Psicología Educativa 19 (2013) 37-44

Psicología Educativa

www.elsevier.es/psed

Preventing childhood anxiety and depression: Testing the effectiveness of a school-based program in Mexico

Julia Gallegos[a]*, Sylvia Linan-Thompson[b], Kevin Stark[b], and Norma Ruvalcaba[c]

[a]University of Monterrey, Mexico
[b]University of Texas at Austin, USA
[c]University of Guadalajara, Mexico

ARTICLE INFORMATION

Manuscript received: 21/03/2012
Revisión received[a]: 05/02/2013
Accepted: 05/02/2013

Key words:
Prevention
Anxiety
Depression
Mexico
Primary-school children

ABSTRACT

A growing number of school-aged children experience or are at risk for a myriad of 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 importance of school prevention. This study assessed the effectiveness of the Spanish version of the *FRIENDS for Life* program [*AMISTAD para siempre*], a social and emotional program that uses cognitive-behavioral techniques to prevent anxiety and depression. Eight schools from a northern city in Mexico were randomly selected and assigned to either an intervention or standard curriculum instruction. Fifteen teachers implemented the intervention, and 16 served as control. Participants were 1,030 fourth and fifth grade students (ages 8-13). The impact of the program was evaluated immediately after the intervention and after 6 months. The program showed a positive effect by reducing symptoms and risk for depression and increasing the proactive coping skills of the overall sample. Suggestions for further research and implications for practice are offered.

La prevención de la ansiedad y de la depresión en la infancia: estudio de la eficacia de un programa escolar en México

Palabras clave:
Prevención
Ansiedad
Depresión
México
Niños de educación primaria

RESUMEN

Un número elevado de niños de edad escolar experimentan o corren el riesgo de experimentar una serie de problemas psicológicos y de comportamiento tales como la ansiedad y la depresión, las cuales interfieren en sus relaciones interpersonales, el desempeño académico y el potencial para convertirse en personas productivas. El presente estudio evalúa la eficacia de la versión en español del programa *FRIENDS for Life* [*AMISTAD para siempre*], que enseña habilidades sociales y emocionales utilizando técnicas cognitivas-conductuales para prevenir ansiedad y depresión. Ocho escuelas de una ciudad al norte de México fueron aleatoriamente seleccionadas y asignadas a un grupo de intervención o al grupo de currículo estándar. Quince educadoras implementaron el programa y 16 maestras siguieron con el currículo estándar. Los participantes fueron 1.030 niños, de 8 a 13 años de edad, de cuarto y quinto grado de primaria. El impacto del programa se evaluó inmediatamente después de la intervención, y a los seis meses. Los resultados muestran que el programa tuvo efectos positivos al reducir los síntomas y el riesgo de depresión e incrementar las estrategias de afrontamiento proactivas de aquellos que lo recibieron. Se ofrecen sugerencias sobre futuras investigaciones así como sobre sus implicaciones para la práctica.

*Correspondence concerning this article should be sent to Julia Gallegos, Ph.D. Benalcázar 115 pte. Colonia Mirasierra. San Pedro Garza García, Nuevo León, Mexico. C.P. 66240. E-mail: juliagallegos@centrocies.com.mx

1135-755X/$ - see front matter

DOI: http://dx.doi.org/10.5093/ed2013a6

A growing number of school-aged children experience or are at risk for a myriad of psychological and behavioral problems that interfere with their interpersonal relationships, school performance, and the potential for becoming productive citizens (Patel & Sumathipala, 2001; 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 symptoms are associated with deviant conduct, substance abuse, risk for school dropout, and depression later in life (Caraveo-Anduaga & Comenares-Bermúdez, 2002; Kashani & Orvaschel, 1990; Patel & Sumathipala, 2001). Depressive disorders affect about 2% of children and 4 to 7% of adolescents (Costello et al., 2002) and are associated with negative long-term psychiatric and functional outcomes (Gladstone & Beardslee, 2009). In addition to the personal suffering experienced by children and their families, anxiety and depressive disorders produce a high economic cost to society (Dozois & Westra, 2004); hence, early prevention and intervention programs in schools are critical.

Clinical trials have demonstrated that childhood anxiety and depressive disorders can be treated effectively with individual cognitive-behavioral interventions (CBT) (Compton, Burns, Egger, & Roberston, 2002; Kendall & Suveg, 2006; Stark et al., 2006). However, only treating children who are already experiencing anxiety and depression may not be the most effective way to stem the growing number of children who experience emotional difficulties. Therefore, the potential of prevention programs needs to be investigated.

In the prevention literature, the presence and extent of risk factors associated with the development of the disorder serve as the basis for determining the level of intensity of the intervention (Gordon, 1987). There are three levels of prevention used: universal, selective, and indicated. Universal interventions are provided to whole populations, regardless of the individual's risk status; selective interventions are provided to groups of individuals at risk for the development of a disorder; and indicated interventions are provided to individuals with symptoms that have not yet developed into a disorder.

Research into universal school-based prevention for anxiety and depression has increased during the last decade yielding promising results (Gladstone & Beardslee, 2009; Neil & Christensen, 2009). While several programs have been researched, by and large the most extensively researched program designed to promote children´s emotional resilience is the *FRIENDS for Life* program, a brief cognitive-behavioral intervention.

Studies of the effectiveness of the *FRIENDS for Life* program have been conducted at the universal, selective, and indicated level of prevention and most of them by Barrett´s research team. The first published study evaluating the program as a universal intervention was conducted by Barrett and Turner (2001) with 489 children, ages 10 to 12 years old. Results showed that children who received the program reported a reduction in anxiety symptoms and those children considered "at risk for anxiety" also reported a reduction of depressive symptoms. Subsequent studies have also reported similar results (e.g., Lock & Barrett, 2003; Lowry-Webster, Barrett, & Dadds, 2001), with gains maintained at 12-month follow-up (Lowry-Webster, Barrett, & Lock, 2003) and at 24 and 36-month follow-up (Barrett, Farrell, Ollendick, & Dadds, 2006).

