A Longitudinal Study of Developmental Differences in Universal Preventive Intervention for Child Anxiety

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The present paper presents the results of a longitudinal study evaluating the effects of a universal school-based intervention for child anxiety at two developmental stages. The study involved a cohort of 733 children enrolled in grade 6 (n = 336, 45.6%) aged between 9 and 10 years, and grade 9 (n = 401, 54.4%) aged between 14 and 16 years. Participants were allocated to either a school-based cognitive-behavioural intervention or to a monitoring group, and completed standardised measures of anxiety, depression and coping style. Young people identified as "at risk" of an anxiety disorder were assessed for a clinical diagnosis with a structured diagnostic interview. Findings showed universal intervention as potentially successful in reducing symptoms of anxiety and increasing coping skills in children. Primary school children reported the greatest changes in anxiety symptoms, suggesting earlier preventive intervention was potentially more advantageous than later intervention. Developmental differences in anxiety, depression and coping strategies are discussed in addition to the implications and limitations of this study and directions for future research.

Research in child anxiety disorders indicates prevention of this problem is an important area warranting further investigation (Donovan & Spence, 2000). Clinical trials provide empirical support for cognitive-behavioural therapy (CBT) in individual, group and family format (Barrett, Dadds, & Rapee, 1996; Barrett, 1998; Kendall, 1994; Silverman, Kurtines, Ginsburg, Weems, Lumpkin et al., 1999; Silverman, Kurtines, Ginsburg, Weems, Rabian et al., 1999). Recent research advances have focused on preventive intervention by examining the effects of clinically-developed CBT programs in reducing the risk, onset and development of anxiety disorders within community settings (Barrett & Turner, 2001; Dadds, Spence, Holland, Barrett, & Laurens, 1997; Dadds et al., 1999; Lowry-Webster, Barrett, & Dadds, 2001).

Prevention programs have traditionally been defined on the basis of their position of the target sample along the developmental continuum of psychopathology (Mrazek & Haggerty, 1994). Primary preventive interventions can be defined as either universal, selected or indicated (Mrazek & Haggerty, 1994). Universal interventions target whole population groups, selective interventions involve young people 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 school-based prevention interventions have many advantages as they specifically target a broad range of young people with varying levels of psychopathology, ranging from those with clinical (severe) or subclinical (moderate) symptoms, to those at risk of a disorder. By targeting large groups of youth within the classroom, universal school-based programs may reduce difficulties with recruitment, screening, transportation, and

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stigmatisation often associated with treatment programs conducted within clinical settings. Beyond this, universal prevention has the potential to enhance peer support, and reduce psychosocial difficulties within the classroom by increasing the opportunity of peer modelling of prosocial behaviour (Armburster, Andrews, Couenhoven, & Blau, 1999; Kubiszyn, 1999).

Despite the potential advantages of universal school-based prevention programs, studies evaluating such programs for child anxiety are sparse. The Queensland Early Intervention and Prevention of Anxiety Project (QEIP; Dadds et al., 1997; Dadds et al., 1999), utilised a "selective" intervention involving 128 children at risk of an anxiety disorder. Children were randomly allocated to either an intervention group or a monitoring group. The intervention group participated in a 10-week 2-hour CBT intervention (*The Coping Koala*; Barrett, Dadds, & Rapee, 1991) conducted by psychologists after school hours. Results showed that all children reported decreases in anxiety over time. At 6-month and 2-year follow-up intervals, a preventive effect was demonstrated with significantly fewer participants in the intervention group meeting criteria for an anxiety disorder compared to the monitoring group. In terms of gender, this study demonstrated that being female was a predictor of treatment outcome at 2-year follow-up. Overall, the results of this study suggest that selective school-based preventative intervention has the potential to reduce the prevalence of child anxiety disorders within the community, and decrease the high levels of subjective distress for individuals and their families. However, a major limitation of this study was its selective design, therefore enabling a possible labelling or stigmatisation effect which can occur through the process of identification, selection, and participation of children "at risk" of anxiety in such programs out of school hours.

To overcome the limitations inherent in selective designs, Lowry-Webster et al. (2001) examined the effectiveness of a universal CBT intervention for child anxiety, implemented by trained teachers and school counsellors as part of the school curriculum. Participants were 594 children aged between 10 and 13 years who were allocated on a class-by-class basis to either a 10-week CBT (Barrett, Lowry-Webster, & Turner, 2000a, 2000b) intervention or monitoring condition, and further divided into high risk and healthy groups based on self-reported anxiety scores. Results were examined universally (for all children), and for children who scored above the clinical cut-off for anxiety on their pre-intervention self-report measures. All children reported significant decreases in anxiety, although these reductions were significantly greater in the intervention group compared to the monitoring condition. Positive results were found for changes in risk status, where 75.3% of the children identified at-risk in the intervention group were no longer at risk at post-intervention, compared to 54.8% of at-risk children in the monitoring group. Intervention effects were maintained at 12-month follow-up (Lowry-Webster, Barrett, & Lock, in press), with 85% of children at risk of anxiety and depression diagnosis-free, compared to only 31.2% of children in the control group. Interestingly, this study found no effects for gender. Overall, these results suggest that teacher-implemented preventive intervention is potentially effective in reducing symptoms of anxiety in children at risk of a clinical disorder.

Further support for universal intervention comes from a large-scale longitudinal prevention project for child anxiety and depression (Barrett & Turner, 2001; Barrett, Lock, & Turner, in press). In a preliminary study conducted by Barrett and Turner (2001), children aged between 10 to 12 years were allocated to either a 10-week CBT (Barrett et al., 2000a, 2000b) intervention run by either psychologists or trained teachers or to a monitoring group. Participants completed standardised self-report measures of anxiety and depression and were divided into high risk or healthy groups based on self-reported levels of anxiety. The program was found to be equally effective in significantly reducing anxiety symptoms across both psychologist and teacher intervention conditions. Females reported significantly higher anxiety compared to boys at pre- and post-intervention. However, a major limitation of this study was the small sample size, specifically, due to the small number of participants in the at-risk group, there was insufficient power to detect any

statistically significant changes in risk status. Hence, the preventive effects of the universal intervention in this study remain unclear.

