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Preventing Childhood Anxiety and Depression: Testing the Effectiveness of a School-Based Program in México

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Preventing Childhood Anxiety and Depression: Testing the Effectiveness of a School-Based Program in México

by

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Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

December 2008

Dedication

To all the children who, for some reason, are not fully enjoying their childhood.

Acknowledgments

My appreciation goes to my primary supervisor, Dr. Sylvia Linan-Thompson, for all of her teaching, support, and enthusiasm during the supervision of this thesis and through my entire doctoral program. I am very fortunate to have the opportunity to work with her, as she has provided me with many opportunities to grow as a researcher and educator. I also want to thank Dr. Kevin Stark, co-chair of this dissertation, for his teaching, guidance, and encouragement during all the phases of this research.

This dissertation would not have started, continued, or finished without the ongoing support of many people involved in this research. I would like to thank Dr. Paula Barrett and Sharon Ryan from Pathways Health and Research Center in Australia for their influence, guidance, and wisdom; Dr. Tasha Beretvas for her steady and clear explanations of the world of statistics; and each of my committee members, Dr. Sharon Vaughn, Dr. Herbert Reith, and Dr. Tasha Beretvas, who provided valuable feedback throughout the entire process.

I would also like to extend special thanks to all the psychologists, teachers, students, and parents from the Ministry of Education in Nuevo León, México, for embracing this project and so willingly giving their time to make this research possible. I am grateful for the financial support received for this research from the Mexican Center at the Teresa Lozano Long Institute (ILLILAS) of The University of Texas at Austin. Likewise, I would also like to acknowledge all the institutions that supported me

financially and believed in the importance of my Ph.D. studies, including: the Institute of International Education for the Fulbright Scholarship, Consejo Nacional de Ciencia y Tecnolgía (CONACyT), and the Graduate School of The University of Texas at Austin.

There are simply no words to express my admiration, respect, and gratitude for all the support and guidance that my parents, Jorge and Rosario, have provided. I would also like to extend many thanks to Mauricio for all his patience, positivity, and support.

Finally, my appreciation also extends to my relatives and friends for their support and encouragement to achieve my goals. I am so blessed to have so many wonderful and caring friends, and I would like to thank them: Raquel, Rocio, Ricardo, Tomer, Assaf, Monica, Karla, Graciela, Jorge Francisco, Carlos Felipe, and Leticia.

Preventing Childhood Anxiety and Depression: Testing the Effectiveness of a School-Based Program in México

Publication No. _____

Julia Gallegos, Ph.D.

The University of Texas at Austin, 2008

Supervisors: Sylvia Linan-Thompson and Kevin Stark

A growing number of school-aged children experience or are at risk for myriad psychological and behavioral problems such as anxiety and depression that interfere with their interpersonal relationships, school performance, and potential to become productive citizens—hence, the critical nature of early prevention and intervention in schools. The purpose of this study was to assess the effectiveness of AMISTAD, a social and emotional program focusing on the prevention of anxiety and depression of four groups of students. Eight schools from a northern city in México were randomly selected and assigned to either an intervention or monitoring condition. Sixteen teachers implemented the intervention, and 16 served as control. Participants were 1,030 fourth- and fifth-grade students (ages 9–-11), including 131 children with learning disabilities (LD). Children in the intervention group received the program and learned about relaxation techniques, coping with difficulties, positive thinking, and interpersonal skills, among others. For

analysis, the sample was divided into four nonoverlapping groups: children diagnosis-free for anxiety and non-LD, children at risk for anxiety and non-LD, children at risk for anxiety with LD, and children diagnosis-free for anxiety with LD. The impact of the program was evaluated immediately after the intervention and after 6 months. Results showed statistically significant improvements of small impact for the overall sample and for children diagnosis-free for anxiety and non-LD, in that those receiving the program decreased the severity of their depressive symptoms, the number of children at risk for depression decreased, and these children increased their proactive coping skills. For children already showing risk for anxiety and/or LD, the program in the current format did not produce meaningful changes. Therefore, adaptations regarding culture, mode of delivery, and content should be incorporated in order to better meet these children's needs. Finally, this study confirms the importance of prevention, as in the current study, almost 1 out of 5 children reported clinical depression, and it appears that without intervention, these symptoms will escalate over time.

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CHAPTER 1

Introduction

A growing number of school-aged children experience or are at risk for myriad psychological and behavioral problems that interfere with their interpersonal relationships, school performance, and potential for becoming productive citizens (Garland et al., 2001; National Institute of Mental Health, 1999; World Health Organization, 2004). Anxiety disorders, which affect 10% to 20% of children and are the most prevalent form of psychopathology, have been identified as a salient concern, particularly because early anxiety problems are associated with deviant conduct, substance abuse, and depression later in life (Burke, Burke, & Rae, 1994; Caraveo-Anduaga, & Comenares-Bermúdez, 2002; Kashani & Orvaschel, 1990; World Health Organization, 2004); hence, early prevention and intervention programs in schools are critical.

During adulthood, anxiety disorders have also been reported as the most prevalent form of psychopathology in both the United States and México. Furthermore, research has shown that the majority of anxiety disorders occur more frequently in females than in males (Kashani & Orvaschel, 1990; Kessler et al., 2005; Medina-Mora et al., 2003).

The symptoms of an anxiety disorder vary depending on the particular characteristics of the child, but according to the tripartite model, anxiety disorders share three major factors: cognitive ideation, physiological features, and behavioral responses (Ollendick, Shortt, & Sander, 2005). The development and maintenance of anxiety disorders is characterized by the interaction between the personal characteristics of the

child, such as genetic vulnerability, behavioral inhibition, and cognitive process, and interpersonal factors, such as attachment to caregivers and learning processes, that occur in the family. Anxious children tend to overestimate the threat and underestimate their coping ability and frequently come from families in which parents are restrictive and overprotective (Barrett, Dadds, & Rapee, 1996), which prevents the development of coping behaviors (Kendall & Suveg, 2006; Ollendick et al., 2005).

Research on risk and protective factors indicate that child temperament, patterns of anxious/resistant attachment, emotional arousal, and coping styles are major risk factors for the development of an anxiety disorder (Barrett & Turner, 2004). On the other hand, protective factors such as social support and proactive coping skills have been shown to enhance the emotional resilience of the child at risk and prevent the onset of an anxiety disorder (Barrett & Turner, 2004; Bernstein, Borchardt, & Perwien, 1996). Anxiety disorders are often associated with other types of disorders that are frequently present in schools: depression, learning disabilities (LD), attention-deficit hyperactivity disorder (ADHD), oppositional defiant disorder, and conduct disorders (Craske, 1999; Noel, Hoy, King, Moreland, & Jagota, 1992).

Anxiety disorders can be treated by psychosocial interventions and/or pharmacotherapy (Bernstein et al., 1996; Dadds & Barrett, 2001). Within the different types of psychosocial interventions, research has shown that cognitive-behavioral interventions (CBT) are the most effective treatment for childhood anxiety (Compton, Burns, Egger, & Roberston, 2002). Furthermore, it has been reported that improvements increased by adding a family component to CBT interventions (Barrett et al., 1996).

Cognitive-behavioral treatments target the three major factors of the tripartite model of anxiety by teaching children to recognize anxious behaviors and physiological reactions, clarify maladaptive cognition and negative self-talk, develop a coping plan, and evaluate themselves in terms of partial success (Kendall, 2006; Kendall & Gosch, 1994). Several authors have suggested that learning these skills can also help to prevent the development of an anxiety disorder by increasing the child's emotional resilience to cope with difficult situations (Dozois & Westra, 2004; Feldner, Zvolensky, & Schmidt, 2004).

According to Gordon (1987), there are three levels of prevention based on the presence and level of risk factors related to the disorder: universal, selected, and indicated. Universal interventions are provided to whole populations, regardless of the individuals' risk status; selected interventions are provided to groups of individuals at risk for the development of an anxiety disorder; and indicated interventions are provided to individuals with anxiety symptoms but who have not developed a disorder yet.

Studies focusing on the prevention of anxiety disorders with primary school children have explored the effects of behavioral (e.g., relaxation), cognitive, and social skills training, and CBT interventions. To determine the effectiveness of psychosocial interventions in school settings, a synthesis was conducted (Gallegos, Beretvas, & Linan-Thompson, 2006).

Findings suggest that groups of children identified as having a higher risk for the development of an anxiety disorder seem to benefit the most from psychosocial interventions; to a lower extent, programs delivered to the whole classroom, regardless of risk status, also appear beneficial for primary school children. The smallest effect sizes

were for indicated programs. By type of intervention, CBT and behavioral interventions were equally effective at a universal level of prevention; CBT was most effective at a selective level of prevention; and to a lesser extent, CBT could also benefit children who are already experiencing anxiety symptoms.

In addition to a reduction in anxiety levels, prevention programs for anxiety disorders also focus on enhancing children's emotional resilience by addressing the protective factors through the interventions. Several of the studies included outcome measures on protective factors such as self-concept, self-esteem, and coping skills. The highest improvements were found on positive future outlook, followed by self-esteem, self-concept, and coping skills.

Providing prevention programs during the school day could have benefits such as increasing the number of students benefiting from psychotherapy, increasing the awareness of psychopathology among teachers, and promoting student competence through positive coping skills, among others (Dozois & Dobson, 2004; Lowry-Webster, Barrett, & Dadds, 2001; Smart, 2001). Furthermore, because research has shown that teachers are as effective as psychologists at implementing prevention programs to whole classrooms, schools are now provided with feasible and cost-effective options to implement the programs with their own staff (Feldner et al., 2004).

Despite increasing efforts to prevent anxiety disorders, there are still understudied at-risk groups. Children with LD, an increasingly prevalent group, have been shown to be at risk for anxiety disorders due to their social and emotional difficulties and low self-concept (Margalit & Zak, 1984; Sharma, 2004; Svetaz, Ireland, & Blum, 2000). Several

studies have concluded that children with LD, when compared to their typically developing peers, show higher levels of anxiety and helplessness as well as higher levels of avoidance in close relationships (Al-Yagon & Mikulincer, 2004; Patten, 1983; Rodriguez & Routh, 1989). Despite this evidence, there have been no randomized control trials published in peer-reviewed journals that focus on the prevention of anxiety disorders for children within this group. The current study explored the relationship between LD and anxiety while building strategies for future prevention programs.

The purpose of this study was to determine the effectiveness of a universal school-based cognitive behavioral intervention with Mexican primary school children. Furthermore, it assessed the effectiveness of the program with a subsample of children with LD.

The intervention implemented, the FRIENDS program, is based on the research of risk and protective factors of anxiety disorders. This program incorporates physiological, cognitive, and behavioral coping strategies while simultaneously employing techniques for relaxation, cognitive restructuring, and family and peer support in order to prevent and/or intervene in the early stages of anxiety disorders. So far, FRIENDS has been successfully implemented in high-income, English-speaking countries like Australia and the United States. However, no such program has been designed for or implemented outside of the world's wealthiest nations or with Spanish-speaking students. This study implemented the Spanish-language version of the FRIENDS program, AMISTAD, which incorporates cultural adaptations tailored to students from México.

First, this study examined the preventive effects of the intervention with primary school children in México. It was hypothesized that children who participated in the program would decrease the severity of their anxiety and depressive symptoms and their risk status for anxiety and depression, and would increase their proactive coping skills, when compared to the monitoring condition.

Second, this study examined the effectiveness of a universal school-based intervention among children with LD. It was hypothesized that children with LD who participated in the program would decrease the severity of their anxiety and depressive symptoms, risk status for anxiety and depression, and behavior problems, and would increase their self-concept and proactive coping skills, when compared to the monitoring condition.

CHAPTER 2

Review of Relevant Literature

The following literature review provides an overview of the current state of knowledge of childhood anxiety, including information about its phenomenology, epidemiology, etiology, course and onset, consequences, assessment, and treatments. Furthermore, it includes the results of a synthesis of the efficacy of psychosocial interventions in reducing anxiety disorders in school settings.

Phenomenology of Anxiety Disorders

Even though anxiety was first mentioned in the time of Hippocrates (460–370 B.C.E.), it was not until the middle ages that the church and schools focused their attention on childhood anxiety (Treffers & Silverman, 2001). Since the 19th century, anxiety has been thought to be caused by hereditary factors determining temperament. However, with time, more complex explanations have been raised, such as the interplay of temperamental factors and life events (Treffers & Silverman, 2001).

During the 1960s, psychoanalytic theory drove the field of anxiety disorders; in recent years, more emphasis has been placed on the role of cognition on the onset and maintenance of anxiety disorders (Prins, 2001; Treffers & Silverman, 2001; Turk & Salovey, 1985). Maladaptive cognition plays a crucial role in the interpretation of the danger or threat of a particular event.

Anxiety, as a response to real danger, is adaptive. It motivates the individual to take action—to fight, freeze, or flee (DiTomasso & Gosch, 2002; Stock, Werry, & McClellan, 2001). However, if an anxiety response is elicited when no objective danger

or minimal risk of threat exists, then it is no longer adaptive (Bourne, 1999; DiTomasso & Gosch, 2002; Fonseca & Perrin, 2001; Kendall & Suveg, 2006; Ollendick et al., 2005).

Although anxiety reactions may take various forms, according to the tripartite model of anxiety, they share three major factors: cognitive ideation, physiological features, and behavioral responses (Ollendick et al., 2005). Cognitive ideation focuses on the misperception and overestimation of threat and includes catastrophic thoughts, underestimation of resources to cope with the situation, hypervigilance or chronic anticipation of feared stimulus, and the tendency to concentrate only on perceived threat and unhelpful thoughts (e.g., "What if something terrible happens?") (Hollon & Kriss, 1984; Ollendick et al., 2005; Safran, Vallis, Segal, & Shaw, 1986). Often, a misperception of danger is enough to activate an anxious reaction, defined by a state of heightened somatic arousal (e.g., increased heart rate, skin conductance, and perspiration), which is often reported through multiple somatic complaints such as having a stomach ache (Dozois & Westra, 2004; Fonseca & Perrin, 2001). In order to control or reduce arousal, the individual initiates behavioral responses such as avoidance or escape. For example, anxiety in children can be manifested through behaviors such as restlessness (e.g., hand-wringing), clinging to caregivers/loved ones, urgent pleas for assistance, complete immobility, and sometimes stuttering (Fonseca & Perrin, 2001).

There are also developmental differences in the expression of anxiety. Fears and worries are considered adaptive and part of the normal human development when they are age appropriate and transitory in nature (Craske, 1999; Fonseca & Perrin, 2001; Ollendick et al., 2005). For example, infants tend to fear separation from caregivers or

heights; fears of animals, being alone, and the dark emerge between ages 2 and 6. As cognitive abilities continue to develop, children's fears change to more abstract concepts such as death, failure, or evaluation. From adolescence to adulthood, concerns about danger, social comparison, and physical appearance emerge (Fonseca & Perrin, 2001; Ollendick, Shortt, & Sander et al., 2005).

Pathological anxiety is seen only when a child experiences persistent fears and worries that are not typical of his or her age; are disproportionate to the threat exposed; are severe enough to cause distress in the child; and impair the child's functioning at home, school, or in peer and family relationships (Fonseca & Perrin, 2001; Kendall & Suveg, 2006; Ollendick et al., 2005). Finally, although anxiety and its disorders are universally present in all cultures, the phenomenology and the way it is expressed are different across cultures (Craske, 1999; Kendall & Suveg, 2006).

According to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV), in order to be clinically diagnosed, anxiety and worry must occur on the majority of days during a period of at least 6 months and must be accompanied by at least three (one in children) of the following additional symptoms: restlessness, fatigue, concentration difficulties, irritability, muscle tension, and sleep disturbances (American Psychiatric Association, 2000). There are several types of anxiety disorders, including panic disorder without agoraphobia, panic disorder with agoraphobia, agoraphobia without history of panic disorder, separation anxiety disorder, specific phobia, social phobia, obsessive-compulsive disorder, posttraumatic stress disorder, generalized anxiety disorder, anxiety disorder due to a general medical condition, substance-induced anxiety disorder, and

anxiety not otherwise specified (American Psychiatric Association, 2000; National Institute of Mental Health, 1999). Symptoms of these types of disorders could overlap categories and are often marked by physical symptoms such as sweating, tension, and increased heart rate (World Health Organization, 2001). Among children, the most common types of anxiety disorders are separation anxiety disorder, specific phobia, social phobia, obsessive-compulsive disorder, and generalized anxiety disorder (Bernstein et al., 1996; Ollendick et al., 2005).

Although the focus of anxiety varies across specific disorders (e.g., specific phobia relates to a certain object or situation and social phobia is concerned with the evaluation of others), the key characteristic of all anxiety disorders is "anxious apprehension," a mood oriented toward the future and associated with negative effect, chronic overarousal, and sense of uncontrollability (DiTomasso & Gosch, 2002; Kendall & Suveg, 2006).

Epidemiology of Anxiety Disorders

The National Comorbidity Survey Replication (NCS-R) is the most prevalent large-scale epidemiological study in the United States that estimates lifetime prevalence and age of onset distributions of the DSM-IV disorders (Kessler et al., 2005). Participants were 9,282 English-speaking household residents age 18 and older. The survey was conducted through face-to-face interviews using the fully structured World Mental Health Survey version of the Composite International Diagnostic Interview (WHM-CIDI).

Results showed that the most prevalent lifetime disorders were anxiety disorders, 28%; followed by mood disorders, 20.8%; impulse-control disorders, 24.8%; and

substance use disorders, 14.6%. Approximately 46.4% of the total participants had at least one of the disorders. The median age of onset is much earlier for anxiety (age 11) and impulse control (age 11) than for substance use (age 20) and mood disorders (age 30) (Kessler et al., 2005).

México, as a part of the World Health Organization's (WHO) 2000 Initiative on Mental Health, conducted the *Encuesta Nacional de Epidemiología Psiquiátrica* (National Survey on Psychiatric Epidemiology [ENEP]). The ENEP studied the prevalence, regional variations, sociodemographic correlates and service utilization of 5,826 Mexican residents between 18 and 65 years old (Medina-Mora et al., 2003). The survey was conducted through face-to-face interviews using the fully structured WHM-CIDI.

Results showed that 28.6% of the urban adult population of the country meets the criteria for at least one of the 23 disorders considered during their lifetime, 13.9% during the 12 months previous to the interview, and 5.8% during the previous 30 days. Per type of disorder, the most prevalent lifetime disorders were anxiety disorders, 14.3%; followed by substance abuse disorders (e.g., tobacco, alcohol, and other drugs), 9.2%; and affective disorders, 9.1%. A detailed analysis of the results showed that anxiety and mood disorders were more common in women and substance use disorders were more common in men (Medina-Mora et al., 2003).

Further, the median age of onset for anxiety disorders tends to be concentrated in children (before age 15), and substance abuse problems show the highest onset between ages 15 and 30. The highest 30-day prevalence of anxiety disorders was observed in the

region formed by the three metropolitan areas: México City, Monterrey, and Guadalajara (Medina-Mora et al., 2003).

Anxiety disorders are the most common form of psychological distress self-reported throughout childhood and adolescence, and they are the most typical reason for referral to mental health services (World Health Organization, 2001). Estimated prevalence rates of childhood anxiety typically range between 10% and 21%; about 8% may require clinical treatment (Bernstein & Shaw, 1997; Kashani & Orvaschel, 1990). Furthermore, it is expected that one in five children experience high levels of anxiety (Dadds, Spence, Holland, Barrett, & Laurens, 1997).

Etiology of Anxiety Disorders

The development and maintenance of anxiety is caused by the interaction between the personal characteristics of the child (e.g., genetic vulnerability, behavioral inhibition, and cognitive processes) and interpersonal factors such as attachment to caregiver and learning processes that occur within the family (Kendall & Suveg, 2006; Ollendick et al., 2005). Due to biological and familial factors, it has been demonstrated that anxiety disorders tend to run in families and that there is a genetic vulnerability toward either an anxiety or a depressive disorder (Boer & Ingeborg, 2001; DiTomasso & Gosch, 2002; Ollendick, Shortt, & Sander et al., 2005). This genetic vulnerability is sometimes transmitted via inherited temperamental characteristics such as behavioral inhibition. The latter seems to develop when the Behavioral Inhibition System (BIS) is overactive in a child's brain (Oosterlaan, 2001).

Children are referred to as temperamentally behaviorally inhibited when they show a propensity to react frequently to novel and unfamiliar events with initial restraint and avoidance (Oosterlaan, 2001). The risk for anxiety disorders is higher in children who are consistently inhibited over time and in children who have parents with anxiety disorders (Ollendick et al., 2005; Oosterlaan, 2001).

The cognitive view of childhood anxiety assumes that anxiety is mediated by distorted maladaptive cognition (Hollon & Kriss, 1984; Kendall & Suveg, 2006; Prins, 2001). Some of the cognitive variables involved in the development and maintenance of anxiety include negative cognition, worrying, causal attributions, and biased attention and memory process (Kendall & Suveg, 2006; Prins, 2001). The tendency to perceive danger when there is none appears to be related to the individual's dysfunctional attitudes, beliefs, and assumptions, which in turn create a biased cognitive and information processing of internal and external events (DiTomasso & Gosch, 2002). When anxious children process information, they tend to overestimate the threat of danger and underestimate their coping ability. They perceive a lack of control over the threat, triggered by negative self-talk, and resort to catastrophic thoughts (Beck, 1991; Ollendick et al., 2005; Prins, 2001).

The relationship between parents and children with anxiety disorders has also been regarded as an etiological factor. Parents of clinic-referred anxious children have been found to be more controlling, restrictive, and involved emotionally, and less accepting and granting of psychological autonomy than parents of nonreferred children (Barrett et al., 1996; Ollendick et al., 2005). Maternal overprotection is more common in

individuals with anxiety disorders than in low-trait-anxious individuals. This overprotection may prevent an individual the opportunity for valuable learning experiences and the development of coping behaviors (DiTomasso & Gosch, 2002).

Three factors appear to contribute to the maintenance of anxiety: escape, avoidance, and safety behaviors. Typically, these actions help by reducing anxiety; however, the person never remains in the situation long enough to discover that there is no real threat (DiTomasso & Gosch, 2002; Prins, 2001). Other substrate factors that can contribute to the development and maintenance of anxiety disorders are disease states, traumatizing mental events, distressing vicarious experiences, acquired misinformation, classically conditioned events, and chronic hyperventilation (DiTomasso & Gosch, 2002).

Risk and Protective Factors

Risk factors are biological, psychological, or environmental variables that increase the likelihood to develop a disorder. Protective factors are variables that give individuals resilience to face adversity and moderate the impact of stress symptoms on their social and emotional well-being (Barrett & Turner, 2004).

The most common risk factors for childhood anxiety are childhood temperament, a pattern of anxious/resistant attachment, emotional arousal, and an avoidant coping style (Barrett & Turner, 2004). Inhibited or withdrawn temperaments have been strongly linked to high levels of anxiety and anxiety disorders (Bernstein et al., 1996; Schwartz, Snidman, & Kagan, 1999). Also, environmental stress and parental psychopathology significantly increased the risk for developing an anxiety disorder (Bernstein et al., 1996).

The latter is thought to be the result of genetic influence and parenting practices such as overcontrol and overprotection (Barrett et al., 1996). Research on protective factors for childhood anxiety is sparse and largely focused on the social support area and child coping skills (Barrett & Turner, 2001).

Course and Onset of Childhood Anxiety

The course of anxiety is characterized by its chronicity and relapse (Bourne, 1999; Dozois & Westra, 2004; World Health Organization, 2001). Chronicity of anxiety disorders in childhood may be in part due to their association with social problems such as dependency on adults and poor social skills (Dadds & Barrett, 2001; Kashani & Orvaschel, 1990). The majority of individuals with anxiety disorders subsequently develop another type of anxiety disorder or an additional diagnosis such as depression (Birmaher et al., 1996; Craske, 1999).

Separation anxiety disorder (SAD) seems to have the earliest age of onset of 4 years old (Ost & Treffers, 2001). The American Psychiatric Association (APA) describes SAD as developmentally inappropriate and excessive anxiety associated with separation from home or from figures in the child's life (American Psychiatric Association, 2000). Often, children with SAD worry about danger or harm to themselves and loved ones when they are separated from caregivers and undertake behaviors to avoid being apart from them (e.g., refusing to attend school or to sleep away from home) (Dadds & Barrett, 2001; Ollendick et al., 2005). Evidence indicates that as the child becomes older, the prevalence of SAD declines (Ollendick et al., 2005; Ost & Treffers, 2001).