Some studies have evaluated the effectiveness of *FRIENDS for Life* as a universal intervention in other parts of the world. The first study was conducted in the United Kingdom and evaluated the effectiveness of the program implemented by school nurses with 213 children, ages 9 to 10 years old (Stallard, Simpson, Anderson, Osborn, & Bush, 2005). After completing the program, children reported significant reductions in anxiety symptoms, an increase in their self-esteem, and high levels of satisfaction with the program. The study was replicated by Stallard, Simpson, Anderson, Hibbert, and Osborn in 2007 reporting similar results at posttest with gains being maintained after one year (Stallard, Simpson, Anderson, & Goddard, 2008). Essau, Conradt, and Ederer (2004) conducted a study with 200 German children, ages 9 to 12 years old, and also reported a significant reduction in children´s anxiety symptoms and high levels of satisfaction with the program.

The study by Mostert and Loxton (2008) was conducted with forty six 12-year old children from South Africa and reported no significant differences between the intervention conditions regarding children´s anxiety symptoms. For those children receiving the program they found a significant decrease of anxiety symptoms over time (Mostert & Loxton, 2008). Rose, Miller and Martinez (2009) conducted a study with 52 Canadian children, ages 8 to 9 years old, and also reported no significant differences for anxiety between intervention conditions.

Although the majority of these studies highlight the potential benefit of the *FRIENDS for Life* program, further pragmatic research is required to demonstrate the benefits of the program in other countries where the methods of delivery and educational context might be different (Stallard, Simpson, Anderson, & Goddard, 2008). Particularly for Hispanic populations, there is a dearth of research examining anxiety prevention programs. This is the first study that evaluates the effectiveness of a prevention program for anxiety and depression conducted with Latin American children in Spanish language.

The purpose of this study was to evaluate the effectiveness of the Spanish-version of the *FRIENDS for Life program* [*AMISTAD para siempre*] for increasing proactive coping skills and reducing and preventing anxiety and depressive symptoms in Mexican primary school children.

The research question that guided this study was: What is the effect of the *AMISTAD para siempre* program 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 would increase and that the children would report less anxiety and depressive symptoms and risk when compared to the standard curriculum instruction condition.

Method

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) standard curriculum instruction condition. There were three within-subject factor levels: (a) pretest, (b) posttest, and (c) 6-month follow-up.

Participants

A total of 1,030 students from fourth and fifth grade (ages 8-13) took part in this study. Students attended schools in a city located in the Northern Region of Mexico and one of the three cities in Mexico with the highest prevalence rate for anxiety disorders (Medina-Mora et al., 2003). This study was implemented as a pilot project of the Ministry of Education.

All schools in the study were categorized as level six, a metric used by the *Instituto Nacional de Estadística,Geografía e Informática* to stratify the community by socioeconomic status. Level six communities are low SES and account for 70% of the population. Characteristics of persons at this level include 91.83% of the population being able to read and write, 91.85% of the population aged 6 to 14 go to school, 69.82% of the population aged 12 to 17 go to school, and 49.91% of the population over 15 years old having a post primary education (Instituto Nacional de Estadística, Geografía e Informática, 2006). All schools in the study were coeducational, had at least two classrooms at each grade 4 and 5, and were served

by *Gabinetes de Servicios Educativos* [Offices of Educational Services], a unit within the Special Education Department of the State. Schools, rather than students, were selected as the unit of random assignment, and the eight public elementary schools were randomly assigned to the standard curriculum instruction group (four schools, n = 496 children) and to the intervention group (n = 534). The eight schools yielded 32 classrooms with 533 fourth and 497 fifth graders (mean age 9.89 years, range 8-13 years, *SD* = 0.80). A little over half of the students were girls (52.6%). Only one teacher from an intervention school withdrew from the study.

Measures

The following three measures were administered collectively to all children at pretest, posttest, and 6-month follow-up.

Escala de Ansiedad para Niños de Spence (Spence, 1997) is the Spanish version of the Spence Children´s Anxiety Scale (SCAS; Spence, 1997), a self-report measure of anxiety designed for use with 8-12 year old children. The SCAS consists of 44 items, 38 of which assess specific anxiety symptoms (e.g., symptoms of social phobia, separation anxiety, panic attack, and agoraphobia). The remaining 6 items serve as positive "filter items" in order to reduce negative response bias. 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. The total score of this measure was used in the current study. Psychometric properties have been examined for the Spanish version, reporting a reliability coefficient of .91 on the SCAS scores (Bermúdez-Ornelas & Hernández- Guzman, 2002).

Cuestionario de Depresión Infantil (CDI; Kovacs, 1981) is the Spanish version of the Children´s Depression Inventory, a self-report measure used for depressive symptoms in children aged 7 to 17 years. The CDI 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 two weeks. Statements within each item are scored according to the severity of children´s symptoms: no symptomatology present (0), mild symptomatology (1), or severe symptomatology (2). A total score is calculated by summing the statements chosen by the students. The statement (item 9) that assessed suicidability was removed. The Spanish version of the CDI has shown good psychometric properties: a Cronbach's alpha reliability coefficient of .94 and a test-retest reliability coefficient of .87 and adequate construct and content validity (Del Barrio, Moreno-Rosset, & López-Martínez, 1999).

Cuestionario de Afrontamiento (Hernández- Guzman, 2003) is a Spanish self-report measure developed and standardized in Mexico to assess coping skills in children aged 6 to 12 years. The scale has 12 items related to child´s interpretation and reactions when facing a problem and the things he or she does to cope and/or solve the problem. Lower scores reflect a more proactive positive coping. 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 questionnaire assesses coping responses to situations perceived as stressful and provides information on three factors: active coping, emotional coping, and passive or avoidant coping. The *Cuestionario de Afrontamiento* has demonstrated adequate psychometric properties including a Cronbach's alpha reliability coefficient of .67 (Hernández- Guzmán, 2003).