Despite the data indicating the effectiveness of prevention programs for child anxiety, a significant question remains unanswered, "what is the optimal time for intervention?" As part of the same large-scale longitudinal prevention project (Barrett & Turner, 2001), Barrett et al. (in press) sought to specifically answer this question by comparing the effectiveness of universal intervention for child anxiety at two different stages in development. The study utilised part of the same data which involved a sample of 692 children enrolled in grade 6 (n = 293) aged between 9 and 10 years, and grade 9 (n = 399) aged between 14 and 16 years. Overall, findings of the study were consistent with previous research showing reductions in anxiety for all children (Barrett & Turner, 2001; Dadds et al., 1997; Dadds et al., 1999; Lowry-Webster et al., 2001, Lowry-Webster, et al., in press). However, this study advances the literature by demonstrating that such intervention is potentially effective at two different developmental levels. Most importantly, primary school children in grade 6 reported greater reductions of anxiety symptoms at post-intervention, compared to high school children in grade 9, while moderate and high risk children reported the greatest reductions in anxiety at 12-month follow-up. As primary school children reported the greatest changes in anxiety symptoms, these findings suggest that earlier preventive intervention for anxiety is potentially more advantageous than later intervention in adolescence.

In sum, the prevention of anxiety has been identified as an important area of research for some time (Donovan & Spence, 2000; Spence, 2001), yet empirical studies in the field are only slowly beginning to emerge. Selective and "universal" school-based interventions, when implemented by either psychologists or school staff, have shown to be potentially effective in reducing anxiety symptoms in children with clinical disorders, and those at risk, with mild to moderate levels of anxiety (Barrett & Turner, 2001; Barrett et al., in press; Dadds et al., 1997, Dadds et al., 1999; Lowry-Webster et al., 2001, in press). Universal prevention programs are typically considered to involve greater social benefits compared with indicated or selected programs (e.g., Armburster et al., 1999). However, while research findings on universal preventive intervention are encouraging, research in this field is in its early stages and much remains unknown regarding how best to intervene and prevent anxiety problems in childhood and adolescence. Hence, a number of issues warrant further investigation.

It has been suggested that an important protective factor in child anxiety is coping skills (Donovan & Spence, 2000; Spence, 2001), although research regarding intervention effects on children's coping style is sparse. Current research defines three different types of strategies individuals use for coping with difficult or challenging situations. These strategies have been categorised as cognitive approach or problem-focused strategies, cognitive or behavioural avoidant strategies, or emotion-focused strategies (Compas, 1987; Billings & Moos, 1981; Donovan & Spence, 2000). Donovan and Spence (2000) defined problem-focused coping as strategies implemented that directly address or minimise the effect of the problem. Emotion-focused coping involves strategies that aim to reduce the subjective distress associated with the problem. Lastly, cognitive or behavioural avoidant coping includes strategies to avoid or escape the problem. Preliminary findings with children suggest emotion-focused coping and avoidance coping strategies are also associated with higher levels of anxiety in children and adolescents (Compas, Malcarne, & Fondacoro, 1988). Examination of changes in children's coping skills may further quantify the efficacy of universal prevention programs for child anxiety and how to develop intervention protocols which foster resilience.

Whether gender is a predictor of intervention outcome also remains unclear, as studies that have examined gender differences in anxiety yield various results. Barrett and Turner (2001) found females aged between 10 and 12 years reported greater levels of anxiety at pre- and post-assessment intervals compared to boys. However, Lowry-Webster et al. (2001) and Lowry-Webster et al. (in press) reported nonsignificant gender differences in anxiety at

post-assessment and 12-month follow-up. Similar findings were shown in the QEIP (Dadds et al., 1997; Dadds et al., 1999), although gender (female) was reported to be one predictor of treatment outcome at 2-year follow-up. Further comparison of age and gender differences may yield additional information regarding variations in children's anxiety over time, and which children may benefit the most from early intervention.

A final methodological consideration is that universal preventive intervention research has been based on children's self-reported changes in anxiety (Barrett & Turner, 2001; Barrett et al., in press; Lowry-Webster et al., 2001; Lowry-Webster et al., in press) or diagnostic interview (Dadds et al. 1997, Dadds et al., 1999). No studies have incorporated a multi-method approach inclusive of questionnaires and diagnostic interview at each time of assessment. The present study aims to add to the growing body of research in the field of universal preventive intervention for child anxiety, by examining the aforementioned issues. As part of the same large-scale longitudinal prevention project (Barrett & Turner, 2001; Barrett et al., in press), the current study involves a multi-method design, utilising a different (new) cohort of children. The objective was to examine the effects of a universal school-based CBT intervention for child anxiety at two developmental levels, and to investigate the role of gender and coping style in the prevention of child anxiety. As such, this study involved four specific objectives.

The first objective was to contribute to the growing body of literature by examining the effects of a universal preventive intervention. Comparisons of self-reported anxiety and depression between an intervention condition and a monitoring condition at post-intervention and 12-month follow-up intervals were made. It was hypothesised that the intervention group would be associated with greater reductions in self-reported anxiety than the children in a monitoring group would.

The second objective was to compare the effects of the universal intervention in anxiety and depression between children at two developmental levels: children in grade 6 in primary school and children in grade 9 in secondary school.

The third objective was to examine the effects of the preventive intervention in reducing anxiety in children with severe symptoms identified at-risk of developing an anxiety disorder. It was hypothesised that children at-risk in the intervention condition would evidence greater reductions in anxiety and changes in diagnostic status at post- and 12-month follow-up intervals in comparison to children at-risk in the monitoring condition.

A final objective was to compare the effects of the universal intervention on children's coping responses. Grade 6 primary school children and grade 9 secondary school children were compared on a self-report measure of coping style at pre-intervention, post and 12-month follow-up time intervals.

Method

Participants

Participants were 977 children aged 9 to 16 years from seven socioeconomically diverse schools in the metropolitatian area of Brisbane, Australia. All parents of students in the intervention schools in grade 6 and grade 9 were sent a letter, including a consent form, outlining that their child, along with the rest of their class, had been invited to participate in a group to help build their emotional resilience, coping skills and problem-solving abilities. Of the families initially contacted, 78.1% of grade 6 and 76.9% of grade 9 participants consented to participate in the study. Schools, rather than participants, were selected as the unit of random assignment and the schools were randomly assigned to either an intervention condition or a monitoring condition.

Materials

At pre-intervention, post-intervention, and 12-month follow-up intervals, all participants in both the intervention and monitoring conditions completed the following self-report questionnaires in their classroom within regular school hours. Children with high levels of anxiety on the self-report measures were administered a diagnostic interview.

The Spence Child Anxiety Scale (SCAS; Spence, 1998). The SCAS is a 45-item self-report measure designed to evaluate symptoms of anxiety for children aged 8–12 years. Children were asked to rate, on a 4-point scale ranging from *never* (0) to *always* (3), the frequency with which they experienced each symptom. The clinical cut-off for this scale is 42.48 (Spence, 1994). The SCAS has demonstrated good high reliability and validity with other measures of child and adolescent anxiety (Spence, 1998; Spence, Barrett, & Turner, 2003).

The Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978). The RCMAS is designed for use with youngsters aged 5 to 19 years. The scale used in the current study consisted of 28 anxiety questions, which can be summed to provide a total anxiety score. The RCMAS has shown good psychometric properties (Reynolds, 1982; Gerad & Reynolds, 1998; Reynolds & Richmond, 1985; Wisniewski, Mulick, Gensharft, & Coury, 1987; Witt, Heffer, & Pfeiffer, 1990).

The Children's Depression Inventory (CDI; Kovacs, 1985). The CDI is the most commonly used self-report measure for depressive symptoms in children aged 7 to 17 years. The scale has 27 items dealing with sadness, self-blame, insomnia, loss of appetite, interpersonal relationships, and school adjustment. The clinical cut-off for the CDI is 18. The scale has demonstrated high reliability (Smucker, Craighead, Craighead, & Green, 1986) and validity (Mattison, Handford, Kales, Goodman, & McLaughlin, 1990).

Coping Scale for Children and Youth (Brodzinsky et al., 1992). The Coping Scale for Children and Youth is a 29-item self-report measure of coping behaviour for use with children aged from 10 through to 15 years. The Coping Scale was designed to assess four specific coping responses to situations perceived as stressful (assistance seeking, cognitive-behavioural problem-solving, cognitive avoidance, and behavioural avoidance). Each item on the scale represents a method of coping, and respondents are asked to endorse the frequency to which they have applied that coping strategy during the past few months using a 4-point scale ranging from *never* (scored 1) to *very often* (scored 4). Each subscale is summed separately to provide a measure of coping, assistance seeking, cognitive-behavioural problem-solving, cognitive avoidance, and behavioural avoidance strategies. The Coping Scale has shown good reliability and validity (Brodzinsky, et al., 1992).

Diagnostic Interview

Anxiety Disorder Interview Schedule for Children — IV (ADIS-C-IV; Silverman & Albano, 1996). The ADIS-C-IV is a structured interview designed to permit differential diagnosis according to the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychological Association, 1994), for use with children aged 6 to 17 years. The ADIS-C has shown adequate reliability (Silverman & Eisen, 1992; Silverman & Rabian, 1995).

Procedure

Details of the procedures are described in the Barrett and Turner (2001) study, so only critical details are presented here.

Intervention Group

The cognitive-behavioural intervention used was the *FRIENDS* program (Barrett et al., 2000a, 2000b), which has shown to be effective in child, family and group format in the treatment and early intervention of child anxiety disorders (Barrett et al., 1996; Barrett, 1998). The *FRIENDS* program and its original source have been described in detail elsewhere. See Barrett et al. (1996), Barrett, Lowry-Webster, and Turner (1999), and Barrett and Turner (2001) for a comprehensive review of the *FRIENDS* program.

Intervention Integrity

Either clinical masters trained psychologists or doctoral candidates conducted all intervention groups. These psychologists were trained extensively in the delivery of the *FRIENDS* program. To ensure all topics and sessions were delivered as deigned, each group facilitator completed the Program Integrity Checklist (Barrett et al., 1999).

The Monitoring Group

Parents and children in the monitoring group completed all assessment measures at the same time intervals as the intervention groups. At post- and 12-month follow-up intervals, parents were informed if their child met a diagnosis rated at a clinical severity of 4 or more. Such families were referred for individual treatment for their child's problems, and excluded from further follow-up assessment. Participants in the monitoring groups were provided intervention at the end of the study.

Results

Risk Group Status

Participants were stratified into "at-risk" and "healthy" groups, based on their pre-intervention scores on the *Spence Children's Anxiety Scale*. Participants were allocated to the healthy group based on scores below the clinical cut off score of 42.48 at pre-intervention, or allocated to the at-risk group for scores above this cut-off at pre-intervention.

Table 1 presents the number and percentage of children at-risk at each time interval on the basis of their scores at pre-, post- and 12-month follow-up intervals. Chi-square tests at pre-intervention revealed significant differences across grade $\chi^2(1) = 19.18$, $p > .001$, and gender $\chi^2(1) = 18.73$, $p > .001$. As can be seen, the at-risk group comprised of a greater number of grade 6 children and females. At pre-assessment, of the children at risk, 47 (71.2%) of grade 6 children, compared to 19 (28.8%) of grade 9 students, and 50 (75.8 %) females compared to 6 (24.2%) males were at-risk of an anxiety disorder.

Attrition Rates and Missing Data

Patterns of missing data were examined to determine drop-out and absenteeism rates in order to assess potential influences of these factors on intervention outcome at post and 12-month follow-up intervals. At post-assessment, 101 children were absent from school, 77 (8.8%) from the intervention group and 24 (2.7%) from the monitoring group. By the 12-month follow-up 95 children had withdrawn from the study. A significantly greater $\chi^2(1, 100) = 40.64$, $p < .001$ number of children dropped out from the monitoring group ($n = 69$, 72.6%) compared to the intervention group ($n = 26$, 27.4%).

Significant grade differences were found between the children who dropped out of the study $\chi^2(1, 977) = 3.87$, $p < .05$, and were absent at post-assessment $\chi^2(1, 882) = 23.27$, $p < .001$. A greater number of grade 9 children ($n = 79$, 78.2%), compared to grade 6 children ($n = 22$, 21.8%) were absent at post-assessment. A greater number of grade 9 children ($n = 63$, 66.3%), compared to grade 6 children ($n = 32$, 33.78%) dropped out of the study. A significantly larger percentage of children from the at-risk group ($n = 11$, 11.6%) dropped out of the study $\chi^2(1, 95) = 4.688$, $p < .05$ in the monitoring condition compared to the intervention group ($n = 0$). By SPSS default, cases with missing scores at either post-assessment or at 12-month follow-up were excluded from the statistical analysis. This resulted in a final sample of 737 participants, 442 (60.0%) in the intervention condition and 295 (40.0%) in the monitoring condition. This sample comprised of 336 (45.6%) grade 6 students and 401 (54.4%) grade 9 students, 366 (49.7%) males and 371 (50.3%) females. Six hundred and seventy-one (91%) participants were in the healthy group and 66 (9%) were in the at-risk group.

Universal Intervention Effects on Anxiety and Depression

To evaluate the effects of the *FRIENDS* program on children's self-reported anxiety and depression, a 2 (Group: intervention vs. monitoring) × 2 (Grade: 6 vs. 9) × 2 (Gender: male vs. female) × 3 (Time: pre-intervention vs. post-intervention vs. 12-month follow-up) two-tiered repeated measures multivariate analysis (MANOVA) was conducted on the dependent variables (DVs: RCMAS, SCAS and the CDI). The first analysis was conducted to examine intervention effects between gender, and the second analysis examined intervention effects between risk group (healthy vs. at-risk).

