Journal of Clinical Child & Adolescent Psychology

Long-Term Outcomes of an Australian Universal Prevention Trial of Anxiety and Depression Symptoms in Children and Youth: An Evaluation of the Friends Program

Paula M. Barrett [a]; Lara J. Farrell [a]; Thomas H. Ollendick [b]; Mark Dadds [c]

[a] University of Queensland, Pathways Health and Research Centre, Brisbane, Australia. [b] Virginia Polytechnic Institute and State University, Blacksburg. [c] University of New South Wales, Sydney, Australia.

PLEASE SCROLL DOWN FOR ARTICLE

Long-Term Outcomes of an Australian Universal Prevention Trial of Anxiety and Depression Symptoms in Children and Youth: An Evaluation of the Friends Program

Paula M. Barrett

University of Queensland, Pathways Health and Research Centre, Brisbane, Australia

Lara J. Farrell

University of Queensland, Pathways Health and Research Centre, Brisbane, Australia

Thomas H. Ollendick

Virginia Polytechnic Institute and State University, Blacksburg

Mark Dadds

University of New South Wales, Sydney, Australia

This study evaluated the long-term effectiveness of the FRIENDS Program in reducing anxiety and depression in a sample of children from Grade 6 and Grade 9 in comparison to a control condition. Longitudinal data for Lock and Barrett's (2003) universal prevention trial is presented, along with data from 12-month follow-up to 24- and 36-month follow-up. Results of this study indicate that intervention reductions in anxiety reported in Lock and Barrett were maintained for students in Grade 6, with the intervention group reporting significantly lower ratings of anxiety at long-term follow-up. A significant Time × Intervention Group × Gender Effect on Anxiety was found, with girls in the intervention group reporting significantly lower anxiety at 12-month and 24-month follow-up but not at 36-month follow-up in comparison to the control condition. Results demonstrated a prevention effect with significantly fewer high-risk students at 36-month follow-up in the intervention condition than in the control condition. Results are discussed within the context of prevention research.

Emotional disturbances in children and youth occur at alarmingly high rates, are associated with a number of negative life consequences, and come at a tremendous cost to society. A *Year Book of Australia* report indicated that 20% of children between the ages of 12 and 16 had a significant mental health problem (Stanley, 2002). Anxiety disorders are the most frequently experienced mental health disorder in childhood and adolescence, with studies estimating a point prevalence of 5% to 10% and a lifetime prevalence of approximately 20% (Essau, Condradt, & Petermann, 2000; Shaffer, Fischer, Dulcan, & Davies, 1996). Research has demonstrated that anxiety and depressive symptoms are highly related in child and youth populations (e.g., Dobson, 1985; Tannenbaum, Forehand, & Thomas, 1992). Estimates indicate approximately 2% to 5% of children and adolescents will suffer a major depressive disorder of clinical severity (Kashani et al., 1987; Lewinsohn, Clarke, & Rohde, 1994). Beyond the high prevalence rates, these emotional disorders are

associated with a wide range of psychosocial impairments, tend to be chronic and unremitting in course, and are associated with significant risk for other psychological disorders if left untreated (e.g., Cole, Peeke, Martin, Truglio, & Seroczynski, 1998; Kashani & Orvaschel, 1990; Last, Hansen, & Franco, 1997; Orvaschel, Lewinsohn, & Seeley, 1995).

There has been a recent surge in the field of prevention research for children and youth. Given the potential of such approaches to impact on the incidence and prevalence of childhood emotional disorders, the need for evidence-based prevention is strong. Primary preventive interventions can be defined as either universal, selected, or indicated and targeted (Mrazek & Haggerty, 1994). Universal interventions target whole population groups, selective interventions involve children and youth identified as at risk of psychological problems, and indicated interventions target individuals identified with mild to moderate symptoms of a disorder (Mrazek & Haggerty, 1994). Universal prevention interventions conducted in the school context have many advantages, including reducing recruitment, screening, and attrition difficulties; reaching a broad range of children and adolescents with varying

Correspondence should be addressed to Lara Farrell, School of Applied Psychology, Mt. Gravatt Campus, Griffith University, Queensland, Australia 4111. E-mail: l.healy@griffith.edu.au

levels of risk for psychopathology; reducing stigmatization; enhancing peer support; and reducing psychosocial difficulties within the classroom—thus promoting learning and healthy development (Evans, 1999; Kubiszyn, 1999). Support for preventative outcomes based on the delivery of cognitive behavioral interventions in schools is growing.