*Protocol integrity measures***.** Single-informant coding of the protocol integrity measures was carried out using the Spanish translation of the Fidelity of Implementation Checklists (Barrett, 2005) on 17% of all sessions. These checklists determine the group leader's degree of adherence to the program structure and their leaders´ skills (e.g., empathy, reflection). Using a Likert-type scale, the checklist provided four response categories: extremely well (1), moderately well (2), not very well (3), and not at all (4). Fidelity of implementation was calculated by averaging the scores of each form across all the observations of the teachers. The mean for treatment structure was 2.07 and the mean for teachers´ skills was 1.82, indicating that the program was implemented moderately well.

Procedure

At pretest, participating children completed the self-report questionnaires during the school day. Teachers and psychologists from the *Gabinetes de Servicios Educativos* read the instructions and test items aloud to all students and answered questions. Students were informed that all responses were confidential. Classroom teachers from the participating schools were released from their classrooms for a two-day training covering the principles and practices of prevention and early intervention. The training provided a step-by-step guide to the intervention program.

Following the pretest phase and the training workshop, the prevention program was implemented in the intervention schools. Schools from the standard curriculum instruction group continued with their regular activities. *AMISTAD para siempre* (Barrett, 2008a, 2008b) was implemented for 10 consecutive weeks, with one 75 minute session completed once per week. Two booster sessions were implemented one month and three months after the 10th session. Students were tested at the completion of the 10th session and all participants were asked to complete the same measures again 6 months later for follow-up. All children completed the *SCAS*, *CDI,* and the *Cuestionario de Afrontamiento*.

Children who reported clinical anxiety, a SCAS score of 42 or above, or clinical depression, a CDI score of 19 or above, were referred to the school for outside treatment and it is unknown whether they actually received therapy. The "clinical" cut-off scores were established before the study began and were suggested by the authors of the measures.

Intervention protocol and materials

AMISTAD para siempre (Barrett, 2008a, 2008b), the culturally adapted Spanish version of the *FRIENDS for Life* program, is a social and emotional program designed to enhance resilience in children. It incorporates physiological, cognitive, and behavioral strategies to assist children in coping with stress and worry. The behavioral component includes the monitoring of feelings and thoughts, out-of-session and mental imagery exposure and relaxation training. The cognitive component teaches children to recognize their feelings and thoughts and the link between them. It also teaches students to identify faulty cognitions and incompatible self-statements, and to elaborate alternative interpretations of difficult situations. Learning techniques include group discussion, hands-on activities, and role-play. Approximately one session is dedicated to learn each of the seven steps represented by the FRIENDS acronym. 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 and feel good; 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 models the skills and after the skills are taught children have opportunities to practice in small groups and debrief with the whole classroom. The program encourages the building of social support groups and respect for diversity. There are two informational sessions for parents of about 1.5 hours each. In these sessions parents learn about the skills and techniques taught in the program, the importance of family and peer support, and the promotion of the practice of problem solving rather than avoidance of anxiety-provoking situations.

Statistical Analysis

Questions were addressed separately using one-tailed independent sample *t*-tests (alpha level .05) in order to examine the dependent variables of anxiety, depression, and coping skills. 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. These numbers were calculated by adding the mean score to 1 *SD* of the whole sample at pretest. The preventative impact of the intervention was measured by a decrease in the severity of symptoms and by evaluating the change in status. It should be considered that some prevention programs could show an initial treatment effect such as a reduction of anxiety and/or depressive symptoms, followed by a long-term prevention effect.

Results

Preliminary analysis

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 standard curriculum instruction and intervention groups were not significantly different at pretest. Children's levels of anxiety, $F(1, 970) = 3.52$, $p = .06$, depression, $F(1, 968) = 0.14$, $p = .35$, and coping skills, $F(1, 971) = 0.01$, $p = .47$ were comparable. There were no significant differences observed at pretest between the standard curriculum instruction and intervention groups in their risk for anxiety, $\chi^2(1, n = 972) = 0.58$, $p = .48$ and their risk for depression, $\chi^2(1, n = 970) = 0.49$, $p = .45$.

Pre-post correlations were calculated for the standard curriculum instruction 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 the SCAS ($r = .66$, $p = .01$) and the CDI ($r = .69$, $p = .01$).

Pearson correlations were performed in order to examine the relationships between the pretest scores of the SCAS, CDI, and CA. The correlations were positive between the SCAS and the CDI ($r = .39$, $p = .01$), and between the CA and the CDI ($r = .24$, $p = .01$). No statistically significant correlation was found between the SCAS and CA ($r = -.01$, $p = .77$).

Attrition and Missing Data

There were no statistically significant differences in the frequency of missing data across conditions at posttest (6.82% missing in the intervention group, 9.89% missing in the standard curriculum instruction group), $\chi^2(1, n = 1.030) = 3.17$, $p > .05$. In the same way, there were no statistically significant differences at 6-month follow-up (17.87% missing in the intervention group, 19.23% missing in the standard curriculum instruction), $\chi^2(1, n = 1.030) = .32$, $p > .05$. Reasons for attrition at each time point were absenteeism from school on the day of assessment, students leaving the school, and absenteeism from class due to extracurricular activities.

Universal Program Effects

To examine the effect of the intervention for the entire sample participants´ scores at posttest and 6-month follow-up were compared between experimental conditions. Table 1 displays the means and standard deviations of each dependent measure at each time point. The one-tailed independent sample *t*-test revealed no significant differences between groups in the SCAS´s mean scores at posttest, $t(1, 955) = 1.35$, $p = .09$ or at 6-month follow-up, $t(1, 850) = 1.49$, $p = .07$. From the intervention group, 16% were at risk for anxiety at pretest, 13% at posttest, and 9% at 6-month follow-up. From the standard curriculum instruction group, 17% were at risk for anxiety at pretest, 14% at posttest, and 10% at 6-month follow-up. Chi-square analysis revealed no significant differences in the pattern of frequencies of children at risk for anxiety at posttest, $\chi^2(1, n = 955) = 0.34$, $p = .85$ or at 6-month follow-up $\chi^2(1, n = 855) = 0.02$, $p = .90$.

