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Long-term outcomes of an Australian universal prevention trial of anxiety and depression symptoms in children and youth: An evaluation of the Friends Program

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Abstract

This study evaluated the long-term effectiveness of the *FRIENDS* Program as a universal school-based intervention for the prevention of child and youth anxiety and depression. The *FRIENDS* intervention was offered within the classroom curriculum to a cohort of primary school (Grade 6) and secondary school (Grade 9) students, and was evaluated in comparison to a control group of students who received the usual classroom curriculum. Previous studies (Barrett & Turner, 2001; Lock & Barrett, 2003; Lowry-Webster, Barrett, & Dadds, 2001; Lowry-Webster, Barrett, & Lock, 2003) have demonstrated the efficacy of the *FRIENDS* program in reducing anxiety and depressive symptomatology at post-intervention and up to 12 months follow-up. This study presents follow-up data at 12 months, 24 months and 36 months follow-up. Results indicated a significant Intervention condition X Grade X Time multivariate interaction. Further analyses indicated that for students from the Grade 6 cohort, intervention participants maintained gains on self-reported depression scores across time, whereas students in the monitoring condition reported a significant increase in depression scores at 24 months follow-up, followed by a reduction again in symptoms at 36 months follow-up. For students from the Grade 6 cohort there was no change in self-reported anxiety scores for the monitoring group; however there were significant decreases in anxiety symptoms at 36 months compared to both 12 months follow-up and 24 months follow-up. For Grade 9 students there was no overall Time X Group interaction; however males in the intervention condition reported significant consistent reductions in both depression and anxiety over the follow-up period. This study provides evidence for both the durability of prevention effects for primary school-aged children, and for the additional cumulative benefits of the *FRIENDS* program over 3-years post intervention, when delivered as a universal prevention program

implemented by class-room teachers as part of the standard class curriculum. Results are discussed within the context of other recent prevention studies.

Keywords; anxiety, depression, children, youth, prevention

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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. The 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). More specifically, research indicates that internalising disorders, such as anxiety and depression, represent some of the most serious mental health problems in our children and youth. Anxiety disorders are the most frequently experienced mental health disorder in childhood and adolescence, with studies estimating a point prevalence of 5 – 10%, and a lifetime prevalence of approximately 20% (Essau, Conradt, & Petermann, 2000; Fergusson, Horwood, & Lynskey, 1993; Lewinsohn, Hops, Roberts, Seeley, & et al., 1993; Shaffer, Fisher, Dulcan, & Davies, 1996). Research has demonstrated that anxiety and depressive symptoms are highly related in child and youth populations (eg., Dobson, 1985; Tannenbaum, Forehand & McCombs, 1992; Wolfe, Finch, Saylor, Pallmeyer &Carek, 1987). Estimates indicate approximately 2 – 5% of children and adolescents will suffer a major depressive disorder of clinical severity (Kashani, Carlson, Beck, 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 et al., 1998; Harrington, Fudge, Rutter, Pickles, & Hill, 1990; Kashani & Orvaschel, 1990; Last, Hanson, & Franco, 1997; Orvaschel, Lewinsohn, & Seeley, 1995).

The above studies highlight the pressing need for researchers to develop ways to best intervene, and reduce the occurrence of mental health disorders in children and youth.

In response to this need, there has been a recent surge in the field of preventative research for mental health problems. Considering reports suggesting that of the 1 in 5 of school children that experience a mental health problem, most will not seek or receive appropriate intervention or treatment (Stanley, 2002), prevention has become a priority for governments, and offers a cost effective and efficient means of providing services to children and youth prior to the onset of psychopathology. Given the potential of such approaches to impact upon the incidence and prevalence of childhood anxiety disorders, the momentum for prevention is strong. Consumers and educators welcome this change in focus, and the task now remains for researchers to establish a strong empirical base upon which preventive interventions can continue to be refined and developed.

