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Exposure-based cognitive behavioral treatment for phobic and anxiety disorders: treatment effects and maintenance for Hispanic American relative to Euro-American youths

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

EXPOSURE-BASED COGNITIVE BEHAVIORAL TREATMENT FOR PHOBIC
AND ANXIETY DISORDERS: TREATMENT EFFECTS AND MAINTENANCE
FOR HISPANIC AMERICAN RELATIVE TO EURO-AMERICAN YOUTHS

A thesis submitted in partial fulfillment of the

requirements for the degree of

MASTER OF SCIENCE

in

PSYCHOLOGY

by

Rebecca M. Fuentes

2002

To: Dean Arthur W. Herriott
College of Arts and Sciences

This thesis, written by Rebecca M. Fuentes, and entitled Exposure-based Cognitive Behavioral Treatment for Phobic and Anxiety Disorders: Treatment Effects and Maintenance for Hispanic American Relative to Euro-American Youths, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this thesis and recommend that it be approved.

William Kurtines

Jonathan Tubman

Wendy K. Silverman, Major Professor

Date of Defense: November 20, 2002

The thesis of Rebecca M. Fuentes is approved.

Dean Arthur W. Herriott
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Florida International University, 2002

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ABSTRACT OF THE THESIS

EXPOSURE-BASED COGNITIVE BEHAVIORAL TREATMENT FOR PHOBIC
AND ANXIETY DISORDERS: TREATMENT EFFECTS AND MAINTENANCE
FOR HISPANIC AMERICAN RELATIVE TO EURO-AMERICAN YOUTHS

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Rebecca M. Fuentes

Florida International University, 2002

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Professor Wendy K. Silverman, Major Professor

A total of 131 Hispanic American and Euro-American youths (ages 6 to 16 years) who participated in previous clinical trials for phobic and anxiety disorders were compared in terms of treatment gains and maintenance. In terms of treatment gains, the findings indicated that Hispanic American and Euro-American youths responded more similarly than differently to the exposure-based cognitive/behavioral treatments from pre- to post-treatment. This was found using traditional hypotheses testing, calculation of effect sizes, and statistical equivalence testing. In terms of treatment maintenance, the findings also demonstrated that Hispanic American and Euro-American youths responded more similarly than differently, albeit with some variations within specific assessment points. The findings are discussed in terms of the need to evaluate empirically supported treatments for use with ethnic minority populations, particularly Hispanic Americans.

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CHAPTER I

INTRODUCTION

The 1990s witnessed a flurry of clinical trials aimed at developing and evaluating psychosocial treatments for youths with phobic and anxiety disorders (from hereon referred to as anxiety disorders). The treatments were downscaled adaptations of treatments found to be efficacious with adults (e.g., Barlow, Craske, Cerny, & Klosko, 1989; Barlow, Rapee, & Brown, 1992; Borkovec & Costello, 1993; Heimberg, Becker, Goldfinger, & Vermilyea, 1985), namely, exposure-based cognitive behavior treatments. Thus, all the treatments evaluated in the childhood anxiety disorders 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), albeit with variations existing across some of the treatments (e.g., degree of parental involvement, individual format, group format) (see Silverman & Kurtines, 1996).

Table 1 presents a listing of the exposure-based cognitive behavior therapy 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, cognitive behavior therapy has been earmarked as an “empirically supported treatment” for anxiety disorders in youth (American Psychological Association, Division 12 Task Force on Psychological Interventions; Chambless & 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, “pharmacotherapy should not be used as the sole intervention” (p. 75S); rather, the types of procedures used in cognitive behavior therapy (e.g., graded exposures, positive reinforcement, self evaluation) were recommended (American Academy of Child and Adolescent Psychiatry, 1997).