The Queensland Early Intervention and Prevention of Anxiety Project (Dadds, Spence, Holland, Barrett & Laurens, 1997) represented the first cognitive behavioral trial for prevention of childhood anxiety. This study targeted children (ages 7 to 14 years) who were disorder-free but exhibited anxious symptomatology (indicated prevention; Mrazek & Haggerty, 1994) as well as children who met criteria for an anxiety disorder but were in the less severe range (early intervention; Mrazek & Haggerty, 1994). Screening identified 128 eligible participants who were randomly allocated to either an intervention or a control condition. Diagnostic status was used as an outcome measure, and results were favorable. Both groups demonstrated improvement immediately postintervention; however, by 6-month follow-up, the improvement was maintained in the intervention group only. No differences between groups were evident at 12-month follow-up; however, at the 2-year follow-up, intervention effectiveness was demonstrated through the reduction of existing rates of anxiety disorder and prevention of the onset of new anxiety disorders (Dadds, Spence, Laurens, Mullins, & Barrett, 1999). Consistent with prior research (Last, Perrin, Hersen, & Kazdin, 1996), regardless of intervention status, participants in this study showed a general improvement across time; results further revealed gender (female), parental anxiety and pretreatment severity predicted poor response to intervention (Barrett, Dadds, & Rapee, 1996; Cobham, Dadds, & Spence, 1998). This study demonstrated that anxiety disorders and the number of children at risk of anxiety can be successfully reduced through selected school-based cognitive–behavioral intervention. An interesting outcome was putative delay in intervention effects, which is consistent with the results of a similar prevention trial for adolescent depression (Jaycox, Reivich, Gillham, & Seligman, 1994).

Barrett and Turner (2001) evaluated the effects of a universal cognitive behavioral intervention for the prevention of internalizing symptoms in children in Grade 6 (ages 9 to 10 years). Ten schools in the Brisbane region participated in the project, which involved all children participating in the FRIENDS program during class time (Barrett, 2004, 2005; Barrett, Lowry-Webster, & Turner, 1999a, 1999b). This study evaluated a "train-the-trainer" model of intervention, whereby children were assigned to one of three conditions: (a) psychologist-led intervention, (b) teacher-led intervention (following a standardized teacher training work-

shop), or (c) standard curriculum (control condition). Barrett and Turner (2001) trained classroom teachers and psychologists to implement the 12-session FRIENDS program as part of the standard classroom curriculum. Parents were invited to attend four parent evenings, which involved psychoeducation and parenting strategies. Evaluation of children's self-report measures at postintervention indicated preventive effects, with participants reporting significant reductions in anxiety symptoms across psychologist and teacher intervention conditions. This study provided preliminary evidence for the effectiveness of the FRIENDS program delivered by teachers at a school-based population level, integrated within the standard school curriculum.

Lowry-Webster, Barrett, and Dadds (2001) further examined the effectiveness of the FRIENDS program as a universal strategy for prevention of childhood anxiety. In total, 594 students, ages 10 to 13 years, were allocated to either an intervention or a control condition on the basis of class. At postassessment, all children reported significant reductions in anxiety, although these decreases were significantly greater in the intervention group compared to the control condition. A significant reduction in depression was found for the intervention group only. Further analysis of changes in risk status showed positive findings. Of the children in the intervention group at risk at preintervention, 75.3% were no longer at risk at postintervention, compared to 54.8% of high-risk children in the control group. Lowry-Webster, Barrett, and Lock (2003) reported on outcomes at 12-month follow-up for this sample. Results indicated that prevention effects were maintained up to the 12-month follow-up for children who received the program. The intervention group evidenced lower scores on anxiety self-report measures, and the high-anxiety children from the intervention condition reported reductions in both anxiety and depression scores. Diagnostic interview data demonstrated that 85% of children in the intervention group who were scoring above the clinical cutoff for anxiety and depression were diagnosis-free at 12-month follow-up, compared to only 31.2% of children in the control group. This follow-up study demonstrated clinically and statistically significant reductions in anxiety symptoms and disorders from pretest to 12-month follow-up following the FRIENDS universal program.

Most recently, Lock and Barrett (2003) presented the results of a longitudinal school-based study of universal prevention using the FRIENDS program across two distinct age groups. This study involved a group of 733 children enrolled in Grade 6 (*n* = 336; ages 9 and 10 years) and Grade 9 (*n* = 401; ages 14 to 16 years) from seven socioeconomically diverse schools in the metropolitan area of Brisbane, Australia. Schools were randomly assigned to either an intervention condition

404

(FRIENDS) or a control condition (standard curriculum), and all students completed self-report measures of anxiety, depression, and coping. Students identified as high risk based on elevated scores on an anxiety measure were interviewed using a structured diagnostic interview. As with previous research (e.g., Dadds et al., 1997, 1999; Lowry-Webster et al., 2001, 2003), this study found general reductions in anxiety across time regardless of intervention condition; however, these reductions were significantly greater for students in the intervention condition at both posttest and 12-month follow-up. In terms of age differences, children in Grade 6 reported significantly higher levels of anxiety prior to the intervention and at postintervention yet greater reductions in anxiety at 12-month follow-up, as well as lower levels of depression across time compared to Grade 9 children. This finding suggested that the optimal time for preventing anxiety may be in late childhood (9 to 10 years of age) versus early adolescence. This study also examined gender differences and found that girls were more likely to be at risk of an anxiety disorder and tend to report higher levels of anxiety than boys over time. Moreover, Grade 6 girls were most responsive to the intervention, as they reported greater reductions in anxiety compared to girls in Grade 9 and boys across grades.

Lock and Barrett (2003) also examined the effects of the intervention on depressive symptoms. Results indicated that there significant reductions in depression; however, this effect was only apparent at 12-month follow-up, suggesting a delayed "prevention" effect for depression. This finding of a delayed effect is consistent with the finding from the Queensland Early Intervention project (Dadds et al., 1997) and is also consistent with Jaycox and colleagues (1994) prevention trial for depression.