Generalized anxiety disorder (GAD) is characterized by excessive anxiety, psychological arousal, and/or worry about events (American Psychiatric Association, 2000; Dadds & Barrett, 2001). Its age of onset is approximately 8 to 10 years old (Ost & Treffers, 2001). Some individuals with GAD show self-consciousness sleep disturbance, excessive reassurance seeking, and anxiety of performance and competence (Dadds & Barrett, 2001). In school, their anxieties are often related to the quality of their performance, even when their performance has not been evaluated (American Psychiatric Association, 2000), and they may be excessively worried and anxious about events such as social functions (Forness, Walker, & Kavale, 2003). To meet the criteria for GAD, children need to present at least one physical symptom (e.g., restlessness and fatigue) that occurs the majority of days during a period of at least 6 months (American Psychiatric Association, 2000; Dadds & Barrett, 2001). There is some evidence that prevalence of GAD increases with age (Kashani & Orvaschel, 1990).

Specific phobias are characterized by marked fear of a specific feared object or situation that is excessive and unreasonable (American Psychiatric Association, 2000; Dadds & Barrett, 2001). The age of onset varies, but it could start as early as 5 years old (Ost & Treffers, 2001). Among children, the most common phobias are related to certain animals or insects, darkness, heights, storms, and medical procedures (Ollendick et al., 2005).

Social phobia is characterized by a marked and persistent fear of embarrassment and anxiety when exposed to social or performance situations (American Psychiatric Association, 2000; Dadds & Barrett, 2001; Spence, Donovan, & Brechman-Toussaint,

2000). Children with social phobia show behavioral indicators such as crying, tantrums, and shrinking from social situations with unfamiliar people included (Beidel, Turner, & Morris, 2000). This disorder has an age of onset of about 11 years old, and research suggests that prevalence increases with age (Hayward et al., 2000; Ollendick et al., 2005; Ost & Treffers, 2001).

Obsessive-compulsive disorder (OCD) is characterized by obsessions, which are intrusive recurrent thoughts, images, and/or impulses. These obsessions are frequently followed by compulsions, which are repetitive behaviors to reduce anxiety (e.g., hand-washing) (American Psychiatric Association, 2000; Dadds & Barrett, 2001; Ollendick et al., 2005). Obsessions may center on themes such as personal contaminations or harming loved ones (Piacentini, March, & Franklin, 2006). This disorder could be present in childhood, but it is more often reported during adolescence. Research suggests that its prevalence may increase with age (American Psychiatric Association, 2000; Ollendick et al., 2005).

Gender Differences and Socioeconomic Status

Research in both México and the United States showed that females have a significantly higher risk than males for anxiety and mood disorders (Dozois & Westra, 2004; Kashani & Orvaschel, 1990; Kessler et al., 2005; Medina-Mora et al., 2003). Medina-Mora et al. found that in México, the majority of anxiety disorders occur in women, with specific and social phobias being the most common mental problems. In the same way, Kashani and Orvaschel found that anxiety disorders were significantly more common in girls than in boys, with the exception of OCD.

Some reasons that might account for this gender discrepancy could be reporting bias because of gender role expectations (i.e., males may underreport anxiety), females having fewer opportunities of exposure to habituate or extinguish their fears, cognitive vulnerability among females encountering a great number of negative life events during childhood and adolescence (e.g., childhood sexual abuse), biological predispositions, and an inaccurate or low perception of self-efficacy (Craske, 1999; Dozois & Westra, 2004; Kendall & Suveg, 2006).

Researchers have studied the causes of anxiety disorders to determine whether the observed gender differences in anxiety disorders are biologically determined or caused by psychosocial variables such as environmental stress, coping skills, and low self-esteem. A study by Lewinsohn, Lewinsohn, Gotlib, Seely, and Allen (1998) examined gender differences in a large sample of adolescents. Participants were 1,079 adolescents who had never met criteria for any disorder, 95 who had recovered from an anxiety disorder, and 47 who had an anxiety disorder. Results indicated a preponderance of female cases of anxiety disorders, and a retrospective analysis showed that by age 6, twice as many girls as boys had an anxiety disorder. Similarly, other researchers have reported that girls who were classified as inhibited at age 2 were more likely to have generalized social anxiety at age 13 than adolescent boys with similar temperament patterns (Schwartz et al., 1999).

Tendencies such as rumination and negative affectivity were seen in females who had recovered from an anxiety disorder and in females who had an anxiety disorder. However, the analysis of psychosocial variables indicated that the female vulnerability to

anxiety is genetically associated rather than determined by the environment (Lewinsohn et al., 1998).

The latter was also confirmed by Weich, Sloggett, and Lewis (2001). Their study examined the relationship between social roles, gender, and common mental disorders among 9,947 participants aged 16 to 70. Results showed that neither the number or type of social roles occupied nor the socioeconomic status of participants explained the gender difference (Weich et al., 2001).

Rates of psychopathology such as anxiety disorders also differ among individuals from different socioeconomic status (SES). Two main hypotheses have been made: social selection and social causation. Proponents of social selection argue that the SES of an individual decreases as a result of the impairments that accompany the disorder (e.g., inability to fulfill expected roles in the work). Social causation supporters posit that people with low SES develop a form of psychopathology as a result of living with the environmental stress of poverty (Barrett & Turner, 2004; Wadsworth & Achenbach, 2005).

A study by Wadsworth and Achenbach (2005) tested two mechanisms of the social causation hypothesis with a sample of 1,075 youth over a 9-year period. Using parental reports on behavior checklists, the authors' found that low SES had a strong effect on the subscales of somatic complaints, anxious/depressed, thought problems, delinquent behavior, and aggressive behavior. For anxious/depressed problems, low SES appeared to have an effect only in adulthood. Furthermore, analysis revealed disproportionate accumulations of clinically elevated scores for individuals of low SES,

thus indicating that low SES was also a factor that limited access to mental health care (Wadsworth & Achenbach, 2005). Similarly, research in Brazil, Chile, India, and Zimbabwe, coordinated by the UK Institute of Psychiatry, indicated that women, those with low levels of education, the poor, and the elderly are most likely to suffer from anxiety and depression (Patel, 2001).

Comorbidity

Anxiety disorders have been associated with other types of disorders: mood disorders (e.g., depression), personality disorders, learning disabilities (LD), and substance abuse (Craske, 1999; DiTomasso & Gosch, 2002; Noel et al., 1992; the National Center on Addiction and Substance Abuse at Columbia University, 2001). This comorbidity might reflect shared predispositions or different pathologies that co-occur, developing in chronological sequence. Craske (1999) explained that anxiety in childhood could trigger maladaptive interpersonal styles (e.g., personality disorders), which in turn contribute to the development of anxiety and depression in adulthood. Anxiety and depression then could lead to reliance on substances as a method of coping (Craske, 1999). However, there is no one definite explanation.

Anxiety disorders also present high rates of comorbidity with externalizing problems such as ADHD, oppositional defiant disorder, and conduct disorder (Hill, 2002; Hinshaw, 2006; Ollendick et al., 2005). Children with comorbid disorders tend to have a greater severity and persistence of symptoms, more social functioning problems, and a greater resistance to change (Ollendick, Shortt, & Sander et al., 2005).

Depression and Anxiety Disorders

Particularly among adolescents with anxiety disorders, rates of comorbidity with depression are higher, suggesting that anxiety disorders usually precede depression (Bourne, 1999; Craske, 1999; Dozois & Westra, 2004; Ollendick et al., 2005). For example, individuals with panic disorder reported higher rates of comorbid major depressive disorder ranging from 10% to 65% (American Psychiatric Association, 2000).

Depression is an emotional state marked by great sadness and apprehension where the individual shows a depressed or irritable mood or loss of interest in most activities (Dozois & Westra, 2004). According to the DSM-IV, in order to be clinically diagnosed, symptoms must persist for most of the day for at least 2 consecutive weeks. The individual should also experience at least four additional symptoms such as change in appetite or weight, insomnia, and psychomotor activity; loss of energy; feelings of worthlessness or guilt; difficulty in thinking or concentrating; or recurrent thought of death or suicidal ideation (American Psychiatric Association, 2000). Children with depression may develop an irritable rather than a sad mood and may appear agitated and aggressive (American Psychiatric Association, 2000; Barrett, Webster, Turner, & May, 2003; Forness et al., 2003), while depression in adolescents is manifested through negativism, antisocial behavior, and a feeling of being misunderstood (Barrett et al., 2003). An unexpected drop in grades may reflect the effect of poor concentration due to preoccupation with worry (American Psychiatric Association, 2000; Manassis & Young, 2000).

Alternative explanations have been raised for the relationship between anxiety and depression, suggesting that depression might be a response to anxiety, that they share features such as negative affect, and/or that they may share biological and psychological predispositions (Craske, 1999; Dozois & Westra, 2004).

Learning Disabilities and Anxiety Disorders

Low achievement has been related with school failure and poor academic and emotional skills (Margalit & Zak, 1984; Patten, 1983), and school failure is a distinct characteristic of children with LD (Martinez & Semrud- Clikerman, 2004).

Children with LD perform substantially lower than what it is expected based on intelligence and age (Fletcher, Morris, & Lyon, 2004) and are predisposed to social and emotional difficulties (Elksnin & Elksnin, 2004; Kavale & Moster, 2004; Lufi, Okasha, & Cohen, 2004; Price, Johnson, & Evelo, 1994). Therefore, concerns have been emerging in the field of learning disabilities about the social, emotional, and behavioral development of students with LD (Bender & Wall, 1994; Minsha, 2003).

Social and Behavioral Development

The domain of social development has focused on the social competence, adult adjustment, and family characteristics of students with LD. A meta-analysis concluded that approximately 75% of students with LD exhibit social skill deficits (Forness & Kavale, 1996). It has been well established that some students with LD struggle to maintain interpersonal relationships and are less socially accepted when compared to typically developing students (Al-Yagon & Mikulincer, 2004; Bryan, 1978; Rock, Fessler, & Church, 1997). Their limited social networks could be the result of a

combination of inappropriate patterns of self-disclosure, low assertiveness, and unresponsiveness to others in social interactions (Margalit & Al-Yagon, 2002; Weiner, 1998).

Studies have shown that these students have major difficulties in the social information processing and reported consistent difficulties understanding complex emotions (Bauminger, Schorr Edelsztein, & Morash, 2005; Margalit, 2004). Therefore, they might experience a low ability and avoidance to cope with unpleasant feelings (Margalit & Al-Yagon, 2002; Rock et al., 1997).

Also, due to their poor social adjustment, students with LD are at risk for victimization and bullying (Greenham, 1999). Studies have shown that students with LD were more likely to be bullied due to the stigma associated with LD, had fewer friends, and were frequently teased (Martinez & Semrud-Clikerman, 2004; Minsha, 2003). Peer victimization may create adjustment problems and anxiety; rejection from their peers may create a sense of loneliness that, when taken in a passive way, can raise a depressive disorder (Minsha, 2003; Weiner, 2004).

Externalizing behavior problems such as antisocial behavior, conduct disorder, disruptive behavior disorders, impulsivity, and ADHD represent the most common symptoms of poor behavior observed among students with LD (Bender & Wall, 1994; Sundheim & Voeller, 2004). However, research has shown that the presence of externalizing behavior problems on students with LD is highly mediated by having comorbid ADHD (Kaplan, Dewey, Crawford, & Wilson, 2001; Rock et al., 1997; Willcutt & Pennington, 2000). Furthermore, research has shown that the behavior

problems of individuals with LD differ according to sex and grade level (Epstein, Cullinan, & Lloyd, 1986).

Emotional Development

Different explanations have been raised for the relationship between school failures and poor academic and emotional functioning (Greenham, 1999; Sundheim & Voeller, 2004). Some researchers suggest that both, social and learning impairments, are caused by a deviation in the functioning of the central nervous system called "atypical brain development" (Kaplan et al., 2001; Rourke & Fuerst, 1991); others suggest that chronic school failure triggers emotional difficulties (academic difficulties hypothesis). There is also the hypothesis that the problems compound each other (Al-Yagon & Mikulincer, 2004; Martinez & Semrud-Clikerman, 2004).

It has been well established that students with LD are at risk for experiencing more negative outcomes in the psychosocial areas (Bryan, Burstein, & Ergul, 2004; Elksnin & Elksnin, 2004; McNamara, Willoughby, & Chalmers, 2005; Morrison & Cosden, 1997; Rock et al., 1997). Affective variables such as self-concept, attributions, motivation, anxiety, temperament, loneliness, and depression/suicide for these students have been studied (Bender & Wall, 1994; Mayron, 1978).

Children experiencing poor school performance and frequent negative feedback about themselves are likely to develop a negative self-concept (Margalit & Al-Yagon, 2002; Sundheim & Voeller, 2004). Studies have shown that students with LD report less general life satisfaction (LaGreca & Stone, 1990; Rock et al., 1997), lower self-perception based on a decreased belief in their academic abilities (Lackaye, Margalit,

Ziv, & Ziman, 2006; Martinez & Semrud-Clikerman, 2004), a sense of inadequacy regarding their intellectual ability and school status, higher levels of loneliness and negative mood (Lackaye & Margalit, 2006), and a lower sense of coherence and hope (Margalit & Al-Yagon, 2002; Lackaye et al., 2006).

Children with learning disabilities, when looking for a cause that explains their failure, tend to exhibit more external attribution orientations than internal (Rodriguez & Routh, 1989). These children are more likely to perceive academic outcomes as controlled by others and have reported lower levels of self-efficacy (Huntington & Bender, 1993). These negative outcomes are sometimes compounded by the child's attachment style and are often accompanied by an apprehensive temperament (Margalit & Al-Yagon, 2002). The temperament of children with LD has been shown to be less persistent as a result of school frustration, showing limited flexibility and adaptability, and lacking coping skills (Rock et al., 1997; Teglasi, Cohn, & Meshbesher, 2004).

A study by Al-Yagon and Mukulincer (2004) showed that school-aged children with LD, when compared to their typically developing peers, reported higher levels of avoidance and anxiety in their close relationships, thus showing less attachment security correlated with high levels of loneliness. This finding might be expected because according to Manasiss and Young (2004), both groups—children with LD and children with anxiety disorders—have difficulties with emotional perception.

Research has suggested that both children and adolescents with LD are more likely to show higher levels of loneliness and depression than their typically developing peers (Lackaye & Margalit, 2008; McNamara et al., 2005; Margalit, 2006; Newcomer &

Barenbaum, 1995). Studies have found that children with LD, particularly girls, frequently experience higher levels of negative mood, lower levels of positive mood, and higher levels of depression (Heath & Ross, 2000; Lackaye et al., 2006; Maag & Reid, 2006; Martinez & Semrud-Clikerman, 2004; Sundheim & Voeller, 2004).

A study conducted by Sharma (2004) showed that primary school students with LD, when compared with their typically developing peers, portrayed problems in their social and emotional adjustment. Significant differences were found between these groups. Students with LD appeared to be more schizothyme, showing behavioral patterns such as emotional aloofness, sensitivity, fearfulness, inability to socialize, and tendency to daydream. They were also more rigid, phlegmatic, and pessimistic than their peers. Furthermore, they showed that these tendencies in the personality disposition of students with LD tend to increase with age (Sharma, 2004).

The Minnesota Multiphasic Personality Inventory-2 (MMPI-2) profile for adults with LD (Noel et al., 1992) showed that adults with LD from a rehabilitation setting demonstrated feelings of social isolation, poor self-concept, self-doubt, and extreme restlessness. Somewhat different, adults with LD from a university setting experienced feelings of fear, obsessive thoughts, lack of self-confidence, self-doubt, and extreme self-criticism. A common trait in both groups was that all individuals demonstrated extreme short- and long-term stress, leading to anxiety.

Results from the National Longitudinal Study of Adolescent Health showed that when compared to their peers, adolescents with LD had twice the risk for emotional distress and females with LD had twice the risk for attempting suicide and being involved

in violence (Svetaz et al., 2000). Likewise, adults with LD have significant difficulties in employment and social adjustment (American Psychiatric Association, 2000).

Anxiety and LD. Children with LD frequently show characteristics, such as behavioral inhibition and maladaptive cognition, that lead to anxiety (Al-Yagon & Mikulincer, 2004). Anxiety expressions such as crying and worrying, symptoms of somatic distress, and avoidant behavior have been often reported for students with LD (Margalit & Heiman, 1986). Several studies have concluded that children with LD, when compared to typically developing peers, showed higher levels of anxiety and helplessness (Huntington & Bender, 1993).

A clinical-psychological investigation by Cohen (1986) examined the relationship between LD and psychosocial development. A summary of the clinical reports of 10 boys with LD and 15 adolescents with LD was conducted to identify common themes among patients. In regard to emotions, children and adolescents with LD evidenced a low level of chronic depression and an unusually high propensity for distress, anxiety, and panic anxiety. The anxiety of students with LD consisted of a variety of worries that were unconsciously perpetrated, such as imagining academic and social performance as a dangerous situation (e.g., being humiliated and helpless). Thus, these students suffering from anxious anticipation (Cohen, 1986).

A study by Rodriguez and Routh (1989) investigated the depression, anxiety, and attributional style of children with LD and typically developing children. Sixty-two children, ranging from 8 to 13 years, were assessed with the Children's Attributional Style Questionnaire (CASQ), the Children's Depression Inventory (CDI), the Revised

Children's Manifest Anxiety Scale (RCMAS), the Anxiety-Withdrawal subscale of the Revised Behavior Problem Checklist (RBPC), and the Peer Nomination Inventory of Depression. Results showed that children with LD reported significantly more anxiety on both anxiety measures than did the control group. Furthermore, children who were diagnosed with LD for a longer period of time reported higher levels of anxiety and peer-nominated depression when compared to both the control group and children who were recently diagnosed as LD (Rodriguez & Routh, 1989).

A study by Peach and Cobb (1991) extended the findings of Rodriguez and Routh (1989). Using the same RBPC measure, the authors concluded that high school students with LD reported higher levels of anxiety withdrawal when compared to students with behavior disorders (Peach & Cobb, 1991). Students with LD were found to be more easily embarrassed, prone to feeling inferior and shy, hypersensitive and fearful, and lack self-confidence. In self-reported measures such as RCMAS, children with LD also reported significantly higher levels of anxiety relative to normative populations (Stein & Hoover, 1989).

A study by Margalit and Raviv (1984) compared the incidence of minor somatic complaints (e.g., headache, fatigue, and nausea) between primary school children with LD, typically developing children, and children with mental retardation. Results showed that children with LD demonstrated a higher frequency of minor somatic complaints, especially fatigue symptoms. The authors explained that these minor somatic complaints might reflect a passive style and avoidance behavior compounded by emotions of anxiety and helplessness when confronting difficulties such as academic failure. They concluded

that these symptoms have a communicative function that expresses feelings of inadequacy, stress, anxiety, and need for support (Margalit & Raviv, 1984).

High anxiety levels have been linked to self-concept. A study by Margalit and Zak (1984) compared the self-concept and anxiety of two groups of children ranging from 6 to 13 years old: children with LD and typically developing children. Children with LD reported higher levels of anxiety related to circumstances beyond their control, which the authors referred to as pawns in a chess match. They also expressed lower levels of self-concept related to their tendency to attribute negative self-referenced items to themselves. However, they did not differ significantly from their typically developing peers in positive aspects of self-concepts or anxiety related to competency (Margalit & Zak, 1984).

A study by Patten (1983) further explored the relationship between self-esteem, anxiety, and achievement of students with LD. Eighty-eight students with LD from kindergarten to sixth grade were assessed with the Coopersmith Self-Esteem Inventory, the Sarason General Anxiety Scale for Children, and the Peabody Individual Achievement Test. Students with LD reported low self-esteem and high general anxiety. A significant anxiety-achievement relationship was found, suggesting that, particularly for boys with LD, higher levels of anxiety are experienced as achievement levels decrease (Patten, 1983).

The presence of anxiety has also been linked to low levels of autonomy. Margalit and Shulman (1986) studied this relationship with two groups (LD and non-LD) of young adolescents ranging from 11 to 13 years old. Forty sixth- and seventh-grade boys were

assessed with the Autonomy Multiple Choice Measure (AUTMC) and the State-Trait Anxiety Inventory (STAIC). The students with LD were attending a special education school for students with LD. Results showed that students with LD had lower levels of autonomy and expressed higher levels of anxiety when compared to the non-LD group. Students with LD were less able to resist the pressures of parents and peers, felt dependent and insecure, and reported high levels of trait anxiety as part of their personality (Margalit & Shulman, 1986).

To broaden the understanding of high anxiety levels in students with LD, Margalit and Heiman (1986) conducted a study to examine the perceptions of anxiety and family climate among 9- to 11-year-old boys with LD. The study assessed the anxiety levels and perceptions of family climate of 40 intact families, 20 of which included a son with LD. Three measures were administered: the Family Environment Scale (FES), the Self-Analysis Scale (SAS), and the Child Anxiety Scale (CAS). Results showed that boys with LD reported higher levels of anxiety compounded by feelings of incompetence and lack of control, when compared to the control group. In the same way, parents of boys with LD reported higher anxiety levels and described the family climate as more rigid, organized, and less emotionally expressive (Margalit & Heiman, 1986).

To better understand the behavior and emotional problems of girls with LD, Epstein, Cullinan, and Nieminen (1984) compared teachers' ratings based on the Behavior Problem Checklist (CBCL). Participants were teachers of 94 girls with LD and 241 typically developing girls. Girls ranged from 6 to 18 years old and were grouped at three age levels: younger, middle, and older. Results showed that the only significant

differences were found on the Personality Problem dimension. All girls with LD reported higher anxiety, feelings of inferiority, and withdrawal problems, when compared with the typically developing girls (Epstein, Cullinan, & Nieminen, 1984). These personality problems tended to be more severe among younger girls with LD attending the first years of school.

Studies have been conducted to estimate the prevalence of anxiety and depression at a clinical level among children with LD. Kaplan, Dewey, Crawford, and Wilson (2001) evaluated 179 school-aged children for seven disorders: reading disability (RD), ADHD, developmental coordination disorder, oppositional defiant disorder, conduct disorder, depression, and anxiety. Results showed that 50% of the participants met criteria for at least two disorders and that 3.2% of the children with RD were diagnosed with an anxiety disorder according to the Diagnostic Interview Schedule for Children (DISC).

A study by Willcutt and Pennington (2000) further investigated the association between RD and internalizing and externalizing psychopathology. Participants were twins with and without RD ranging from 8 to 18 years old and their parents. Results showed that participants with RD, particularly girls, exhibited significantly more internalizing disorders such as anxiety and depression than the control group (Willcutt & Pennington, 2000). Conversely, the association between RD and internalizing or externalizing psychopathology was significant but highly mediated by the presence of ADHD. Internalizing and externalizing disorders were measured by the parent-report version of the CBCL and the Diagnostic Interview for Children and Adolescents (DICA-A).

Sideridis, Morgan, Botsas, Padeliadu, and Fuchs (2006) explored the relationship of psychopathology as a strong predictor for classifying students with or at risk for LD. Particularly, they examined whether anxiety and depression, as measured by the RCMAS and CDI, correctly classify students as being at risk for math disabilities (MD). Participants were fifth- and six-graders: 105 typically developing students and 23 students at risk for MD.

Results showed that high levels of depression correctly predicted 80% of the cases at risk for MD and that high levels of anxiety correctly predicted 69% of the cases at risk for MD. Therefore, these results suggest that the measures of psychopathology are fairly accurate in classifying children as having MD or being at risk for MD (Sideridis, Morgan, Botsas, Padeliadu, & Fuchs, 2006).

The anxiety symptoms or disorders experienced by students with LD appear to persist through adulthood. A study by Moss et al. (2000) investigated psychiatric symptoms in adults ranging from 18 to 30 years old with LD and challenging behavior. Results showed that overall, 15.4% of the adults with LD were depressed and 9.1% were diagnosed with anxiety disorders. The rates of psychiatric disorders increased with the presence of challenging behavior; 12.6% of the adults with LD with more demanding challenging behavior had anxiety disorders, and 28.7% had depression (Moss et al., 2000). In the same way, a study of the psychiatric morbidity in subjects age 50 or older with moderate and severe LD concluded that the prevalence of a psychiatric disorder among this population was 11.4%, most of which were depression and anxiety (5.6%). In

addition, the authors reported that 75% of these cases were unknown to mental health services before the study was conducted (Patel & Moss, 1993).