Table 2 presents the means and standard deviations for the child anxiety and depression self-report measures. Multivariate results using

TABLE 1

Number and Percentage of Children "At-risk" at Pre, Post and Follow-up Intervals

Condition		Assessment					
		Pre		Post		12-month	
	Gender	*N*	%	*N*	%	*N*	%
Intervention (*n* = 442)							
Grade 6	Female	19	10.8%	10	5.7%	3	1.7%
	Male	4	4.6%	4	2.5%	3	1.9%
Grade 9	Female	9	11.97%	6	3.1%	3	1.5%
	Male	3	1.5%	5	2.4%	7	3.4%
	Total %	35	4.7%	25	3.4%	16	2.2%
Monitoring (*n* = 295)							
Grade 6	Female	17	9.7%	5	2.8%	4	2.3%
	Male	7	4.4%	7	4.4%	3	1.9%
Grade 9	Female	5	2.6%	7	3.6%	3	1.5%
	Male	2	1.0%	4	1.9%	1	.5%
	Total %	31	4.2%	23	3.1%	11	1.5%

the Pillais Trace statistic at a significance level of $p < .05$ were as follows. A significant main effect was found for time, Pillais $F(6, 723) = 45.49$, $p < .001$, indicating changes in self-reported anxiety and depression in general. Significant main effects were shown for group, Pillais $F(3, 726) = 8.07$, $p < .001$; grade, Pillais $F(3, 726) = 20.28$, $p <. 001$; gender, Pillais $F(3, 726) = 17.48$, $p < .001$; and risk group, Pillais $F(3, 726) = 79.05$, $p < .001$.

Significant interactions were found for Time × Grade, Pillais $F(6, 723) = 9.04$, $p < .001$; Time × Gender, Pillais $F(6, 723) = 3.92$, $p < .001$; Time × Risk group, Pillais $F(6, 723) = 28.04$, $p < .001$; Time × Group × Grade, Pillais $F(6, 723) = 3.55$, $p < .01$; Time × Group × Gender, Pillais $F(6, 723) = 2.25$, $p < .05$; Time × Grade × Gender, Pillais $F(6, 723) = 3.05$, $p < .01$; and Time × Grade × Risk Group, Pillais $F(6, 723) = 2.22$, $p < .05$. Significant interactions were found for Group × Grade, Pillais $F(3, 726) = 4.51$, $p < .01$, and Grade × Gender, Pillais $F(3, 726) = 2.84$, $p < .05$.

To investigate the impact of each main effect and interactions on the individual dependent variables of anxiety and depression, a Roybargmann stepdown analysis was performed, using an alpha rate of 0.016 to adjust for Type I error (Tabachnick & Fidell, 1996). Results are reported for significant findings.

Group, Grade and Gender Differences in Anxiety and Depression

Univariate analysis of the group effect revealed significant differences in RCMAS anxiety scores, stepdown $F(1, 735) = 18.82$, $p < .016$, and SCAS anxiety scores, $F(1, 735) = 13.96$, $p < .016$, across the intervention and monitoring conditions at post-intervention. As shown in Table 2, both groups evidenced reductions in anxiety at post-intervention, but reductions were greater in the intervention condition compared to the monitoring condition. This trend continued at 12-month follow-up with significant differences in RCMAS anxiety scores, stepdown $F(1, 735) = 9.14$, $p < .016$; SCAS anxiety scores, $F(1, 735) = 7.41$, $p < .016$; and CDI scores $F(1, 735) = 8.21$, $p < .016$. Children in the intervention condition showed lower anxiety at post and 12-month follow-up intervals, and lower depression at 12-month follow-up compared to children in the monitoring condition.

Significant grade effects were found in SCAS anxiety scores, $F(1, 735) = 5.90$, $p < .016$, and CDI scores, $F(1, 735) = 6.21$, $p < .016$, at

TABLE 2

Means and Standard Deviations for SCAS, RCMAS and CDI for Grade and Gender

Measure		Spence Child Anxiety Scale (SCAS)						Reynolds Child Manifest Anxiety Scale (RCMAS)						Children's Depression Inventory (CDI)					
Condition		Pre		Post		12-month		Pre		Post		12-month		Pre		Post		12-month	
Time	Gender	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Intervention (n = 442)																			
Grade 6	Female	27.51	14.27	21.35	12.86	14.96	10.80	11.43	7.15	9.48	6.63	6.23	5.68	9.11	7.81	6.50	5.76	4.88	5.19
	Male	17.62	1.38	14.65	12.68	11.27	11.48	7.53	6.17	7.70	6.14	5.25	5.64	6.94	6.27	6.60	6.64	5.88	5.90
	Total	23.13	13.94	18.38	13.18	13.33	11.23	9.70	6.99	8.69	6.47	5.79	5.67	8.15	7.23	6.54	6.15	5.32	5.52
Grade 9	Female	23.57	11.97	19.84	12.40	18.41	11.13	10.20	5.96	9.60	6.44	10.39	6.29	9.09	5.99	8.62	7.23	8.87	7.38
	Male	8.80	9.76	14.30	12.52	14.35	12.21	9.62	5.92	8.68	6.05	8.80	5.67	9.32	6.70	7.53	5.67	7.98	6.39
	Total	21.10	11.12	16.97	12.74	16.31	11.85	9.90	5.93	9.13	6.25	9.57	6.01	9.20	6.33	8.06	6.48	8.41	6.88
	Overall Total	22.06	11.12	17.64	12.95	14.89	11.64	9.81	6.45	8.92	6.35	7.78	6.14	8.70	6.79	7.34	6.36	6.94	6.45
Monitoring (n = 295)																			
Grade 6	Female	33.21	14.70	24.62	12.01	20.60	12.66	13.67	6.34	10.63	6.18	9.92	5.79	10.18	7.34	7.27	5.61	7.68	6.78
	Male	25.09	11.52	22.53	13.42	16.57	2.05	11.33	7.04	10.27	7.12	7.72	6.09	9.90	8.05	8.23	7.36	7.74	6.76
	Total	28.92	13.69	23.52	12.77	18.47	12.46	12.44	6.79	10.40	6.67	8.76	6.02	10.04	7.69	7.77	6.59	7.71	6.74
Grade 9	Female	22.89	10.83	20.32	11.88	18.63	11.84	11.73	5.63	11.16	6.73	11.06	6.06	10.89	7.45	9.64	8.19	9.19	7.12
	Male	18.86	9.90	18.72	12.57	13.91	10.18	9.37	5.89	11.05	8.18	7.82	5.78	9.13	6.74	7.67	6.31	8.51	7.12
	Total	20.83	0.53	19.50	12.23	16.21	11.24	10.52	5.87	11.57	7.50	9.35	6.11	9.99	7.13	8.63	7.33	8.84	7.11
	Overall Total	24.40	12.74	21.26	2.60	17.30	11.99	11.39	7.17	11.11	7.17	9.16	6.16	10.08	7.45	8.34	7.14	8.38	6.96