Table 1
Means and *SDs* for the SCAS, CDI and *Cuestionario de Afrontamiento* at each time point

Outcome measure/ Time point	Standard curriculum instruction			Intervention group		
	M	*SD*	*n*	*M*	*SD*	*n*
SCAS pretest	30.81	10.35	475	29.52	11.15	497
SCAS posttest	28.39	11.28	463	27.41	11.35	492
SCAS 6m	25.77	11.12	409	24.61	11.48	441
CDI pretest	9.44	5.44	475	9.30	5.79	495
CDI posttest	9.82	5.97	462	8.15	5.98	492
CDI 6m	8.29	6.10	411	7.70	6.08	435
Coping pretest	9.60	2.68	476	9.60	2.61	497
Coping posttest	9.74	2.59	462	9.06	2.68	493
Coping 6m	9.53	2.55	409	9.01	2.86	441

At posttest, the one-tailed independent sample *t*-tests revealed significant differences between groups in the CDI mean scores, $t(1, 954) = 4.34$, $p = .01$, which yielded an effect size of $d = -0.28$, which is considered a small magnitude. At 6-month follow-up, no significant differences were found between groups on the CDI mean scores, $t(1, 846) = 1.41$, $p = .08$. From the intervention group, 16% were at risk for depression at pretest, 13% at posttest, and 12% at 6-month follow-up. From the standard curriculum instruction group, 14% were at risk for depression at pretest, 20% at posttest, and 12% at 6-month follow-up. Differences were shown in the pattern of frequencies of children at risk for depression at posttest, $\chi^2(1, n = 954) = 6.76$, $p = .01$ but not at 6-month follow-up, $\chi^2(1, n = 846) = 0.01$, $p = .91$.

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 the standard curriculum instruction group at posttest, $t(1, 955) = 3.98$, $p = .01$ and at 6-month follow-up $t(1, 850) = 2.75$, $p = .01$. The effect size yielded at posttest was $d = -0.26$ and at 6-month follow-up $d = -0.19$, which are considered a small magnitude.

Discussion

Prevention of anxiety and depressive disorders is very important as these are common problems among children that, if left untreated, may lead to a broad range of negative consequences for the child and his or her family (Kashani & Orvaschel, 1990; World Health Organization, 2004). Findings from this study revealed that at pretest almost 2 out of 10 Mexican children were experiencing some symptoms of anxiety or depression. A recent study conducted by Benjet, Borges, Medina-Mora, Zambrano, and Aguilar-Gaxiola (2009) has reported even higher rates of anxiety and depression among Mexican youth, suggesting that these problems escalate over time. It was estimated that about 40% of Mexican youth had experienced a mental health problem, anxiety being the most common, followed by impulse-control disorders, affective disorders, and substance abuse (Benjet et al., 2009). The latter study also found that only 14%

of the adolescents who reported a mental health problem received help. Various forms of help were reported, including psychological treatment, a visit to a medical doctor, reading a self-help book, self-medication, herbal medicine, or talking to a priest. Therefore, research on the prevention of anxiety and depression in developing countries such as Mexico is crucial.

Children who received the program demonstrated increased proactive coping skills and a decrease in depressive symptoms and risk for depression. These findings are similar to findings that have been reported by other researchers (Barrett, Lock, & Farrell, 2005; Lock & Barrett, 2003; Lowry-Webster et al., 2001). This suggests that providing a universal prevention program is an effective strategy in promoting mental health. The fact that the intervention can be delivered by classroom teachers is an added benefit that adds to the cost-effectiveness of the strategy since a large number of children can be reached over a relatively short period of time (Dozois & Westra, 2004).

However, the non-significant finding for anxiety symptoms was unexpected and differed from the findings of other studies (e.g., Lowry-Webster et al., 2001). A recent systematic review conducted by Neil and Christensen (2009) on the efficacy and effectiveness of school-based prevention and early intervention programs for anxiety has reported that three-quarters of the trials that were analyzed showed a significant reduction in symptoms of anxiety. There are several possible explanations for the lack of significant differences. First, it could be the result of a sleeper effect in which significant changes appear later in time, similar to what Barrett et al. (2006) found. Second, it is possible that the Spanish version of the SCAS measure was not sensitive enough to the culture of Mexican children. Pretest correlations between the coping skills measure and the SCAS were not statistically significant in this study. Previous studies have found an increase in participants' proactive coping skills and a decrease in anxiety symptoms after the intervention (e.g., Lock & Barrett, 2003), suggesting the possibility that translated scales may not be equivalent to original scales.

The third possibility is that the program was implemented less consistently than it was in other studies. This study reported that the program was implemented "moderately well", but it is unknown whether this could be the cause as no other published studies of the program have included data regarding the fidelity of implementation. Results from a meta-analysis conducted by Fisak, Richard, and Mann (2011) showed that studies conducted in Australia (most of them using the *FRIENDS for Life* program) yielded higher effect sizes than those studies conducted at another location (d = .30 vs. .12). This suggests that more research is required to evaluate the degree of effectiveness of the *FRIENDS for Life* program in other countries. Last, it could be also that the program in its current format did not work for this outcome in the population of Mexican children. This was the first adaptation of the program and further aspects related to the Mexican culture and manifestations of anxiety will be taken into account in order to work towards a better and more culturally sensitive adaptation of the program.