Relevant to the present study are the rates of ethnic minority groups’ participation, particularly Hispanic Americans’ participation, in the clinical trials listed in Table 1. As the table shows, most of the trials included either no Hispanic American participants or an extremely small proportion. This low Hispanic American participation rate reflects, in part, the times during which the trials were conducted. That is, prior to Kendall (1994) there existed no clinical trials evidence that anxiety disorders in youths could even be successfully reduced. Thus, the zeitgeist was such that it was deemed critical for researchers to either produce this empirical evidence (e.g., Kendall, 1994) and/or replicate or extend the evidence (e.g., Barrett, Dadds, & Rapee, 1996; Kendall, Flannery-Schroeder, Panichelli-Mindel, Southam-Gerow, Henin, & Warman, 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., Euro-American youths and their families, United States 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 treating 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 and colleagues (Silverman, Kurtines, Ginsburg, Weems, Lumpkin, & Carmichael, 1999a; and Silverman, Kurtines, Ginsburg, Weems, Rabian, & Serafini, 1999b) were exceptions in terms of having sizable proportions of Hispanic American participants (37% and 46%, respectively). The higher rates of Hispanic American participation in the Silverman et al. trials relative to the other trials is because Silverman et al. drew from the population of Miami-Dade county, Florida, which has one of the largest populations of Hispanic Americans in the U.S. (1.3 million, 57.3% of the total county population).

Because the Silverman et al. (1999 a, b) 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. the overall positive findings from the respective clinical trials were reported.

In the present study, post hoc comparisons across the two trials were conducted to examine how the Hispanic American youths fared relative to the Euro-American youths in terms of treatment outcome and maintenance. Specifically, this study compared the two groups' diagnostic recovery rates, youth and parent completed questionnaire scores, obtained effect sizes, and clinically significant improvements in terms of normative comparisons on the Child Behavior Checklist

(Achenbach, 1991). Because statistical non-significance does not imply equivalence, in addition to “traditional” hypothesis tests (e.g., repeated measures analyses), statistical equivalence tests (Jaccard & Guilamo-Ramos, 2002; Rogers, Howard, & Vessey, 1993) were performed. Treatment maintenance of Hispanic American relative to Euro-American participants also was examined in terms of youth and parent completed questionnaire scores from pre- to posttreatment, 3-, 6-, and 12-month follow-up using hierarchical linear modeling (Raundebush, Bryk, Cheong, & Congdon, 2001).

The examination of these issues in the present study is a response to calls for data that speak to the issue of whether empirically supported treatments (in this case, exposure based cognitive behavioral therapy for use with anxiety disorders in youth) can be generalized for use with various segments of minority populations (Hohmann & Parron, 1996; Rogler, Malgady, Constantino, & Blumenthal, 1987). That is, does an empirically supported treatment “work” with a non-mainstream or a specific ethnic minority group (or subgroup) as it does with the mainstream group (Lloyd et al., 1987; Sue, 1999; United States Department of Health and Human Services, 1994)? Thus, the purpose of this study was to provide preliminary evidence that may shed some light on a course of action for future research with minority populations by evaluating the efficacy of exposure-based cognitive behavioral therapy for the treatment of anxiety disorders in Hispanic American youth.

Investigating this issue with Hispanic American youths is of particular importance given that Hispanic Americans are both the fastest growing and second largest minority group in the U.S., with approximately 28.6 million people of

Hispanic origin living in this country (11.9% of the U.S. population)(U.S. Bureau of the Census, 2000). Consequently, there is an increased demand for the exploration of mental health issues in the Hispanic American community, particularly in terms of treatments that are both empirically supported and culturally sensitive.

Further, examining the efficacy of treatment for Hispanic Americans relative to Euro-Americans may provide preliminary evidence for determining whether simply exporting empirically supported treatments, which have been demonstrated to be efficacious with Euro-Americans, results in relatively similar psychosocial gains for Hispanic Americans.

Finally, investigating this issue with Hispanic American youths with anxiety disorders is of particular importance given that anxiety disorders are *the* most prevalent psychiatric disorders in young people (about 4.1% to 9.2%) (e.g., Bernstein, Borchardt, & Perwein, 1996) and given that anxiety disorders do not necessarily spontaneously remit (Flakierska-Prakin, Lindstroem, & Gillberg, 1997; Last, Hansen, & Franco, 1998; Woodward & Fergusson, 2001).

As noted, the present evaluation of exposure-based cognitive behavioral therapy is based on the samples that participated in two Silverman et al. (1999a and b) clinical trials. The Hispanic Americans recruited and selected for participation in Silverman et al. agreed to receive the assessment and intervention procedures largely in English and they did not request receiving the procedures in Spanish. (No more than 4% were referred for assessment and treatment in Spanish.) The Silverman et al. samples are therefore likely to be highly representative of the Hispanic American population in the United States (74% of Hispanic Americans rate their ability to

speak English as “very well” or “well”; Department of Commerce, 1990). Overall, the findings reported in this study may be viewed as stepping-stones for future treatment research aimed at reducing anxiety disorders in Hispanic American youths.