The results of these studies suggest that students with LD experience elevated levels of anxiety across measures and raters and that the severity of anxiety symptoms tend to increase with age, persisting through adulthood (Huntington & Bender, 1993).

Consequences of Anxiety Disorders

Anxiety disorders can cause significant impairment in multiple domains of functioning (Dozois & Westra, 2004; Ost & Treffers, 2001). Anxiety symptoms are risk factors for significant mental distress due to excessive worry (Dadds & Barrett, 2001). Students' learning and career development are impaired as a result of school absenteeism and low rates of participation in extracurricular activities (Lowry-Webster, Barrett, & Lock, 2003; Wood, 2006), which could lead to school dropout and low rates of postsecondary completion. A study by Van Ameringen, Mancini, and Farvolden (2003) focused on the impact of anxiety on school functioning and/or dropout from school. A sample of 201 patients, ages 18 to 65, who met the DSM-IV criteria for a primary anxiety disorder completed a questionnaire about the reasons for dropping out of school as well as self-reported measures of anxiety, depression, and school adjustment. Results showed that about 49% reported leaving school and that 24% of those indicated that anxiety was the primary reason for this decision. Patients who had dropped out of school were more likely to have lifetime diagnoses of social phobia, substance abuse, and alcohol dependency, in comparison with those who completed their desired level of education

(Van Ameringen, Mancini, & Farvolden, 2003). These findings suggest that anxiety disorders, particularly social phobia, are associated with school dropout.

The presence of an anxiety disorder also disrupts social relationships with partners, friends, and family members (Dozois & Westra, 2004; Lowry-Webster et al., 2003). Children experiencing high levels of anxiety might be impaired in their daily function, as they are often unable to be independent and carry out daily chores. These impairments have been found to trigger withdrawal and/or discord between the children's parents, siblings, and peers. Particularly, an increase in family stress is seen due to parental concerns about their child's well-being (Ezpeleta, Keeler, Erkanli, Costello, & Angold, 2001).

Anxiety disorders, if untreated, can further lead to the onset of a severe anxiety disorder (American Psychiatric Association, 2000) and a coexistence of other mental problems such as depression and substance abuse (American Psychiatric Association, 2000; Caraveo-Anduaga & Comenares-Bermúdez, 2002; Craske, 1999; Dadds & Barrett, 2001; DiTomasso & Gosch, 2002). If an anxiety disorder persists through adulthood, a range of expenses is involved: unemployment, days lost from work, hospitalization, medical utilization, and pension payments (Dadds & Barrett, 2001; Dixon, McDaid, Knapp, & Curran, 2006; Miller, 2002), also producing low income levels and increasing the risk for self-damaging behaviors such as civil disobedience, aggression, and in extreme cases, suicide (American Psychiatric Association, 2000; Barrett et al., 2003; Craske, 1999). It is estimated that anxiety disorders, during the 1990s, cost about $42

billion per year in the United States (Greenberg et al., 1999). In sum, anxiety disorders, if untreated, can cause lifelong suffering and high economic costs to society.

Assessment of Anxiety Disorders

Because anxiety is a multidimensional construct, a multi-informant and multimethod approach is recommended for the assessment of childhood anxiety (Fonseca & Perrin, 2001). During the assessment, it is important to obtain information about the onset, development, and context of anxiety symptoms, as well as information regarding the child's medical, developmental, school, family (e.g., whether a parent had a psychological problem such as anxiety), and social history (Bernstein et al., 1996). Assessment instruments for anxiety disorders should measure symptoms across multiple domains (i.e., cognitive, behavioral, and psychological channels), discriminate between disorders, evaluate severity, and provide relevant information for treatment (Kendall & Suveg, 2006).

For this, a wide range of instruments and procedures are available, including clinical interviews, parent/teacher rating scales, children's self-reports, direct observation, and physiological recordings (Fonseca & Perrin, 2001; Ollendick et al., 2005).

Clinical Interviews

Clinical interviews are the more accurate way to discriminate anxiety disorders and remain one of the most common methods for assessing childhood disorders (Kendall & Suveg, 2006). Clinical interviews with the child and parents are useful to differentiate developmentally appropriate fears and anxiety from anxiety disorders (Ollendick et al., 2005). The Anxiety Disorders Interview Schedule for Children (ADIS-C/P; Silverman &

Albano, 1996) is the diagnostic interview most commonly used (Kendall & Suveg, 2006). It includes information about a range of individual anxiety symptoms, interferences in daily functioning, school refusal behavior, interpersonal functioning, and avoided situations (Fonseca & Perrin, 2001; Ollendick et al., 2005).

Other commonly used semi-structured interviews are the Schedule for Affective Disorders and Schizophrenia in School-Aged Children (K-SADS; Puig-Antich & Chambers, 1978), the Diagnostic Interview for Children and Adolescents (DICA; Herjanic & Reich, 1982), and the National Institute of Mental Health (NIMH) Diagnostic Interview for Children, Fourth Version (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000).

Children's Self-Reported Measures

Standardized self-report measures for children provide information about the child's feelings, perceptions, and cognitions, and they appear in a variety of formats, such as behavior checklists, symptoms checklists, personality questionnaires, and anxiety rating scales (Fonseca & Perrin, 2001). According to Ollendick, Shortt, and Sanders (2005), the most commonly used self-report measures are the Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings, & Conners, 1997), the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1985), and the Fear Survey Schedule for Children, Revised (Ollendick, 1983).

Other self-reported measures frequently used are the Spence Children's Anxiety Scale (SCAS; Spence, 1997), the State-Trait Inventory for Children (STAIC; Spielberger, Edwards, & Lushene, 1973), the Social Phobia and Anxiety Inventory for Children

(SPAI-C; Beidel et al., 1995), and the Coping Questionnaire, Child Version (CQ-C; Kendall, 1994).

Overall, self-report measures are a rapid, flexible, and cost- and time-efficient way of assessing children's level of anxiety. However, a main limitation is that they fail to assess the specific context of the child's anxiety, and some of them do not evaluate the type of fears and/or anxiety that the child is experiencing (Kendall & Suveg, 2006). Also, some inventories have not been modified for children's comprehension abilities. Thus, special attention should be given to younger children, whose reading abilities and capacity to describe their anxiety could vary greatly (Fonseca & Perrin, 2001).

Parent, Teacher, and Clinician Rating Scales

Questionnaires and checklists completed by parents, teachers, and significant others are important, as these are the people who observe the child over a long period of time and across various settings and stages of development (Fonseca & Perrin, 2001). However, these questionnaires and checklists are limited, as parents and teachers may not know the nature and intensity of the child's distress, and there is often low concordance between the reports of the child and the significant other (Kendall & Suveg, 2006).

The Child Behaviour Checklist (CBCL; Achenbach, 1991) is one of the most widely used rating scales (Kendall & Suveg, 2006). The scale is used to assess, in a standardized format, the anxiety/depression symptoms as well as the social competencies and behavior problems of children and adolescents (Ollendick et al., 2005). It provides data on the child's level of distress and differentiates internalizing and externalizing disorders.

The Pediatric Anxiety Rating Scale for Children (PARS; the RUPP Anxiety Group, 2002) has also been frequently used by clinicians to rate anxiety severity and to discriminate between the types of anxiety disorders (e.g., social phobia vs. separation anxiety disorder). Other rating scales such as the STAIC and the Coping Questionnaire (Kendall, 1994) have been developed for parents based on previous self-reported measures.

Direct Observations and Psychological Recordings

Direct observation methods focus on "in vivo" anxious behaviors, with particular attention to their antecedents and consequences. There are two categories of direct observations: those that occur in natural settings and those that clinicians set up, such as behavior avoidance tests (BATs). An example of a BAT could be exposing a child with a specific spider phobia to a room with a spider in a cage. This assessment is frequently used in the development of treatment interventions (Fonseca & Perrin, 2001). Direct observations could also assess behaviors that may suggest anxiety, such as fingernail biting, avoiding eye contact, and speaking softly (Kendall & Suveg, 2006).

Another method for the assessment of anxiety disorders is physiological recordings, such as cardiovascular and electrodermal measures. However, because they are expensive and time-consuming measures, little is known about their application (Fonseca & Perrin, 2001; Kendall & Suveg, 2006).

Treatments for Anxiety Disorders

Anxiety disorders can be treated by psychosocial interventions and/or pharmacotherapy. There are different types of psychosocial intervention techniques,

including psychotherapy, behavioral, cognitive, and cognitive-behavioral interventions (Bernstein et al., 1996).

Pharmacological treatments, commonly considered medications for anxiety symptoms, include tryciclic antidepressants, sedative-hypnotic medications or anxiolytics (e.g., benzodiazepines), buspirone and antihistamines, and serotonin reuptake inhibitors (Bernstein et al., 1996; Popiel, Montgomery, & DiTomasso, 2002; Stock et al., 2001). Antidepressants are the most widely used medication for children (Stock et al., 2001). Medication by itself is not very common. Usually, medication is given as a part of the treatment program, in combination with a psychosocial intervention (Dadds & Barrett, 2001).

Psychotherapy focuses on analyzing the underlying fears and anxieties of the child (Bernstein et al., 1996). Behavioral techniques include exposure, relaxation, modeling, and contingent reinforcement (Kendall & Gosch, 1994; Kendall & Suveg, 2006). Exposure to or contact with situations or objects that elicit anxiety decreases the anxiety response of the child. Exposure methods can be in vivo or through imagery. This exposure leads to the elimination of conditioned responses and increases the child's self-perceived efficacy. Relaxation techniques are used to target the muscle tension and increased physiological arousal that come with anxiety. Children are taught to increase their awareness of when they are experiencing tension, differentiate between tension and relaxation, and use bodily sensations to relax. Modeling is the demonstration of nonfearful behavior during an anxiety-provoking situation; children learn appropriate skills by watching others cope with anxiety and by imitation of the role models.

Contingent reinforcement serves as a way of modifying behaviors by the use of rewards (Kendall & Gosch, 1994; Kendall & Suveg, 2006).

Cognitive techniques focus on changing the negative cognition and misinterpretation of events in the child. Cognitive techniques include cognitive restructuring and problem-solving (Beck, 1991). Children with anxiety tend to have a distorted cognitive process that includes unrealistic self-expectations, negative self-evaluation, and escape or avoidance (Kendall & Gosch, 1994). Cognitive restructuring techniques teach the child to identify and change maladaptive self-talk and unrealistic interpretations of events (Kendall & Gosch, 1994). Problem-solving skills teach the child to identify the problem and generate alternative solutions.

Cognitive-Behavioral Treatments

Cognitive-behavioral programs, compared to interventions using isolated cognitive or behavioral strategies or medication, have been found to be most effective (Compton et al., 2002). CBT programs are guided by a theory that the combination of behavioral events, associated anticipatory expectations, postevent attributions, ongoing cognitive processing, and emotional states influences behavior and its transformations (Ollendick, King, Bruce, & Chorpita, 2006). These programs teach children to recognize individual signs of anxiety (e.g., sweaty palms) and use these signs as cues to practice their coping skills (Kendall & Gosch, 1994).

Cognitive-behavioral treatment for anxiety disorders in children focuses on six components: recognizing anxious feelings and physiological reactions, clarifying cognitions (e.g., unrealistic or negative thoughts), developing a plan to cope, modifying

negative self-talk, determining coping skills, and evaluating their success (Kendall & Suveg, 2006). Modifying cognition will also benefit the child by lessening negative emotions, as research has shown that most individuals with anxiety and depression have a higher ratio of negative thoughts (Kendall, 2006). In addition, behavioral strategies such as in vivo exposure and role-play are used (Bernstein et al., 1996; Ollendick & King, 1998). Including exposure tasks in the treatment provides an opportunity for the child to practice the abilities learned and to develop a sense of self-competence. A review of treatments for childhood anxiety concluded that CBT is the modality with the most empirical support (Compton et al., 2002).

Three randomized control trials have being conducted using CBT. Kendall (1994) conducted the first randomized control trial of CBT for childhood anxiety. Participants were 47 children aged 9 to 13 diagnosed with anxiety disorders (i.e., overanxious disorders and SAD). After receiving *The Copy Cat,* a 16-session CBT treatment, children in the intervention group significantly improved anxiety and depressive symptomatology, when compared to the control group. Furthermore, gains were maintained after 1 year (Kendall, 1994).

A replication of this study confirmed the findings, reporting that 50% of the treated cases were diagnosis-free after the treatment (Kendall et al., 1997). A study by Kendall, Safford, Flannery-Schroeder, and Webb (2004) investigated the maintenance of outcomes from the latter study after 7 years. Participants were 86 of the 94 children in the original sample, now ages 15 to 22. According to the diagnostic interviews, and self-report and parent-report measures, the majority of youths with anxiety disorders largely

maintained their gains. In addition, children who were successfully treated reported a reduced degree of involvement with substance abuse (Kendall, Safford, Flannery-Schroeder, & Webb, 2004).

Research has shown that treatment gains are enhanced when interventions include a parental component. For example, Barrett, Rapee, and Dadds (1996) investigated a CBT family-based treatment for childhood anxiety. Seventy-nine children with anxiety disorders aged 7 to 14 were randomly assigned to CBT, CBT plus the family component, or a wait-list condition. The family component provided training to parents in contingency-management strategies and communication and problem-solving skills. Results indicated improvements in both of the treatment conditions, particularly when the family component was included. At posttreatment, 60% of both treatment conditions were diagnosis-free for anxiety disorders, compared to 30% of the children in the wait-list condition. At 12-month follow-up, diagnosis-free rates for anxiety disorder were 70% for the CBT group and 95% for the CBT with the family component. A 6-year, long-term, follow-up study examined whether gains were maintained for 52 of the participants from the earlier sample. Results showed that 85.7% were diagnosis-free for anxiety disorder and that most of the gains were maintained 6 years later. However, no significant differences were reported between CBT and CBT with a family component (Barrett, Duffy, Rapee, & Dadds, 2001). Finally, research has shown that depression and trait anxiety of the child and psychopathology symptoms in the parents were best predictors for a successful treatment outcome (Berman, Weems, Silverman, & Kurtines, 2000)

Prevention of Anxiety Disorders

Several authors have argued that learning and practicing skills for coping with anxiety, fears, and worries could prevent the development of an anxiety disorder (Dozois & Westra, 2004; Feldner et al., 2004; Silverman & Berman, 2001) by increasing the child's emotional resilience to cope with more difficult and anxiety-provoking situations later in life (Hirshfeld-Becker & Biederman, 2002). Furthermore, a major advantage of prevention programs is their ability to target the children in need who are not being reached due to long waiting lists and dropouts from treatment (Lowry-Webster et al., 2001).

Prevention programs that reduce the incidence of anxiety disorders have been defined as universal, selected, and indicated (Gordon, 1987). These three levels are based on the presence and extent of risk factors related to the disorder (Barrett & Turner, 2001; Simmeonsson & Simmeonsson, 1999) and on the position that most types of psychopathology follow a gradual path of development (Lowry-Webster et al., 2001). Universal interventions are provided to whole populations such as an entire school grade, regardless of risk for anxiety. These programs enhance resilience in all children and avoid any stigmatization due to labeling (Lowry-Webster et al., 2001). Selected interventions are provided to individuals or subgroups that have a higher risk for the development of an anxiety disorder (e.g., immigrants). Indicated interventions are provided to individuals who show mild symptomatology, such as behavioral symptoms or behavioral markers related to anxiety disorder, but without meeting diagnostic criteria (Gordon, 1987; Lowry-Webster et al., 2001).

Prevention programs such as psychosocial interventions have been implemented in schools under the rationale that reducing anxiety symptoms may be an effective way to prevent problems that many people experience later in life (Feldner et al., 2004).

A synthesis of interventions was conducted to determine the effectiveness of psychosocial interventions in reducing anxiety disorders in childhood (ages 6–12) and to determine the core components that might make an intervention effective (Gallegos et al., 2006). Fourteen peer-reviewed studies were included, all of which providing sufficient data to calculate effect sizes. Three of the studies were follow-up studies, and most of the studies focused on the implementation of a particular program (i.e., the FRIENDS program).

Findings of the synthesis indicated that psychosocial interventions were effective in preventing anxiety disorders in primary school children. Specifically, CBT interventions were more effective for children who were at risk for developing an anxiety disorder. On the other hand, social skills interventions yielded negative outcomes, indicating that they were ineffective in reducing anxiety levels for children who were victims of bullying (see Table 1).

Table 1

Estimated Average of Effect Sizes for Different Interventions and Levels of Prevention

	Overall Results		
Treatment Category	Universal $\bar{d}$	Selected $\bar{d}$	Indicated $\bar{d}$
Behavioral	0.33		
Cognitive-Behavioral	0.37	0.63	0.23
Social Skills Training		-0.32	

Note. From Gallegos et al., 2006.

Universal Interventions

Six studies were conducted as universal interventions (Barrett & Turner, 2001; Ghaderi, Martensson, & Schwan, 2005; Lock & Barrett, 2003; Lowry-Webster et al., 2001; Lowry-Webster et al., 2003; Ragan & Hiebert, 1987). The estimated average effect sizes found for each treatment category at the universal prevention level indicate that both behavioral and CBT interventions are similarly effective in reducing the severity of anxiety symptoms of children. The estimated average effect sizes of $\bar{d}$ = 0.33 (behavioral) and $\bar{d}$ = 0.37 (CBT) are considered to be small (Cohen, 1988). Only one study using a behavioral intervention was included in the analysis, so the generalizability of these results is limited, and conclusions must be tentative. Likewise, findings should be interpreted with caution, as there was high variability between single effect sizes depending on time points, measures, and groups.

A comparison of the studies' effect sizes shows that the smallest effect size was reported in Ghaderi, Martensson, and Schwan (2005). This study was more focused on building a positive self-image than on anxiety itself. The comparison suggests that studies not specifically designed to prevent anxiety disorders might not be strong enough to change children's severity of anxiety symptoms.

When comparing teachers and psychologists as the providers of the intervention, it was surprising to note that the estimated average effect size for teachers ($\bar{d}$ = 0.46) was higher than for psychologists ($\bar{d}$ = 0.30). Teachers might have several advantages when implementing a universal intervention to their own class. The degree of familiarity with the students may create a more "trustful" environment, in which children can express their anxiety and fears. In the same way, teachers have contact with the students most of the school day and might continuously remind students of the content from the program and encourage them to practice the skills learned.

The benefits of CBT used as a universal intervention were found to maintain over time. However, there is still the question of how beneficial these programs are for children who are not at risk for developing an anxiety disorder. Effect sizes for children who were diagnosis-free for anxiety before the intervention were very small (0.10 and 0.15), particularly when compared to the effect sizes for at-risk children.

The underlying reason for implementing a school-based prevention program lies in the idea that prevention programs not only help to reduce the occurrence of future problems, but also promote competencies that will help any individual, regardless of risk status (Sandler, 2001). All of the universal interventions in this synthesis provided

important skills (e.g., problem-solving, coping skills, and relaxation) that would benefit children, even if they do not struggle with anxiety. Universal interventions were found to slightly improve children's self-concept; however, there was no improvement on children's coping skills. A possible explanation is that coping styles may be more difficult to change because they are learned behaviors that become automatic with time.

Also, the efficacy of these interventions was based on children's self-reported, subjective interpretations of anxiety. Only one study (Lowry-Webster et al., 2003) included a clinician's measure. Anxiety should be assessed through a multi-method and multi-informant approach (Bernstein et al., 1996; Fonseca & Perrin, 2001). Further studies should include clinician, teacher, and parent measures.

Selected Interventions

Five studies were conducted as selected interventions (Barrett, Sonderegger, & Sonderegger, 2001; De Cuyper, Timbremont, Braet, De Backer, & Wullaert, 2004; DeRosier, 2004; DeRosier & Marcus, 2005; Fox & Boulton, 2003). Results suggest that CBT is an effective intervention for children who are at risk for developing an anxiety disorder. The estimated average effect size of $\bar{d} = 0.63$ is slightly higher than what would be considered an effect size of medium magnitude (Cohen, 1988). However, these findings should be interpreted with caution, as the efficacy of the program was gauged only by self-reported measures of anxiety.

On the other hand, social skills training ($d = -0.32$) did not prove to be effective in preventing anxiety disorders as a selective intervention. It is important to note the possibility of negative reactions when school-aged children are receiving a prevention

program (Davis & Gidycz, 2000). There might be certain groups of children for whom providing a social skills training program in a small-group format would trigger anxiety reactions. It could be that children who already feel intimidated by bullies do not feel comfortable sharing their personal experiences with the group. Also, a group comprising only victims of bullying might fail to provide exposure to positive role models from typically developing peers. Similar to the Ghaderi, Martensson, and Schawn (2005) study, the primary focus of this intervention was on establishing friendships and dealing with the bully, rather than coping with anxiety. This confirms that if the purpose is to prevent anxiety disorders, the content of the interventions should target the risk directly (e.g., difficult temperament or a learning disability) and protective factors (e.g., positive self-concept and problem-solving skills) related to anxiety (Barrett & Turner, 2004). Children at risk for anxiety disorders receiving the intervention also benefit by reporting improvements in self-esteem ($\bar{d}$ = 0.42), self-concept ($\bar{d}$ = 0.57), and positive future outlook ($\bar{d}$ = 1.20).

Of the psychosocial interventions examined, CBT was found to be effective in preventing anxiety disorders in groups at risk. Estimated average effect sizes ranged from 0.37 to 0.95, which are considered of medium and large magnitude, respectively (Cohen, 1988). Immigrants from non-English-speaking backgrounds ($\bar{d}$ = 0.95) were the group who benefited the most, followed by children experiencing subthreshold depression ($\bar{d}$ = 0.66) and children with peer relationship difficulties ($\bar{d}$ = 0.37). A possible explanation is that the CBT interventions for these last two groups focused more on depression and peer relationships than on anxiety itself.

One of the purposes of this synthesis was to determine the core components that might make an intervention effective. Results indicate that the FRIENDS program is one of the most effective CBT interventions for children at risk for anxiety disorders. The success of this program might result from meeting several of the key characteristics of effective programs. The content focused on research based on risk and protective factors and addressed the three major factors shared by anxiety: cognitive ideation by identification of negative self-talk, physical features by identifying body signs of anxiety and practicing relaxation, and behavioral responses by providing exposure opportunities to use the coping and problem-solving skills learned. The program was provided in a small, interactive group format; was user-friendly (structured and packaged); and carefully implemented determined levels of dosage as well as follow-up boosters (Bond & Hauf, 2004). Furthermore, this program included a parental component, as it has been shown that the learning that occurs in the family (risk factor) also influences the development and maintenance of anxiety (Barrett et al., 1996; Ollendick et al., 2005).

Even though selective programs appear to be promising, gains tend to decrease over time. This indicates that children who are at risk might need more intervention in the future or need multicomponent interventions to strengthen the skills learned. Once again, it is important to note that interventions will be more effective if they explicitly address the risk and protective factors for anxiety.

Indicated Interventions

Relative to studies implementing universal and selective interventions, studies implementing indicated interventions were sparse, and all three used CBT (Dadds et al., 1999; Dadds et al., 1997; Stein et al., 2005). Compared with findings for universal interventions, the methodological quality of indicated studies seems stronger, as the studies also included outcome measures for parents. However, none of these studies provided outcome measures for protective factors.

The magnitude of the estimated average effect size for indicated studies was small ($\bar{d}$ = 0.23), according to Cohen's (1988) guidelines. In fact, the magnitude of the effect size might be even smaller, as one extremely large effect size was reported for children exposed to violence and PTSD (d = 1.08). These findings suggest that implementing prevention programs for children who are already showing anxiety features or the disorder itself may not be the best solution. It could be that to date, the interventions have addressed the "developmental appropriateness" for the individual's age and maturity but not for their stage of anxiety (Bond & Hauf, 2004). Also, it may be possible that a school-based intervention does not provide the required dosage and specific content to produce visible changes in children who already show features or the actual disorder. This resistance to change is also reported in the estimated average effect sizes calculated at each time point, as improvement slowly increased over time and became apparent after 2 years. And, although improvement is reported, one cannot infer a causal relationship as the result of the prevention program because these children have sought medication or individual psychotherapy to reduce their distress.

