	−0.73	0.19	1.10	1.86	−1.75
SE	1.03	0.15	1.06	0.91	1.23	1.49	0.22	1.49	1.47	1.61
ADIS-C										
B	1.69	−0.03	−0.70	0.48	0.05	−0.19	0.13	0.91	1.64	−1.56
SE	0.95	0.08	1.28	1.04	1.46	1.59	0.11	1.49	1.56	1.67
ADIS-P										
B	0.52	0.12	1.52	1.02	−0.80	0.48	0.14	1.74	2.48	−3.49
SE	1.80	0.13	2.34	1.96	2.64	2.26	0.15	2.48	2.48	2.89
RCMAS										
B	2.67	0.32	7.37	−0.36	−8.41	7.53	0.34	2.96	−2.88	−7.49
SE	3.49	0.15	5.13	3.29	5.42	4.62	0.18	6.96	4.33	6.88
CDI										
B	28.63	−0.10	0.02	−16.43	0.25	30.86	−0.22	−2.02	−16.15	1.77
SE	16.12	0.62	7.91	5.43	8.37	17.77	0.67	9.93	7.43	10.21
CBCL-I										
B	3.96	0.06	−0.18	4.61	−2.74	6.34	0.28	7.90	−2.07	−9.58
SE	3.54	0.08	4.50	3.36	4.94	5.25	0.12	6.43	4.73	6.50
	Intercept	Outcome (pre)	Language	Condition	Language × Condition	Intercept	Outcome (pre)	Language	Condition	Language × Condition
ADIS-CSR										
B	0.00	0.27	−0.18	0.47	0.18	−0.11	0.17	0.45	0.83	0.00
SE	0.95	0.16	1.61	0.72	1.72	1.26	0.22	2.27	1.05	2.20
ADIS-C										
B	1.38	−0.05	0.09	0.34	0.53	0.30	0.11	0.44	0.78	−0.19
SE	0.76	0.08	1.64	0.79	1.75	1.26	0.11	2.21	1.20	2.37
ADIS-P										
B	1.38	0.09	0.69	0.56	−0.12	1.28	0.17	0.25	0.88	−1.33
SE	1.48	0.13	3.54	1.62	3.79	1.65	0.15	3.83	1.78	3.97
RCMAS										
B	5.81	0.34	4.10	−4.30	−4.26	−0.11	0.17	0.45	0.83	0.00
SE	3.47	0.15	7.90	2.86	8.09	1.26	0.22	2.27	1.05	2.20
CDI										
B	27.61	−0.05	−1.17	−15.84	−0.98	28.46	−0.15	−2.01	−14.88	−0.06
SE	15.72	0.62	11.72	5.23	11.92	16.57	0.68	13.13	6.81	13.47
CBCL-I										
B	3.65	0.07	−0.10	3.88	−2.36	11.01	0.25	2.26	−7.07	−1.97
SE	3.25	0.08	8.09	2.89	8.55	4.71	0.12	9.99	4.12	9.71

Note. In the analyses, ethnicity: 1 = Latino, 0 = Caucasian; language: 1 = Spanish, 0 = English; condition: 1 = child plus parent, 0 = child only. Pre = pretest; post = posttest (3 months); FU = follow-up (6 months); ADIS-CSR = Anxiety Disorders Interview Schedule–Clinician's Severity Rating; ADIS-C = Anxiety Disorders Interview Schedule–child symptom count; ADIS-P = Anxiety Disorders Interview Schedule–parent symptom count; RCMAS = Revised Children's Manifest Anxiety Scale (Total Anxiety Scale); CDI = Children's Depression Inventory; CBCL-I = Child Behavior Checklist–Internalizing.

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measured. Findings showing variations by degree of parent involvement are noteworthy because previous research has been equivocal (perhaps due to variability in content, number, and format of parent sessions; Barmish & Kendall, 2005). Our findings, however, provide some evidence that training caregivers to reduce reinforcement of child anxious behaviors and to help the child practice the skills learned in session could be critical. As such, future studies should test whether changes in parent behaviors mediate response, a topic that is severely underdeveloped in the child anxiety area (Alfano et al., 2009; Kendall & Treadwell, 2007).

Another focus of this study was to evaluate the role of ethnicity and language on program effects. In the anxiety prevention area, Barrett, Sonderegger, and Xenos (2003) adapted the FRIENDS for Life anxiety program for former Yugoslavian and Chinese immigrant children, whereas Cooley-Strickland, Griffin, Darney, Otte, and Ko (2011) reported on an adaptation for African American children. Both of these studies reported positive program effects for the ethnic minority children participants. This is the first controlled study, however, to focus on Hispanic/Latino children. In this study, Hispanic/Latino children (including those targeted in Spanish) benefited from the protocol as much as their Caucasian counterparts. This result is consistent with Pina et al. (2003), but unlike Pina et al., this study relied on a sample largely comprised of Mexican-origin youth, several of whom received services in Spanish. Whereas the ethnicity/language finding is encouraging,

adult studies have shown that Latinos treated in Spanish respond better to culturally adapted interventions (Griner & Smith, 2006). For this reason, a stronger test of cross-ethnic equivalence of program effects might be necessary to determine whether our prevention and early intervention efforts are as robust for Hispanic/Latino children as they are for their Caucasian counterparts (a test that would require a larger sample size).

The present study is limited in several ways. First, this study relied on a relatively small sample size and a short-term FU. As such, null results may reflect low power for the analyses and should be viewed tentatively. Second, the small sample size for this study precluded evaluating differential child response at the indicated prevention versus treatment of diagnosable anxiety disorders levels. Third, tests of program effects relied on anxiety indicators with a restricted range (e.g., ADIS-C/P CSR), which could have limited the study's ability to show additional significant effects. Fourth, the focus on ethnicity and language is an important first step, but it shows little about possible within-group response variability to the intervention. That is, it remains unknown whether acculturation, enculturation, or cultural values impact program effects for Hispanic/Latinos. These are important issues that warrant careful consideration in future research especially as the field moves forward to secure evidence-based prevention and treatment services for all children.

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