In the following sections, a summary of the research literature on the efficacy of exposure-based cognitive behavioral therapy for the treatment of anxiety disorders in children is provided as well as a brief summary of the literature regarding treatment research with ethnic minority populations.

CHAPTER II

LITERATURE REVIEW

Exposure-based Cognitive Behavioral Therapy

Exposure-based cognitive behavioral therapy has received empirical support in several clinical trials using both waitlist control (e.g., Kendall, 1994; Kendall et al., 1997; Silverman et al., 1999b) and active control conditions (Last et al., 1998; Silverman et al., 1999a) in the treatment of anxious youths. Several other studies have also demonstrated the efficacy of exposure-based cognitive behavioral therapy in the treatment of anxious youths (e.g., Barret, 1998; Beidel, Turner, & Morris, 2000; Spence, Donovan, & Brechman-Toussaint, 2000). This section will review these and other studies that have provided support for the use of exposure-based cognitive behavioral therapy in the treatment of anxious youths.

Kendall (1994) conducted the first published randomized clinical trial of an exposure-based cognitive behavioral therapy with anxious children in which 47 9- to 13-year-old children were randomly assigned to either a cognitive behavioral treatment condition or a waitlist control condition. Results of the trial provided support for the efficacy of the cognitive behavioral treatment condition: children who received the cognitive behavioral treatment demonstrated significant improvement from pre- to posttreatment across parent reports, self-reports, and behavioral observations, and 64% of these children were diagnosis free at posttreatment. Further, 1-year follow-up data demonstrated that treatment gains were maintained for the children in the cognitive behavioral condition.

In a second randomized clinical trial, Kendall et al. (1997) randomly assigned 94 9- to 13-year-old children with anxiety disorders to either a cognitive behavioral treatment condition or to a waitlist control condition. This trial showed comparable results to the first, with the cognitive behavioral treatment group demonstrating significant improvements when compared to the waitlist control group. Specifically, over 50% of the cognitive behavioral group was free of their primary diagnosis at posttreatment. For those cases in which the primary diagnosis remained at posttreatment, analyses showed significant reduction on severity scores (Kendall et al., 1997). A significantly greater percentage of children in the cognitive behavioral group were also found to have returned to within the normal range of scores on several measure of psychopathology as compared to the waitlist control group, and these treatment gains were again maintained at 1-year follow-up.

Barrett (1998) reported on a randomized clinical trial in which a cognitive behavioral group family-based intervention for childhood anxiety disorders was evaluated. A sample of 60 children, 7- to 14-years-old, were randomly assigned to three treatment conditions: group cognitive behavioral therapy (GROUP-CBT), group cognitive behavioral therapy plus family management (GROUP-FAM), and a waitlist control condition (WL). Results indicated that children assigned to either GROUP-CBT or GROUP-FAM showed significant improvement compared to the children assigned to the WL condition. Specifically, 64.8% of the children across the two treatment conditions no longer fulfilled diagnostic criteria for an anxiety disorder at posttreatment as compared to 25.2% of children in the WL group. Children in the GROUP-CBT and GROUP-FAM also showed significant

improvements at posttreatment on both parent and self-report measures as compared to the WL group. Further, at 12-month follow-up, 64.5% of children in the GROUP-CBT and 84.8% of the children in the GROUP-FAM were diagnosis free (Barrett, 1998).

In a study by Last et al. (1998) the efficacy of an exposure-based cognitive behavioral treatment was evaluated relative to an education support control condition for the treatment of children with school phobia. Surprisingly, results demonstrated that the cognitive behavioral condition and the educational support control condition were equally effective at returning children to school and reducing their anxiety symptoms. Further, treatment gains were maintained (or increased) in both groups at a 4-week follow-up (Last et al., 1998).