These preliminary studies have indicated significant promise for the effectiveness of the FRIENDS program as a selective, indicated, and universal prevention program for schools. However, as the true preventive impact of an intervention can better be determined over a longer term, it is important to examine outcomes beyond the 12-month follow-up. This study aims to evaluate the long-term prevention outcomes at 24-month and 36-month follow-up, compared to existing data at 12-month follow-up reported in Lock and Barrett's (2003) longitudinal study. Students involved in Lock and Barrett's study were followed up again at 24 months and 36 months. This study evaluates outcomes on measures of self-reported anxiety and depression across intervention and control schools from 12-month follow-up to 24-month follow-up and 36-month follow-up. It was hypothesized that intervention gains from Lock and Barrett's study would be maintained; that is, there would be significantly lower scores on anxiety and depression self-report across the

follow-up for children and youth in the intervention condition in comparison to students in the control condition. It was further hypothesized that there would be significantly fewer students at high risk for anxiety and depression in the intervention condition compared with the control condition at each follow-up point. Based on Lock and Barrett's findings, it was anticipated that prevention effects (maintenance of gains vs. increases in symptoms over time) would be strongest for children in the Grade 6 group compared with students in the Grade 9 group and for girls compared to boys.

Method

Participants

Participants included in this follow-up study were 669 children and youth from Lock and Barrett's (2003) original sample of 737 Grade 6 (age 10 to 11 years) and Grade 9 (age 13 to 14 years) students. One school from the original sample (control school, $n = 68$) withdrew from the longitudinal study following the 12-month follow-up. The sample at 12-month follow-up consisted of 334 students in Grade 7 and 335 students in Grade 10. These students were followed up again at 24 months (Grade 8 and Grade 11) and 36 months (Grade 9 and Grade 12). All participants were students from one of six coeducational schools extending from preschool to Year 12 in the metropolitan area of Brisbane, Australia. Schools, rather than participants, were selected as the unit of random assignment; with schools randomly assigned to either an intervention condition or a control condition. The schools remaining in this study were three intervention schools and three control schools. At 12-month follow-up, there were a total of 379 participating students (54% female) within the intervention condition and a total of 290 participating students within the control condition (48% female).

Socioeconomic status (SES) was based on paternal occupation and was coded using the 9-point Australian Standard Classification of Occupations Dictionary (Australian Bureau of Statistics and Department of Education, Training and Youth Affairs, 1997). The average SES rating across schools was 5.67 ($SD = 1.21$), typical of the SES distribution of Australia in general. This value is indicative of middle SES on average (e.g., skilled, clerical, and trade occupations are coded as 5 and semiprofessional occupations as 6) and is broadly consistent with the average SES reported in other Australian studies (e.g., Spence, Barrett, & Turner, 2003). The intervention and control schools did not differ from each other on SES ratings. The majority of intervention (89%) and control students (84%) were born in Australia, with the remainder coming from a wide vari-

ety of ethnic backgrounds, as is typical of the Australian population.

Procedure

Informed consent and assignment to experimental conditions. All schools participating in the project were from the independent education sector, and initial consent was obtained from the principal of each school to invite students, their parents, and their teachers to participate in a longitudinal research project. Schools were matched in pairs based on geographical location, and one school from each pair was randomly assigned to either an intervention or a control condition. All parents of students were sent an information sheet describing the project and an informed consent form to be completed and returned by parents. A good consent rate was obtained for each grade level: Grade 6, 79.36%, and Grade 9, 77.62%. See Lock and Barrett (2003) for further details.

Program evaluation—Long-term follow-up. In this study, students were assessed at two time intervals: 24-month follow-up and 36-month follow-up. This data will be compared with Lock and Barrett's (2003) 12-month follow-up data to evaluate change over time. All questionnaire assessments were completed within class groups, within normal school hours. A postgraduate research assistant read the instructions and questionnaires aloud to all students while other project staff walked around the classroom assisting students who required help or indicated they did not understand one of the questions. Students were informed that all questionnaire responses were confidential. Questionnaires were presented in a counterbalanced order within the assessment package, with each school receiving a different ordering of questionnaires, across each data collection point.

Program implementation. The FRIENDS intervention (discussed later) was implemented within schools assigned to the intervention condition as part of the curriculum within the subject areas of health and physical education or social and personal development. The intervention consists of 10 sessions of approximately 70 min each, with one session scheduled per week over a 10-week term. There are two booster sessions in the program, which were implemented in the following term. Two developmentally tailored versions of the program were implemented: FRIENDS for Children (Barrett et al., 1999a) was offered to Grade 6 intervention participants and FRIENDS for Youth (Barrett et al., 1999b) was implemented with Grade 9 intervention participants. The FRIENDS program is a brief cognitive–behavioral intervention designed and validated as an individual or group-based treatment for clinically anxious children (Barrett et al., 1996; Shortt,

Barrett, & Fox, 2001). The program, described in detail by Barrett (1999), assists children and youth in learning important skills and techniques that help them to cope with and manage anxiety and emotional distress through the application of learned coping and problem-solving skills. The FRIENDS program was implemented by teachers with the assistance of clinically trained psychology postgraduate students following a 1-day standardized teacher-training workshop. Teachers were the main facilitator for the sessions, with the psychology students assisting children when needed. An earlier study reported that there were no differences in postintervention outcomes for students who received the intervention led by teachers and students who received the intervention led by psychologists (see Barrett & Turner, 2001). The program also incorporates four evening sessions for parents, which are scheduled at regular intervals throughout the 10 weeks of the program. These psychoeducational sessions provided parents with an opportunity to learn about the program and to discuss parenting and reinforcement strategies. FRIENDS is an acronym for the different skills taught (F = feeling worried; R = relax and feel good; I = inner helpful thoughts; E = explore plans; N = nice work, reward yourself; D = don't forget to practice; and S = stay calm for life!).