Finally, when interpreting the findings of this study it is necessary to take into account the school/teacher differences between Mexico and the other countries where the *FRIENDS for Life* program has been tested (e.g., Australia, England, Germany). Differences such as the number of children per classroom (40 children vs. typically 25 in developed countries), absence of a teacher assistant, classroom teachers who usually work two shifts (about 10 -12 hours per day) due to economic struggles, and teachers´ limited opportunities for continuing professional development, may have influenced the results of the program. Classroom teachers who implemented the program expressed through informal conversations that for a more effective implementation major school changes are needed, starting with a greater support for those implementing the program. They also pointed the need for assistance with workload management and the provision of more information about mental health promotion and resilience in communities. This vision of multi-sectorial involvement in the promotion of community mental health has also been stated as a priority in other implementation studies (Patel & Sumathipala, 2001).

Limitations of the Study

Although this study attempted to avoid some of the methodological shortcomings of previous school-based research, there are still some limitations that should be taken into account when interpreting the findings. First, the effectiveness of the program was primarily evaluated through children´s self-reported measures, which rely on their subjective perceptions. Therefore, further studies should include multiple informants and qualitative measures such as interviews and focus groups. Second, another limitation was the dearth of measures that targeted positive or strength-based outcomes such as optimism, empathy, quality of peer relationships, or social skills. Especially when working at the universal level of prevention it is crucial to incorporate more measures of positive outcomes, as most of the population is non-clinical.

Third, due to financial constraints, single informant coding was carried out for the protocol integrity measures and no long-term evaluation was conducted. For the same reason, the informational sessions for parents were no sufficiently promoted. The ideal promotion would have included sending several written reminders of the sessions, offering some tea/coffee and crackers, and providing attendance rewards such as other parental resources or participating in raffle (Neil & Christensen, 2009). Fourth, an important limitation of this study was not being able to follow-up those cases that scored above clinical cut-off and were referred to teachers and parents. Thus, caution should be paid when analyzing the results at 6-month follow-up.

Conclusion

Most of the research on the prevention of anxiety and depression has been conducted in developed countries with high SES populations. Patel and Sumathipala (2001) reported that "mental health research in low and middle income countries contributes barely to 3-6% of all published mental health research in the world, and research focusing on children is even smaller". This is the first study examining the school-based prevention of mental health problems in Mexican children and it is an innovative first step in examining how prevention programs might be implemented in developing countries that due to their social and financial constraints are in urgent need of help.

Further studies should continue exploring the effects of the *AMISTAD para siempre* program as a tool to promote emotional resilience in classrooms. Working towards effective prevention is crucial as anxiety and depression can lead to negative consequences such as substance abuse and deviant conduct, which may limit children from reaching their maximal potential.

Resumen ampliado

Un número cada vez mayor de niños de nivel escolar experimentan o corren el riesgo de experimentar un sinnúmero de problemas psicológicos y conductuales que interfieren en sus relaciones interpersonales, su rendimiento escolar y su potencial de convertirse en ciudadanos productivos (Patel y Sumathipala, 2001; World Health Organization [Organización Mundial de la Salud], 2004). Por lo tanto, los programas de prevención e intervención tempranas en las escuelas son cruciales.

Este es el primer estudio que evalúa la eficacia de un programa de prevención de ansiedad y depresión llevado a cabo con niños latinoa-

mericanos en el idioma español. El propósito de este estudio fue evaluar la eficacia de la versión en español del *FRIENDS for Life (AMISTAD para siempre)* para incrementar sus habilidades de afrontamiento proactivas, así como en reducir y prevenir los síntomas de ansiedad y depresión en niños mexicanos de escuelas primarias. La pregunta de investigación que guió este estudio fue: ¿cuál es el impacto del programa *AMISTAD para siempre* en las habilidades de afrontamiento y en los síntomas de ansiedad y depresión y el nivel de riesgo de padecerlas, en estudiantes de 4º y 5º año de primaria? La hipótesis era que aumentarían las habilidades de afrontamiento proactivas de los niños que participaron en la intervención y que los niños presentarían menos riesgo y síntomas de ansiedad y depresión en comparación con la condición de la instrucción curricular estándar.

Método

Para abordar las preguntas de la investigación se empleó una comparación del diseño de grupo cuasi experimental no equivalente con un factor inter-sujetos y un factor intra-sujeto. Hubo dos niveles del factor inter-sujetos: (a) condición de la intervención y (b) condición de la instrucción curricular estándar. También hubo tres niveles del factor intra-sujeto: (a) preprueba, (b) postprueba y (c) seguimiento a 6 meses. Se seleccionaron ocho escuelas de una ciudad del norte de México y de una de las tres ciudades con mayor prevalencia de trastornos de ansiedad y se asignaron a una intervención o a la instrucción curricular estándar. Quince maestros implementaron la intervención y 16 fungieron como control. Los participantes fueron 1.030 estudiantes de 4º y 5º grado (de 8 a 13 años de edad). Se administraron tres pruebas a todos los niños en conjunto, tanto en la preprueba como en la postprueba y en el seguimiento a 6 meses: *Escala de Ansiedad para Niños de Spence* (SCAS, Spence, 1997), *Cuestionario de Depresión Infantil* (CDI, Kovacs, 1981) y *Cuestionario de Afrontamiento* (CA, Hernández- Gúzman, 2003). La fidelidad de líder de grupo en cuanto a estructura y habilidades se llevó a cabo utilizando la traducción al español de *Fidelity of Implementation Checklists* (Barrett, 2005) en el 17% de las sesiones.

Los maestros de las escuelas del grupo intervención participaron en un curso de capacitación de dos días. Después de la fase de preprueba y del taller de capacitación se implementó el programa de prevención en las escuelas asignadas a la intervención. Las escuelas del grupo de instrucción curricular estándar continuaron con sus actividades normales. El programa *AMISTAD para siempre* (Barrett, 2008a, 2008b) se implementó durante 10 semanas consecutivas con una sesión de 75 minutos realizada una vez a la semana. Se implementaron 2 sesiones de repaso al mes y a los 3 meses de la sesión 10. Se analizó a los estudiantes al término de la sesión 10 y a todos los participantes se les pidió que completaran nuevamente las mismas medidas a los 6 meses como seguimiento.