Primary preventive interventions can be defined further as either universal, selected, or indicated / 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, and reaching a broad range of children and adolescents with varying levels of psychopathology, ranging from those at risk, to those with sub-clinical or clinical symptoms. Further, potential advantages involve reducing stigmatization, enhancing peer support and reducing psychosocial difficulties within the classroom, and thus promoting learning and healthy development in all children and adolescents (Armburster et al, 1999; Evans, 1999; Kubiszyn, 1998). The Australian National Agenda for Early Childhood (Anthony, 2003) declares that all children “deserve a good start to life” and suggests that universal strategies are the most appropriate for ensuring a minimum standard of care for all children, in addition to the provision of

indicated programs for children at risk. Recently, the World Health Organization cited the Australian developed *FRIENDS* program (Barrett, 2004; in press) as the only evidence-based program effective at all levels of intervention for anxiety in children; that is, it has an evidence-based as a treatment for anxiety disorders, and as a targeted / indicated, selective, and universal prevention intervention (WHO, 2004).

The *FRIENDS* program was originally trialed as an individual cognitive-behavioural treatment (CBT) program for anxious children (i.e., The Coping Koala, Barrett, Dadds, and Rapee, 1996). It was adapted from Phillip Kendall's original CBT protocol for treating anxious children, "The Coping Cat" (Kendall, 1994), and involved the additional component of parent training and support. Numerous trials have been conducted using this protocol as a treatment for anxious children and youth (Barrett et al., 1996; Barrett, 1998; Barrett, Duffy, Dadds, and Rapee, 2000; Shortt, Barrett and Fox, 2000), either in individual format or as a group-based treatment. Results from these trials have been consistently positive with remission rates ranging from 65% to 90% at post-treatment, with treatment effects being maintained over 6-years follow-up (Barrett et al., 2000). The *FRIENDS* program is a developmentally tailored, standardised family and peer-group CBT protocol consisting of 10 weekly sessions and 2 booster sessions The program also involves a parent component, which consists of 2 – 4 parent sessions, focussed on strategies to assist parents in coping with their own anxiety, reinforcement strategies and contingency management for children, and brief training in problem-solving and communication skills. The *FRIENDS* program has more recently been validated in controlled trials as an effective CBT prevention program for child and youth anxiety and depression (Dadds, Spence, Holland, Barrett & Laurens, 1997; Barrett and Turner, 2000; Lowry-Webster, Barrett and Dadds, 2001; , Lowry-Webster, Barrett and Lock, 2003, Lock and Barrett, 2003).

The Queensland Early Intervention and Prevention of Anxiety Project (Dadds, Spence, Holland, Barrett & Laurens, 1997) represents the first cognitive behavioural trial for prevention of childhood anxiety disorders, and was based on the original *FRIENDS* protocol (i.e., "Coping Koala"; Barrett, Dadds, and Rapee, 1996). This study combined a prevention strategy with early intervention as it targeted children (aged 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 control condition. Diagnostic status was used as an outcome measure, and results were favourable. Both groups demonstrated improvement immediately post-intervention, 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, regardless of intervention status, participants in this study showed a general improvement across time (Last, Perrin, Hersen & Kazdin, 1996) and results further revealed gender (female), parental anxiety and pre-treatment severity predicted poor response to intervention (Barrett et al, 1996; Cobham et al, 1998). This study demonstrated that childhood anxiety disorders and the number of children 'at risk' with mild to moderate levels of anxiety can be successfully reduced through selected school-based cognitive –behavioural intervention. An interesting outcome was the immediate reductions in symptoms reported across both intervention and monitoring

groups. The putative delay in intervention effects is consistent with the results of a similar prevention trial for adolescent depression (Jaycox et al, 1994).

Barrett & Turner (2000) evaluated the effects of a universal cognitive behaviour intervention for the prevention of internalizing symptoms in children in grade 6 (aged 9 – 10 years). Ten schools in the Brisbane region participated in the project, which involved all children participating in the FRIENDS program (Barrett, 1998) in their classroom during the school curriculum. This study evaluated a "train-the-trainer" model of intervention, whereby children were assigned to one of three conditions; (1) psychologist led intervention, (2) teacher led intervention (following a standardised teacher training workshop) and (3) standard curriculum (monitoring condition). Barrett and Turner (2001) trained classroom teachers and psychologists to implement the 12-session *FRIENDS* program, a cognitive-behavioural intervention, as part of the standard classroom curriculum. Participants completed standardised self-report measures of anxiety at pre- and post-intervention. Parents were invited to attend four parent evenings, which involved psychoeducation and parenting strategies. Evaluation of children's self-report measures at post-intervention 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.