Prior to implementing the program, group leaders were each given a program fidelity checklist to record whether they completed each activity within the session. Of the 18 teachers who implemented the intervention, only 5 returned fidelity checklists. Adherence to the intervention content ranged from 72.3% to 91.66%.

Measures

Spence Children's Anxiety Scale (SCAS). The SCAS (Spence, 1997) is a 44-item scale assessing anxiety symptoms. Six subscales, corresponding to *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) anxiety disorders are calculated from the anxiety items and a Total Anxiety score (used in this study) is obtained by summing all subscales. Participants rate each symptom on a 4-point scale corresponding to the frequency with which they experience each symptom, and higher scores reflect a greater number of anxiety symptoms. Spence (1998) and Spence et al. (2003) reported high internal consistency in community child (Cronbach's α = .92) and adolescent populations (Cronbach's α = .92), respectively, and 6-month test–retest reliability of .60 for children (Spence, 1998) and 12-week test–retest reliability of .63 for youth (Spence et al., 2003). Good convergent and discriminant validity was also reported. Analysis of internal consistency was conducted for this sample at 12-month follow-up, with results in-

dicating high internal reliability (Cronbach's α = .89) for this measure.

Revised Children's Manifest Anxiety Scale (RCMAS). The RCMAS (Reynolds & Richmond, 1985) provides a measure of anxiety symptomatology. The questionnaire contains 37 items, 9 of which form a Lie scale. For each item, the child is asked to respond "yes" or "no." This measure has been found to have high internal consistency and test–retest reliability, as well as showing convergent and divergent validity (Reynolds & Richmond, 1985). The internal consistency for this measure was high, based on responses from this sample at 12-month follow-up, with a Cronbach's α of .85.

Children's Depression Inventory (CDI). Depressive symptoms were assessed using the 27-item CDI (Kovacs, 1981). Items assess depressive symptoms such as sadness, self-blame, loss of appetite, interpersonal relationships, and school adjustment. For each item, participants choose a statement from three response alternatives, with each increasing in symptom severity. Higher scores reflect more severe symptomatology. In this study, and in line with other research studies (e.g., Hannon, Rapee, & Hudson, 2000; Shochet et al., 2001; Weiss et al., 1991), one item pertaining to suicidal ideation was omitted due to concerns expressed by school personnel and parent groups. In comparing children's scores in samples with and without the suicide item, Weiss et al. (1991) reported that deletion of the suicide item did not significantly alter CDI scores. Cole, Hoffman, Tram, and Maxwell (2000) reported high internal consistency in a community sample of children and youth (Cronbach's α = .90) and 6-month test–retest reliability of .66. Internal consistency for this measure based on this sample at 12-month follow-up indicated high internal reliability (Cronbach's α = .89).

Results

Attrition and Missing Data

Patterns of missing data from 12-month follow-up to 24-month follow-up and 36-month follow-up were examined to determine dropout and absenteeism rates to assess potential influences of these factors on the long-term outcomes. At 24-month follow-up, there were no differences in the frequency of missing data across between grade (34% missing Grade 6, 33% missing Grade 9), gender (34% missing male, 33% missing female), or students at high risk (32% missing) and in the healthy range (34% missing). There were significant differences between the intervention and the control conditions, with the control condition hav-

ing significantly more missing data (44%) than the intervention group (25%), $\chi^2(1, 669) = 26.09$, $p < .001$.

At 36-month follow-up there were no differences in the frequency of missing data between grade (47% missing Grade 6, 46% missing Grade 9), gender (49% missing male, 43% missing female), or students at high risk (44% missing) and in the healthy range (47% missing). There were significant differences between the intervention and the control conditions, with the control condition having significantly more missing data (54%) than the intervention group (41%), $\chi^2(1, 669) = 10.98$, $p < .01$. 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 that were occurring at the time of assessments (i.e., sports meetings, music classes, learning assistance). Control schools were less likely to provide additional opportunities to screen children who were missing from class. Single imputation via expectation maximization method in SPSS was used for missing data in all analyses.