Similar results were found in a randomized clinical trial performed by Silverman et al. (1999a) in which 81 children with phobic disorders were randomly assigned to an exposure-based contingency management treatment condition (CM), an exposure-based cognitive self-control treatment condition (SC), or an education support control condition (ES). Children in both the CM and SC conditions showed substantial improvement on all outcome measures, and these gains were maintained at 3-, 6-, and 12-month follow-ups (Silverman et al., 1999a). Again, surprisingly, children in the ES condition also showed substantial improvement at posttreatment and at 3-, 6-, and 12-month follow-ups. Although the Last et al. (1998) and Silverman et al. (1999a) studies do not demonstrate the superiority of an exposure-based cognitive behavioral treatment for the treatment of phobic disorders in children, they do provide further evidence for the effectiveness of this type of

treatment for anxiety disorders. Interestingly, these two studies also demonstrated the efficacy of educational support conditions for children with phobic disorders.

In another randomized clinical trial using the same clinic patient flow, Silverman et al. (1999b), the efficacy of group cognitive-behavioral therapy (GCBT) versus a wait-list control condition (WLC) for treating anxiety disorders in children was evaluated. Results indicated that 64% of the children in GCBT no longer met diagnosis for an anxiety disorder at posttreatment compared to 13% of the children in the wait-list control condition. Further, children in GCBT showed substantial improvement on all the main outcome measures, and maintained these treatment gains at 3-, 6-, and 12-month follow-ups. Children in WLC did not show improvement from the pre- to the postwait assessment point (Silverman et al., 1999b).

Beidel et al. (2000) randomly assigned 67 children (ages 8 and 12) with social phobia to either a behavioral treatment condition (Social Effectiveness Therapy for Children, SET-C) or an active control condition (Testbusters). Children in the SET-C condition, which included social skills training and exposure to feared situations, demonstrated significant improvement across several domains of functioning (i.e., reduction in social phobic fears, improvement in social skills and performance). At posttreatment, 67% of the children in the SET-C condition no longer met diagnostic criteria for social phobia compared to only 5% of the children in the Testbusters condition. Further, treatment gains were maintained at 6-month follow-up (Beidel et al., 2000).

In a randomized clinical trial performed by Flannery-Schroeder & Kendall (2000), 37 children (8- to 14-years old) with anxiety disorders were randomly assigned to a cognitive-behavioral individual treatment (ICBT), a cognitive-behavioral group treatment (GCBT), or a wait-list control (WL). At posttreatment, a substantially larger percentage of children in the treatment groups (73% individual, 50% group) did not meet diagnostic criteria for their primary anxiety disorder compared to 8% of the children in the WL group. Further, significant improvements were found in multiple child- and parent-reports of anxious distress and coping for both ICBT and GCBT relative to the WL control condition (Flannery-Schroeder & Kendall, 2000).

Lastly, Spence et al. (2000) randomly assigned 50 children (7- to 14-years old) with social phobia to child-focused cognitive-behavioral therapy (CBT) or to a wait-list control (WLC). Children in the CBT condition demonstrated significant reduction in social and general anxiety throughout the treatment, and a significant reduction occurred in the percentage of children in the treatment condition diagnostic criteria for social phobia at posttreatment. Such improvements were not evident for the WLC children, who showed minimal change during the treatment period (Spence et al., 2000). Further, treatment effect for children in the CBT condition were generally maintained at 12-month follow-up.

In summary, there is a growing body of literature that supports the efficacy of exposure-based cognitive behavioral treatments for children with anxiety disorders (e.g., Kendall, 1994; Barrett, 1998; Silverman et al., 1999b; Spence et al., 2000). No study, however, has systematically examined the effectiveness of exposure-based

cognitive behavioral therapy for Hispanic American youths relative to Euro-American youths. Using the data from Silverman et al. 1999a & 1999b, this study aims to shed light on the question of whether an empirically supported treatment (i.e., exposure-based cognitive behavioral therapy) is effective for use with ethnic minority groups, specifically Hispanic American youths.

Empirically Supported Treatments and Ethnic Minority Groups

Examining whether empirically supported treatments are effective for use with ethnic minority population is of considerable importance in the backdrop of recent calls in the literature for investigators to address the issue of ethnicity in research and treatment (e.g., Department of Health and Human Services, 2001; Hall, 2001; Sue, 1999).

In an article focusing on ethnicity and science, Sue (1999) argues that the practice in much psychological research has often been to assume generality of research findings when it is not warranted. That is, findings from research with a particular ethnic population are often broadly generalized to other ethnic populations without the benefit of studies confirming these assumptions. Sue further argues that because most psychological research is not based on ethnic minority populations, these assumptions of generality cannot be made, and that more research must be focused on ethnic minority populations in order to ascertain the extent to which research findings are universal across populations (Sue, 1999).