Contrary to the findings found for children with anxiety features or disorders, children exposed to violence and with posttraumatic stress disorder (PTSD) symptoms appear to benefit to a large extent from CBT as an indicated intervention (d = 1.08). A possible conclusion is that discussing personal experience with violence helps reduce distress in children who have been traumatized. Also, the events that trigger anxiety likely are at a more conscious level for these children. Therefore, these children may benefit more from strategies such as relaxation, mental imagery, and problem-solving, as they are practicing with real situations. However, the findings of this study should be interpreted with caution because the efficacy of the program was measured by only one self-reported measure of PTSD.

Findings from indicated studies suggest that researchers should pay close attention to the selection of appropriate interventions that meet the specific needs of the target group. Without appropriate intervention, the severity of an anxiety disorder will increase; therefore, it is better to start early with either intensive intervention in smaller groups or to provide these children with one-to-one counseling in school. Early referral to psychological services should be strongly encouraged among school personnel.

Variability Between Levels of Prevention

Very different trends can be seen at each level of prevention. Immediately after receiving a prevention program, groups of children at risk (e.g., immigrants) reported the highest improvement; however, improvement began to fade after 1 year. An opposite trend was seen for indicated interventions. Children with subthreshold anxiety or the disorder itself reported low improvement after receiving the intervention and increasing

improvement over time. A third different pattern was seen for universal interventions: Improvement maintained 1 year after the intervention.

The variability in different groups receiving a psychosocial intervention is interesting (see Table 2). One could infer that targeted groups within each level of prevention would yield similar effect sizes; however, this was not the case. Children at risk for anxiety and depression demonstrated higher improvement than children at risk for anxiety, which suggests that the more severe cases benefit the most from universal interventions. Unlike the previous trend, children with only symptoms of anxiety disorders (e.g., children with PTSD symptoms) reported higher improvement in indicated interventions than children with an anxiety disorder itself. Finally, groups of children at risk (e.g., immigrants) who experience symptoms from internalizing disorders (e.g., anxiety and depression) are more likely to benefit from selective interventions than those whose problems are related to social interactions.

Table 2

Estimated Average of Effect Sizes for Groups

Group	Overall Results ($\bar{d}$)
Children diagnosis-free for anxiety disorders	0.12
All children (diagnosis-free and at-risk)	0.34
Children at risk for anxiety disorders	0.60
Children at risk for anxiety disorders and depression	1.24
Children with subthreshold depression	0.66
Immigrant children from non-English-speaking background (NESB)	0.95
Children with difficulties in peer relationships	0.31
Children victims of bullying	-0.32a
Children with subthreshold anxiety	0.23
Children exposed to violence and PTSD symptoms	1.08a
All children with anxiety (subthreshold or disorder)	0.19
Children with anxiety disorders	0.34

Note. a = only one effect size reported. From Gallegos, Beretvas, & Linan-Thompson, 2006.

The results of this synthesis support previous clinical research on the efficacy of CBT for anxiety disorders (Compton et al., 2002; In-Albon & Schneider, 2006). Furthermore, this synthesis extends current knowledge by providing relevant information

on the efficacy of psychosocial interventions for preventing anxiety disorders at different levels of prevention and for different groups.

Conclusions

Anxiety disorders, the most prevalent lifetime disorder, create enormous short-term and long-term costs for education systems, with negative impact manifested throughout society. As a core potential benefit of preventing and reducing the incidence of anxiety disorders within a community is decreasing the risk of myriad societal problems such as substance abuse and depression, which is expected to become the second-ranked cause of disease burden in 2020 (World Health Organization, 2004).

Substance and drug abuse has been a massive and pervasive problem in schools (Donovan, 2007). For example, statistics from the United States showed that by the time students complete high school, 70% have smoked cigarettes, 81% have consumed alcohol, 47% have used marijuana, and 24% have used some other illicit drug (the National Center on Addiction and Substance Abuse at Columbia University, 2001). These problems will burden schools and societies to absorb the costs and destructive implications: class disruption and violence, increase in special education and counseling programs, teacher turnover, truancy, children left behind, property damage, and injury, among others. Therefore, the prevention of substance abuse, which can begin with childhood psychopathology, is certainly important to address.

Research has shown that schools are excellent settings for prevention and access points to children and adolescents. As late childhood is a critical time for the development of an anxiety disorder (Kessler et al., 2005; Shonkoff & Phillips, 2000),

providing prevention programs during the school day will help by (1) increasing the rate of students benefiting from psychotherapy (Lowry-Webster et al., 2001); (2) avoiding stereotypes due to labeling, particularly when provided to the whole classroom (Smart, 2001); (3) increasing the awareness of psychopathology among teachers, thus providing early screening and referral for students who need further help (Dadds et al., 1997; Dozois & Dobson, 2004); (4) promoting student competence through positive coping skills and preventing unhealthy behaviors in students' formative years of personality development; and (5) providing positive role models from peers and teachers (Lowry-Webster et al., 2003). Likewise, effective prevention programs could lead to indirect outcomes such as helping students reduce negative self-perception (Bryan et al., 2004), enhance coping skills, and establish strong relationships within the community (Lowry-Webster et al., 2003). Because research has shown that teachers are as effective as psychologists at implementing prevention programs, schools are now provided with feasible and cost-effective options to implement prevention programs with their own school staff (Feldner et al., 2004; Hirshfeld-Becker & Biederman, 2002).

Schools should explore the benefits of prevention programs by proving CBT interventions to students who might be at risk (e.g., children with learning disabilities and ADHD). In the same way, it will be interesting to explore the effectiveness of CBT with Mexican and Mexican-American children in the United States. A common problem of Mexican immigrants in the United States is that language difficulties and a sense of losing their cultural identity produce significant distress and high levels of anxiety (Valenzuela, 1998).

In addition to implementing a psychosocial intervention to prevent anxiety disorders in children, there are other things that schools could do to reduce the risk of developing an anxiety disorder. A first step is educating the community (i.e., parents and teachers) about risk and protective factors for anxiety and its course of development. Research has shown that for students with LD, parents and school connectedness are the major protective factors for the development of a psychological problem (Svetaz et al., 2000). For example, educating parents about the importance of establishing secure parent-child attachment and positive relationships in the first 2 years of life could reduce the child's risk for developing an anxiety disorder (Al-Yagon & Mikulincer, 2004; Weiner, 2004). Also, educating parents about child-management and coping skills has shown to be fundamental (Barrett et al., 1996).

In the same way, preservice and in-service training for teachers and rehabilitation professionals in the field of special education should include some of the work from the mental health profession (McReynolds & Garske, 2003; Price et al., 1994). The field of special education should envision the possibility to compound efforts through both social-emotional and academic interventions, as treating the affective, cognitive, and academic abilities as separate domains has shown very little promise (Price et al., 1994).

With the great need of reducing the risk for developing anxiety disorders, prevention programs appear to be an excellent option for schools (Lufi et al., 2004), especially as epidemiological data show that the age of onset is decreasing (American Psychiatric Association, 2000). Tentative conclusions are that CBT and behavioral interventions could be equally effective at a universal level of prevention; that CBT is

most effective at a selective level of prevention for groups at risk for anxiety disorders; and that to a lesser extent, CBT as an indicated intervention could also benefit children who are already experiencing anxiety symptoms or the actual disorder.

Statement of the Problem

Despite the prevalence and significant impairment associated with anxiety disorders, prevention research continues to lag far behind from that on childhood aggression, substance abuse, and academic failure. Fortunately, this trend appears to be changing, with the number of studies noticeably increasing since 2003. It is possible that anxious children may be more difficult to identify than children with aggressive patterns and drug dependency, or than struggling readers (Compton et al., 2002). There is some evidence that teachers are less sensitive to report internalizing symptoms of children with anxiety disorders because teachers do not perceive these children as being troublesome (Kendall, 1994; Kendall et al., 1997). The current state of knowledge of the field of prevention of anxiety disorders points to several opportunities for further research.

Because anxiety disorders have been associated with conditions highly prevalent in schools such as learning disabilities and externalizing disorders including ADHD, oppositional defiant disorder, and conduct disorders, schools can benefit from prevention programs that reduce the severity of the students' problems (Noel et al., 1992; Ollendick et al., 2005).

Particularly for children with LD, research has shown a strong connection between academic improvement and psychosocial interventions to prevent anxiety disorders (Martinez & Semrud-Clikerman, 2004; Patten, 1983). Learning disabilities and

anxiety disorders are also highly related to substance abuse. Some of the characteristics of LD and anxiety disorders are themselves risk factors of substance abuse: poor understanding of one's ability, a lack of skills for developing relationships, and the need for prolonged family support (Cosden, 2001).

It is evident that children with LD need to improve their self-concept and learn coping strategies to manage their anxiety and helplessness (Margalit & Raviv, 1984), and CBT interventions appear to be a potential option for the delivery of these skills. Even though there is increasing evidence of the risk status for anxiety and depression in children with LD, to date no randomized control trials published in peer-reviewed journals focus on the prevention of anxiety and depression for these children. This study will explore the relationship between LD, anxiety and depression, while building strategies for future preventive programs. In the long run, exploring this relationship with a Mexican sample will open the door to exploring prevention programs with other groups that might be "at risk" in the Spanish-speaking community, such as Mexican and Mexican-American children in the United States.

Some of the limitations of the research on psychosocial interventions to prevent anxiety disorders in school settings have been addressed in this study. An important limitation of some studies was the lack of disaggregated data for children at risk and diagnosis-free children. In order to thoroughly understand how prevention programs work, the availability of disaggregated data is crucial, as there appears to be a high discrepancy between the benefits for children at risk and those who were diagnosis-free. This study addressed this limitation by stratifying children before the intervention into

four nonoverlapping groups: children who are diagnosis-free for anxiety excluding those with LD, children at risk for anxiety excluding those with LD, children with LD who are at risk for anxiety, and children with LD who are diagnosis-free for anxiety.

It is also crucial to include more outcome measures that go beyond the assessment of anxiety symptoms and that could provide evidence of how the learning of protective factors such as problem-solving skills benefit children who do not experience high levels of anxiety. Few studies included outcome measures related to protective factors, and most of the outcome measures for anxiety were self-reported. To address this limitation, this study included measures of protective factors such as coping skills for all children and an additional measure of self-concept for children with LD. In addition, for children with LD, three types of measures were used to examine the severity of children's anxiety symptoms: diagnostic interview, self-reported questionnaire, and a behavior checklist answered by their parents.

Results from the synthesis suggest that prevention program that addresses the risk and protective factors for anxiety disorders are the most effective. For this study, the FRIENDS program was chosen, as it has been developed under the theoretical model underlying anxiety disorders and it comprises the essential components that make a prevention program successful (Bond & Hauf, 2004). The FRIENDS program also includes the learning of protective factors such as social skills, sense of coherence, and personal empowerment, which have been reported as crucial to decrease the loneliness and helplessness experiences of children with LD (Margalit & Al-Yagon, 2002).

It was the purpose of this study to evaluate the effectiveness of a prevention program with Mexican primary school children. Building upon existing research on learning disabilities and emotional difficulties in children, this study investigated the effectiveness of the Spanish version of the FRIENDS program on preventing anxiety and depression of primary school children, particularly those with LD.

CHAPTER 3

Method

The purpose of this study was to determine the effectiveness of a universal school-based cognitive behavioral (CBT) intervention for reducing and preventing anxiety and depressive symptoms in primary school children from México. Furthermore, it assessed the effectiveness of the program with a subsample of children with learning disabilities (LD), as this increasingly prevalent group has been shown to be at risk for these disorders (Svetaz et al., 2000).

Three research questions guided this study:

1. What is the effect of a universal intervention on the coping skills, anxiety and depressive symptoms, and risk status for anxiety and depression of fourth- and fifth-grade students? It was hypothesized that the proactive coping skills of children who participated in the intervention, regardless of their risk status, would increase and the children would report less anxiety and depressive symptoms, and that they would be at lower risk for anxiety and depression when compared to children in the monitoring condition.
2. What is the effect of the intervention on the coping skills, anxiety and depressive symptoms, and risk status for anxiety and depression of children in each of four subgroups: diagnosis-free for anxiety excluding children with LD, at risk for anxiety excluding those with LD, children with LD who are also at risk for anxiety, and children with LD who are diagnosis-free for anxiety? It was hypothesized that proactive coping skills would increase for children in all

subgroups. It was also hypothesized that the anxiety and depressive symptoms and risk status of children at risk, including those with LD, would decrease when compared with children in the monitoring condition.

3. What is the effect of the intervention on the levels of self-concept and behavior problems of children with LD? It was hypothesized that the level of positive self-concept of children with LD would increase when compared to children with LD in the monitoring condition. It was also hypothesized that the behavior problems of children with LD would decrease when compared to children with LD in the monitoring condition.

Research Design

A quasi-experimental nonequivalent comparison group design with one between-subject and one within-subject factor was employed to address the research questions. There were two between-subject factor levels: (a) intervention condition and (b) monitoring condition. There were three within-subject factor levels: (a) pretest, (b) posttest, and (c) 6-month follow-up.

The focus of the study was on universal prevention by providing intervention to all children in a classroom. Schools, rather than students, were randomly assigned to either intervention or monitoring condition. In order to control for a spillover effect, the school, rather than the classroom, was the unit of random assignment.

A quasi-experimental design was chosen due to the limitation of not being able to conduct random assignment at the individual level. However, in order to build a stronger design, additional design features were added to reduce the plausibility of threats to

validity in the study. To address the threats of selection and measurement bias and to improve causal inference, the following features were included: a pretest, randomly selecting schools from a similar socioeconomic level, including multiple posttests, and stratifying individuals according to their anxiety risk status (Shadish, Cook, & Campbell, 2002).

Setting

The metropolitan area of Monterrey, México, was selected as the location for this study, as a large-scale epidemiological study showed that the highest 30-day prevalence rate for anxiety disorders in México was observed in the region formed by the three metropolitan areas: México City, Guadalajara, and Monterrey (Medina-Mora et al., 2003). Monterrey, the least populous of these urban areas, serves as the most tractable location to undertake a school-based study.

Only schools that met the following criteria were considered for the study: (a) representative of a level 6 socioeconomic status (SES), (b) coeducational, (c) inclusive settings for students with LD, (d) at least two classrooms at each grade 4 and 5, and (e) served by *Gabinetes de Servicios Educativos* (Office of Educational Services), a unit within the Special Education Department of the State of Nuevo León. This unit is responsible for providing services to students with mild disabilities such as learning disabilities and behavior disorders.

In order to reduce the variance and school effects, schools were divided by socioeconomic strata. Schools in Monterrey serve children from various socioeconomic levels, depending on their location. The SES level of the schools was determined by the

Instituto Nacional de Estadística Geografía e Informática (INEGI; National Institute of Statistics, Geography, and Information). According to INEGI, about 70% of the population that lives in the metropolitan area of Monterrey is considered to be of a medium SES, ranked as number 6. In order to be representative, the schools were selected from a pool of schools ranked as number 6 according to the neighborhood in which they are located (Instituto Nacional de Estadística Geográfica e Informática, 2006).

Eligible schools were selected from a government database that identified 1,326 private and public schools in the metropolitan area of Monterrey, and of these, 601 schools had at least two classrooms at each grade 4 and 5. Eighty-five of these schools were public schools served by *Gabinetes de Servicios Educativos*, and 33 of these schools were from a medium SES. Eight schools were randomly selected from the 33 schools that met the inclusion criteria using the Microsoft Excel program. Four of these schools were randomly assigned to an intervention condition and four to a monitoring condition.

Participants

The eight schools yielded 32 classrooms. The classroom teachers from the schools selected for this study were all certified primary education teachers, 12 females and 4 males. Initially, there were 16 classroom teachers implementing the program, but after the third session, the teacher from classroom 1 withdrew from the study. Therefore, the data from this classroom were not included in the analysis. In school 4, two teachers were relocated to another school during the middle of program implementation; for these classrooms, two trained teachers from the same school finished implementing the program. The teacher who finished the program in classroom 13 was the same teacher

who was implementing the program in classroom 14. The sixth-grade teacher of school 4 finished the program in classroom 16.

Students

Fourth- and fifth-grade students (ages 8–13) who attended the sample schools participated in the study. This age group was selected because epidemiological studies in both the United States and México have shown that the median age of anxiety onset is before a child reaches 15 (Kessler et al., 2005; Medina-Mora et al., 2003). Initially, the eight schools yielded a total of 1,070 children—172 of these children were identified as LD. The final sample included 1,030 children; 131 children with LD and their parents (n = 119) agreed to complete additional measures. The intervention condition included 534 children, and the monitoring condition included 496 children. Information regarding gender, age, and grade was collected for all participants from the school office. The mean age for children in the monitoring condition was 10.01, and the mean age for children in the intervention condition was 9.78. A One-Way Analysis of Variance (ANOVA) was conducted to see whether the groups differed at pretest. Results showed that there was a significant difference between groups in age, F (1, 1006) = 22.749, $p < 0.05$. Participants were 52.62% females (n = 542) and 47.38% males (n = 488), 51.75% were from fourth grade (n = 533) and 48.25% were from fifth grade (n = 497) No significant differences were found between groups at pretest for gender, $x2 = 3.056b$, $p > 0.05$, or for grade, $x2= 3.351b$, $p > 0.05$. Children with LD were identified through school records. In México, a student is identified as having a learning disability if: (a) academic difficulties persist after providing adequate instruction in the classroom and (b) the academic evaluation

shows that the student's developmental level is below what it is expected for his or her age (Secretaría de Educación Pública, 2002). Children with LD in the sample were of particular interest because of their high prevalence in society (i.e., accounting for about 50% of the cases referred to special education in México) and their high susceptibility for anxiety disorders (Secretaría de Educación Pública, 2002).

Measures

Six measures were used to determine children's risk status for anxiety and depression, coping skills, self-concept, and behavior.

Escala de Ansiedad para Niños de Spence (SCAS). This measure (Spence, 1997) is the Spanish version of the Spence Children's Anxiety Scale, a self-report measure of anxiety designed for use with children aged 8–12 years. The SCAS is administered collectively and takes approximately 15–20 minutes to complete. The SCAS consists of 45 items—39 assess specific anxiety symptoms such as symptoms for social phobia, and 6 items serve as filter to reduce response bias. In the Spanish version, children are asked to rate, on a 3-point scale ranging from never (0) to always (2), the frequency with which they experience each symptom. This study used the total score obtained by summing the 39 items that assess anxiety symptoms—higher scores reflect greater symptomatology. The cutoff for risk of anxiety was computed adding the pretest mean of the sample on the SCAS (30.14) to the standard deviation (10.67), resulting in a score of 41. For children with LD, a score of 41 on the SCAS was the requirement to administer the ADIS-C. The SCAS was used as a screening measure to identify children at risk for anxiety and as an outcome measure for anxiety. It was selected due to its ability to reliably discriminate

clinically anxious children from those who are not anxious (Spence, 1994). Spence (1997) has reported high internal consistency ($r = 0.92$), high split half reliability ($r = 0.90$), adequate test-retest reliability ($r = 0.60$), as well as support for convergent and divergent validity. This measure has been translated into Spanish and standardized with a normative sample of students from México showing sound psychometric properties including a reliability coefficient of 0.91 on the SCAS scores (Bermúdez-Ornelas & Hernández-Gúzman, 2002).

Cuestionario de Depresión Infantil. This measure is the Spanish version of the Children's Depression Inventory (CDI; Kovacs, 1981). The CDI is the most commonly used self-report measure for depressive symptoms in children aged 7 to 17 years. The CDI is administered collectively and takes approximately 10–25 minutes to complete. The scale has 27 items related to the cognitive, affective, and behavioral signs of depression. Each item contains three statements, and children select the one statement that best describes them in the past 2 weeks. Statements within each item are scored according to symptom severity: no symptomatology present (0), mild symptomatology (1), or severe symptomatology (2). A total depression score is calculated by summing all item scores—higher scores reflect higher symptomatology. The statement (item 9) that assessed suicidality was removed. The cutoff for risk for depression was computed adding the pretest mean of the sample on the CDI (9.37) to the standard deviation (5.62), resulting in a score of 15. The CDI has shown good psychometric properties: a Cronbach's alpha reliability coefficient of 0.94 and a test-retest reliability coefficient of 0.87 (Saylor, Finch, Spirito, & Bennett, 1984). Likewise, research has shown that the

CDI met adequate construct and content validity (Del Barrio, Moreno-Rosset, & López-Martínez, 1998).

Cuestionario de Afrontamiento. This measure (Hernández-Gúzman, 2003) is a Spanish measure developed and standardized in México to assess coping skills in children. The *Cuestionario de Afrontamiento* is a self-report measure for children aged 6 to 12 years. This measure can be administered collectively and takes approximately 5–10 minutes to complete. The scale has 12 items related to the child's interpretation and reactions when facing a problem, and the things he or she does to cope and/or solve the problem. Children are asked to rate, on a 3-point scale ranging from never (0) to always (2), the frequency with which they experience each statement. The *Cuestionario de Afrontamiento* assesses coping responses to situations perceived as stressful and provides information on three factors: active coping, emotional coping, and passive or avoidant coping. The total score is the sum of the 12 items—lower scores reflect a more proactive coping style. Scores on the *Cuestionario de Afrontamiento* have shown adequate psychometric properties including a Cronbach's alpha reliability coefficient of 0.67 (Hernández-Gúzman, 2003).

Piers Harris 2: Lo Que Pienso de Mí Mismo. This measure is the Spanish version of the Pier-Harris Children's Self-Concept Scale (CSCS; Piers, 1984). The CSCS was designed to examine the self-attitudes of children ages 8–18. The self-reported measure assesses six aspects of a child's self-concept: behavior, intellectual and school status, physical appearance and attributes, anxiety, popularity, and happiness and satisfaction. This measure was administered to children with LD. The instrument is a 60-item

inventory consisting of short sentences for which the child answers yes or no. The items describe children's feelings about themselves and about the reactions of others toward them. Each positive response is scored with 1 point and each negative response with 0 points. About half of the 60 statements indicate high self-concept and half are low self-concept. High scores indicate a better self-concept. CSCS total scale internal consistency ranges from 0.88 to 0.94 with stability ranging from 0.42 to 0.96. CSCS subscale internal consistency ranges from 0.73 to 0.81 (Bracken, Bunch, Keith, & Keith, 2000; Piers, 1984). Scores on the CSCS have shown adequate test-retest reliability ($r = 0.80$) and convergent validity ($r = 0.61$) with other self-concept instruments such as Multidimensional Self-Concept Scale (Piers, 1984).

Inventario de Entrevistas para Transtornos de Ansiedad por el DSM-IV, Version Niños (ADIS-C-IV). This measure (Silverman & Albano, 1996) is the Spanish version of the Anxiety Disorder Interview Schedule for Children, IV. The ADIS-C is a semistructured interview for use with youth ages 6 to 17. It was developed specifically to determine DSM-IV anxiety diagnosis through the assessment of symptomatology, course, etiology, and severity of the child's anxiety. Final or composite diagnosis is based on the level of severity reported by the child. The ADIS-C is administered individually and takes approximately 45–60 minutes to complete. This interview was administered to children with LD who showed risk for anxiety on the SCAS. Four items that assessed suicidality (items 11a, 11b, 11c, and 11d from the subscale of Affective Disorders) were removed for this study. The ADIS-C has shown to yield highly reliable DSM-IV anxiety disorder symptoms and diagnosis in children and adolescents (Kendall & Suveg, 2006).

Scores on the ADIS-C have shown good psychometric properties. Test-retest reliability of diagnosis coefficients range from 0.63 to 0.80. Test-retest reliability of symptom coefficients reported range from 0.78 to 0.95 (Silverman, Saavedra, & Pina, 2001). Likewise, construct validity has been shown as symptom scale scores obtained on the parent and rating scales have been significantly associated with scores obtained on the parent and child interviews (Rabian, Ginsburg & Silverman, 1994).