Risk Group Status

Participants were classified as high risk based on elevated scores (above a specified cutoff) on either the SCAS or the CDI. Given there were significant grade and gender differences within this sample on the SCAS at preintervention, this study used separate cutoffs for grade and gender. The cutoffs used reflected the score above which 10% of the normative sample scored (Spence, 2005), which closely paralleled the mean scores of the top 10% of this sample. The cutoff for the CDI was 14 across all students given that there were no significant grade or gender differences on the CDI at preintervention in this sample. Table 1 presents the frequency and percentage of students at high risk across grade and intervention conditions at each time point. Chi-square tests revealed significant differences between the intervention and control conditions at 36-

Table 1. *Frequency and Percentage of Students at High Risk Across Intervention Conditions for Each Follow-Up Time Point*

	12 Months		24 Months		36 Months	
	n	*%*	*n*	*%*	*n*	*%*
Total Intervention	59	16	49	17	22	12[a]
Female	34	58	29	59	13	59
Male	25	42	20	41	9	41
Total Control	62	21	40	25	26	31[a]
Female	31	50	24	60[b]	13	42
Male	31	50	16	40[b]	13	50

[a]Significance between intervention and control groups at 36 months, $p < .001$. [b]Significance between females and males within the control condition at 24 months, $p < .05$.

month follow-up, $\chi^2(1, 261) = 13.57$, $p < .001$, with significantly more students in the control condition at high risk. There were equal girls to boys at high risk within the intervention and control conditions at each time point, except at 24-month follow-up, when there were significantly more girls at high risk within the control condition, $\chi^2(1, 162) = 3.65$, $p < .05$.

Long-Term Follow-Up of Universal Prevention Effects

Prior to evaluating prevention effects across time and intervention condition, a three-level (schools, students, and occasions) multilevel analysis was conducted across the dependent variables (CDI, SCAS, RCMAS) to examine whether there was a clustering effect of schools. The results indicated that the "schools" level of data accounted for less than 5% of total variance across dependent measures; hence it was concluded that there was no clustering effect of schools. Further analyses were conducted using univariate analysis of variance covarying preintervention group differences (analyses of covariance) on all dependent measures, given that these group differences were significant and not controlled for in Lock and Barrett's study (2003). To evaluate the long-term prevention effects of the FRIENDS program on measures of anxiety and depression, 2 (group: intervention or control) × 2 (grade: Grade 6 or Grade 9) × 2 (gender) × 2 (risk: high risk or healthy) × 3 (time: 12-month follow-up, 24-month follow-up, 36-month follow-up) repeated-measures analyses of covariance were conducted. As a result of multiple comparisons being examined, Bonferroni adjustments, based on student's t statistic, were used in SPSS for the repeated-measures analyses to adjust the observed significance level and control for experimentwise error due to the multiple comparisons.

Results of these analyses found no significant outcomes on the CDI. On the SCAS, however, there was a significant Group × Grade interaction, $F(1, 193) = 9.25$, $p < .005$, partial eta squared = .05. Simple effects analyses of group differences within each grade level demonstrated that there were significant intervention group differences on the SCAS for Grade 6 students, $F(1, 96) = 7.48$; $p < .01$. Grade 6 students within the intervention condition scored significantly lower on the SCAS ($M = 9.53$, $SE = 0.88$) across time compared to Grade 6 students in the control condition ($M = 17.07$, $SE = 2.61$). There were no significant intervention group differences for Grade 9 students on the SCAS.

On the RCMAS, there was also a significant Group × Grade interaction, $F(1, 193) = 8.63$, $p < .005$, partial eta squared = .04. Simple effects analyses of group differences within each grade level demonstrated that there were significant intervention group differences for Grade 6 students, $F(1, 96) = 4.43$; $p < .05$. Across

time, Grade 6 students within the intervention condition scored significantly lower on the RCMAS ($M = 4.67$, $SD = 0.45$) than Grade 6 students in the control condition ($M = 7.63$, $SD = 1.34$). There were no significant intervention group differences on the RCMAS for the Grade 9 students. There was also a significant Time × Group × Gender effect on the RCMAS measure of anxiety, $F(2, 386) = 7.37$; $p < .005$, partial eta squared = .04. To examine this interaction further, univariate analyses were conducted separately for girls and boys. Results revealed a significant Time × Group interaction for girls on the RCMAS, $F(2, 186) = 4.07$; $p < .04$. Pairwise comparisons demonstrated that girls in the intervention group scored significantly lower than girls in the control group at 12-month follow-up, $p < .001$, and 24-month follow-up, $p < .05$; however, girls were not significantly different on RCMAS scores across the intervention or control groups at 36-month follow-up. There was no significant Time × Group interaction for boys. Table 2 presents the means and standard deviations for all measures, across time, intervention group, grade, and gender.

Discussion

This study examined the long-term prevention effects of the FRIENDS program within the context of a randomized controlled universal school-based prevention trial. The FRIENDS intervention was offered to both primary and secondary school students and was evaluated against a control condition in Lock and Barrett's (2003) longitudinal study. This study aimed to evaluate the longer term prevention effects of the FRIENDS program across two grades, with long-term follow-up data from 12-month, to 24-month, to 36-month follow-up. It was anticipated that intervention gains reported in Lock and Barrett would be maintained, with students from within the intervention condition self-reporting significantly lower scores on anxiety and depression in comparison to the control condition. Furthermore, it was expected that there would be significantly fewer students within the high-risk range on measures of anxiety and depression in the intervention condition compared with the control condition. Based on Lock and Barrett's results, it was further expected that there would be an Intervention Group × Grade effect, with students in Grade 6 reporting more positive gains than students in Grade 9, and a possible gender effect, with girls reporting the strongest reductions in anxiety and depression.