post-intervention. Table 2 shows that the grade 6 children reported higher anxiety, and lower depression, compared to the grade 9 children. At 12-month follow-up, significant grade differences were found on the RCMAS, stepdown $F(1, 735) = 31.66$, $p < .016$, and the CDI, $F(1, 735) = 43.50$, $p < .016$. All children continued to show reductions in anxiety, however, grade 6 children reported significantly lower anxiety and depression than grade 9 children.

Significant gender effects were shown between females and males in SCAS anxiety scores, $F(1, 735) = 19.97$, $p < .016$, at post-intervention. As Table 2 outlines, females reported greater reductions in anxiety compared to males. At 12-month follow-up females continued to show significantly greater reductions in anxiety compared to males on the RCMAS, stepdown $F(1, 735) = 12.68$, $p < .016$, and the SCAS, $F(1, 734) = 6.52$, $p < .016$.

Nonsignificant effects were found across Group × Grade from pre to post-assessment on the anxiety and depression measures. At 12-month follow-up, group differences were found between the intervention and monitoring conditions between grade 6 and 9 groups on the RCMAS, stepdown $F(1, 733) = 13.44$, $p < .016$, and the SCAS $F(1, 735) = 9.68$, $p < .016$. Table 2 shows children in grade 6 in the intervention condition reported greater reductions in anxiety scores, compared to children in the monitoring condition.

Significant effects were found across group × gender on the SCAS $F(1, 733) = 8.54$, $p < .016$, at post-assessment. Females in the intervention group showed greater reductions in anxiety scores compared to females in the monitoring condition. However, nonsignificant differences were found at 12-month follow-up.

Changes in "At-risk" Status

Significant differences were found in RCMAS anxiety scores, stepdown $F(1, 735) = 62.29$, $p < .016$; SCAS anxiety scores, $F(1, 735) = 145.54$, $p < .016$; and CDI, $F(1, 735) = 52.73$, $p < .016$, between the at-risk and healthy groups at post-intervention. As seen in Table 3, both the healthy and at-risk groups evidenced reductions in anxiety at post-intervention, but as expected, children in the at-risk group reported higher anxiety compared to children in the healthy group. Interestingly, children in the at-risk group also reported higher levels of depression compared to the healthy group. This trend continued at 12-month follow-up with the at-risk group reporting higher scores on the RCMAS, stepdown $F(1, 735) = 46.13$, $p < .016$; SCAS, stepdown $F(1, 735) = 11.29$, $p < .016$; and CDI, $F(1, 735) = 12.42$, $p < .016$.

Effects of Intervention on Diagnostic Status

Table 1 shows the number of children at at-risk of an anxiety disorder, based on scores on the Spence Anxiety Scale for Children. Children in the at-risk group were interviewed at post-assessment and 12-month follow-up intervals to examine the preventative effects of the intervention program. Pre-assessment interviews were not conducted due to the short timeframe within the school cirriculum to allow for self-report administration, data entry and screening, before the intervention program was scheduled to commence. Table 4 shows descriptive data for the diagnostic status of children in the intervention and monitoring conditions. Chi-square analysis showed nonsignificant differences between group, grade and gender in diagnosis at post-intervention or 12-month follow-up.

Universal Intervention Effects on Coping Style

To evaluate the effects of the *FRIENDS* program on the self-report measure of coping style, a 2 (Group: intervention vs. monitoring) × 2 (Grade: 6 vs. 9) × 2 (Gender: male vs. female) × 3 (Time: pre-intervention vs. post-intervention vs. 12-month follow-up) two-tiered repeated measures multivariate analysis (MANOVA) was conducted on each of the coping subscales. The first analysis was conducted to examine intervention effects between gender, and the second analysis examined intervention effects between the risk groups (healthy vs. at-risk). Follow-up Roybargmann stepdown analyses were conducted to examine the main effects and interactions at post-intervention and 12-month follow-up, with an alpha rate of 0.0125 to adjust for Type I error (Tabachnick & Fidell, 1996). Findings are reported for significant effects.

TABLE 3
Means and Standard Deviations for Anxiety and Depression Measures Across Risk Group

Measure	Spence Child Anxiety Scale SCAS						Reynolds Child Manifest Anxiety Scale (RCMAS)						Children's Depression Inventory (CDI)					
Condition																		
Time	Pre		Post		12-month		Pre		Post		12-month		Pre		Post		12-month	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Intervention (*n* = 442)																		
Healthy	19.56	9.40	15.96	11.22	13.91	10.67	8.90	5.80	8.29	6.00	7.37	5.84	7.90	6.06	6.85	6.03	6.63	6.25
At risk	51.16	6.89	37.20	15.68	26.25	15.97	20.31	3.91	16.20	5.91	12.50	7.61	17.97	7.97	12.04	7.38	9.23	6.40
Total	22.06	13.94	17.64	12.95	14.89	11.64	9.81	6.45	8.92	6.35	7.78	6.14	8.70	6.79	7.34	6.36	6.94	6.45
Monitoring (*n* = 295)																		
Healthy	21.22	8.95	19.73	11.77	16.42	11.71	10.31	5.71	10.60	7.11	8.61	5.87	9.00	7.69	7.73	6.73	8.20	7.01
At risk	51.35	10.53	34.29	12.11	24.78	11.90	20.52	3.92	15.40	6.17	13.83	6.62	19.22	6.19	14.52	8.43	10.57	7.69
Total	24.40	12.74	21.26	12.60	17.30	11.99	11.39	6.39	11.11	7.17	9.16	6.16	10.08	7.45	9.34	7.14	8.38	6.96

Table 5 presents the means and standard deviations for coping style subscales (assistance seeking, cognitive-behavioural problem-solving, cognitive avoidance, and behavioural avoidance). Multivariate results using the Pillais Trace statistic at a significance level of $p < .05$ were as follows. A significant main effect was found for time, Pillais $F(8, 721) = 12.62$, $p < .001$, indicating changes in coping scores in general. Significant main effects were shown for group, Pillais $F(4, 725) = 3.87$, $p < .010$; grade, Pillais $F(4, 725) = 6.25$, $p < .001$; gender, Pillais $F(4, 725) = 17.08$, $p < .001$; and risk group, Pillais $F(4, 725) = 21.43$, $p < .001$.