In follow-up to this study, Lowry-Webster, Barrett and Dadds (2001) examined the effectiveness of the *FRIENDS* program as a universal strategy for prevention of childhood anxiety. In total, 594 students, aged 10-13 years, were allocated to either an intervention or control condition on the basis of class. The intervention taught participants a variety of coping and problem-solving strategies to help them cope with, and manage anxiety. At

post assessment all children reported significant reductions in anxiety, although these decreases were significantly greater in the intervention group compared to the monitoring 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 pre intervention, 75.3% were no longer at risk at post intervention, compared to 54.8% of high-risk children in the monitoring 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 12-months follow-up for children who received the *FRIENDS* 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 cut-off 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 pre-test to 12-months 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 cohorts. This study involved a cohort of 733 children enrolled in grade 6 (n = 336; aged 9 and 10 years) and grade 9 (n = 401; aged 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 (*FRIENDS*) or a monitoring control condition (standard curriculum), and all students completed self-report measures of anxiety (SCAS: Spence, 1998; RCMAS: Reynolds & Richmond, 1978),

depression (CDI: Kovacs, 1981) and coping (Brodzinsky et al., 1992). 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; Dadds et al., 1999; Lowry-Webster et al., 2001; Lowry-Webster et al., 2003), this study found general reductions in anxiety across time, regardless of intervention condition, demonstrating a tendency for children to report decreases in anxiety over time. However, this study found that reductions in anxiety were significantly greater for students in the intervention condition at both post-test and 12-months follow-up.

In terms of age differences, this study found that children in Grade 6 reported significantly higher levels of anxiety prior to the intervention and at post-intervention, yet greater reductions in anxiety at 12-months follow-up, as well as lower levels of depression across time compared to Grade 9 children. This finding suggests that the optimal time for preventing anxiety may be in late childhood (9 – 10 years of age) versus early adolescence. It further examined gender differences and found that females 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 females were most responsive to the intervention, as they reported greater reductions in anxiety compared to females in Grade 9, and males across grades.

Lock & 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-months follow-up. This finding of a *delayed* intervention effect is consistent with the finding from the Queensland Early Intervention project (Dadds et al., 1997) and is also consistent with Jaycox and colleagues prevention trial for depression (see Jaycox, Reivich, Gillham, & Seligman, 1994).

The above 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 the longer term, it is important to examine outcomes beyond 12-molnths follow-up. This study aims to evaluate the long-term prevention outcomes based on existing data reported in Lock and Barrett's (2003) longitudinal study. Students involved in Lock and Barrett's (2003) study were followed-up again at 24-months follow-up, and 36-months follow-up. This study evaluates outcomes on measures of self-reported anxiety and depression, across intervention and monitoring schools from 12–months follow-up to 24-months follow-up and 36-months follow-up. This study does not report outcomes for diagnostic data as there was insufficient diagnostic interview data collected over the final two years of this study. It was hypothesised that outcomes at 12 months follow-up would be increased across the 24-months follow-up and the 36-month follow-up for children and youth in the intervention condition. It was further hypothesised that there would be greater increases in anxiety and depression symptoms over time for children and youth in the monitoring control condition, in comparison to students in the intervention condition who would not experience significant changes over time due to the preventative effects of the *FRIENDS* program. Based on findings in Lock and Barrett (2003) it was anticipated that prevention effects (maintenance of gains versus increases in symptoms over time) would be strongest for children in the Grade 6 cohort.