In an article focusing on psychotherapy with ethnic minorities, Hall (2001) states that there is not adequate evidence to support the efficacy of empirically supported or culturally sensitive treatments with ethnic minorities. Thus, there is a

need for psychotherapy efficacy research on both empirically supported treatments (ESTs) *and* culturally sensitive treatments (CSTs) with ethnic minorities. Because empirically supported treatments have some empirical basis, Hall (2001) argues that a good starting point for this research would be to determine the cultural effectiveness and sensitivity of ESTs before attempting to establish the efficacy of empirically unsupported culturally sensitive treatments (CSTs). Further, Hall (2001) suggests that future research should focus on modifying ESTs to be more culturally sensitive (if necessary), or conversely, should focus on developing empirical support for existing culturally sensitive treatments.

Lastly, in a supplement to the Mental Health Report of the Surgeon General (United States Department of Health and Human Services, 2001), it was reported that although some evidence exists that ethnic minority groups can benefit from mental health treatment, most of the studies that included ethnic minorities had small sample sizes and were not randomized clinical trials. There was therefore insufficient evidence to determine group-specific efficacy of treatment interventions for ethnic minority populations. To remedy this situation, the report suggests utilizing randomized controlled trials that include sizeable racial and ethnic minority populations in order to determine the efficacy of already-proven psychotherapies (or empirically supported treatments) for ethnic minority groups. The report also states that further research is essential to determine whether ethnic- or culture-specific interventions are efficacious for minority populations (U.S. Department of Health and Human Services, 2001).

In consideration of the issues mentioned above, the purpose of the present study was to evaluate the effectiveness of exposure-based cognitive behavioral therapy in the treatment of Hispanic American youth with anxiety and phobic disorders relative to Euro-American youth with anxiety and phobic disorders. The large of percentage of Hispanic Americans who participated in the two Silverman et al. clinical trials from which this study's data is culled provided a unique opportunity to examine this issue. However, because this study is based on pre-existing data and analyses are post hoc, this study should be viewed as exploratory in nature, with it's purpose being to provide preliminary data to support (or not support) the effectiveness of exposure-based cognitive behavioral therapy with Hispanic American youth.

CHAPTER III

METHODOLOGY

Sample

Data from a total of 131 youths (46% girls) and their parents (1 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, b) 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 Euro-American and 52 (40%) were Hispanic American (see Table 2). Across the two trials there were no statistically significant differences between Euro-American and Hispanic American participants with respect to the sociodemographic characteristics shown in Table 2. For Hispanic Americans, 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), and the remaining Hispanic American families reported mixed-Hispanic origin (e.g., Colombia + Mexico).

Diagnosis

Anxiety Disorders Interview Schedule for Children (ADIS-C/P; Silverman and Nelles, 1988). The ADIS-C and ADIS-P were used to derive diagnoses. Previous research demonstrated satisfactory interrater diagnostic reliability (e.g., $\kappa = .84$ for the ADIS-C, $\kappa = .83$ for ADIS-P, and $\kappa = .78$ for the composite diagnosis; Silverman and Nelles, 1988) and test-retest reliability (e.g., 10- to 14-days retest yielded $\kappa =$

.76 for the ADIS-C, $\kappa = .67$ for ADIS-P, and $\kappa = .75$ for the composite diagnosis; Silverman and Eisen, 1992). Diagnosticians were trained to use the ADIS-C and ADIS-P by observing live and videotaped samples. Initial discrepancies were discussed to reach agreement. Diagnosticians met an initial reliability criterion of 100% agreement on five consecutive child/parent interviews. To determine diagnoses, separate interviews with the child and parent using the child and parent versions, respectively, of the ADIS-C were conducted. The clinicians assigned diagnoses that both sources agreed were most interfering. In cases of discordance between child and parent, the clinician adjusted the severity ratings in considerations of both sources' views about interference and disturbance, thereby, making final or "combined" diagnoses a function of both source's reports. In cases of multiple diagnoses, the relative impact of each specific disorder was determined by questioning both the child and parent, by obtaining severity ratings from each source, and by prioritizing each diagnosis/disorder from most interfering or disturbing to least interfering or disturbing, as delineated in the ADIS-C/P guide (see Albano and Silverman, 1996). The diagnosis/disorder that was deemed most interfering or disturbing was rendered the primary diagnosis.