Significant interactions were found for Time × Grade, Pillais $F(8, 721) = 15.39$, $p < .001$; Time × Gender, Pillais $F(8, 721) = 2.96$, $p < .010$; Time × Group × Grade, Pillais $F(8, 721) = 4.09$, $p < .001$; Time × Grade × Gender, Pillais $F(8, 721) = 3.15$, $p < .01$. Significant interactions were shown for Group × Gender, Pillais $F(4, 725) = 4.48$, $p < .001$; Grade × Gender, Pillais $F(4, 725) = 3.67$, $p < .010$; Group × Grade × Gender, Pillais $F(4, 725) = 4.89$, $p < .001$; and Grade × Risk Group, Pillais $F(4, 725) = 2.75$, $p < .010$.

Significant differences were found between the intervention and monitoring conditions in behavioural avoidance, stepdown $F(1, 735) = 11.21$, $p < .0125$, at post-intervention, and at 12-month follow-up assessment, stepdown $F(1, 735) = 8.24$, $p < .0125$. As shown in Table 5, children in the intervention condition evidenced lower scores in behavioural avoidance compared to the children in the monitoring condition.

Nonsignificant grade differences were found on the coping subscales at post-intervention. However, significant grade differences were found at 12-month follow-up in assistance seeking, stepdown $F(1, 734) = 41.83$, $p < .0125$; cognitive-behavioural problem-solving, $F(1, 734) = 71.01$, $p < .0125$; and in behavioural avoidance, $F(1, 734) = 33.02$, $p < .0125$. Children in grade 9 reported higher levels of assistance seeking, cognitive-behavioural problem-solving and behavioural avoidance in comparison to grade 6 children.

Significant gender differences were found between females and males at post-intervention in assistance seeking, stepdown $F(1, 735) = 12.56$,

TABLE 4

Number and Percentages of Children with *DSM-IV* Diagnoses at Post-assessment and 12-month Follow-up in the Intervention and Monitoring Groups

	Group			
	Intervention		Monitoring	
	N	%	*N*	%
Post-assessment	(*n* = 23)		(*n* = 20)	
Children with a primary diagnosis	8	34.78	8	40.0
Children with a secondary diagnosis	4	17.39	3	15.0
Children with a tertiary diagnosis	2	8.69	1	5.0
Children with GAD	4	17.39	0	0.0
Children with specific phobia	2	8.69	1	5.0
Children with social phobia	2	8.69	1	5.0
Children with major depressive episode	0	0.0	2	10.0
Children with dysthymia	0	0.0	3	15.0
Children with other diagnosis	0	0.0	1	5.0
12-month follow-up assessment	(*n* = 16)		(*n* = 17)	
Children with a primary diagnosis	6	37.5	7	41.1
Children with a secondary diagnosis	4	25.0	3	14.6
Children with a tertiary diagnosis	0	0.0	0	0.0
Children with GAD	4	25.0	0	0.0
Children with specific phobia	1	6.25	0	0.0
Children with social phobia	1	6.25	1	5.8
Children with major depressive episode	0	0.0	3	14.6
Children with dysthymia	0	0.0	3	14.6
Children with other diagnosis	0	0.0	0	0.0

$p < .0125$, and in behavioural avoidance, $F(1, 735) = 12.51$, $p < .0125$. Results shown in Table 5 indicate that females reported higher levels of assistance seeking and behavioural avoidance than males. This trend continued at 12-month follow-up, with significant gender differences evident in assistance seeking, stepdown $F(1, 734) = 50.55$, $p < .05$, and behavioural avoidance, $F(1, 734) = 6.11$, $p < .05$, as well as cognitive-behavioural problem-solving, $F(1, 734) = 8.25$, $p < .0125$. The data suggests that females used greater assistance seeking, cognitive-behavioural problem-solving, and behavioural avoidance than males when responding to stressful situations.

Significant differences were found between risk in behavioural avoidance, $F(1, 735) = 32.70$, $p < .0125$, at post-intervention. Children in the at-risk group evidenced higher scores ($M = 7.25$, $SD = 4.15$) in behavioural avoidance compared to the children in the healthy group ($M = 4.66$, $SD = 3.41$). At 12-month follow-up, a significant difference was also found between the at-risk and healthy groups in behavioural avoidance, $F(1, 735) = 24.00$, $p < .0125$, and cognitive avoidance, $F(1, 735) = 11.43$, $p < .0125$. Children in the at-risk group evidenced higher scores in behavioural avoidance ($M = 5.85$, $SD = 3.77$) and cognitive avoidance ($M = 12.01$, $SD = 5.44$) compared to the children in the healthy group (behavioural avoidance, $M = 3.84$, $SD = 3.09$, cognitive avoidance, $M = 9.46$, $SD = 5.84$).

At post-assessment, significant effects were found across Group × Grade in cognitive-behavioural problem-solving, $F(1, 733) = 9.60$, $p < .0125$, and behavioural avoidance, $F(1, 733) = 6.28$, $p < .0125$. As shown in Table 5, grade 9 children in the intervention condition reported higher scores in cognitive-behavioural problem-solving strategies, and less behavioural avoidance than grade 9 children in the monitoring condition. No differences were found between