AMISTAD para siempre (Barrett, 2008a, 2008b), la versión en español adaptada culturalmente del programa *FRIENDS for Life*, es un programa social y emocional diseñado para incrementar la resiliencia de los niños. Incorpora estrategias fisiológicas, cognitivas y conductuales para ayudar a los niños a afrontar el estrés y la preocupación. En el componente conductual se incluye el monitoreo de sentimientos y pensamientos, la exposición a la visualización mental y fuera del aula y un ejercicio de relajación. El componente cognitivo enseña a los niños tanto a reconocer sus sentimientos y pensamientos como la conexión entre ambos. También enseña a los estudiantes a identificar sus interpretaciones erróneas y sus autoafirmaciones incompatibles, además de a elaborar interpretaciones alternas de situaciones difíciles. Entre las técnicas de aprendizaje se incluye la discusión grupal, las actividades prácticas y los juegos de roles. Aproximadamente se dedica una sesión a aprender cada uno de los 7 pasos representados en el acróstico de AMISTAD. El acróstico en español es paralelo al de inglés en cuanto a los conceptos que se enseñan. Después de la sesión de introducción los niños comienzan con la pregunta de la letra *A*, que representa "¿andas preocupado?", seguido de la letra *M* "mantente relajado", *I* "pensamientos internos útiles", *S* "soluciones y planes para afrontar", *T* "trabajaste bien, prémiate", *A* "acuérdate de practicar" y *S* "sonríe".

Las preguntas se abordaron de forma separada utilizando pruebas *t* para una muestra independiente de una dimensión (nivel alfa de .05) con el objetivo de examinar las variables dependientes de ansiedad, depresión y habilidades de afrontamiento. Para evaluar más a fondo la eficacia del programa se condujeron análisis de chi cuadrado en el SCAS y en el CDI para examinar la condición de riesgo de los niños en cada momento. Se consideró "en riesgo" de ansiedad a los participantes cuya puntuación era de 41 o más en el SCAS, mientras que a los niños que obtuvieron 15 o más en el CDI se les consideró "en riesgo" de padecer depresión. Estos números se calcularon agregando la puntuación media a 1 desviación estándar de toda la muestra en la preprueba. El impacto preventivo de la intervención se midió mediante una disminución en la severidad de los síntomas y evaluando el cambio de su condición.

Resultados

*Análisis preliminar***.** La prueba de Levene de homogeneidad de varianzas indicó que durante la preprueba cada medida de los resultados de ansiedad, depresión y habilidades de afrontamiento cumplió con la suposición de homogeneidad de varianzas ($p > .05$, para cada una). Un análisis de varianza efectuado en todas las medidas de resultados indicó que la instrucción curricular estándar y los grupos de intervención no fueron significativamente diferentes en la preprueba. Las correlaciones de Pearson se llevaron a cabo para examinar la relación entre las puntuaciones de la preprueba del SCAS, CDI y el CA. Las correlaciones fueron positivas entre el SCAS y el CDI ($r = .39$, $p = .01$) y entre el CA y el CDI ($r = .24$, $p = .01$). No se encontró ninguna correlación significativa estadísticamente entre el SCAS y el CA ($r = -.01$, $p = .77$).

Para examinar el efecto de la intervención para la muestra entera se compararon las puntuaciones de los participantes durante la preprueba y durante el seguimiento a 6 meses entre condiciones experimentales.

Ansiedad. La prueba *t* para la muestra independiente de una dimensión reveló que no había diferencias significativas entre grupos en las puntuaciones de la media del SCAS durante la postprueba, t (1, 955) = 1.35, $p = .09$ o durante el seguimiento a 6 meses t (1, 850) = 1.49, $p = .07$. Del grupo de intervención, el 16% estuvo en riesgo de ansiedad durante la preprueba, el 13% durante la postprueba y el 9% durante el seguimiento a 6 meses. Del grupo de instrucción curricular estándar, el 17% estuvo en riesgo de ansiedad durante la preprueba, el 14% durante la postprueba y el 10% durante el seguimiento a 6 meses. Los análisis de chi cuadrado revelaron que no había diferencias significativas en el patrón de frecuencias de los niños en riesgo de ansiedad durante la postprueba, $\chi^2(1, n = 955) = 0.34$, $p = .85$ o durante el seguimiento a 6 meses, $\chi^2(1, n = 855) = 0.02$, $p = .90$.

Depresión. Durante la postprueba las pruebas *t* de la muestra independiente de una dimensión revelaron diferencias significativas entre grupos en las puntuaciones de la media del CDI, t (1, 954) = 4.34, $p = .01$, lo que produjo un tamaño del efecto de $d = -0.28$ y que se considera como una magnitud pequeña. Durante el seguimiento a 6 meses no se encontraron diferencias significativas entre grupos en las puntuaciones de la media del CDI, t (1, 846) = 1.41, $p = .08$. Del grupo de intervención el 16% estuvo en riesgo de depresión durante la preprueba, el 13% durante la postprueba y el 12% durante el seguimiento a 6 meses. Del grupo de instrucción curricular estándar el 14% estuvo en riesgo de depresión durante la preprueba, el 20% durante la postprueba y el 12% durante el seguimiento a 6 meses. Las diferencias se mostraron en el patrón de frecuencias de los niños en riesgo de depresión durante la postprueba, $\chi^2(1, n = 954) = 6.76$, $p = .01$, pero no durante el seguimiento a 6 meses, $\chi^2(1, n = 846) = 0.01$, $p = .91$.