The results of this study were generally supportive of the study predictions. Consistent with Lock and Barrett (2003), there was an Intervention Group × Grade effect, whereby students in Grade 6 appeared to benefit more from the intervention than students in Grade 9 on both measures of anxiety. For students in

Table 2. *Means and Standard Deviations for SCAS, RCMAS, and CDI Across Grade, Condition, Gender, and Follow-Up Point*

	CDI						SCAS						RCMAS					
	12		24		36		12		24		36		12		24		36	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Intervention																		
Grade 6																		
Female	4.75	4.97	6.43	8.59	4.75	5.34	14.61	9.86	14.59	13.20	8.56	6.12	6.15	5.41	7.11	6.00	4.93	4.96
Male	5.68	5.72	6.81	7.36	5.44	6.16	10.51	10.30	10.52	13.37	6.81	8.72	4.95	5.29	4.65	4.97	3.52	3.80
Total	5.18	5.34	6.61	8.01	5.06	5.71	12.71	10.25	12.66	13.40	7.55	7.73	5.59	5.37	5.94	5.65	4.30	4.51
Grade 9																		
Female	10.72	8.12	9.97	8.75	7.63	5.31	21.36	13.04	21.35	17.77	17.09	12.92	10.95	6.52	8.63	6.18	8.14	5.99
Male	8.60	6.93	7.75	6.68	6.86	5.05	15.10	12.83	14.38	16.61	11.62	7.09	8.99	5.82	6.83	5.63	5.78	3.47
Total	9.76	7.66	9.03	7.99	7.38	5.21	18.54	13.28	18.37	17.56	15.14	11.45	10.06	6.27	7.87	6.00	7.37	5.40
Control																		
Grade 6																		
Female	7.69	6.78	7.96	7.23	8.14	6.16	20.75	12.78	16.48	11.94	21.50	4.95	9.92	5.79	7.42	6.85	7.57	4.20
Male	8.00	6.68	9.84	8.07	8.04	8.37	17.94	13.33	20.05	17.24	12.00	12.15	7.99	6.14	8.86	5.94	7.76	5.72
Total	7.86	6.70	9.08	7.74	8.08	7.57	19.23	13.10	18.61	15.31	13.46	11.74	8.88	6.03	8.30	6.30	7.69	5.17
Grade 9																		
Female	9.25	7.14	11.73	8.51	8.87	6.20	18.51	12.04	17.84	11.08	12.27	8.43	11.11	6.07	9.33	5.40	7.87	5.14
Male	9.13	8.01	7.82	6.66	8.94	6.89	14.33	11.34	11.02	10.04	14.19	18.99	7.99	6.04	5.88	4.50	7.32	6.65
Total	9.19	7.57	9.81	7.87	8.91	6.52	16.40	11.84	14.50	11.08	13.33	15.11	9.54	6.23	7.64	5.25	7.60	5.92

Note: SCAS = Spence Children's Anxiety Scale; RCMAS = Revised Children's Manifest Anxiety Scale; CDI = Children's Depression Inventory.

Grade 6, there were significant interventions group differences at all time points across both the SCAS and RCMAS, with students who received the FRIENDS program reporting significantly lower anxiety scores than students in the control condition. There were no significant group differences for students in Grade 9. This finding strengthens Lock and Barrett's suggestion that intervening with prevention in Grade 6 may be an optimal time for reducing risk for anxiety and depression.

Consistent with Lock and Barrett's (2003) study, there was a significant Time × Intervention Group × Gender effect; however, this was on anxiety (RCMAS) only. Univariate analyses revealed that girls in the intervention group scored significantly lower than girls in the control group at 12-month and 24-month follow-up; however, there were no significant differences between girls in each group at 36-month follow-up. This finding suggests that there is a prevention effect for girls on anxiety symptoms up to 24-month follow-up, however, this effect washed out by 36-month follow-up for girls, who are more at risk for anxiety than boys, based on the self-report measures of this study.

Based on previous findings, it seems that gender may play an important role in predicting both risk for anxiety and intervention outcome. Results from Lock and Barrett (2003) suggest that girls, across age groups, tend to be at higher risk for anxiety than boys but also tend to be most responsive to an intervention up to 12-months follow up when the intervention is delivered in Grade 6. This finding, taken together with the results of this long-term outcome study, suggests

that intervening during primary school years can provide very positive short-term outcomes for girls at a universal level. However, given that being female is associated with elevated anxiety and risk for anxiety, results suggest that prevention programs need to be extended across education, in that students—particularly female students—receive such interventions every 2 to 3 years during their schooling. Results from the Queensland Early Intervention and Prevention of Anxiety Project (Dadds et al., 1997), which examined a targeted intervention for high-risk and clinical students, found that being female was a predictor for poorer response to the targeted intervention. This finding further highlights that female students are at higher risk and, when experiencing subclinical and clinical levels of anxiety (such as the sample examined in Dadds et al.), school-based interventions may need to be coupled with more intensive treatment interventions in the community.

In terms of students at high risk (that is, elevated scores on either the SCAS or CDI), there were proportionally more students at high risk in the control condition at each time point in comparison to the intervention condition, and this effect was significant at 36-month follow-up. The frequency of students at high risk in the intervention condition remained relatively stable over time (i.e., 16%, 17%, 12%), whereas there was a substantial increase in the frequency of high-risk students in the control condition over time (i.e., 21%, 25%, 31%).