TABLE 5

Means and Standard Deviations for Coping Subscales for Grade and Gender

Subscale		Assistance seeking						Cognitive-behavioural problem-solving						Cognitive avoidance						Behavioural avoidance					
Group	Time	Pre		Post		12-month		Pre		Post		12-month		Pre		Post		12-month		Pre		Post		12-mth	
	Gender	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Intervention																									
Grade 6	Female	5.13	2.06	5.51	1.99	5.77	2.36	9.47	4.39	9.84	3.22	8. 02	4.77	11.98	5.56	10.93	6.51	9.89	5.72	5.23	3.57	5.23	3.78	3.52	2.86
	Male	4.83	1.91	5.06	1.83	4.77	2.06	10.00	4.69	10.04	4.63	6.67	4.91	10.80	6.22	10.75	5.83	8.62	5.87	4.39	3.16	4.08	2.74	2.66	2.45
	Total	5.00	2.00	5.31	1.93	4.33	2.28	9.71	4.52	9.93	3.90	7.42	4.87	11.46	5.88	10.85	6.21	9.33	5.81	4.86	3.31	4.72	3.40	3.14	2.72
Grade 9	Female	5.21	2.32	5.85	2.08	5.83	2.13	11.00	4.60	11.24	4.99	11.00	4.25	9.88	6.64	10.19	6.46	9.79	6.41	4.00	3.14	4.43	3.91	4.48	3.39
	Male	4.72	2.18	5.09	2.22	4.41	1.91	8.79	4.38	9.68	4.50	9.23	4.20	9.74	5.80	10.27	6.34	9.25	5.72	4.13	3.21	4.31	3.34	4.10	3.26
	Total	5.04	2.16	5.46	2.18	5.10	2.14	9.86	4.61	10.37	4.78	10.09	4.31	9.81	6.21	10.23	6.39	9.51	6.06	4.07	3.17	4.37	3.62	4.28	3.32
	Total	5.02	2.08	5.39	1.98	4.73	2.24	9.78	4.57	10.16	4.39	8.82	4.77	10.59	6.10	10.52	6.30	9.42	5.93	4.44	3.31	4.53	3.52	3.74	3.10
Monitoring																									
Grade 6	Female	5.13	1.40	5.76	1.45	4.44	2.38	7.97	4.03	9.67	4.09	7.45	4.72	10.90	5.93	8.83	4.31	9.31	6.63	4.91	3.13	4.15	2.43	3.54	2.80
	Male	5.21	2.32	5.73	1.80	3.90	2.15	9.65	4.59	10.00	3.05	6.74	4.82	13.88	6.39	12.00	5.75	9.07	5.45	5.08	3.39	5.48	2.88	3.53	2.99
	Total	5.17	1.93	5.74	1.64	4.16	2.26	8.85	4.40	9.93	3.75	7.07	4.77	12.47	6.33	10.50	5.34	9.18	6.01	5.00	3.26	4.85	2.75	3.53	2.99
Grade 9	Female	5.37	2.15	5.45	2.03	6.46	2.04	9.85	4.53	10.03	4.24	10.26	4.18	10.13	5.47	10.18	6.05	10.91	5.08	5.06	3.66	7.22	4.31	5.73	3.20
	Male	4.41	1.81	4.81	1.77	4.60	1.99	9.64	4.20	9.38	4.20	10.08	4.35	11.01	5.47	13.72	7.10	10.57	5.72	4.30	3.27	4.51	3.15	5.49	3.45
	Total	4.88	2.04	5.13	1.95	5.64	2.16	9.74	4.35	9.61	4.22	10.17	4.26	10.58	5.60	11.92	6.80	10.73	5.40	4.67	3.47	5.84	3.99	5.09	3.42
	Total	5.01	2.05	5.39	1.85	5.01	2.32	9.37	4.39	9.99	4.09	8.85	4.73	11.38	5.98	11.32	6.25	10.07	5.71	4.81	3.38	5.42	3.55	5.43	3.33

group and grade in coping strategies at 12-month follow-up.

Significant differences were found across Group × Gender at post-assessment in cognitive-behavioural problem-solving, stepdown $F(1, 732) = 8.94$, $p < .05$. As indicated in Table 5, females in the intervention condition reported using more cognitive-behavioural problem-solving strategies than females in the monitoring condition. However, no gender differences were evident at 12-month follow-up. Significant effects were found across Group × Grade × Gender at post-assessment in cognitive avoidance, $F(1, 729) = 13.70$, $p < .0125$, and behavioural avoidance, $F(1, 729) = 23.60$, $p < .0125$. Males in grade 6 and females in grade 9 in the monitoring condition reported greater cognitive and behavioural avoidance strategies than males and females in each grade in the intervention condition. At 12-month follow-up, no significant differences were found in coping strategies between males and females.

Significant effects were shown across Grade × Gender at post-assessment in cognitive-behavioural problem-solving, $F(1, 733) = 6.64$, $p < .0125$, and in cognitive avoidance $F(1, 733) = 7.23$, $p < .0125$. Grade 9 females reported using more cognitive-behavioural problem-solving compared to grade 6 females. Grade 6 and grade 9 males reported using more cognitive avoidance strategies compared to grade 6 and grade 9 females. These effects had disappeared by 12-month follow-up, with no differences found in coping strategies between males and females.

Discussion

Universal school-based preventive intervention for child anxiety is arguably an important area warranting further investigation. This longitudinal study aimed to compare the effects of a universal school-based cognitive-behavioural intervention in anxiety, depression and coping across two age groups. Overall, results are encouraging in that a preventative effect was found indicating the *FRIENDS* program has the potential to reduce the number of children at risk of developing an anxiety disorder. Support was found for the hypothesis that the intervention group would be associated with greater changes in self-reported anxiety than the monitoring group. Participants in the study showed general reductions in anxiety across time regardless of intervention status, a finding congruent with previous research (Dadds et al., 1997; Dadds et al., 1999; Lowry-Webster et al., 2001; Lowry-Webster et al., in press) showing a tendency for children to report decreases in anxiety over time. However, in the present study reductions in anxiety were significantly greater for participants in the intervention group at post-intervention and 12-month follow-up intervals. This outcome differed slightly from the results of our preliminary longitudinal study (Barrett et al., in press) wherein intervention effects only became apparent 12 months following the intervention. A possible explanation for this may be due to sampling effects in terms of the differences in the nature of the cohort of children recruited for each study.

Evaluation of age differences in intervention outcome suggests that earlier preventative intervention may yield greater success in reducing anxiety symptoms and preventing the development and onset of anxiety disorders in youth. Foremost, children in grade 6 (aged 9–10 years) reported significantly higher levels of anxiety prior to intervention and at post-assessment, yet greater reductions in anxiety at 12 months after the intervention, as well as lower levels of depression across time compared to the grade 9 children (14–16). This result supports earlier findings (Lowry-Webster et al., 2001; Lowry-Webster et al., in press; Barrett & Turner, 2001; Barrett et al., in press) suggesting late childhood is an optimal time for preventive intervention. Further examination of gender differences showed that females were more likely to be at-risk of an anxiety disorder, and report higher levels of anxiety than boys, over time. Our data indicated that grade 6 females were most responsive to the intervention program as they reported greater changes in anxiety compared to females in grade 9 and males across grades.

Inconsistent with previous research (Lowry-Webster et al., 2001; Lowry-Webster et al., in press; Dadds et al., 1999; Barrett et al., in press), the current study found no differences in anxiety between children at risk in the

intervention condition and those at risk in the monitoring condition. A possible explanation for this outcome is that a large number of children were absent at post-assessment or withdrew from the study. Of the children who dropped out, significantly more children within the monitoring condition were those at-risk of anxiety at pre-assessment. The missing data from the at-risk children in the monitoring condition makes interpretation of results difficult.