Youth Completed Measures

Revised Children's Manifest Anxiety Scale (RCMAS, Reynolds and Richmond, 1978). The RCMAS is a widely used measure to assess the child's general level of anxiety. The RCMAS consists of 37 items that describe anxious symptoms to which the child indicates "yes" or "no." The scale yields three subscales: Worry-Oversensitivity, Psychological, and Concentration and a Lie subscale. There has

been extensive work supporting the RCMAS's validity and reliability (see manual, Reynolds and Richmond, 1985). Pela and Reynolds (1982), for example, reported excellent test-retest reliability ($r=0.98$) using a three-week interval.

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

Parent Completed Measures

RCMAS Parent (RCMAS/P). As has been done by other investigators working in the child fear/anxiety area (Kendall, 1994; Strauss, Lease, Kazdin, Dulcan, & Last, 1989), the authors asked parents 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..." (e.g., My child worries about what is going to happen"). The parent responds Yes or No to each item.

FSSC-R Parent (FSSC-R/P). Parents also completed the FSSC-R inventory and were asked to rate their children's fears, as in past research (Matson and Love, 1990; Weems, Silverman, Saavedra, Pina, & Lumpkin, 1999). The instructions in the FSSC-R/P were changed to read "your child's fears" instead of "your fears."

Child Behavior Checklist (CBCL, Achenbach, 1991). This 113-item measure assesses children's behavioral and social problems and competencies. 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

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Internalizing and Externalizing subscales. CBCL items, scaled scores, and clinical cut-points have been found to discriminate between clinic referred and non-referred children, and normative data are available (Achenbach, 1991)

Procedure

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. Administration of assessment measures was conducted on two separate sessions within a 2-week period. In the first session, parents and youths signed informed consent and assent forms, and were administered the ADIS-C/P and questionnaires. In the second session, participants completed the remaining questionnaires. 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 to 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 (see Silverman et al. 1999a, b). After treatment completion, participants were re-administered the interviews and questionnaires at post-treatment and 3-, 6-, and 12-month follow-up.

CHAPTER IV

RESULTS

Group Comparability

Chi-square analyses and t-tests revealed no statistically significant differences between Hispanic American and Euro-American participants in terms of gender and age; a statistically significant difference was found for family income with Hispanic Americans reporting lower family incomes than Euro-Americans [$\chi^2(2) = 27.95, p < .01$]. Of the 131 participants, 38 (29%) Hispanic Americans and 62 (47%) Euro-Americans completed treatment; 14 (11%) Hispanic Americans and 17 (13%) Euro-Americans did not complete treatment. There were no significant differences on any of the socio-demographics or pretreatment youth and parent completed measures between completers and non-completers. There also were no statistically significant differences between Hispanic American and Euro-American youths who completed treatment in terms of gender and age. A statistically significant difference was found for family income for those who completed treatment: Hispanic American participants who completed treatment had lower family income than Euro-Americans participants who completed treatment [$\chi^2(2) = 18.37, p < .01$]. There were no statistically significant differences on any of the pretreatment youth and parent completed measures between Hispanic American and Euro-American participants who completed treatment following Bonferroni-based corrections.

Treatment Gains

Clinically Significant Change

Chi-square analyses revealed no statistically significant differences between the proportions of Hispanic American (84.2%) and Euro-American youths (83.9%) recovered at post-treatment (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 within non-clinical 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 post-treatment, 86.4% Hispanic American participants whose initial T-scores were above 70 were within the normative range; 81.8% Euro-American participants whose initial T-scores were above 70 were within the normative range. Chi-squares showed no statistically significant differences between the groups.