The results of this study did not demonstrate any significant interaction outcomes for depression over time. Examination of the depression means across gen-

der and grade reveal consistently lower scores for children in the intervention group in Grade 6 compared to students in the control group; however, this trend was not apparent within the Grade 9 cohort. Although these results were not significant, they suggest that intervention reduction in depression at 12-month follow-up (see Lock & Barrett, 2003) may be maintained over time.

This follow-up study provides evidence for the durability of prevention effects for children who received this program in Grade 6 up to 3 years following a brief cognitive–behavioral intervention, delivered by classroom teachers, within the school curriculum. For girls, however, who reported the highest scores of anxiety at preintervention and who reported the largest reductions in anxiety up to 12-month follow-up (Lock & Barrett, 2003), it seems that prevention effects are only durable up to 24-month follow-up. Future research and school-based prevention initiatives should aim to examine a multilevel approach to prevention for children and youth, such that universal prevention is coupled with indicated programs for students at elevated risk, effectively strengthening the dose of intervention and potentially increasing prevention outcomes. Long-term prevention outcomes would also be greatly improved by maximizing booster sessions and ongoing exposure to the life-skills taught in such a program, whereby students are taught these skills throughout their schooling from preschool through to primary and high school. It would be of great interest and benefit to examine whether prevention outcomes could be enhanced for high school students if they were previously exposed to these strategies during primary school.

This study is the first to present long-term outcomes for a universal prevention program targeting anxiety and associated depression. Strengths of this study that serve to increase the generalizability of findings include random assignment of schools to intervention conditions, the presence of a control group, relatively large sample size, intervention fidelity checklists, implementation of an evidence-based protocol involving students and parents, teacher delivery of the program, and the use of highly reliable and valid measures of assessment. These findings are limited due to the absence of diagnostic data and the absence of multi-informant self-report measures (i.e., teacher and parent report).

This study has provided evidence for the worth in pursuing universal prevention in reducing the incidence of anxiety and depression and the subsequent burden of suffering associated with these disorders. The development of a strong evidence base in treating and preventing emotional distress is crucial. The FRIENDS program has a promising evidence base at every level of intervention—from treatment to universal prevention. As highlighted by the WHO project summary on the prevention of mental illnesses (Hosman, 2004), it is the political, ethical, and professional obligation of policymakers, educators, researchers, and consumers to persist with efficacy and effectiveness research using evidence-based programs. Further replication studies demonstrating efficacy of long-term preventative outcomes are warranted and will assist in driving effective prevention initiates and programs such as the FRIENDS program into schools.

References

American Psychiatric Association. (1994) *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Australian Bureau of Statistics and Department of Education, Training and Youth Affairs. (1997). Australian Standard Classification of Occupations (ASCO) (2nd ed.). *Statistical Concepts Library, Australian Bureau of Statistics* (Cat. No. 1220.0).

Barrett, P. M. (1999). Interventions for child and youth anxiety disorders: Involving parents, teachers, and peers. *Australian Educational and Developmental Psychologist, 16,* 5–24.

Barrett, P. M. (2004). *FRIENDS for life! for children. Participant workbook and leaders manual.* Brisbane, Australia: Australian Academic Press.

Barrett, P. M. (2005). *FRIENDS for life! for youth. Participant workbook and leaders manual.* Brisbane, Australia: Australian Academic Press.

Barrett, P. M., Dadds, M. R., & Rapee, R. (1996). Family treatment of childhood anxiety: A controlled trial. *Journal of Consulting & Clinical Psychology, 64,* 333–342.

Barrett, P. M., Lowry-Webster, H., & Turner, C. M. (1999a). *FRIENDS for children group leader manual.* Brisbane, Australia: Australian Academic Press.

Barrett, P. M., Lowry-Webster, H., & Turner, C. M. (1999b). *FRIENDS for youth group leader manual.* Brisbane, Australia: Australian Academic Press.

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

Cobham, V. E., Dadds, M. R., & Spence, S. H. (1998). The role of parental anxiety in the treatment of childhood anxiety. *Journal of Consulting & Clinical Psychology, 66,* 893–905.

Cole, D. A., Hoffman, K., Tram, J. M., & Maxwell, S. E. (2000). Structural differences in parent and child reports of children's symptoms of depression and anxiety. *Psychological Assessment, 12,* 174–185.

Cole, D. A., Peeke, L. G., Martin, J. M., Truglio, R., & Seroczynski, A. D. (1998). A longitudinal look at the relation between depression and anxiety in children and adolescents. *Journal of Consulting & Clinical Psychology, 66,* 451–460.

Dadds, M. R., Spence, S. H., Holland, D., Barrett, P. M., & Laurens, K. (1997). Prevention and early intervention for anxiety disorders: A controlled trial. *Journal of Consulting & Clinical Psychology, 65,* 627–635.

Dadds, M. R., Spence, S. H., Laurens, K., Mullins, M., & Barrett, P. M. (1999). Early intervention and prevention of anxiety disorders in children: Results at a 2-year follow-up. *Journal of Consulting & Clinical Psychology, 67,* 145–150.