Habilidades de afrontamiento. Las pruebas *t* para la muestra independiente de una dimensión revelaron un aumento estadísticamente significativo en las habilidades de afrontamiento proactivas de los niños del grupo de intervención, en comparación con el grupo de instrucción curricular estándar, durante la postprueba, t (1, 955) = 3.98, p = .01 y durante el seguimiento a 6 meses t (1, 850) = 2.75, p = .01. El tamaño del efecto durante la postprueba fue d = -0.26 y durante el seguimiento a 6 meses fue d = -0.19, los cuales se consideran de una magnitud pequeña.

Discusión

Los hallazgos de este estudio revelaron que durante la preprueba casi 2 de cada 10 niños mexicanos experimentaron algunos síntomas de ansiedad y depresión. Un estudio reciente efectuado por Benjet, Borges, Medina-Mora, Zambrano, and Aguilar-Gaxiola (2009) ha presentado índices de ansiedad y depresión aún más altos entre adolescentes mexicanos, sugiriendo que estos problemas escalan con el tiempo. Se estimó que aproximadamente el 40% de los adolescentes mexicanos habían experimentado un problema de salud mental, siendo el de ansiedad el más común, seguido de trastornos de control de impulsos, trastornos afectivos y abuso de sustancias (Benjet et al., 2009). Por lo tanto, las investigaciones en la prevención de la ansiedad y la depresión en países en desarrollo como México son cruciales.Los niños que realizaron el programa demostraron un aumento en sus habilidades de afrontamiento proactivas y una disminución en los síntomas de depresión y en el riesgo de padecer depresión. Estos hallazgos son similares a los que otros investigadores han presentado (Barrett, Lock y Farrell, 2005; Lock y Barrett, 2003; Lowry-Webster, Barrett y Dadds, 2001). Esto sugiere que ofrecer un programa de prevención universal es una estrategia efectiva para fomentar la salud mental. El hecho de que los maestros de escuela puedan realizar la intervención es un beneficio adicional que se suma a la rentabilidad de la estrategia, ya que se puede llegar a un gran número de niños en un período de tiempo relativamente corto (Dozois y Westra, 2004).

No obstante, el hallazgo no tan significativo de síntomas de ansiedad fue inesperado y difirió de los hallazgos de otros estudios (por ejemplo, Lowry-Webster et al., 2001). Las explicaciones posibles podrían ser un efecto durmiente en el que cambios significativos aparezcan con el paso del tiempo, de manera similar a lo que Barrett, Farrell, Ollendick y Dadds (2006) encontraron, falta de sensibilidad cultural de la medida SCAS o problemas con la fidelidad de la implementación, entre otros.

Finalmente, al interpretar los hallazgos de este estudio es necesario tomar en cuenta las diferencias de escuela/maestro entre México y los otros países en los que se ha probado el programa *FRIENDS for Life* (por ejemplo, Australia, Inglaterra o Alemania).

Conclusión

La mayor parte de la investigación sobre la prevención de la ansiedad y la depresión se ha efectuado en países desarrollados con poblaciones de un nivel socioeconómico elevado. Este es el primer estudio en examinar la prevención escolar de los problemas de salud mental en niños mexicanos y es un primer paso innovador para examinar cómo se podrían implementar los programas de prevención en países en vías de desarrollo que, debido a sus limitaciones sociales y económicas, se encuentran en la necesidad de recibir ayuda urgente. Estudios posteriores deberían continuar explorando los efectos del programa *AMISTAD para siempre* como herramienta para fomentar la resiliencia emocional dentro de las aulas.

Conflicts of interest

The authors of this article declare no conflicts of interest.

References

Barrett, P. (2005). *Support Materials for the FRIENDS program*. Brisbane, Australia: Pathways Health and Research Centre.

Barrett, P. (2008a). *AMISTAD para siempre: cuaderno de trabajo para niños*. Brisbane, Australia: Australian Academic Press.

Barrett, P. (2008b). *AMISTAD para siempre: manual para líderes de grupo*. Brisbane, Australia: Australian Academic Press.

Barrett, P., Lock, S., & Farrell, L. (2005). Developmental differences in universal preventive intervention for child anxiety. *Clinical Child Psychology and Psychiatry, 10*, 539-555.

Barrett, P., & Turner, C. (2001). Prevention of anxiety symptoms in primary school children: Preliminary results from a universal school-based trial. *The British Journal of Clinical Psychology, 40*, 399-410. doi: 10.1348/014466501163887

Barrett, P., Farrell, L. J., Ollendick, T. H., & Dadds, M. (2006). Long-term outcomes of an Australian universal prevention trial of anxiety and depression symptoms in children and youth: An evaluation of the FRIENDS program. *Journal of Clinical Child and Adolescent Psychology, 35*, 403-411.

Benjet, C., Borges, G., Medina-Mora, M. E., Zambrano, J., & Aguilar-Gaxiola, S. (2009). Youth mental health in a populous city of the developing world: Results from the Mexican adolescent health survey. *Journal of Child Psychology and Psychiatry, 50*, 386-395. doi: 10.1111/j.1469-7610.2008.01962.x

Bermúdez-Ornelas, G., & Hernández- Gúzman, L. (2002). La medición de la fobia específica en niños y adolescentes. *Revista Mexicana de Psicología, 19*, 119-225.

Caraveo-Anduaga, J. J., & Comenares-Bermúdez, E. (2002). Los trastornos psiquiátricos y el abuso de substancias en México: panorama epidemiológico. *Salud Mental, 25*(2), 9-15.

Compton, S. N., Burns, B. J., Egger, H. L., & Roberston, E. (2002). Review of the evidence base for treatment of childhood psychopathology: Internalizing disorders. *Journal of Consulting & Clinical Psychology, 70*, 1240-1266. doi: 10.1037//0022-006X.70.6.1240

Costello, E. J., Pine, D. S., Hammen, C., March, J., Plotsky, P. M., Weissman, M. … Leckman J. F. (2002). Development and natural history of mood disorders. *Biological psychiatry, 52*, 529-542. doi: 10.1016/S0006-3223(02)01372-0

Del Barrio, V., Moreno-Rosset, C., & López-Martínez, R. (1999). El Children's Depression Inventory (CDI, Kovacs, 1992): su aplicación en población española. *Clínica y Salud, 10*, 393-416.