Cuestionario sobre el Comportamiento de Niños, Version Padres. This measure is the Spanish version of the Child Behaviour Checklist, Parent Version (CBCL; Achenbach & Rescorla, 2001). The CBCL is a paper-and-pencil measure for parents of youth ages 6 to 18. Only parents of children with LD completed this measure. The measure is a 113-item scale assessing an array of behavioral problems and social competencies. The checklist provides scores on several factors or behavioral problem areas and identifies internalizing (e.g., anxiety and depression) and externalizing problems. Scores on the CBCL have shown good psychometric properties, including test-retest reliability coefficients ranging from 0.95 to 1.00, inter-rater reliability coefficients ranging from 0.93 to 0.96, and internal consistency reliability coefficients ranging from 0.78 to 0.97 (Achenbach, 1983). Also, the scores of the scale have shown to be significantly associated with clinical status, meeting the criteria for content validity, and support for the construct and criterion-related validity has been found (Achenbach & Rescorla, 2001).

Intervention

This study implemented *AMISTAD para Siempre,* the Spanish version of the FRIENDS for Life program (Barrett, 2004). The program was translated to Spanish and incorporates cultural adaptations tailored to the needs of Mexican children. To increase the cultural validity of the Spanish version, a Mexican psychologist with 20 years of experience working in public schools reviewed the Spanish version. *AMISTAD para Siempre* is a brief cognitive-behavioral intervention that incorporates physiological, cognitive, and behavioral strategies. The program consists of 10 weekly sessions of 60 to 75 minutes each, with two booster sessions to be implemented 1 and 3 months after the 10th weekly session. The program also incorporates two optional information sessions for parents that describe the program and provide strategies that parents can implement to increase the emotional resilience of their children.

The components of the intervention are behavioral, cognitive, and family and peer support (Barrett, 2004). The behavioral component includes self-monitoring of feelings and thoughts, out-of-session and mental imagery exposure, relaxation training, and contingency management for parents. The cognitive component teaches children to recognize their feelings and thoughts and the link between them. It also teaches them to identify faulty cognitions and incompatible self-statements, and to elaborate alternative interpretations of difficult situations. The family and peer support component discourages the avoidance of anxiety-provoking situations by promoting the practice of problem-solving. It encourages the building of social support groups and respect for diversity

(Barrett, 2004). Learning techniques include group discussion, hand-on activities, and role-play.

Approximately one session is dedicated to learn each of the seven steps represented by the FRIENDS acronym (see Appendix A). The Spanish acronym is parallel to the English in terms of the concepts taught. After the introductory session, children start to learn the letter *F*, which stands for "Feeling worried?", followed by the letter *R* "Relax," *I* "Inner helpful thoughts," *E* "Explore solutions and coping plans," *N* "Nice work; reward yourself," *D* "Don't forget to practice," and *S* "Smile and stay calm." Within each session, the teacher uses modeling of the skill, and after the skill is taught, children have opportunities to practice in small groups and debrief with the whole classroom. The two booster sessions review all the content learned during the 10 consecutive weeks.

Procedures

Ethical Considerations

This study complied with the ethical standards of research set by The University of Texas at Austin. Approval for the data collection was obtained from the Institutional Review Board of The University of Texas. The Ministry of Education in Nuevo León, México, also approved this study. Informed assent was obtained from all parents of children with LD through consent forms sent home or distributed during meetings with parents. The letters explained the assessment and intervention procedures. Only the data of students who provided parental permission and gave assent was used in this study.

Training of Testers

Administrators of measures were the researcher and a team of psychologists and educators from the *Gabinetes de Services Educativos,* a unit of special education in Nuevo Léon. The researcher and a doctoral student from the Department of Educational Psychology at The University of Texas at Austin trained the test administrators. A three-day training for testers was provided the first week of December 2006 that focused on the administration and scoring of each measure used in this study.

Teacher Training

Classroom teachers in the intervention condition received training in the implementation of the program on January 16 and 17, 2007. The teacher training was delivered by a certified trainer who has been implementing the program for more than 15 years and works at Pathways Health and Research Centre in Australia, where the program was developed. The 2-day intensive workshop covered the principles and practices of prevention and early intervention, and taught participants about the epidemiology and phenomenology of anxiety and depression, research background on prevention and intervention models, and cognitive-behavioral theory. It provided experiential learning of the key FRIENDS strategies, a step-by-step guide to the intervention program, and taught process issues in delivering group-based CBT at a prevention level.

Intervention and Monitoring Conditions

Four schools were randomly assigned to an intervention condition and four schools to a monitoring condition.

Intervention condition. *AMISTAD para Siempre* was implemented as a universal prevention program. It was anticipated that all children would benefit from a skills-building program that enhances emotional resilience and improves the interpersonal functioning of a school community (Dozois & Westra, 2004). Starting on January 19, 2007, children in the intervention condition received the program once a week. The program lasted 10 consecutive weeks and was followed by two booster sessions, during the third week of April and June, respectively.

Monitoring condition. Children in the monitoring condition continued to receive the standard curriculum and received no additional intervention during the school day beyond the core classroom instruction. The only exception was students with individualized education programs (IEPs) receiving special education services (counseling or academic support). For students who at pretest scored in a range that suggested a diagnosis of anxiety or depression of clinical severity, classroom teachers were informed and asked to keep close observation and report immediately any behavior that would warrant attention.

After posttesting was completed, children from both the intervention and monitoring conditions who reported anxiety and depression scores at clinical severity were referred to the school as "children at risk" who needed psychological services. For anxiety, 12.73% of children were referred, and 14.45% were referred for depression. The researcher provided each school with a list of the names of these children and created a small directory that was sent to the classroom teachers and parents with information of several nongovernmental and governmental facilities that could provide free treatment.

To follow up and document these cases, classroom teachers and parents were asked to report to the researcher whether the child had received any kind of help after the notification; however, most parents and teachers did not return information regarding these cases.

Fidelity of Implementation

During the implementation of the program, the researcher evaluated intervention integrity using the Fidelity of Implementation Checklists (Barrett, 2005) developed by the program and translated into Spanish to determine the degree of adherence to the program structure and the group leader skills. The checklist related to structure indicates compliance with the program's manual content for each session and assessed how well the teacher met the aim of each activity. The checklist related to teacher skills assessed the degree to which the teacher used the following skills during program implementation: positive reinforcement, specific feedback, self-disclosure, empathy, paraphrasing, summarization, and reflection. For example, one item asked, "How well was positive reinforcement used in this session?" Using a Likert scale, the checklist provides four responses categories: "extremely well" (1), "moderately well" (2), "not very well" (3), and "not at all" (4). The researcher conducted and audiotaped independent live observations on at least 17% of all sessions, using both checklists.

Fidelity of implementation was calculated by averaging the scores of each form across all the observations of the teacher. Classroom 1 was not included because the teacher withdrew from the study. Classrooms 13 and 16 have two entries because the students received the intervention from two different teachers. This was because the

teachers who implemented the program initially were relocated during sessions 6 and 7, respectively, to other schools.

Table 3

Fidelity of Implementation

	Mean quality by intervention area		
	Sessions observed	Treatment structure	Group leader's skills
Classroom 2	3	2.75	2.86
Classroom 3	2	2.44	2.36
Classroom 4	7	1.66	1.45
Classroom 5	5	1.88	1.57
Classroom 6	4	1.62	1.25
Classroom 7	5	1.64	1.56
Classroom 8	3	1.99	1.81
Classroom 9	4	2.23	2.28
Classroom 10	4	2.13	2.25
Classroom 11	4	2.13	1.61
Classroom 12	4	2.29	1.75
Classroom 13	2	1.87	1.29
Classroom 13*	3	2.08	1.71
Classroom 14	5	2.14	1.52
Classroom 15	3	1.68	1.52
Classroom 16	1	2.12	2.57
Classroom 16*	3	2.50	1.62

Fidelity of ADIS-C Administration

Finally, the researcher analyzed randomly 20% of the interviews conducted by each psychologist to ensure the fidelity of the ADIS-C administration. Five psychologists administered the ADIS-C; however, they did conducted different numbers of children interviews. Psychologist 1 conducted 40 interviews: From the 8 interviews checked for fidelity, the researcher agreed with the diagnosis of 7 and disagreed with 1. Psychologist 2 conducted six interviews, and the researcher agreed with the diagnosis of the two

interviews checked for fidelity. Psychologist 3 conducted one interview, and the researcher agreed with the diagnosis. Psychologist 4 conducted one interview, and the researcher agreed with the diagnosis. Psychologist 5 conducted 34 interviews, and the researcher agreed with the diagnosis for the 7 interviews checked for fidelity.

Data Collection

All measures were administered to students in both intervention and monitoring conditions according to the schedule described in this section. Trained testers administered three measures to intact classrooms at three time points. Each testing phase lasted approximately 2–3 weeks. At each phase, during the first 3 days, the anxiety, depression, and coping skills group measures were administered to children. Testers read the instructions and questions aloud to all students, to control for reading difficulties. Assessments were counterbalanced at each phase.

This was followed by the group administration of the self-concept measure (CSCC) to children with LD. The final measure administered was the ADIS-C. Psychologists individually administered the interview to children with LD whose SCAS score was 41 or above, indicating risk for anxiety disorders. They were interviewed to determine whether they were experiencing an anxiety disorder. At pretest, 23 children with LD were interviewed, 29 children were interviewed at posttest, and 31 children were interviewed at 6-month follow-up.

At each phase, the parents of children with LD were asked to complete the CBCL. All measures were administered at pretest, posttest, and 6-month follow-up. The

participation of parents of children with LD was voluntary, and consent forms were given 2 months before the study started.

To administer the questionnaire to parents of children with LD, the researcher and the testers sent notification to parents a week before each testing phase and provided them with 2 to 3 different meeting dates. In order to facilitate testing of parents for whom it was impossible to attend the meetings, options such as sending the questionnaire home or answering it by phone were offered.

Pretest Phase

The pretest phase ran from January 8–20, 2007. During this time, all measures were administered. Of 131 parents of children with LD who initially agreed to participate in the study, only 119 were found at pretest. The CBCL was completed by 119 parents. Ninety-seven parents completed the questionnaire during the school meetings, 20 were completed during home visits, and 2 parents completed the questionnaire during a phone interview. The remaining questionnaires were not completed because parents could not attend the meetings and they did not have a phone line.

Posttest Phase

From March 11 to March 30, 2007, posttests were conducted using the same measures administered at pretest. The CBCL was completed by 106 parents. During school meetings, 85 parents completed the questionnaire, and 21 parents completed it during home visits.

Six-month Follow-up Phase

From September 24 to October 10, 2007, the 6-month follow-up assessment was completed using the same measures administered at pretest and at posttest. The CBCL was completed by 109 parents. During the school meetings, 89 parents completed the questionnaire, there were 12 home visits for parents, and 8 parents completed the questionnaire by phone.

CHAPTER 4

Results

This investigation examined the effectiveness of a universal school-based cognitive behavioral (CBT) intervention for reducing and preventing anxiety and depression in primary school children from México. Furthermore, it assessed the effectiveness of the program with a subsample of children with learning disabilities (LD). Children and teachers from eight schools participated in this study and were randomly assigned to either an intervention (n = 534) or a monitoring condition (n = 496). Teachers in the intervention condition implemented the AMISTAD program for 10 consecutive weeks. Two booster sessions were also implemented, 1 and 3 months after the 10th session was completed. A quasi-experimental nonequivalent comparison group design with one between-subject and one within-subject factor was employed to address the following research questions:

1. What is the effect of a universal intervention on the coping skills, anxiety and depressive symptoms, and risk status for anxiety and depression of fourth- and fifth-grade students?
2. What is the effect of the intervention on the coping skills, anxiety and depressive symptoms, and risk status for anxiety and depression of children in each of four subgroups: diagnosis-free for anxiety excluding children with LD, at risk for anxiety excluding those with LD, children with LD who are also at risk for anxiety, and children with LD who are diagnosis-free for anxiety?

3. What is the effect of the intervention on the levels of self-concept and behavior problems of children with LD?

This chapter consists of five sections. The first section provides the methodology used to analyze the data; the second section presents the results of the assumptions of homogeneity of variance and pretest data; the third section provides the overall results of the study; the fourth section presents the results of the study for each of the stratified groups; and the final section provides the additional results for children with LD.

Data Analysis

Questions were addressed separately using one-tailed independent sample *t*-tests and related sample *t*-tests in order to examine the dependent variables of anxiety, depression, coping skills, behavior, and self-concept.

An analysis of the results of the pretest measures was conducted to ensure that participants within each of the conditions did not differ from each other in terms of their levels of anxiety, depression, and coping skills. A series of one-way ANOVAs on the dependent variables was conducted. Likewise, data were screened for the presence of outliers and violations of the assumptions of analysis of variance. Three cases were found that met the criteria for outliers. Two children scored 71 on the *Escala de Ansiedad para Niños de Spence* (SCAS), which is an extreme and unlikely score, almost reaching the total score limit of the test (76). One child scored 46 on the *Cuestionario de Depresión Infantil* (CDI), which is also an extreme and unlikely score, almost reaching the total score limit of the test (52). The outliers were deleted; however, they were included in the referral for treatment after posttests, as they were still eligible for the category of clinical

anxiety (SCAS of 42 or above) and depression (CDI score of 19 or above). There were no violations of analysis of variance.

To examine the overall effects of the program, one-tailed independent sample *t*-tests were performed on each measure at each time point with an alpha level set at 0.05. To examine the changes over time, related sample *t*-tests were performed for each condition from pretest to posttest and from posttest to 6-month follow-up. Because the assessment instruments measure related constructs, there was a possibility that the results of the related sample *t*-tests could be inflated. To decrease the probability of having a Type I error, the Dunn-Bonferroni's correction was performed, which uses the standard *t*-test statistic but the alpha level is split among a set of planned contrasts. The alpha level was set at 0.025.

To further evaluate the effectiveness of the program, chi-square analyses were conducted on the SCAS and CDI to examine risk status of children at each time point. Participants scoring 41 or above on the SCAS were considered to be "at risk" for anxiety. Children scoring 15 or above on the CDI were considered to be "at risk" for depression. The preventive impact of the intervention was measured by evaluating the change in status. If frequencies indicated that children "at risk" in the intervention group, when compared to the monitoring group, were more likely to move into the "diagnosis-free" range, the program was interpreted as "effective".

To evaluate the change in the clinical status of highly anxious children with LD over time, as measured by the *Inventario de Entrevistas para Trastornos de Ansiedad por el DSM-IV* (ADIS-C), children's change patterns were identified. Children were assigned

to one of four categories: (1) children who improved, (2) children who remained diagnosis free, (3) children who indicated the presence of an anxiety disorder at both time points and, (4) children who indicated the presence of an anxiety disorder at the second time point but not the first. The percentage of children for each category in each condition was then compared.

There were 10 cases that were not included for the ADIS-C analysis. These cases were: 2 children who did not finish the interview, 5 children who were not present during the testing time, 1 child from teacher 1's classroom who dropped out of the study, and 3 missing cases who were found after posttests.

After analyzing effects for all children, children were stratified into four nonoverlapping groups for additional analysis on the basis of their pretest SCAS scores and LD status. The same analysis procedure as for overall effects was conducted for each of the stratified groups.

Group 1 comprised children who were "diagnosis-free" for anxiety, scoring below 41 on the pretest SCAS, excluding children with LD. Group 2 comprised children who were "at risk for anxiety," scoring 41 or above on the pretest SCAS, excluding children with LD. Group 3 comprised children with LD who were also "at risk for anxiety". Group 4 comprised children with LD who were "diagnosis-free" for anxiety.

Standardized effect size estimates were calculated using Cohen's *d* and computed as $d = \frac{(M_T - M_C)}{SD}$, where M_T is the mean of the treatment group, M_C is the mean of the comparison group, and *SD* is the pooled within-group standard deviation (Lipsey &

Wilson, 2000). The magnitude of the effect sizes is interpreted as follows: small, $d = .2$; medium, $d = .5$; and large, $d = .8$. For outcome data presented as changes in rate of diagnosis through $\chi 2$, the equation (1) was used to calculate the effect sizes (Lomax, 2000):

$$| ES_{\chi^2} | = 2\sqrt{\left(\frac{\chi^2}{n_T + n_C - \chi^2}\right)}$$

Chi-square tests of the pretest data on the ADIS-C were conducted to ensure that the intervention and monitoring groups were not significantly different. Also, in order to have an index of the reliability of the scores on the measures that had not been standardized with a Mexican sample, pre-post correlations were conducted for the monitoring group.

The data at 6-month follow-up should be examined with caution, as children who reported clinical anxiety and/or clinical depression were referred to the school for outside treatment and it is unknown whether they actually received therapy.

Test of Assumptions and Pretest Data

Levene's test of homogeneity of variance indicated that at pretest, each outcome measure of anxiety, depression, and coping skills met the assumption of homogeneity of variance ($p > .05$, for each).

A one-way ANOVA conducted on all outcome measures indicated that the monitoring and intervention groups were not significantly different at pretest. Children's levels of anxiety [F (1,970) = 3.52, $p > .05$], depression [F (1,968) = 0.14, $p > .05$], and coping skills [F (1,971) = 0.01, $p > .05$] were comparable.

In the same way, pretest chi-square analysis indicated that the groups were comparable at pretest on their percentage of children at risk for anxiety and at risk for depression. There were no significant differences observed at pretest between the monitoring and intervention groups on their anxiety frequencies [$\chi^2(1, n = 972) = 0.58, p > .05$] and their depression frequencies [$\chi^2(1, n = 970) = 0.49, p > .05$].

The chi-square analysis of children with LD who were interviewed with the ADIS-C showed that the experimental groups were comparable at pretest [$\chi^2(1, n = 21) = 0.06, p > .05$]. Ten children with LD from the intervention condition were interviewed—6 (60%) were diagnosis-free for anxiety and 4 (40%) indicated the presence of an anxiety disorder. In the monitoring group, 11 children with LD were interviewed—6 (54.55%) children were diagnosis-free for anxiety and 5 (45.45%) indicated the presence of an anxiety disorder.

Homogeneity of variance was supported for both children's levels of self-concept and their behavior rated by parents, as evidenced by nonsignificant Levene test results ($p > .05$). For the measures administered only to children with LD, one-way ANOVAs showed that the monitoring and intervention groups were comparable at pretest. Specifically, children's levels of self-concept [$F(1,127) = 0.60, p > .05$], behavior rated by parents [$F(1,117) = 0.09, p > .05$], and the internalizing symptoms rated by parents [$F(1,117) = 0.02, p > .05$], were comparable at pretest.

Pre-post correlations were calculated for the monitoring condition on the outcome measures that had not been standardized with a Mexican sample to provide measures of test-retest reliability. The pre-post correlations were significant for both the SCAS ($r =$

0.66, $p < .05$), and the CDI ($r = 0.36$, $p < .05$). For the additional measures administered to children with LD, the pre-post correlations were also significant: the measure of self-concept (CSCS) had a correlation of ($r = 0.68$, $p < .05$) and the CBCL had a correlation of ($r = 0.68$, $p < .05$).

Analysis of the Intervention's Overall Effects

Effects on Anxiety Symptoms

The one-tailed independent sample *t*-tests revealed no statistically significant differences ($p > .05$) in the severity of children's anxiety symptoms between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 4).

Table 4

Means, SDs, T-tests, and ES for the SCAS at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	30.81	10.35	475	29.52	11.15	497	1.88	.03	N/A
Posttest	28.39	11.28	463	27.41	11.35	492	1.35	.09	-0.09
6 months	25.77	11.12	409	24.61	11.48	441	1.49	.07	-0.10

Changes over time. To evaluate changes over time, related sample *t*-tests were conducted for each condition at each time point. For the monitoring group, a statistically significant decrease in the severity of children's anxiety symptoms was observed at

posttest [t (458) = 6.01, $p < .025$] and at 6-month follow-up [t (402) = 5.06, $p < .025$]. In the same way, the intervention group reported a statistically significant decrease in the severity of children's anxiety symptoms at posttest [t (475) = 5.69, $p < .025$] and at 6-month follow-up [t (426) = 6.27, $p < .025$].

Risk analysis of anxiety. Chi-square analyses were conducted on the SCAS to examine the difference between the monitoring and intervention groups in children's risk status for anxiety at each time point. A child was considered to be at risk for anxiety disorders when she or he scored 41 or above on the SCAS. Frequencies and percentages of the risk status for anxiety are presented in Table 5. Chi-square analyses revealed no significant differences between the intervention and monitoring group in the pattern of frequencies of children's risk status for anxiety at posttest [$\chi^2(1, n = 955) = 0.34, p > .05$], or at 6-month follow-up [$\chi^2(1, n = 855) = 0.02, p > .05$].

Table 5

Frequencies and Percentages of Children who were Diagnosis-free and Children who were At Risk for Anxiety at Each Time Point

Time point	Monitoring group			Intervention group		
	Diagnosis-free *n* (%)	At risk *N* (%)	*n*	Diagnosis-free *n* (%)	At risk *n* (%)	*n*
Pretest	390 (82.1%)	85 (17.9%)	475	417 (83.9%)	80 (16.1%)	497
Posttest	399 (86.2%)	64 (13.8%)	463	426 (86.6%)	66 (13.4%)	492
6 months	370 (89.8%)	42 (10.2%)	412	399 (90.1%)	44 (9.9%)	443

Effects on Depressive Symptoms

At posttest, the one-tailed independent sample *t*-test revealed a statistically significant decrease ($p < .05$) in the severity of the depressive symptoms of children from the intervention group, when compared to those from the monitoring condition. No statistically significant change was found at 6-month follow-up (see Table 6). The effect size at posttest was of small magnitude.

Table 6

Means, SDs, T-tests, and ES for the CDI at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	9.44	5.44	475	9.30	5.79	495	0.37	.35	N/A
Posttest	9.82	5.97	462	8.15	5.98	492	4.34	.00*	-0.28
6 months	8.29	6.10	411	7.70	6.08	435	1.41	.08	-0.10

Note. * $p < .05$. The lower the mean score, the better. A negative effect size would be considered to be a positive change. N/A = not applicable.

Changes over time. For the monitoring group, a statistically significant increase in the severity of children's depressive symptoms was observed from pretest to posttest [$t(458) = -2.20$, $p < .025$]. From posttest to 6-month follow-up, children from the monitoring group showed a statistically significant decrease in the severity of depressive

symptoms [t (403) = 5.63, $p < .025$], The intervention group reported a statistically significant decrease in the severity of children's depressive symptoms at posttest [t (473) = 5.96, $p < .025$] but not at 6-month follow-up [t (420) = 1.38, $p > .025$]. At 6-month follow-up, scores from the intervention group indicated that gains were maintained.

Risk analysis of depression. Chi-square analyses were conducted on the CDI to examine the difference between the monitoring and intervention group in children's risk status for depression at each time point. A child was considered to be at risk for depression when she or he scored 15 or above on the SCAS. Frequencies and percentages of the risk status for depression are presented in Table 7. Chi-square analyses revealed significant differences between the intervention and monitoring groups in the pattern of frequencies of children's risk status for depression at posttest [$\chi^2(1, n = 954) = 6.76, p < .05$], indicating that there were fewer children at risk for depression in the intervention group than in the monitoring group. No significant differences were found at 6-month follow-up [$\chi^2(1, n = 846) = 0.01, p > .05$].

Table 7

Frequencies and Percentages of Children who were Diagnosis-free and Children who were At Risk for Depression at Each Time Point

Time point	Monitoring group			Intervention group		
	Diagnosis-free *n* (%)	At risk *n* (%)	*n*	Diagnosis-free *n* (%)	At risk *n* (%)	*n*
Pretest	405 (85.3%)	70 (14.7%)	475	414 (83.6%)	81 (16.4%)	495
Posttest	369 (79.9%)	93 (20.1%)	462	424 (86.2%)	68 (13.8%)	492
6 month	358 (87.1%)	53 (12.9%)	411	380 (87.4%)	55 (12.6%)	435

Effects on Coping Skills

At both time points, one-tailed independent sample *t*-tests revealed a statistically significant increase in the proactive coping skills of children from the intervention group, when compared to those in the monitoring group. The effect sizes for both time points were of small magnitude (see Table 8).