Dobson, K. (1985). The relationship between anxiety and depression. *Clinical Psychology Review, 5,* 307–324.

Essau, C. A., Conradt, J., & Petermann, F. (2000). Frequency, comorbidity, and psychosocial impairment of depressive disorders in adolescents. *Journal of Adolescent Research, 15,* 470–481.

Evans, S. W. (1999). Mental health services in schools: Utilization, effectiveness, and consent. *Clinical Psychology Review, 19,* 165–178.

Hannon, A. P., Rapee, R. M., & Hudson, J. L. (2000). The prevention of depression in children: A pilot study. *Behaviour Change, 17,* 78–83.

Hosman, C. (2004). *WHO's project in the prevention of mental illness.* Paper presented at the meeting of the Promotion of Mental Health and Prevention of Mental and Behavioural Disorders, Auckland, New Zealand.

Jaycox, L. H., Reivich, K. J., Gillham, J., & Seligman, M. E. P. (1994). Prevention of depressive symptoms in school children. *Behaviour Research & Therapy, 32,* 801–816.

Kashani, J. H., Carlson, G. A., Beck, N. C., Hoeper, E. W., Corcoran, C. M., McAllister, J. A., et al. (1987). Depression, depressive symptoms, and depressed mood among a community sample of adolescents. *American Journal of Psychiatry, 144,* 931–934.

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

Kovacs, M. (1981). Rating scales to assess depression in school-age children. *Acta Paedopsychiatrica, 46,* 305–315.

Kubiszyn, T. (1999). Integrating health and mental health services in schools: Psychologists collaborating with primary care providers. *Clinical Psychology Review, 19,* 179–198.

Last, C. G., Hansen, C., & Franco, N. (1997). Anxious children in adulthood: Prospective study of adjustment. *Journal of American Academy Child & Adolescent Psychiatry, 36,* 645–652.

Last, C. G., Perrin, S., Hersen, M., & Kazdin, A. E. (1996). A prospective study of childhood anxiety disorders. *Journal of the American Academy of Child & Adolescent Psychiatry, 35,* 1502–1510.

Lewinsohn, P. M., Clarke, G. N., & Rohde, P. (1994). Psychological approaches to the treatment of depression in adolescents. In W. M. Reynolds & H. E. Johnston (Eds.), *Handbook of depression in children and adolescents* (pp. 3–17). New York: Plenum.

Lock, S., & Barrett, P. M. (2003). A longitudinal study of developmental differences in universal preventive intervention for child anxiety. *Behaviour Change, 20,* 183–199.

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

Lowry-Webster, H., Barrett, P., & Lock, S. (2003). A universal prevention trial of anxiety symptomatology during childhood: Results at one-year follow-up. *Behaviour Change, 20,* 25–43.

Mrazek, P. J., & Haggerty, R. J. (1994). *Reducing risks for mental disorders: Frontiers for preventive intervention research.* Washington, DC: National Academy Press.

Orvaschel, H., Lewinsohn, P. M., & Seeley, J. R. (1995). Continuity of psychopathology in a community sample of adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 34,* 1525–1535.

Reynolds, C. R., & Richmond, B. O. (1985). *The Revised Children's Manifest Anxiety Scale: Manual.* New York: Western Psychological Services.

Shaffer, D., Fisher, P., Dulcan, M. K., & Davies, M. (1996). The NIMH Diagnostic Interview Schedule for Children Version 2.3 (DISC 2.3): Description, acceptability, prevalence rates, and performance in the MECA study. *Journal of the American Academy of Child & Adolescent Psychiatry, 35,* 865–877.

Shochet, I. M., Dadds, M. R., Holland, D., Whitefield, K., Harnett, P. H., & Osgarby, S. (2001). The efficacy of a universal school-based program to prevent adolescent depression. *Journal of Clinical Child Psychology, 30,* 303–315.

Shortt, A., Barrett, P. M., & Fox, T. (2001). Evaluating the FRIENDS program: A cognitive–behavioral group treatment for anxious children and their parents. *Journal of Clinical Child Psychology, 30,* 525–535.

Spence, S. H. (1997). The structure of anxiety symptoms among children: A confirmatory factor analytic study. *Journal of Abnormal Psychology, 106,* 280–297.

Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behavior Research & Therapy, 36,* 545–566.

Spence, S. H., Barrett, P. M., & Turner, C. M. (2003). *Psychometric properties of the Spence Children's Anxiety Scale with young adolescents.* Manuscript submitted for publication.

Spence, S. H. (2005). [Australian normative data for the Spence Children's Anxiety Scale]. Unpublished raw data.

Stanley, F. (2002). *Year book Australia: Health centenary article—Child health since federation.* Brisbane, Australia: Australian Bureau of Statistics.

Tannenbaum, L. E., Forehand, R., & Thomas, A. M. (1992). Adolescent self-reported anxiety and depression: Separate constructs or a single entity? *Child Study Journal, 22,* 61–72.

Weiss, B., Weisz, J., Politano, M., Carey, M., Nelson, W., & Finch, A. (1991). Developmental differences in the factor structure of the Children's Depression Inventory. *Psychological Assessment, 3,* 38–45.