Two equivalence intervals around a difference of zero (i.e., $\pm 10\%$, $\pm 20\%$, with the former being more stringent than the latter; Rogers et al., 1993) were defined using the outcome for the mainstream (i.e., Euro-American sample) as the standard, with any difference small enough to fall within the equivalence interval to be considered of dubious clinical relevance (see Rogers et al.). Equivalence testing analyses showed that the diagnostic recovery rates at post-treatment for Hispanic

Americans and Euro-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 American and Euro-American youths 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 American and Euro-American participants (± 0.16 ; LCL: -0.14, UCL: 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 [$F(1, 87) = 17.13, p < .01; \eta^2 = .17$], RCMAS/P [$F(1, 92) = 9.05, p < .01; \eta^2 = .09$], FSSC-R/P, $F(1, 76) = 6.30, p < .01; \eta^2 = .07$], CBCL internalizing [$F(1, 36) = 94.88, p < .01; \eta^2 = .73$], and CBCL externalizing [$F(1, 33) = 352.87, p < .01; \eta^2 = .91$]; no significant time $\times$ ethnicity interactions were found for any of these measures, following Bonferroni based-corrections. Neither pre- 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 Hispanic Americans and 1.57 ($SD = 1.65$) for Euro-Americans.

Table 3 shows the 95% confidence interval, the 10% criterion for equivalence, and the 90% confidence interval for the post-treatment youth and parent scores. In terms of statistical equivalency, use of the 10% criterion showed

equivalency of treatment gains at post-treatment between Hispanic American and Euro-American youths on the FSSC-R and CBCL internalizing scale. Use of the 20% criterion resulted in statistically significant equivalency at post-treatment between Hispanic American and Euro-American youths for two additional measures: the FSSC-R/P (± 1.95 ; LCL: -0.93, UCL: 0.77) and CBCL externalizing scores (± 10.28 ; LCL: 0.08, UCL: 6.74). No additional statistically significant equivalences were found.

Treatment Maintenance

Hierarchical linear modeling (HLM; Raubenbush et al., 2001) was used to test whether the model that best fits the pattern of change exhibited from pre- 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 Hispanic Americans and Euro-Americans.

The pattern of change exhibited from pre- 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 [$\chi^2(50, n = 100) = 70.97, p < .05$], CBCL internalizing [$\chi^2(19, n = 99) = 30.57, p < .05$], and CBCL externalizing [$\chi^2(17, n = 98) = 34.51, p < .05$]. A significant cubic component was found for the RCMAS/P [$\chi^2(54, n = 100) = 92.28, p < .01$], FSSC-R [$\chi^2(50, n = 100) = 69.31, p < .05$], and FSSC-R/P [$\chi^2(45, n = 100) = 62.88, p < .05$].

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

CHAPTER V

DISCUSSION

Because the two Silverman et al. (1999a and b) clinical trials (which evaluated the efficacy of exposure-based cognitive behavior therapy for reducing anxiety disorders in youths) contained a substantially higher proportion of Hispanic American participants than any other published clinical trial, the author was in a unique position to report treatment effects and maintenance (up to 12 months) for Hispanic Americans relative to Euro-Americans. Findings showed that Hispanic American youths responded favorably to cognitive behavior therapy in terms of treatment gains, and responded similarly to Euro-American youths in terms of treatment gains. This was evident by a consistent pattern of findings across a variety of outcome indices: diagnostic recovery rates, clinically significant improvement, and child and parent completed questionnaires, including average effect sizes. Statistical equivalence tests (Rogers et al., 1993) provided further support for the positive findings and for the similarity to Euro-Americans' responses. Specifically, treatment effects were equivalent for both Hispanic American and Euro-American youths across diagnostic recovery rates, clinically significant improvement, and child and parent completed questionnaires. In addition, Hispanic American youths continued to show favorable treatment response over time in terms of treatment maintenance. However, there were variations across outcome indices relative to the Euro-Americans within specific assessment time points (e.g., three to six months follow up).

As noted in the Introduction, the samples in Silverman et al. (1999a and b) are likely to be highly representative of the Hispanic American population in the United States as they agreed to receive the assessment and intervention procedures largely in English and they did not request receiving the procedures in Spanish. Seventy-four percent of Hispanic Americans rate their ability to speak English as “very well” or “well” (Department of Commerce, 1990). Thus, the study’s finding that an empirically supported intervention approach for use with anxiety disorders in youth (i.e. exposure- based cognitive behavior therapy) works as well with this particular segment of Hispanic American youth relative to Euro-American youth may have considerable importance. This may be especially so given that people of Hispanic origin are the fastest growing and second largest minority group in the country (U.S. Bureau of the Census, 2000), and that phobic and anxiety disorders are the most prevalent psychiatric disorders of youth that do not spontaneously remit (e.g., Bernstein et al., 1996; Flakierska-Prakin et.al. 1997; Last et. al., 1996; Woodward and Fergusson, 2001).