Table 8

Means, SDs, T-tests, and ES for the Coping Skills Questionnaire at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	9.60	2.68	476	9.60	2.61	497	0.10	.47	N/A
Posttest	9.74	2.59	462	9.06	2.68	493	3.98	.01*	-0.26
6 months	9.53	2.55	409	9.01	2.86	441	2.75	.01*	-0.19

Note. * $p < .05$. The lower the mean score, the better. A negative effect size would be considered to be a positive change. N/A = not applicable.

Changes over time. For the monitoring group, no statistically significant changes were found at posttest [t (459) = -1.27, p >.025] or at 6-month follow-up [t (402) = 1.11, p > .025]. The intervention group reported a statistically significant increase in children's proactive coping skills at posttest [t (474) = 3.70, p < .025]. No statistically significant changes in coping skills were found for the intervention group at 6-month follow-up [t (425) = 0.48, p >.025]. Scores indicated that gains were maintained.

Analysis of Intervention Effects by Stratified Group

Group 1: Children Diagnosis-free for Anxiety, Excluding Those with LD

Effects on anxiety symptoms. One-tailed independent sample t-tests revealed no statistically significant differences ($p > .05$) in the severity of children's anxiety symptoms for group 1 between the intervention and monitoring group at posttest or at 6-month follow-up (see Table 9).

Table 9

Means, SDs, T-tests, and ES for the SCAS of Group 1 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	27.57	7.95	350	25.82	8.77	356	2.77	.00	N/A
Posttest	26.42	10.14	338	24.89	10.18	346	1.97	.25	-0.15
6-months	24.31	10.11	301	22.40	10.51	313	2.29	.11	-0.18

Changes over time. To evaluate changes over time, related sample *t*-tests were conducted for each condition at each time point. For the monitoring group, a statistically significant decrease in the severity children's of anxiety symptoms was observed at posttest [t (335) = 2.38, $p < .025$] and at 6-month follow-up [t (294) = 3.71, $p < .025$]. In the same way, the intervention group reported a statistically significant decrease in the severity of children's anxiety symptoms at posttest [t (336) = 2.21, $p < .025$] and at 6-month follow-up [t (299) = 5.12, $p < .025$].

Risk analysis of anxiety. Chi-square analyses were conducted on the SCAS to examine the difference between the monitoring and intervention groups in children's risk status for anxiety at each time point. Frequencies and percentages of the risk status for anxiety of group 1 are presented in Table 10. Chi-square analyses revealed no statistically significant differences between the intervention and monitoring groups in the pattern of

frequencies of children's risk status for anxiety at posttest [$\chi^2(1, n = 684) = 0.54, p > 0.05$] or at 6-month follow-up [$\chi^2(1, n = 618) = 0.22, p > 0.05$].

Table 10

Frequencies and Percentages of Children From Group 1 who were Diagnosis-free and Children who were At Risk for Anxiety at Each Time Point

Time point	Monitoring group			Intervention group		
	Diagnosis-free *n* (%)	At risk *n* (%)	Group *n*	Diagnosis-free *n* (%)	At risk *n* (%)	Group *n*
Pretest	100%	0%	350	100%	0%	356
Posttest	313 (92.6%)	25 (7.4%)	338	322 (93.1%)	24 (6.9%)	346
6 months	284 (93.7%)	19 (6.3%)	303	298 (94.6%)	17 (5.4%)	315

Effects on depressive symptoms. At posttest, a one-tailed independent sample *t*-test revealed a statistically significant ($p < .05$) decrease in the severity of depressive symptoms of children in the intervention group, when compared to those from monitoring group. The effect size at posttest was of a small magnitude. No statistically significant differences were found for group 1 at 6-month follow-up (see Table 11).

Table 11

Means, SDs, T-tests, and ES for the CDI of Group 1 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	8.70	5.00	350	8.26	5.30	530	1.13	.13	N/A
Posttest	9.13	5.72	339	7.25	5.19	346	4.49	.00*	-0.34
6 months	7.72	5.91	302	6.77	5.16	311	2.12	.17	-0.17

Note. * $p < .05$. The lower the mean score, the better. A negative effect size would be considered to be a positive change. N/A = not applicable.

Changes over time. For the monitoring group, a statistically significant increase in the severity of children's depressive symptoms was observed at posttest, [t (336) = -2.41, $p < .025$]. At 6-month follow-up, the monitoring group showed a statistically significant decrease in the severity of children's depressive symptoms [t (296) = 4.79, $p < .025$]. The intervention group showed a statistically significant decrease in the severity of children's depressive symptoms at posttest [t (333) = 5.02, $p < .025$]. At 6-month follow-up, the change was not statistically significant [t (298) = 0.41, $p > .025$], and scores indicated that gains were maintained.

Risk analysis of depression. Chi-square analyses were conducted on the CDI to examine the difference between the monitoring and intervention group on children's risk status for depression at each time point. Frequencies and percentages of the risk status for depression of group 1 are presented in Table 12. Chi-square analyses revealed

statistically significant differences between the intervention and monitoring groups in the pattern of frequencies of children's risk status for depression at posttest [$\chi^2(1, n = 685) = 7.26, p < .05$], indicating that there were fewer children at risk for depression in the intervention group than in the monitoring group. There were no statistically significant differences found at 6-month follow-up [$\chi^2(1, n = 613) = 0.29, p > .05$].

Table 12

Frequencies and Percentages of Children From Group 1 who were Diagnosis-free and Children who were At Risk for Depression at Each Time Point

Time point	Monitoring Group			Intervention Group		
	Diagnosis-free	At risk		Diagnosis-free	At risk	
	n (%)	*n* (%)	*n*	*n* (%)	*n* (%)	*n*
Pretest	311 (88.9%)	39 (11.1%)	350	309 (87.8%)	43 (12.2%)	352
Posttest	282 (83.2%)	57 (16.8%)	339	312 (90.2%)	34 (9.8%)	346
6 months	272 (90.1%)	30 (9.9%)	302	284 (91.3%)	27 (8.7%)	311

Effects on coping skills. At both time points, the one-tailed independent sample *t*-tests revealed a statistically significant increase ($p < .05$) in the proactive coping skills of children from the intervention group, when compared to those from the monitoring group. The effect sizes for posttest and 6-month follow up were considered of a small magnitude (see Table 13).

Table 13

Means, SDs, T-tests, and ES for the Coping Skills Questionnaire of Group 1 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	9.72	2.51	350	9.43	2.66	355	1.45	.08	N/A
Posttest	9.75	2.56	338	8.85	2.62	346	4.55	.00*	-0.35
6-months	9.51	2.59	301	8.84	2.88	313	3.05	.01*	-0.25

Note. * $p < .05$. The lower the mean score, the better. A negative effect size would be considered to be a positive change. N/A = not applicable.

Changes over time. For the monitoring group, no statistically significant change was observed at posttest [t (336) = -0.54, $p > .025$] or at 6-month follow-up [t (294) = 1.06, $p > .025$]. At posttest, children from the intervention group showed a statistically significant increase in their proactive coping skills [t (335) = 3.35, $p < .025$]. At 6-month follow-up, no statistically significant changes in coping skills were observed for the intervention group [t (299) = 0.41, $p > .025$], and scores indicated that gains were maintained.

Group 2: Children At Risk for Anxiety, Excluding Those With LD

Effects on anxiety symptoms. The one-tailed independent sample *t*-tests revealed no statistically significant differences ($p > .05$) in the severity of children' s anxiety

symptoms for group 2 between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 14).

Table 14

Means, SDs, T-tests, and ES for the SCAS of Group 2 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	45.89	3.81	73	47.00	5.30	63	1.41	.08	N/A
Posttest	39.55	9.87	73	39.03	10.60	64	0.93	.39	-0.05
6 months	35.92	11.19	62	35.77	9.33	57	0.26	.47	-0.01

Changes over time. To evaluate changes over time, related sample *t*-tests were conducted for each condition at each time point. For the monitoring group, a statistically significant decrease in the severity of children's anxiety symptoms was observed at posttest [t (70) = 6.43, $p < .025$] and at 6-month follow-up [t (61) = 2.27, $p < .025$]. In the same way, the children from the intervention group reported a statistically significant decrease in the severity of anxiety symptoms at posttest [t (62) = 7.00, $p < .025$] and at 6-month follow-up [t (56) = 2.49, $p < .025$].

Risk analysis of anxiety. Chi-square analyses were conducted on the SCAS to examine the difference between the monitoring and intervention group on children's risk status for anxiety at each time point. Frequencies and percentages of the risk status for anxiety of group 2 are presented in Table 15. Chi-square analyses revealed no statistically

significant differences between the intervention and monitoring groups for group 2 in the pattern of frequencies of children's risk status for anxiety at posttest [$\chi^2(1, n = 137) = 0.01, p > .05$] or 6-month follow-up [$\chi^2(1, n = 119) = 0.70, p > .05$].

Table 15

Frequencies and Percentages of Children From Group 2 who were Diagnosis-free and Children who were At Risk for Anxiety at Each Time Point

Time point	Monitoring group			Intervention group		
	Diagnosis-free	At risk	Group	Diagnosis-free	At risk	Group
	n (%)	*n* (%)	*n*	*n* (%)	*N* (%)	*n*
Pretest	0%	100%	75	0%	100%	64
Posttest	39 (52%)	34 (46.6%)	73	34 (53.1%)	30 (46.9%)	64
6 months	39 (62.9%)	23 (37.1%)	62	40 (70.2%)	17 (29.8%)	57

Effects on depressive symptoms. At posttest, the one-tailed independent sample *t*-test revealed a statistically significant decrease ($p < 0.5$) in the severity of depressive symptoms of children from the intervention group, when compared to those from the monitoring group. The effect size at posttest was of a small magnitude. No statistically significant differences were found for group 2 at 6-month follow-up (see Table 16).

Table 16

Means, SDs, T-tests, and ES for the CDI of Group 2 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	12.11	6.35	73	12.75	5.82	63	0.61	.28	N/A
Posttest	12.85	6.55	72	10.57	6.40	63	2.04	.02*	-0.35
6 months	11.21	6.71	63	10.68	5.79	56	0.46	.33	-0.08

Note. * $p < .05$. The lower the mean score, the better. A negative effect size would be considered a positive change. N/A = not applicable.

Changes over time. For the monitoring group, a statistically significant increase in the severity of children's depressive symptoms was observed from pretest to posttest [t (70) = -1.09, $p < .025$]. From posttest to 6-month follow-up, there were no statistically significant differences in the severity of depressive symptoms of children from the monitoring group [t (61) = 1.90, $p > .025$]. The intervention group showed a statistically significant decrease in the severity of children's depressive symptoms at posttest [t (62) = 3.32, $p < .025$]. At 6-month follow-up, there were no statistically significant differences in the depressive symptoms of children from the intervention group [t (56) = -1.03, $p > .025$], and scores indicated that gains were maintained.

Risk analysis of depression. Chi-square analyses were conducted on the CDI to examine the difference between the monitoring and intervention group on children's risk status for depression at each time point (see Table 17). Chi-square analyses revealed no

statistically significant differences for group 2 in the pattern of frequencies of children's risk status for depression at posttest [$\chi^2(1, n = 135) = 1.60, p > .05$] or at 6-month follow-up [$\chi^2(1, n = 119) = 0.01, p > .05$].

Table 17

Frequencies and Percentages of Children From Group 2 who were Diagnosis-free and At Risk for Depression at Each Time Point

Time point	Monitoring group			Intervention group		
	Diagnosis-free *n* (%)	At risk *n* (%)	*n*	Diagnosis-free *n* (%)	At risk *n* (%)	*n*
Pretest	54 (74%)	19 (26%)	73	46 (73%)	17 (27%)	63
Posttest	49 (68.1%)	23 (31.9%)	72	49 (77.8%)	14 (22.2%)	63
6 months	46 (73%)	17 (27%)	63	41 (64.1%)	15 (23.4%)	56

Effects on coping skills. One-tailed independent sample *t*-tests revealed no statistically significant differences ($p < .05$) in coping skills between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 18).

Table 18

Means, SDs, T-tests, and ES for the Coping Skills Questionnaire of Group 2 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	9.12	2.66	74	9.47	2.70	62	0.75	.23	N/A
Posttest	9.47	2.85	73	9.08	2.46	64	0.85	.20	-0.15
6 months	9.19	2.30	62	8.67	2.04	57	1.31	.10	-0.24

Changes over time. For the monitoring group, no statistically significant change in coping skills was observed at posttest [t (71) = -1.05, $p > .025$] or at 6-month follow-up, [t (61) = 0.20, $p > .025$]. In the same way, the intervention group reported no statistically significant change in coping skills at posttest [t (61) = 1.00, $p > .025$] or at 6-month follow-up [t (56) = 0.51, $p > .025$].

Group 3: Children With LD and Risk for Anxiety

Effects on anxiety symptoms. For group 3, the one-tailed independent sample *t*-tests revealed no statistically significant differences in the severity of children's anxiety symptoms ($p > .05$) between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 19).

Table 19

Means, SDs, F Ratio, and ES for the SCAS of Group 3 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	47.92	3.87	12	46.71	5.08	17	0.69	.25	N/A
Posttest	29.67	13.65	12	33.29	12.31	17	0.75	.23	0.28
6 months	21.36	12.19	11	30.44	13.49	16	1.78	.05	0.70

Changes over time. To evaluate changes over time, related sample *t*-tests were conducted for each condition at each time point. For the monitoring group, a statistically significant decrease in the severity of children's anxiety symptoms was observed at posttest [$t\ (11) = 5.70$, $p < .025$] and at 6-month follow-up [$t\ (10) = 3.22$, $p < .025$]. In the same way, the intervention group reported a statistically significant decrease in the severity of children's anxiety symptoms at posttest [$t\ (16) = 5.44$, $p < .025$]. At 6-month follow-up, no statistically significant change was found for the intervention group [$t\ (15) = 0.87$, $p > .025$], and scores indicated that gains were maintained.

Risk analysis of anxiety. Chi-square analyses were conducted on the SCAS to examine the difference between the monitoring and intervention groups in children's risk status for anxiety at each time point. Frequencies and percentages of the risk status for anxiety of group 3 are presented in Table 20. Chi-square analyses revealed no significant

differences in the pattern of frequencies of children's risk for anxiety at posttest [$\chi^2(1, n = 29) = 1.97, p > .05$] or at 6-month follow-up [$\chi^2(1, n = 28) = 3.50, p > .05$].

Table 20

Frequencies and Percentages of Children From Group 3 who were Diagnosis-free and Children who were At Risk for Anxiety at Each Time Point

Time point	Monitoring group			Intervention group		
	Diagnosis-free *n* (%)	At risk *n* (%)	*n*	Diagnosis-free *n* (%)	At risk *n* (%)	*n*
Pretest	0%	100%	12	0%	100%	17
Posttest	10 (83.3%)	2 (16.75)	12	10 (58.8%)	7 (41.2%)	17
6 months	100%	0%	12	12 (75%)	4 (25%)	16

Results of the ADIS-C interviews. Children with LD who also showed risk for anxiety on the SCAS were administered an anxiety disorder interview. Patterns of change and the frequencies and percentages of children in each category are shown in Table 21. Chi-square analysis revealed no statistically significant differences between the intervention and monitoring groups in the change of children's diagnosis at posttest [$\chi^2(3, n = 29) = 1.97, p > .05$] or at 6-month follow-up [$\chi^2(3, n = 31) = 7.35, p > .05$].

Table 21

ADIS-C Patterns of Children's Diagnosis Change

Time point	Condition	Improved	Remained DF	Remained AD	Got worse
Pre to post	Intervention	3 (18.75%)	5 (31.25%)	1 (6.25%)	7 (43.75%)
	Monitoring	3 (23.08%)	7 (53.85%)	2 (15.38%)	1 (7.69%)
Post to 6M	Intervention	4 (22.22%)	4 (22.22%)	4 (22.22%)	6 (33.34%)
	Monitoring	2 (15.39%)	9 (69.23%)	1 (7.69%)	1 (7.69%)

Note. Remained DF = still diagnosis-free; Remained AD = still showing an anxiety disorder.

Effects on depressive symptoms. One-tailed independent sample *t*-tests revealed no statistically significant differences ($p < .05$) in the severity of children's depressive symptoms at posttest or at 6-month follow-up between the intervention and monitoring groups (see Table 22).

Table 22

Means, SDs, T-tests, and ES for the CDI of Group 3 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	15	5.82	12	13	7.58	17	0.69	.25	N/A
Posttest	10.75	4.58	12	11.59	8.77	17	0.30	.39	0.11
6 months	7.92	5.84	12	7.72	7.45	15	0.10	.48	-0.03

Changes over time. For the monitoring group, a statistically significant decrease in the severity of children's depressive symptoms was observed at posttest [t (11) = 2.81, $p < .025$] and at 6-month follow-up [t (11) = 2.55, $p < .025$]. No statistically significant differences were found for the intervention group at posttest [t (16) = 0.94, $p > .025$] or at 6- month follow-up [t (14) = 2.08, $p > .025$].

Risk analysis of depression. Chi-square analyses were conducted on the CDI to examine the difference between the monitoring and intervention group on children's risk status for depression at each time point (see Table 23). Chi-square analyses revealed no significant differences between the intervention and monitoring groups in the pattern of frequencies of children's risk status for depression at posttest [$\chi^2(1, n = 29) = 0.35, p > .05$] or at 6-month follow-up [$\chi^2(1, n = 27) = 0.17, p > .05$].

Table 23

Frequencies and Percentages of Children From Group 3 who were Diagnosis-free and Children who were At Risk for Depression at Each Time Point

Time point	Monitoring group			Intervention group		
	Diagnosis-free *n* (%)	At risk *n* (%)	*n*	Diagnosis-free *n* (%)	At risk *n* (%)	*n*
Pretest	6 (50%)	6 (50%)	12	11 (64.7%)	6 (35.3%)	17
Posttest	9 (75%)	3 (25%)	12	11 (64.6%)	6 (35.4%)	17
6 months	11 (91.7%)	1 (8.3%)	12	13 (86.7%)	2 (13.3%)	15

Effects on coping skills. One-tailed independent sample *t*-tests revealed no statistically significant differences ($p < .05$) in coping skills between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 24).

Table 24

Means, SDs, T-tests, and ES for the Coping Skills Questionnaire of Group 3 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	8.67	2.77	12	10.76	2.33	17	0.69	.25	N/A
Posttest	10.58	2.39	12	9.13	3.61	16	1.21	.12	-0.46
6 months	10.18	2.23	11	10.63	3.70	16	0.36	.37	0.14

Changes over time. For the monitoring group, a statistically significant increase in children's coping difficulties was observed at posttest [t (11) = -2.31, $p < .025$]. At 6-month follow-up, a statistically significant increase in children's proactive coping skills was observed [t (10) = 2.55, $p < .025$]. Changes in the intervention group were not statistically significant at posttest [t (15) = 1.89, $p > .025$] or at 6-month follow-up [t (14) = -1.85, $p > .025$].

Effects on self-concept. One-tailed independent sample *t*-tests revealed no statistically significant differences ($p > .05$) in the levels of self-concept between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 25).

Table 25

Means, SDs, T-tests, and ES for the Piers-Harris 2 of Group 3 at Each Time Point

Time point	Monitoring			Intervention			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	45.54	7.34	13	43.53	9.46	15	0.62	.27	N/A
Posttest	48.00	8.54	13	50.60	8.66	15	0.79	.22	0.02
6 months	52.00	7.97	12	52.21	9.01	14	0.10	.48	0.01

Changes over time. For the monitoring group, no statistically significant changes were observed at posttest [t (12) = -1.77, $p > .025$] or at 6-month follow-up [t (11) = -1.94, $p > .025$]. The intervention group showed a statistically significant increase in children's positive levels of self-concept at posttest [t (13) = -3.58, $p > .025$]. At 6-month follow-up, the change of the intervention group was not statistically significant [t (112) = -0.77, $p >.025$], and scores indicated that gains were maintained.

Effects on children's behavior problems, as rated by parents. One-tailed independent sample *t*-tests revealed no statistically significant differences ($p > .05$) in children's behavioral problems between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 26).

Table 26

Means, SDs, T-tests, and ES for the Total Score of CBCL for Group 3 at Each Time Point

Time point	Monitoring			Intervention			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	62.23	7.98	13	60.93	12.76	15	0.32	.38	N/A
Posttest	59.42	8.08	12	63.75	6.45	12	1.45	.08	0.09
6 months	58.23	10.17	13	51.08	11.78	12	1.63	.06	0.10

Changes over time. From pretest to posttest, a statistically significant decrease in children's behavior problems was observed for the monitoring group [t (11) = 2.49 $p <$ .025]. No statistically significant change was observed for the monitoring group at 6-month follow-up [t (11) = 0.54, $p >$ .025]. The intervention group reported no statistically significant change at posttest [t (10) = 0.74, $p >$ .025]. At 6-month follow-up, the intervention group reported a statistically significant decrease in children's behavior problems [t (8) = 2.91, $p <$ .025].

Effects on children's internalizing problems, as rated by parents. At posttest, the one-tailed independent sample t-test revealed no statistically significant differences ($p >$.05) in the severity of children's internalizing symptoms. At 6-month follow-up, a statistically significant decrease ($p <$ .05) in the severity of internalizing problems was observed for children from the intervention group, when compared to those from the monitoring group. The effect size at posttest was of small magnitude (see Table 27).

Table 27

Means, SDs, T-tests, and ES for the Internalizing Subscale of the CBCL for Group 3 at Each Time Point

Time point	Monitoring			Intervention			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	63.23	10.35	13	58.93	10.54	15	1.09	.15	N/A
Posttest	62.17	7.15	12	63.17	7.43	12	0.33	.37	0.01
6-months	61.38	11.46	45	50.42	9.37	112	2.61	.01*	0.23

Note. * $p < .05$. The lower the mean score, the better. A negative effect size would be considered to be a positive change. N/A = not applicable.

Changes over time. For the monitoring group, no statistically significant changes in the severity of children's internalizing symptoms were observed at posttest [t (11) = 0.78 $p > .025$] or at 6-month follow-up [t (11) = 0.12, $p > .025$]. The intervention group reported a no statistically significant change at posttest [t (10) = -0.05, $p > .025$]. At 6-month follow-up, the intervention group reported a statistically significant decrease in the severity of children's internalizing problems [t (8) = 3.36, $p < .025$].

Group 4: Children With LD and Diagnosis-free for Anxiety

Effects on anxiety symptoms. For group 4, one-tailed independent sample *t*-tests revealed no statistically significant differences ($p > .05$) in the severity of children's anxiety symptoms between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 28).

Table 28

Means, SDs, T-tests, and ES for the SCAS of Group 4 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	26.55	8.76	40	28.23	7.03	61	1.06	.15	N/A
Posttest	24.25	10.13	40	27.56	9.32	59	1.67	.05	0.34
6 months	21.71	9.07	35	23.95	11.16	55	3.16	.16	0.21

Changes over time. To evaluate changes over time, related sample *t*-tests were conducted for each condition at each time point. No statistically significant change in the severity of children's anxiety symptoms was observed for the monitoring group at posttest [$t\ (39) = 1.84$, $p > .025$] or at 6-month follow-up [$t\ (34) = 1.35$, $p > .025$]. In the same way, the intervention group did not show a statistically significant change in the severity of children's anxiety symptoms at posttest [$t\ (58) = 0.66$, $p > .025$]. At 6-month

follow-up, the intervention group reported a statistically significant decrease in the severity of children's anxiety symptoms [t (53) = 2.54, $p < .025$].

Risk analysis of anxiety. Chi-square analyses were conducted for group 4 on the SCAS to examine the difference between the monitoring and intervention group on children's risk status for anxiety at each time point. Frequencies and percentages of the risk status for anxiety of group 4 are presented in Table 29. Chi-square analysis revealed no statistically significant differences for group 4 in the pattern of frequencies of children's risk status for anxiety at posttest [$\chi^2(1, n = 99) = 0.03, p > .05$]. Statistically significant differences were found at 6-month follow-up [$\chi^2(1, n = 90) = 4.09, p < .05$].