Dozois, D. J. A., & Westra, H. A. (2004). The nature of anxiety and depression: Implications for prevention. In D. J. A. Dozois & K. S. Dobson (Eds.), *The prevention of anxiety and depression: Theory, research and practice* (pp. 9-41). Washington, DC: American Psychological Association.

Essau, C. A., Conradt, J., & Ederer, E. M. (2004). Angstpravention bei schulkindern. *Versicherungsmedizin, 56*, 123-130.

Fisak, B. J., Richard, D., & Mann, A. (2011). The prevention of child and adolescent anxiety: A meta-analytic review. *Prevention Science, 12*, 255-268. doi: 10.007/s11121-011-0210-0

Gladstone, T., & Beardslee, W. R. (2009). The prevention of depression in children and adolescents: A review. *La Revue Canadienne de Psychiatrie, 54*, 212-221.

Gordon, R. (1987). An operational classification of disease prevention. In J. Steinberg & M. Silverman (Eds.), *Preventing mental disorders in school-age children: A review of the effectiveness of prevention programs* (pp. 20-26). Washington, DC: Department of Health and Human Services, National Institute of Mental Health.

Hernández- Guzman, L. (2003). *Escala de afrontamiento (versión infantil). Proyecto de investigación DGAPA IN-302600, evaluación y categorización de los trastornos de ansiedad en niños y adolescentes.* México, DF: Universidad Autónoma de México.

Instituto Nacional de Estadística, Geografía e Informática (2006). *Regiones socioeconómicas de México*. Retrieved May 19, 2006, from http://www.inegi.gob.mx/est/contenidos/espanol/sistemas/regsoc/default.asp?c=5688

Kashani, J. H., & Orvaschel, H. (1990). A community study of anxiety in children and adolescents. *American Journal of Psychiatry, 147*, 313-318.

Kendall, P. C., & Suveg, C. (2006). Treating anxiety disorders in youth. In P. C. Kendall (Ed.), *Child and adolescent therapy* (pp. 243-296). New York, NY: The Guildford Press.

Kovacs, M. (1981). *Inventario de Depresión Infantil*. Madrid, España: TEA Ediciones.

Lock, S., & Barrett, P. (2003). A longitudinal study of developmental differences in universal preventive intervention for child anxiety. *Behaviour Change, 20*, 183-199. doi: 10.1375/bech.20.4.183.29383

Lowry-Webster, H. M., Barrett, P., & Dadds, M. R. (2001). A universal prevention trial of anxiety and depressive symptomatology in childhood: Preliminary data from an Australian study. *Behaviour Change, 18*(1), 36-50. doi: 10.1375/bech.18.1.36

Lowry-Webster, H. M., Barrett, P., & Lock, S. (2003). A universal prevention trial of anxiety symptomology during childhood: Results at 1-year follow-up. *Behaviour Change, 20*, 25-43. doi: 10.1375/bech.20.1.25.24843

Medina-Mora, M. E., Borges, G., Lara, C., Benjet, C., Blanco, J., Fleiz, C. …Aguilar-Gaxiola, S. (2003). Prevalencia de trastornos mentales y uso de servicios: Resultados de la encuesta nacional de epidemiología psiquiátrica en México. *Salud Mental, 26*(4), 1-16.

Mostert, J. & Loxton, H. (2008). Exploring the effectiveness of the FRIENDS Program in reducing anxiety symptoms among South African children. *Behavior Change, 25*(2), 85-96. doi: org/10.1375/bech.25.2.85

Neil, A. J., & Christensen, H. (2009). Efficacy and effectiveness of school-based prevention and early intervention programs for anxiety. *Clinical Psychology Review, 29*, 208-215. doi: 10.1016/j.cpr.2009.01.002

Patel, V., & Sumathipala, A. (2001). International representation in psychiatric journals: A survey of 6 leading journals. *British Journal of Psychiatry, 168*, 406-409.

Rose, H., Miller, L., & Martínez, Y. (2009). FRIENDS for Life: The results of a resilience building, anxiety-prevention program in a Canadian elementary school. *Professional School Counseling, 12*, 400-407.

Spence, S. H. (1997). Structure of anxiety symptoms in children: A confirmatory factor-analytic study. *Journal of Abnormal Psychology, 106*, 280-297. doi: 10.1037/0021-843X.106.2.280

Stallard, P., Simpson, N., Anderson, S., Carter, T., Osborn, C., & Bush, S. (2005). An evaluation of the FRIENDS programme: A cognitive behaviour therapy intervention to promote emotional resilience. *Archives of Disease in Childhood, 90*, 1016 -1019. doi: 10.1136/ads.2004.068163

Stallard, P., Simpson, N., Anderson, S., Hibbert, S., & Osborn, C. (2007). The FRIENDS emotional health programme: Initial findings from a school-based project. *Child and Adolescent Mental Health, 12*(1), 32-37.

Stark, K. D., Hargrave, J., Sander, J., Custer, G., Schnoebelen, S., Simpson, J., & Molnar, J. (2006). Treatment of Childhood Depression: The ACTION Treatment Program. In P. C. Kendall (Ed.), *Child and adolescent therapy* (pp. 169-216). New York, NY: The Guilford Press.

Stallard, P., Simpson, N. & Anderson, S, & Goddard (2008). The FRIENDS emotional health prevention programme: 12-month follow-up of a universal UK school based trial. *European Child & Adolescent Psychiatry, 17*, 283-289.

World Health Organization (2004). *Prevention of mental disorders: Effective interventions and policy options.* Geneva: WHO.