As studies suggest a relationship between anxiety and depression (Cole, Peeke, Martin, Truglio, & Seroczynski, 1998), we were also interested in the effects of the intervention on reducing symptoms of depression. Our data showed reductions in symptoms of depression, however, this effect did not become apparent until 12 months after the intervention. This result was incongruent with findings of our preliminary longitudinal study (Barrett et al., in press) whereby no differences were found in depressive symptoms at either time interval. However, similar putative delays in intervention effects were found in the Queensland Early Intervention project (Dadds et al., 1997) and consistent with results of a prevention trial for depression (Jaycox, Reivich, Gillham, & Seligman, 1994). Again, a possible explanation for the difference in results may be due to varied characteristics of the cohort of children recruited for the present study.

In the present study, children at risk of an anxiety disorder also reported higher levels of depression at each time interval compared to the children in the healthy group. Lowry-Webster et al. (2001) reported similar findings, whereby children at-risk in the monitoring condition reported significantly more depressive symptoms compared to children at-risk in the intervention condition. Although in the current study these children did not meet diagnostic criteria for depression, results indicate that children with high anxiety may be vulnerable to developing depressive symptoms over time. Consequently, our data provides support for previous research suggesting a developmental trajectory wherein anxiety in early childhood precedes depression in adolescence (Cole et al., 1998). Overall, findings of this study suggest that children in grade 6, aged between 9 and 10 years, and females, were more responsive to the *FRIENDS* program than adolescents and males. However, it would be interesting to follow-up this study for 2 to 3 years to assess the sustained effects of the intervention.

A final aim was to examine the effects of the universal intervention on children's coping ability, by comparing changes in approach strategies (assistance seeking, cognitive-behavioural problem-solving) and avoidant strategies (behavioural avoidance, cognitive avoidance) children use to manage difficult experiences. The *FRIENDS* program was effective in reducing children's behavioural avoidance, and thus increasing children's ability to confront situations they experience as stressful. This is an important outcome, as in the current study, at-risk children reported using both behavioural avoidance and cognitive avoidance strategies compared to children in the healthy range. Moreover, avoidance of anxiety-provoking situations is known to be a maintaining factor in anxiety disorders. Similarly, previous research with anxious adults and children has shown avoidance of difficult experiences increases anxiety (Donovan & Spence, 2000; Compas et al., 1988).

The program was immediately effective in increasing cognitive-behavioural problem-solving strategies in females and children in grade 9, and in reducing cognitive-behavioural avoidance in grade 6 children. Males in grade 6 and females in grade 9 in the intervention condition reported less cognitive and behavioural avoidance strategies in comparison to children in the monitoring condition. Unfortunately, these effects had disappeared by 12-month follow-up, which may suggest that without ongoing intervention or support children may revert back to previous habits of coping.

In relation to the specific effects of the *FRIENDS* intervention for anxiety and depression, grade 6 females appeared to be the most responsive to the program as they reported the greatest reductions in anxiety and depression over time. Analysis of the coping strategies employed by participants suggested that children in grade 6 were less likely to physically avoid stressful situations, whilst the grade 9 children were more likely to use problem-solving strategies when confronted with difficult

situations. This finding suggests that the exposure (step plan) component of the *FRIENDS* program may have greater effects for children in late childhood, whilst the problem-solving component of the *FRIENDS for Youth* program may have greater benefits for adolescents.

Further examination of differences in coping strategies between grade 6 and grade 9 children, and females and males, has important practical implications in the design and development of preventive intervention programs. In general, adolescents and females appear to use approach strategies such as seeking help and problem-solving to a greater extent than primary school children and males. Although they are more likely to physically avoid stressful situations than younger children. Further research examining the effects of the self-esteem, relaxation and cognitive restructuring components of the intervention on children's coping skills would provide further support for the *FRIENDS* program as a universal preventive intervention.

As one of the first universal cognitive-behavioural prevention studies of its kind, in the literature it is important to emphasise inherent issues in conducting school-based clinical research trials, the limitations of this study and how future research might address them. The findings of this study must be viewed with caution. We experienced similar problems as in previous research (Barrett et al., in press; Dadds et al., 1997; Dadds et al., 1999), with a large percentage of children dropping out of the study or absent at post-assessment intervals, which inevitably limits the validity of our results. Particularly, the post-assessment data from the participants at-risk of an anxiety disorder in the monitoring condition at pre-assessment would have provided a more accurate indication of intervention effects.

A further limitation of our study was that statistical analysis was based on children's self-reported subjective interpretation of anxiety and depression. The question about the degree of accuracy of children's self-report measures is widely documented in the literature. It is generally recommended that multiple sources be used to assess childhood anxiety. This study did not use parental or teacher measures of children's functioning, thus to increase the external validity of findings, future research would benefit from examining data from multiple sources.

It is also important to note the inherent challenges of conducting large-scale longitudinal research within the school setting. Factors such as financial constraints, attrition difficulties, public holidays, absenteeism due to illness, exams, and school excursions impacted on project implementation and potentially, intervention outcome. Additional factors included classroom dynamics, student characteristics, and the facilitator's ability to maximise the therapeutic process within the classroom setting. A final point was that poor attendance at parent workshops was most disappointing, which may have further contributed to the intervention effects. Studies such as this one, which assess programs incorporating parent sessions, should consider ways of engaging parents in school-based activities.

Prevention research examining the effects of universal intervention utilising clinically-developed cognitive-behavioural programs aimed at reducing the prevalence of anxiety disorders within the community is in its early stages and seems to show promise. Overall, findings of our study showed children in primary school benefited the most from the *FRIENDS* program as they reported greater levels of anxiety, less depressive symptomatology and greater response to intervention compared to adolescents in secondary school. Adolescents were found to cope with stressful situations more effectively than primary school children, perhaps an indication of increases in social-cognitive abilities characteristic in this phase of development. However, a general trend was observed wherein levels of anxiety decreased over time, perhaps an indication of the transient nature of mild self-reported anxiety throughout childhood development.

Much more research is needed to determine the factors that contribute to optimal intervention, and methods of improving the effectiveness of the *FRIENDS* program within the school curriculum. Future research investigating individual factors such as intelligence, children's attendance in sessions, completion of homework, children's motivation, attitudes and aptitude toward cognitive-behavioural intervention, and environmental factors such as peer pressure,

parental participation, school environment, psychologist or teacher characteristics, and classroom layout may provide important information regarding how we can modify cognitive-behavioural interventions such as the *FRIENDS* program to best suit the school curriculum.

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