Table 29

Frequencies and Percentages of Children From Group 4 who were Diagnosis-free and Children who were At Risk for Anxiety at Each Time Point

Time point	Monitoring group			Intervention group		
	Diagnosis-free *n* (%)	At risk *n* (%)	*n*	Diagnosis-free *n* (%)	At risk *n* (%)	*n*
Pretest	100%	0%	40	100%	0%	61
Posttest	37 (92.5%)	3 (7.5%)	40	54 (91.5%)	5 (8.5%)	59
6-months	100%	0%	40	49 (80.3%)	6 (9.8%)	55

Effects on depressive symptoms. One-tailed independent sample *t*-tests revealed no statistically significant differences ($p < .05$) between the intervention and monitoring

group in the severity of children's depressive symptoms at posttest or at 6-month follow-up (see Table 30).

Table 30

Means, SDs, T-tests, and ES for the CDI of Group 4 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	9.40	4.80	40	10.64	5.88	61	1.06	.15	N/A
Posttest	10.03	5.78	38	9.78	7.47	58	0.17	.43	-0.04
6 months	8.09	5.31	34	10.00	8.91	53	1.23	.13	0.25

Changes over time. For the monitoring group, no statistically significant changes were observed in the severity of children's depressive symptoms at posttest [t (39) = -0.97, $p > .025$] or at 6-month follow-up [t (34) = 1.69, $p > .025$]. In the same way, the intervention group did not report any statistically significant change in the severity of children's depressive symptoms at posttest [t (58) = 1.02, $p > .025$] or at 6-month follow-up [t (50) = -0.47, $p > .025$].

Risk analysis of depression. Chi-square analyses were conducted for group 4 on the CDI to examine the difference between the monitoring and intervention group on children's risk status for depression at each time point (see Table 31). Chi-square analyses revealed no statistically significant differences ($p > .05$) between the intervention and monitoring groups for group 4 in the pattern of frequencies of children's

risk status for depression at posttest [$\chi^2(1, n = 97) = 0.13, p > .05$] or at 6-month follow-up [$\chi^2(1, n = 87) = 0.51, p > .05$].

Table 31

Frequencies and Percentages of Children From Group 4 who were Diagnosis-free and Children who were At Risk for Depression at Each Time Point

Time point	Monitoring group			Intervention group		
	Diagnosis-free	At risk	*n*	Diagnosis-free	At risk	*n*
	N (%)	*N* (%)		*n* (%)	*n* (%)	
Pretest	34 (85%)	6 (15%)	40	47 (77%)	14 (23%)	61
Posttest	29 (72.5%)	10 (25%)	39	45 (73.8%)	13 (22.4%)	58
6 months	29 (85.3%)	5 (14.7%)	34	42 (79.24%)	11 (20.76)	53

Effects on coping skills. One-tailed independent sample *t*-tests revealed no statistically significant differences ($p > .05$) in coping skills between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 32).

Table 32

Means, SDs, T-tests, and ES for the Coping Skills Questionnaire of Group 4 at Each Time Point

Time point	Monitoring group			Intervention group			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	9.78	2.87	40	10.21	2.33	61	0.84	0.20	N/A
Posttest	9.87	2.32	39	10.27	2.86	59	0.73	0.24	0.15
6 months	10.06	2.70	35	9.89	2.95	55	0.26	0.39	-0.06

Changes over time. For the monitoring group, no statistically significant changes in coping skills were observed at posttest [t (38) = 0.00, $p > .025$] or at 6-month follow-up [t (34) = 0.05, $p > .025$]. In the same way, the intervention group reported no statistically significant changes in coping skills at posttest [t (59) = -0.14, $p > .025$] or at 6-month follow-up [t (53) = 1.16, $p > .025$].

Effects on self-concept. One-tailed independent sample *t*-tests revealed no statistically significant differences ($p > .05$) in the children's levels of self-concept between the intervention and monitoring groups of group 4 at posttest or at 6-month follow-up (see Table 33).

Table 33

Means, SDs, T-tests, and ES for the Piers-Harris 2 of Group 4 at Each Time Point

Time point	Monitoring			Intervention			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	47.69	8.33	39	48.48	8.71	62	0.45	.33	N/A
Posttest	47.67	9.24	39	48.64	8.47	61	0.54	.30	0.01
6 months	51.33	8.65	36	48.13	10.59	53	1.50	.07	0.02

Changes over time. For the monitoring group, no statistically significant changes were observed at posttest [t (38) = 0.02, $p > .025$]; however, at 6-month follow-up, a statistically significant increase in children's levels of positive self-concept was reported [t (35) = -2.65, $p < .025$]. Children from the intervention group did not report any statistically significant changes at posttest [t (59) = -0.17, $p > .025$] or at 6-month follow-up [t (51) = 0.37, $p > .025$].

Effects on children's behavior problems, as rated by parents. One-tailed independent sample t-tests revealed no statistically significant differences ($p > .05$) in children's behavioral problems between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 34).

Table 34

Means, SDs, T-tests, and ES for the Total Score of CBCL for Group 4 at Each Time Point

Time point	Monitoring			Intervention			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	62.49	8.40	35	63.46	9.29	56	0.51	.31	N/A
Posttest	57.16	9.24	32	58.48	9.99	50	0.60	.28	0.01
6 months	55.75	11.05	32	56.69	10.75	52	0.39	.35	0.01

Changes over time. From pretest to posttest, a statistically significant decrease in behavior problems was observed for children from the monitoring group [t (29) = 3.98 p < .025]. No statistically significant changes were observed for the monitoring group at 6-month follow-up [t (25) = 0.80, p > .025]. The intervention group reported a statistically significant decrease in children's behavior problems at posttest [t (45) = 4.53, p < .025] and at 6-month follow-up [t (41) = 2.62, p < .025].

Effects on children's internalizing problems, as rated by parents. One-tailed independent sample *t*-tests revealed no statistically significant differences (p >.05) in the severity of children's internalizing symptoms between the intervention and monitoring groups at posttest or at 6-month follow-up (see Table 35).

Table 35

Means, SDs, T-tests, and ES for the Internalizing Subscale of the CBCL for Group 4 at Each Time Point

Time point	Monitoring			Intervention			Statistical tests		
	M	*SD*	*n*	*M*	*SD*	*n*	*t*	*p*	*d*
Pretest	62.71	8.84	35	63.61	9.56	56	0.45	.33	N/A
Posttest	55.31	10.86	32	59.00	11.50	50	1.45	.08	0.03
6 months	54.91	11.58	32	57.63	9.80	152	1.16	.13	0.02

Changes over time. For the monitoring group, a statistically significant decrease in the severity of children's internalizing problems was observed at posttest [t (29) = 4.65 $p < .025$]. No statistically significant differences were found at 6-month follow-up [t (25) = -0.45, $p > .025$]. The intervention group reported a statistically significant decrease in the severity of children's internalizing problems at posttest [t (45) = 3.41, $p < .025$] and at 6-month follow-up [t (41) =2.50, $p < .025$].

CHAPTER 5

Discussion

It has been frequently reported that an increasing number of school-aged children experience social and emotional problems that negatively affect their school performance and interpersonal functioning (Garland et al., 2001; World Health Organization, 2004). About 10%–20% of children have experienced an anxiety disorder (Kashani & Orvaschel, 1990; Medina-Mora et al., 2003), and, if untreated, it may bring a broad range of negative consequences to the life of the child and his or her family (e.g., substance abuse, deviant conduct, economic expenses). Anxiety during primary school years is the main risk factor for depression in adolescence and adulthood, and according to the World Health Organization (2004), depression is expected to be the second-ranked cause of disease by 2020. Some conditions such as learning disabilities (LD) may increase the risk for developing anxiety in childhood. Children with LD are more prone to experience social and emotional difficulties, as they often confront low achievement, academic failure and performance anxiety, which over time may affect their self-esteem and confidence and trigger high anxiety and depressive symptoms (Margalit & Zak, 1984; Sharma, 2004).

The FRIENDS program was chosen as it has shown to be an effective with typically developing peers and children at risk for anxiety. The current study extended the effectiveness of this program, as a universal school-based cognitive-behavioral intervention for Mexican primary school children, including a subsample of children with LD. The effectiveness of the program was determined by decreases in children's anxiety

and depressive symptoms, decreases in risk status for anxiety and depression, and increases in proactive coping skills. The program also evaluated changes in the levels of self-concept of children with LD and their behavior problems as rated by parents. The current study is innovative, as it is the first to examine the effect of a prevention program with Spanish-speaking children from a low-SES background. Furthermore, it moves a step forward by also analyzing the effect of a universal prevention program with children with LD.

The aims of this chapter are to discuss the major findings of this study, the implications for practice, the limitations of the study, and suggestions for further research. The results of this study will be discussed by research question and preliminary hypothesis. The 6-month follow-up data should be interpreted with caution. Children receiving outside treatment could affect the data; for ethical reasons, after posttest, all children who were above the clinical cut-off for anxiety and depression were identified, and the school and their parents were provided options for treatment. From the monitoring group, 13.25% of children were referred for anxiety and 14.06% for depression; from the intervention group, 12.25% were referred for anxiety and 14.81% for depression. The number of children actually receiving outside treatment is unknown.

In this study, about 1 out of 10 children experienced clinical anxiety, a figure that is slightly lower than what previous research has reported (2 out of 10 children) (e.g., Dadds et al., 1997). However, almost 2 out of 10 children, 14.45% of the population sample, were experiencing clinical depression; this figure is higher than expected. Researchers have reported that only 2%–3% of primary-aged children experience clinical

depression, as it usually starts to develop later during adolescence (Roberts, Lewinsohn, & Seely, 1995). This difference in the prevalence levels appears to be a cultural difference in the manifestation of anxiety and depression in the Mexican population. This discrepancy is something worth exploring in the future, as the other studies were conducted with Anglo-Saxon populations.

Effect of the Intervention for the Overall Sample

To determine the effectiveness of the program, the coping skills, anxiety and depressive symptoms, and the risk status for anxiety and depression of children in the intervention were compared to that of children in the monitoring condition. Results from this study showed that the program had no impact on the severity of children's anxiety symptoms. It showed that statistically, it had a small impact by decreasing the severity of depressive symptoms and the number of children at risk for depression, and by increasing the proactive coping skills of children receiving the program. These changes were maintained after 6 months. However, it should be noted that these changes were not strong enough to reach clinical significance.

The impact of the program on the severity of children's anxiety symptoms needs further investigation. Results do not confirm the preliminary hypothesis and are not similar to findings from Gallegos et al.'s (2006) synthesis, where the overall effect size at posttest for universal CBT prevention on anxiety was $d = 0.34$. In the same way, results of this study were not as positive as previous research, in which children receiving the intervention reported significantly lower severity of anxiety symptoms when compared to those in the monitoring group (e.g., Lowry-Webster et al., 2001; Lock & Barrett, 2003).

There are several possible explanations for the lack of statistical differences of this study. First, it could be that the intervention was not able to produce a decrease in the severity of anxiety symptoms of Mexican children receiving the program. Second, a delayed preventative effect could occur, similar to the Barrett, Lock, & Farrell (2005) study, in which the differences in the severity of children's anxiety symptoms were apparent only at 12-month follow-up. Lastly, in the current study, children in both groups reported a statistically but not clinically significant decrease in the severity of anxiety symptoms over time; one possible explanation is that this decrease is part of their developmental pathway.

In comparison to previous research, this study resulted in a larger decrease in the severity of depressive symptoms among children from the intervention group. The benefit of the intervention in this study was almost immediate (posttest), whereas in previous research, statistically significant changes in the severity of children's depressive symptoms (Lowry-Webster et al., 2003) were seen only after 12 months. In the current study, the monitoring group reported a statistically significant decrease in the severity of children's depressive symptoms at 6-month follow-up. This was an unexpected finding, and it is unclear why children from the monitoring group reported an increase in the severity of their depressive symptoms at posttest and then a decrease after 6 months. Possible explanations are the effects of receiving outside treatment or that these fluctuations are part of children's developmental pathway.

Only one study has evaluated coping skills (Lock & Barrett, 2003) and reported findings similar to the current study, in that children receiving the intervention reduced

their behavioral avoidance and increased their ability to confront situations that they deemed stressful.

In the current study, the finding that within a short period of time, and without the aid of any specialist, classroom teachers implementing the program helped reduced the number of children at risk for depression by 2.6% is encouraging and might show a preventive effect. This effect is further supported by the finding that the number of children at risk for depression in the monitoring group increased by 5.4% within the same period of time, suggesting that these problems without an effective intervention rapidly escalate.

These small improvements of lower depressive symptoms and higher proactive coping skills might be the result of children learning positive thinking, establishing social support networks, practicing relaxation techniques, and developing a coping plan to confront a difficult situation (Barrett, 2004). Key factors such as program duration and frequency could have also played an important role, as the program was delivered through a highly structured protocol during 10 consecutive sessions and provided two booster sessions to promote maintenance. Research has shown that teachers could be effective group leaders, thus providing several advantages such as low attrition rate, no stigma due to labeling children, no high costs of bringing in outsiders and providing later treatment, and a normalization of social and emotional learning in the classroom context as part of the school curriculum (Barrett & Turner, 2001; Dozois & Dobson, 2004). More research is needed to investigate what mechanisms need to be in place and/or what adaptations need to be made to the program in order to increase the magnitude of its

impact on depressive symptoms and proactive coping skills, and to target anxiety symptoms.

Effect of Intervention by Subgroup

To determine the effect of the intervention on the coping skills, severity of anxiety and depressive symptoms, risk status for anxiety and depression, levels of self-concept, and behavior problems for different types of children, the sample was divided into four subgroups: (1) diagnosis-free for anxiety, excluding children with LD; (2) at risk for anxiety, excluding those with LD; (3) children with LD who are also at risk for anxiety; and (4) children with LD who are diagnosis-free for anxiety.

Group 1: Children Diagnosis-free for Anxiety, Excluding Those With LD

Results from this study showed that the program had no impact on the severity of children's anxiety symptoms. It showed a statistically significant but small impact by decreasing the severity of depressive symptoms and the number of children at risk for depression, and by increasing the proactive coping skills of children receiving the program. These changes were maintained after 6 months, but none were strong enough to reach clinical significance.

The results of the current study are not as positive as the results from Gallegos et al.'s (2006) synthesis, which reported that prevention programs that used the CBT model produced statistically significant changes of small impact on the severity of anxiety symptoms (d = -0.15) for children who were diagnosis-free for anxiety. Not finding statistically significant differences between groups on the frequencies of children at risk for anxiety was not surprising because being "diagnosis-free for anxiety" at pretest was

the requirement to enter this subgroup, so there was nothing to changed. It is still unclear why the severity of anxiety symptoms decreased over time instead of remaining stable, and further investigation is needed. A possible explanation could be that this decrease is part of children's developmental pathway.

Results of the current study regarding depressive symptoms and coping skills are parallel to the overall sample results. Although the impact of the program was small, that the children receiving the program decreased the severity of their depressive symptoms and that the program was helpful in placing them in an even lower risk status for depression were additional benefits observed, as the intervention was not expected to produce any changes in the risk factors of the subsample of "healthy" children. When paired with the finding of a statistically significant increase in the severity of depressive symptoms and in the risk status for depression of children in the monitoring group at posttest, these results suggest that a preventive effect might be occurring.

In the same way as for the overall sample, children in the monitoring group reported an increase in the severity of their depressive symptoms at posttest and then a decrease after 6 months. This decrease could be because of children receiving outside treatment, or these fluctuations could be part of children's developmental pathway.

The statistically significant increase in the proactive coping skills reported by the children diagnosis-free for anxiety in the intervention group suggests that this program might be useful to promote emotional resilience within the school community, as it also targeted the protective factors of children who are not at risk, which is one of the main reasons for implementing a school-based program.

With a small impact, the intervention in the current study met the two essential principles for implementing a universal school-based prevention program: It reduced the occurrence of future problems in those at risk and at the same time promoted positive competences and skills of individuals who did not report a risk status (Gordon, 1987; Simmeonsson & Simmeonsson, 1999; Sandler, 2001).

Unfortunately, it is impossible to compare these findings with previous research, as they do not provide information by stratified group. Most of the research provides overall results and results for the subgroup of "risk for anxiety". Further research should provide detailed information regarding their participants' characteristics and the results for each type of group of children.

Further investigation is needed on the suggested sequential nature of anxiety preceding depression (Bourne, 1999; Craske, 1999; Dozois & Westra, 2004; Ollendick et al., 2005). Findings from this study showed that 11.1% of 9- to 11-year-old children were experiencing risk for depression without showing high levels of anxiety symptoms. It is important to further explore the expressions of anxiety and depression in Mexican children, as under the assumption that depression will come only afterward, current education and health strategies might be missing an opportunity to provide help to this particular group of children. This is also crucial information for program developers and decision-makers.

Group 2: At Risk for Anxiety, Excluding Those With LD

Results from this study showed that the program had no impact on the severity of children's anxiety symptoms or in their coping skills. At posttest, both experimental

groups reported a statistically and clinically significant decrease in their anxiety symptoms. The program showed a statistically significant but small impact by decreasing the severity of children's depressive symptoms. Changes in the severity of children's depressive symptoms showed to be maintained after 6 months.

For this subgroup of children at risk for anxiety, the decrease in the severity of anxiety symptoms of both groups over time was even more pronounced than for the overall sample and for children diagnosis-free for anxiety. Previous studies reporting on the effectiveness of this prevention program for children at risk for anxiety have shown mixed findings. Some found the program effective in reducing the severity of anxiety symptoms and the percentage of children at risk for anxiety (e.g., Lowry-Webster et al., 2001; Lowry-Webster et al., 2003), whereas others (e.g., Barrett & Turner, 2001; Lock & Barrett, 2003), like the current study, found only the pattern of decreasing anxiety over time for both groups. It could also be that the scores of children at risk for anxiety in both groups, intervention and monitoring, are reflecting a "social desirability bias," in which they tend to deny their anxiety and report improvement because they want to be perceived as "good" (Essau & Barrett, 2002; Smith, Driver, Lafferty, Burrell, & Devonport, 2002).

The lack of significant differences in the severity of anxiety symptoms do not support the findings from Gallegos et al.'s (2006) synthesis, in which the children at risk for anxiety reported a large effect size of d = -0.60. These findings were unexpected, as this program was developed taking into account the risk and protective factors that interplay in children experiencing anxiety and used cognitive-behavioral techniques,

which have proven to be the most effective. Compelling explanations for this lack of significant differences could include that the intervention was not well tailored for the needs of Mexican children experiencing anxiety or that the number of children at risk for anxiety in this sample was not large enough, thus resulting in insufficient power.

It appears logical that if children are struggling with anxiety and no help is received, they might develop feelings of hopelessness and frustration. Similarly to what was found for previous subgroups, there is a trend of children increasing the severity of their depressive symptoms and their risk status for depression when no intervention is provided. Although with a small magnitude, the results of the current study confirmed the hypothesis of a decrease in severity of depressive symptoms of children receiving the program, thus suggesting that this program might help to prevent depression in children at risk for anxiety.

Results from the current study are similar to the findings of Lowry-Webster et al. (2001), in which the FRIENDS program produced a positive and statistically significant change by decreasing the severity of children's depressive symptoms and maintaining these gains over time (Lowry-Webster et al., 2003).

The lack of statistical differences for coping skills suggests that this program was not able to change the coping styles of children at risk for anxiety. Changing coping skills requires a strong commitment and is a cognitively demanding task. Children who are already at risk for anxiety might be experiencing concentration problems, which could also be compound by a history of failure in coping effectively with anxiety symptoms. These problems and daily life demands could already be time- and mind-consuming

enough to not allow children to start learning and practicing other healthy ways to cope with stressful events. No other study has reported on the effect of a prevention program on the coping skills of children at risk for anxiety; therefore, it is impossible to compare this finding with previous research.

It seems that children at risk for anxiety might need additional support to reduce the severity of anxiety symptoms and enhance proactive coping skills. Examples of this additional support include more frequent sessions to remind children of concepts learned in the program; more practice in small groups; teachers explicitly following students' progress on homework activities, providing extra modeling of relaxation techniques, and building a coping step plan; and perhaps more detailed information being provided to students' parents, so they can follow students' progress at home. Other research has shown that increasing the intensity in program implementation can produce positive results for children at risk (Barnett, 2007; Raver, 2002).

Group 3: Children With LD who are Also At Risk for Anxiety

As predicted, and supporting the findings of previous research (Margalit & Zak, 1984; Margalit & Al-Yagon, 2002), children with LD reported higher risk for anxiety when compared to typically developing children (22.3% vs. 16.2%) at pretest. Similarly, having LD was also a risk factor for depression, as results indicated that 25.2% of the children with LD reported being at risk for depression, compared to only 15.1% of the typically developing children. These problems could have arise due to their difficulties with low achievement, which has been related to an increase in emotional difficulties (Margalit & Zak, 1984; Martinez & Semrud-Clikerman, 2004; Patten, 1983).

The issue of whether children reporting high levels of anxiety on a self-reported measure represented a reliable indicator of actually experiencing an anxiety disorder was explored through the administration of the Children version of the Anxiety Disorders Interview Schedule (ADIS-C). From the 21 children who reported high levels of anxiety on the SCAS and who could be interviewed at pretest, only 10 of them, less than 50%, actually qualified as having an anxiety disorder. This finding highlights the limitation of relying solely on children's subjective experiences when using self-reported measures and emphasizes the importance of using a multi-informant and multimethod approach in further studies to increase the validity of the results.

Several limitations were encountered when interpreting the results of children with LD, particularly of those showing risk for anxiety. First, the sample size was very small (n = 29) and uneven between groups (17 children in the intervention group and 12 in the monitoring group), thus any small change occurring within this subgroup could be washed out. Secondly, to date, there are no parameters to compare with the results of this study. No other study has been done on the impact of a prevention program on children with LD's severity of anxiety and depressive symptoms, risk status for anxiety and depression, coping skills, behavior problems, and self-concept. This format is an essential strength of the current study, as it disaggregates data by different types of children. Finally, although there is literature that reports that having LD is a risk factor for depression and anxiety, no literature could be found on the developmental pathways of anxiety and depression in children with LD; therefore, it is impossible to compare the

patterns shown in the current study with what would be considered as natural fluctuations of children's developmental pathway.

Results from this study showed no differences between groups on the severity of children's anxiety or depressive symptoms, risk status for anxiety or depression, coping skills, self-concept, and behavior problems as rated by parents. At 6-month follow-up, parents' ratings showed a statistically and clinically significant decrease of small impact on the internalizing symptoms of children receiving the program relative to those in the monitoring condition. Children from the intervention group also reported a statistically and clinically significant increase over time in their positive levels of self-concept. On the other hand, children from the monitoring group reported a statistically and clinically significant decrease in the severity of their depressive symptoms at posttest; at 6-month follow-up, they reported a statistically significant decrease in the severity of depressive symptoms and an increase in proactive coping skills.

These results did not confirm the preliminary hypothesis, as it was expected that children experiencing two risks, risk for anxiety and experiencing a learning difficulty, receiving the program would decrease the severity of their anxiety symptoms. Furthermore, this result is not comparable to previous research (Lowry-Webster et al., 2003) that found a universal prevention program to have a strong and positive benefit for those who experience two risks (anxiety and depression). That study reported that at 1-year follow-up, 85% of the children at risk for anxiety and depression in the intervention group were "diagnosis-free," whereas only 31.3% of those in the monitoring group reported the same result. The synthesis of Gallegos et al. (2006) also supported the latter,

as they found a very large effect size of $d = 1.24$ for children who were at risk for anxiety and depression and who received an intervention.

Parallel to what was observed from the subgroup of children at risk for anxiety and non-LD, both experimental groups of children with LD and at risk for anxiety decreased the severity of their anxiety symptoms over time, and this decrease was statistically and clinically significant. These findings might be explained by children experiencing a social desirability bias or because the intervention was not able to affect the severity of their anxiety symptoms.

Results from this study do not confirm the preliminary hypothesis of the program helping children with LD and at risk for anxiety to decrease the severity of their depressive symptoms, decrease their risk status, and increase their proactive coping skills. Possible explanations for this lack of statistical differences could be that the program is not tailored to the particular needs of these children, thus not being able to produce a change. Also, it could be that the sample size of this subgroup is very small ($n = 29$), so any small differences could have been washed out. Not finding statistically significant differences could also be related to the time of testing. Particularly for children with LD, school is a stressful and demanding experience (Scherer, 2006; Margalit, 2004), and because pretests were administered at the beginning of January, right after Christmas vacation, these children might have reported higher anxiety than usual because of starting school again. On the other hand, posttests were conducted days before Easter break, when children might have been happy and excited about being away from schoolwork.