As previously mentioned, this study was an exploratory one, and the findings should be viewed as preliminary in nature and as stepping-stones for future treatment research aimed at reducing anxiety disorders in Hispanic American youths. Future research with Hispanic Americans should investigate the potential influence of variables such as acculturation, biculturalism, and multiculturalism on treatment gains and maintenance. Results from these types of studies could help pave the way for the development of empirically informed specialized applications of this intervention in diverse subsamples of Hispanic youths with anxiety disorder.

Kurtines and Szapocznik (1996), for example, have described specialized applications that have targeted the interactions between clinical presentation (e.g., conduct disorder symptoms, social maladjustment) and cultural factors (e.g., intercultural and intergenerational differences) in the context of immigration and acculturation stressors.

Limitations

The present findings should be considered in light of the study's limitations. A main limitation of the present study is the degree to which the findings can be generalized across Hispanic minority groups. For example, 45% of the Hispanic American participants in the study were Cuban. It will be important to evaluate treatment effects and maintenance in samples that contain larger proportions of other Hispanic American groups. Future studies should include diverse samples of Hispanic Americans and should examine these issues within groups of Hispanics (e.g., Cubans compared to Columbians, Nicaraguans, etc.) across their particular context.

A second limitation is that the treatment sessions were delivered primarily 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 in order to evaluate the potential influence this may have on treatment effects and maintenance.

A third limitation is that treatment maintenance was assessed for up to 12 months. As has been 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.

Clinical Implications

The most important clinical implication of the findings are that Hispanic American youths responded favorably to cognitive behavior therapy, and similarly to Euro-American youths, in terms of treatment gains and maintenance. The consistent pattern of findings that were observed across a variety of outcome indices provides the clinician with increased confidence that Hispanic American youths responded positively. Consequently, clinicians should consider using exposure-based cognitive behavior therapy in treating Hispanic American youths with anxiety disorders.

TABLE 1

Proportion of Hispanic American Participants in
Child Phobic and Anxiety Clinical Trials

<i>Trial</i>	<i>Hispanic Americans</i>
	<i>Percentage (%)</i>
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)	---
Ginsburg and Drake (2002)	None

Note. --- Flannery-Schroeder and Kendall (2001) reported the proportion (4%) of ethnic-minority participants; proportions of specific ethnic-minority groups were not reported.

TABLE 2
Demographic and Diagnostic Information for Hispanic Americans and Euro-Americans

	Hispanic Americans (n = 52)	Euro-Americans (n = 79)
Gender		
Boys	29 (55.8%)	35 (44.3%)
Girls	23 (44.2%)	44 (55.7%)
Mean Age	10.21 years	9.51 years
Income		
< \$ 21,000	44.4%	14.5%
\$ 21,000 to 40,000	33.3%	18.2%
> \$ 40,000	22.3%	67.3%
Non-completers	14	17
Primary Diagnosis		
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.

Table 3

Means and Standard Deviations at Pre-treatment and Post-treatment on the Child and Parent Completed Measures for Hispanic- Americans and Euro-Americans.

	<u>Hispanic-Americans</u>		Effect Size	<u>Euro-Americans</u>		Effect Size	Traditional		Post-Treatment		Equivalence	
	Pre	Post		Pre	Post		95% CI LCL UCL	10% Criterion	90%CI LCL UCL			
<i>Youth Completed Measures</i>												
RCMAS			0.19			1.02						
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						
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							
<i>Parent Completed Measures</i>												
RCMAS/P			0.43			0.52						
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						
Mean	136.00	133.00		136.49	119.57		-22.51	-4.35	± 11.96		-21.05	-5.81
SD	27.34	26.73		23.87	19.51							
CBCL-Internalizing			2.10			2.28						
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						
Mean	113.61	48.00		114.14	51.41		-1.68	8.50	± 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; CDI = Children's Depression Inventory; 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; PGRS = Parent Rating of Global Severity. Analyses were conducted by pooling all Hispanic-American and Euro-American participants from the two clinical trials (Silverman et al.1999a, b) for exposure-based cognitive behavioral therapy. The 95% confidence interval contains the 80% confidence interval for equivalence.

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

Figure 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

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