Although no changes were observed on children's self-reported measures, at 6-month follow-up, parents' ratings reported a statistically and clinically significant improvement in the severity of the internalizing symptoms and behavior problems of children receiving the program. These children also reported a meaningful increase in positive levels of self-concept, which is an important protective factor.

These improvements could point to a possible delayed effect of the program. It could also be that parents are the first to notice the change, and those children's self-reported measures could point to the same direction with some more time. Finding mixed results between parents and their children is not surprising, and this low concordance has been stated as a problem in earlier research (De los Reyes & Kazdin, 2005). Another possible explanation of these children improving could be the result of receiving outside treatment. Because this subgroup experiences two risks, LD and anxiety, it is probable that they were already receiving outside support for many years.

An unexpected result was found for children from the monitoring group: At posttest, they reported a statistically and clinically significant decrease of their depressive symptoms and a statistically significant decrease in their behavior problems as rated by parents. It is unclear why this happened, and further research should closely explore this effect with a bigger sample.

The program showed to have no impact on the coping skills of children with LD and at risk for anxiety. This result may be due to the fact that coping skills are a stable construct and may be a more cognitively demanding task for children who already struggle with learning and anxiety. Therefore, strategies such as providing easier

examples, more booster sessions, more information and coping plans to practice with parents, regular reminders of what has been learned, and practicing in different contexts could be useful to increase the proactive coping skills of children receiving the program. It is important to pay particular attention to coping skills, as results for this subgroup showed that coping difficulties increased in a statistically and clinically significant way when no intervention was provided.

Findings of the current study suggest that this program in the current format is not effective to produce meaningful changes for children with LD who are at risk for anxiety. In order for them to benefit from this type of program, several modifications or new strategies and materials could be incorporated. Program developers and future researchers should realize that providing an evidence-based emotional resilience program might not be enough for children experiencing LD and at risk for anxiety. Therefore, special attention should be paid to their particular characteristics and to which teaching and learning strategies have been found to work effectively for them. For instance, including more specific examples related to the typical stressful and anxiety-provoking situations experienced by children with LD, delivering the program in small groups, and using other complementary programs and teaching strategies such as pacing, modeling, and explicit instruction, among others, could increase the impact of the program (Deshler, Ellis, & Lenz, 1996; Vaughn, Gersten, & Chard, 1999).

It would also be equally important to determine the ideal type of setting and grouping for delivering the program to children with LD who already experience anxiety, as learning this program might be perceived as difficult and merely one more thing they

need to learn, thus causing stress. For instance, this program could be delivered within two school terms rather than 10 consecutive weeks, giving these students enough time to incorporate the knowledge and practice the skills learned. It could be also be delivered in small groups as a selected prevention strategy to provide more personal attention and more opportunities to practice and ask questions.

Group 4: Children With LD who are Diagnosis-free for Anxiety

Results from this study showed no differences between groups on the severity of children's anxiety or depressive symptoms, risk status for anxiety or depression, or coping skills. Results of parents' ratings on the CBCL showed that the behavior problems and the severity of internalizing symptoms (anxiety and depression) decreased over time for children in both groups. At 6-month follow-up, those receiving the program continued to decrease their behavior problems and reported a statistically significant decrease in the severity of their self-reported anxiety symptoms; the latter finding was also supported by parents' ratings showing that the decrease of children's severity of internalizing symptoms was maintained at 6-month follow-up. Also at 6-month follow-up, children from the monitoring group reported higher levels of positive self-concept. However, none of the changes for this subgroup were of clinical significance.

The results of this study did not confirm the preliminary hypothesis that this program would decrease the severity of depressive symptoms and risk status for depression, and increase proactive coping skills and high levels of self-concept of children with LD and diagnosis-free for anxiety. The small improvements in behavior problems and internalizing symptoms of children from the intervention group at 6-month

follow-up could suggest a delayed effect of the program; but these improvements could also be the result of these children's developmental pathway, receiving outside treatment, or bias in parents' reports. As parents were not blind to the experimental condition, those from the intervention condition could have had expectations for children's improvements.

The significant increase in the positive self-concept levels of children from the monitoring group was unexpected and needs further investigation, as research has suggested that having LD increases the probability of developing low self-concept (Margalit & Al-Yagon, 2002). It could be that these children were already receiving support for their learning difficulty and that the improvement was related to this outside help. It could also be that parents from the monitoring group were more committed and supportive, as they signed the consent forms even though they knew that their children were only being tested and that the program would not be provided. This knowledge could have led parents to work more with their children at home or to seek outside treatment if their child were referred.

In general, this program in the current format provides no practical benefit for the children with LD who are diagnosis-free for anxiety. It might be that the program delivered as a universal prevention is not able to produce changes in children with LD, or it could be that the small sample size did not allow statistically significant differences. Nevertheless, these findings suggest that this program may need further adaptations related to content, mode of delivery, and/or culture, in order to produce meaningful changes for this subgroup. Special attention should be paid to target effectively depressive symptoms, as the results from this study showed that about 20% of children

with LD and diagnosis-free for anxiety were at risk for depression and this program in its current format was not strong enough to produce any changes in this area.

For all interventions to be developed for children with LD, adaptations are suggested such as tailoring the program to these children's specific characteristics, using complementary programs, and increasing the dosage and content in protective areas such as coping skills and self-concept, which may be a greater challenge for those who struggle with learning. Also, attention should be paid to the differences between children with LD with risk and no risk for anxiety. For example, children with LD and diagnosis-free for anxiety in the monitoring group reported no changes in their coping difficulties at posttest, whereas those with LD and risk for anxiety reported an increase in coping problems. These kinds of differences should be taken into account when developing and delivering a program in order to target the children's specific needs and produce stronger outcomes.

Most of the research on the prevention of anxiety and depression has been conducted in developed countries with populations of high SES. This study extends research on the prevention of anxiety and depression into Spanish-speaking Latin American countries with low-SES communities and with children of non-English-speaking background (NESB). This is the first step in examining how prevention programs might be implemented in developing countries that due to their social and financial constraints are in need of help. This study also advances the current knowledge on the social and emotional side of LD, as it is the first to analyze the effectiveness of a prevention program for Mexican children with LD, when delivered to the whole

classroom by teachers already in place. The findings of this study provide useful suggestions about the specific needs of children with LD, which in turn could facilitate the enhancement of current programs or the development of new materials to best meet these children's needs.

Implications for Practice

The findings from this study have wide-ranging implications for school practice. First, a major concern is to educate the school community (i.e., principals, teachers, and parents) on the nature and prevention of social and emotional problems in children. As this study showed, these problems appear to be common during childhood and a high number of fourth- and fifth-grade children are clinically anxious (about 1 out of 10) and clinically depressed (about 1 out of 5), as documented by self-reported measures. Early anxiety problems, if untreated, are associated with negative consequences such as deviant conduct, substance abuse, and depression later in life (Caraveo-Anduaga & Comenares-Bermúdez, 2002; WHO, 2004). Therefore, it is important to pay attention to the prevention of these problems in schools.

Previous research has suggested (e.g., Margalit & Zak, 1984; Weiner, 1998) and the current study has confirmed that these problems appear to be more pronounced among children with LD, who in México and the United States represent a large percentage of children receiving special education services. This finding highlights the need for including some of the work from prevention and mental health professions in the preservice and in-service training for teachers and rehabilitation professionals of the field of special education (McReynolds & Garske, 2003; Price et al., 1994). The field of

learning disabilities should envision the possibility of integrating social-emotional and academic interventions, as treating the affective, cognitive, and academic abilities as separate domains has not been effective (Price et al., 1994).

Educating the school community about the prevention of these problems and the importance of social and emotional well-being is imperative not only because many children are struggling with these problems, but also because teachers and parents often have difficulty noticing these problems, as they are not as visible as conduct disorders or ADHD (Dadds et. al., 1997; Lowry-Webster, Barrett & Dadds, 2001). Early identification and referral in schools may affect the life of children at risk, as it would be more likely that their developmental pathways for anxiety and/or depression could be altered. This finding is particularly relevant and necessary because results from this study have indicated that for some children, coping difficulties and severity of depressive symptoms will rapidly escalate when no intervention is provided. Further, being referred when early symptoms arise would increase the possibility of receiving a specialized treatment by a psychologist—not years later, when many people go untreated and those who receive treatment do so from a doctor of general medicine, especially in developing countries like México (Borges, Wang, Medina-Mora, Lara, & Tat-Chiu, 2007; Knapp, 2006; Medina-Mora et al., 2003). This finding is consistent with other studies, in which less than 20% of those in need of mental health services received appropriate health care (Lowry-Webster et al., 2001; Patel, Saraceno, & Kleinman, 2006). Thus, promoting early identification and referral in schools would be a substantial advance.

Schools could consider the implementation of a prevention program that promotes emotional resilience in their classrooms. The AMISTAD program was found to be, with a small impact, effective by enhancing protective factors such as coping skills and helping reduce the risk status for depression; therefore, schools could found it useful as a tool to teach social and emotional skills. In addition to implementing a prevention program, schools should have a process of screening children who may already be at risk for anxiety and provide them with additional help, as results from this study showed that this program was not able to affect the coping skills or the severity of anxiety symptoms of those who already experience anxiety. Perhaps for these children, who are already at risk, additional instruction as a type of a selective program could be provided and delivered by both the school counselor and the classroom teacher to provide a more individualized program that addresses these children's individual needs and concerns. It is also encouraged that schools pursue the implementation of a complementary program specialized to help children with LD. Overall, this program as a universal intervention was not effective for children with LD, who reported higher risk for anxiety and depression than their typically developing peers. Perhaps, additional adaptations could be made in relation to the mode of delivery, teaching strategies, culture, and content. For children with LD, with or without anxiety, schools should also consider one-to-one support. It would be very important to involve parents and teachers, the ones who most influence a child's behavior and their main source of support (Burns & Hickie, 2002), in this process because children would be provided more practice and generalization of the skills.

All of these efforts should be made gradually and systematically, and aiming at a balance of academic and social and emotional learning; it is important to keep in mind that effectively promoting essential social and emotional skills within the classroom will in turn aid to increase children's academic achievement (Elias, 2003).

Finally, when implementing a prevention program, it is important that school staff and program coordinators take into account the practical realities of making a program work and the daily demands for teachers. It is crucial for the school community to provide positive support for teachers when implementing the prevention program. Previous research has indicated that some teachers may not feel confident or may feel overwhelmed when implementing programs other than the regular academic curriculum; thus, strategies to target this possible constraint must be in place. For example, a school counselor could aid teachers when implementing the program for the first time, schools could offer teachers retreats and opportunities for participating in professional development, debriefing days could be scheduled to exchange experiences, and online blogs involving the entire community could be created with topics such as children's emotional development and useful teaching strategies.

Limitations of the Study

Although this study attempted to avoid some of the methodological shortcomings of previous school-based research, it still contains some limitations that should be taken into account when interpreting the findings.

The first limitation is the way the effectiveness of the program was measured, as most of the results rely on the self-reported subjective perceptions of children regarding

their anxiety, depression, and coping skills. Although all the assessments were read aloud and children were reassured that their answers were not going to affect their academic grades, some children might not have responded to the questionnaires accurately. In the same way, children with LD completing the ADIS-C interviews were the sole informants of their diagnostic status; the lack of including the parental version of the ADIS-C made it impossible to verify concordance. Obtaining adequate measures for a resilience program has been an ongoing challenge, and a limitation of this study is the few assessments administered that target positive and strength-based outcomes such as happiness, improvement in peer relationships, positive thinking, self-regulation skills, availability of social support networks, social skills, and empathy. This study would have clearly benefited from including multiple informants such as teachers and parents to provide a more accurate picture of all participants' development over time. However, due to the multiple responsibilities of the teachers, this was too time consuming and would have also required additional funding. This is a very common limitation of large-scale prevention trials that without substantial funding is not likely to be overcome.

Second, a question that remains unknown is how many students completed the entire program. Some students were at times away or absent from class, therefore not being exposed to all the sessions, and the current research did not include group attendance measures. Also, because of the need to finish the 10th session of the program before the Easter vacation, assessments were tightly scheduled and in some schools, test administrators had to make additional visits due to unexpected school activities. For example, schools had occasional free-class days, in which children stay at home and

teachers do academic planning; school trips were scheduled without previous confirmation; and often, some children were not present on Fridays. Further studies should include measures of group attendance and plan ahead to develop timetables in concordance with the schools' agendas. It is also unknown how many of the children referred at posttest for clinical anxiety and/or depression actually received treatment. Thus, a limitation of this study is that the results from the 6-month follow-up are not as accurate as the results at posttest. Caution should be taken when interpreting these findings, as children receiving outside support could have affected the data. For ethical reasons, after posttest, all children that were above the clinical cut-off for anxiety and depression were identified, and parents were provided with several options for treatment.

Third, because learning about the relationship between LD and anxiety was explorative, a larger sample size should have been pursued. Because no research has explored the effect of a psychosocial intervention on children with LD, this group was thought to be comparable with children who have been bullied and the effect size hypothesized was overestimated ($d = 1.15$). Also, the percentage of children with LD who would also be at risk for anxiety was overestimated. It was hypothesized that about 50% would be at risk for anxiety, when the results showed that 22.3% of the current sample of children with LD were actually experiencing high levels of anxiety. Both overestimations resulted in a small sample size that reduced the power to detect statistical significance. Further studies looking at children with LD within the regular classroom should develop strategies to increase the number of children in the sample.

Finally, due to financial restrictions, this study did not conduct additional follow-up or transfer tests, which limits our knowledge of the sustainability and generalizability of the effects of the program. If funding becomes available, research should carefully examine what mechanisms and structures need to be in place to sustain implementation and assess the long-term maintenance and generalization of skills across multiple settings (i.e., at home, on the playground, with friends and family).

Suggestions for Further Research

One of the important goals of prevention research is to not only identify effective strategies, but also implement them in diverse contexts and with various populations (Sandler, 2001). However, prevention research studies often lack longitudinal (5–10 years) or generalization data—such was the case for the current study. Therefore, further research should examine the long-term and generalization effects of the AMISTAD program across settings and across multiple domains such as academic improvement, school dropout, quality of peer relationships, and sense of school community, among others. Long-term follow-up is essential to ascertain the prevention and duration effects and to determine whether intermittent interventions, more booster sessions, different modalities, or additional programs are required.

It is strongly recommended that any research done with school-based populations include more and diverse protective outcome measures, as it appears logical that a resilience program will produce effects in several areas (Donovan & Spence, 2001; Greenberg et al., 2001; Lowry-Webster et al., 2001). Therefore, there is a great need to use nonclinical and concise measures that capture resilience outcomes such as hope,

friendship, happiness, and emotional strength. In the same way, it is crucial to use a multi-informant approach to analyze high concordance and to increase the external validity of the findings.

Further statistical analyses could be pursued with the current data to analyze interesting aspects that were outside of the scope of the current study. For example, comparisons between grades are suggested across all outcome measures to determine whether there is an optimal time to intervene. The prevalence of anxiety and depression within this sample could also be compared to that of previous studies (e.g., Cole et al., 1998; Dadds et al., 1997; Orvaschel, Lewinsohn, & Seeley, 1995) to identify cross-cultural differences and to explore the direction of anxiety and depression and the developmental pathways (Lowry-Webster et al., 2001). Further statistical analysis could also be conducted to identify predictors of treatment outcome. Variables such as gender effects, anxiety and depression risk status at pretest, treatment adherence, and group leader skills may interact with the intervention status and may promote stronger and more positive effects. Other possible predictors of treatment variables suggested for further study are school dynamics, school characteristics, facilitators' ability, and relationship between children's outcomes and the number of sessions attended.

In order to look at the nested design, further complex statistical analyses such as hierarchical linear modeling could be used. In addition, outcome measures could also be analyzed by looking at subscales or specific items.

It is recommended that further studies be conducted to extend the current state of knowledge. It would be interesting to evaluate the effectiveness of the program with other

Spanish-speaking Latin American countries to see whether findings replicate. Similarly, it would also be of interest to see how this program works with other groups that might be at risk for anxiety such as immigrants in the United States or children with ADHD or other common disorders.

The area of learning disabilities and effective interventions to enhance emotional resilience of children with LD is an understudied and exciting area of investigation that is worth exploring. Further research could explore the cultural differences of the manifestations of anxiety and depression in children with LD, their particular risk and protective factors, developmental pathways, their response to prevention programs applied as universal and selected interventions, and effective tools for social and emotional teaching, among others. The current results raise the question as to whether this program would work if implemented in a different modality or if additional components were included. It remains unknown which specific strategies of delivery and program components would produce stronger effects—for example, involving parents, grandparents, siblings, and peer mentors as positive role models; extending the program into two school terms; and/or integrating anchoring instruction strategies such as a Web site linking support groups for children and parents or phone-line assistance.

It would be interesting to closer examine the sample of children with LD, with and without risk for anxiety. Because the small sample size decreased the power to detect significant findings and, due to the nature of the sample, this is not likely to change, further studies could analyze the current data using other types of analysis such as single-subject designs and case studies. These alternate methods would help researchers better

understand the changes of this particular sample over time and the ways in which the program does or does not work for them.

This study would have benefited from a qualitative component regarding teachers', parents', and children's experience. Further qualitative research is suggested to explore the impact of the program on aspects such as empathy, friendships, bullying, family dynamics, improvement in confidence and coping with daily life stressors, and teacher-student relationship. Focus groups and narratives could be used to explore these interesting topics. In the same way, the social validity of the program should be explored to determine the acceptability and usefulness of the program for teachers, parents, and children.

Conclusions

The prevention and early identification of anxiety and depression is important work, as when untreated, these disorders bring a broad range of negative consequences to the child and his or her family, and produce high costs to society. Results from this study suggest that, although with a small impact, the AMISTAD program was effective for school personnel to implement in the classrooms and therefore promote emotional resilience by increasing children's proactive coping skills and reducing the severity of children's depressive symptoms. Implementing prevention programs within the school community is particularly important, as this study showed that these problems are frequently reported by children and may escalate if no intervention is provided.

The finding that the intervention can be delivered by classroom teachers indicates the potential benefit of implementing a cost-effective strategy that reaches a large number

of children over a relatively short period of time—particularly for children in the early stages of risk—decreasing the lengthy wait lists for therapy and its high associated costs and providing no stigma to children due to labeling (Dozois & Dobson, 2004; Feldner et al., 2004); Lowry-Webster et al., 2001; Smart, 2001).

Results from this study also confirm the importance of paying particular attention to children with LD, who reported a higher risk for anxiety and depression when compared to their nondisabled peers. Findings from this study indicated that children with LD as well as children at risk for anxiety may require additional programs or further adaptations of the AMISTAD program in order to report improvements; this program by itself is not enough for them.

Finally, this study contributes to the knowledge base that explores the effectiveness of prevention programs for Spanish-speaking students, particularly those with LD. Further research is needed to understand what mechanisms and adaptations are needed to produce stronger outcomes and to be effective with children from different cultural backgrounds and with different conditions that may increase the risk for social and emotional problems.

Appendix A

Objectives and Major Lessons of the FRIENDS Program

Session 1

Objectives

The aim of the first session is to introduce group members to each other and to explain what the *FRIENDS for Life* program is all about.

Major Lessons

By the end of Session 1, participants should understand that everyone feels anxious or worried from time to time and that these emotions are normal. *FRIENDS for Life* will help participants to learn ways of feeling more confident and brave when coping with difficult situations. Participants will be introduced to two coping strategies in this session: helping others and remembering happy things.

Session 2

Objectives

There are two major aims for this session: to introduce participants to the concept of feelings and to the idea that how we *think* and *feel* determines how we *behave*. These ideas form the basis for the strategies that participants will learn later in the program, so it is important that participants fully understand the material presented in this session.

Major Lessons

In this session, participants will learn to recognize the feelings that they and others have by focusing on facial expressions and body language. By the end of the session,

participants should show an understanding of the link between thoughts, feelings, and behaviors (i.e., our thoughts and feelings determine how we behave). Participants should also understand that we can choose to think and feel in different ways. When we choose to think positive or happy thoughts, and we feel happy, we usually behave in a positive way. This helps us, and it helps other people.

Session 3

Objectives

The goal of this session is to introduce participants to Steps 1 and 2 of the FRIENDS plan.

Major Lessons

By the end of the session, participants should be able to recognize the different signs that their bodies give them when they feel nervous or worried and perhaps be able to recognize some of the situations that make them feel worried. Participants will learn some relaxation activities, and they will also learn that relaxation activities can help them to feel confident and relaxed.

Session 4

Objectives

The goal of this session is to introduce participants to Step 3 of the FRIENDS plan.

Major Lessons

The major lessons for this session are for participants to understand the concept of self-talk. This is an important concept because many young people are unaware of how their

thoughts about a situation influence how they cope with or manage the situation. Understanding self-talk and learning to think in positive ways helps participants to feel more confident in dealing with difficult situations. This session also will teach participants how to change their negative thoughts into more positive or helpful thoughts.

Session 5

Objectives

The objectives of this session are to complete Step 3 of FRIENDS and to introduce participants to Step 4.

Major Lessons

This session has three major lessons. The first is to encourage participants to become aware of how their attention to details can affect their emotions in certain situations. The second is to build upon the content in Session 4 by encouraging participants to change negative thoughts into positive or helpful thoughts. The third is to teach participants the first of the problem-solving plans: the Coping Step Plan, which looks at how to break down difficult situations into smaller, more manageable steps.

Session 6

Objectives

The goal of this session is to reintroduce participants to Step 4 of the FRIENDS plan for feeling confident and brave and to teach participants additional problem-solving skills.

Major Lessons

The major lesson for participants in this session is problem-solving skills. Two major

problem-solving exercises are discussed. First, participants will learn about the importance of social support by identifying role models for themselves and by identifying their own social support team. Second, participants learn and utilize another problem-solving strategy: the 6-Block Problem-Solving Plan. Participants are encouraged to apply these problem-solving skills to their own lives.

Session 7

Objectives

The goal of this session is to introduce group participants to Step 5 of the FRIENDS plan: N = Now reward yourself! You've done your best!

Major Lessons

The major lesson of this session is for participants to understand that it is not success, but the effort toward achieving success, that is most important. Participants should learn how to reward themselves for trying hard. This skill is important, as it positively reinforces participants to approach feared or difficult situations and builds their self-confidence to be able to cope with these situations.

Session 8

Objectives

The aims of this session are to introduce the last two steps of the FRIENDS plan and to encourage group members to practice feeling confident and brave by using all of the steps they have learned.

Major Lessons

The major lessons for this session are for participants to understand the final two steps of the plan and to gain practical skills in implementing the seven-step FRIENDS plan for feeling confident and brave.

Session 9

Objectives

The aim of this session is to assist participants in generalizing the skills they have learned to other life situations.

Major Lessons

The major lesson for this session is for participants to understand that the skills they have learnt can be generalized to many situations in their lives. The session also gives participants the opportunity to practice putting together all of the FRIENDS plan steps.

Session 10

Objectives

The first aim of this session is to establish strategies to maintain participants' coping skills. The second is to congratulate group members for their participation and hard work.

Major Lessons

The major learning lesson for this session is for participants to learn how to maintain their new skills. A further lesson is to recognize that any problems participants may experience while applying the FRIENDS plan are only minor setbacks. These setbacks simply mean that participants need to reapply the FRIENDS plan steps or start problem-

solving again.
Booster Session 1 *Objectives* The goal of this session is to remind participants of the problem-solving steps of the FRIENDS plan, as well as reinforce the application of the FRIENDS for Life program to real-life situations. *Major Lessons* The major lesson for this session is to help participants see the benefit of taking a positive approach to difficult situations and remembering that all situations give an opportunity for improvement. In addition, this session aims to help participants identify alternative solutions and ideas should problems arise while implementing their FRIENDS plan.
Booster Session 2 *Objectives* The goal of this session is to reinforce the application of the FRIENDS for Life program to real-life situations. *Major Lessons* The major lesson for this session is to encourage participants to continue engaging in positive behaviors. In addition, this session aims to help participants identify alternative plans should problems arise while implementing their FRIENDS plans.

Note: These objectives and major lessons have been transcribed from *FRIENDS for Life: Manual for Group Leaders* (Barrett, 2004).

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