Method

Participants

Participants at 12 months follow-up were 1275 children and youth from two age group cohorts. The original age group cohorts at the commencement of the prevention trial

(Lock & Barrett, 2003) consisted of children in Grade 6 (aged 10 – 11 years) and youth in Grade 9 (aged 13 – 14 years). The current sample at 12 months follow-up consisted of 508 students in Grade 7, and 767 students in Grade 10. These students were followed-up again at 24 months follow-up (Grade 8 / Grade 11) and 36 months follow-up (Grade 9 / Grade 12). All participants were students from one of 7 coeducational schools extending from P – Year 12 in the metropolitan area of Brisbane, Australia. Participants were recruited from within these schools over a period of two consecutive years to increase the sample size and statistical power; therefore, each original age cohort (Grade 6 and Grade 9) was represented by students from two commencement cohorts (those commencing in 1999 and those commencing in 2000). The sample sizes in the current sample are slightly larger than those reported in Lock and Barrett (2003) due to the additional recruitment of participants in the second cohort. Schools, rather than participants, were selected as the unit of random assignment; with schools being randomly assigned to either an intervention condition, or a monitoring condition. There were 3 schools assigned to the intervention condition, and 4 schools assigned to the monitoring condition.

At 12 months follow-up, there were a total of 836 participating students (55% male and 45% female) within the intervention condition, from either Grade 7 or Grade 10. Within the monitoring condition, there were a total of 439 participating students (51% male and 49% female) from Grade's 7 and 10. Table 1 presents sample sizes and gender distribution for both Grade cohorts across follow-up points.

Socio-economic status (SES) was based upon 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 for the intervention school students was 4.41 (SD = 2.37), typical of the SES distribution of Australia in general. This value is indicative of lower-

middle to middle socioeconomic status on average (e.g., “trades” occupations are coded as 4; “clerical” occupations as 5), and is broadly consistent with the average SES reported in other Australian studies (eg, Spence et al., 2003). The average SES rating for the Grade 6 intervention participants was 4.46 (SD = 2.38), and the average SES rating for Grade 9 intervention participants was 4.23 (SD = 2.39). The majority of intervention students (89.7%) were born in Australia (91.1% Grade 6 and 88.8 % Grade 9), with the remainder coming from a wide variety of ethnic backgrounds, as is typical of the Australian population. The average SES rating for monitoring participants was 4.52 (SD =2.22), with the Grade 6 average being 4.86 (SD = 1.92) and the Grade 9 average 4.30 (SD= 2.38). The majority of monitoring participants (90.7%) were also born in Australia (91.4 % Grade 6 and 90.3 % Grade 9).

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 1 school from each pair was randomly assigned to either an intervention or control condition, with only intervention schools receiving the *FRIENDS* Program.[1] Therefore, consistent with previous prevention research (eg., Dadds et al., 1997; Spence et al., 2003), schools rather than students were the unit for random assignment to conditions. 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 three time intervals, 12-month follow-up, 24-month follow-up and 36-month follow-up. All questionnaire assessments were completed within class groups, within normal school hours. Students were asked to sit at their own desk and listen carefully to the standardised instructions that were provided. A registered and clinically trained psychologist read the instructions and questionnaires aloud to all students. One or more post-graduate psychology students accompanied the psychologist where possible, and walked around the classroom assisting students who required help, or who indicated they did not understand one of the questions that were asked. Students were informed that all questionnaire responses were confidential, and upon completion of the questionnaires, all participants were encouraged to ask any questions they may have had. 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. Students identified at each follow-up point as being "at-risk" (based on elevated scores on questionnaires) also participated in a diagnostic interview (as described below) in order to determine whether they were experiencing a clinical anxiety or depressive disorder.

Identification of "High-Risk" students. Following questionnaire administration, questionnaires were immediately scored and students were classified as "high-risk" based on anxiety scores equal to or greater than 42.48 on the Spence Children's Anxiety Scale (SCAS; see below), and or scores equal to or greater than 14 on the Children's Depression Inventory (CDI; see below). Students whose SCAS scores were less than 42.48 were categorised as "low-risk" status. These cut-off scores were determined as the most appropriate scores for minimising false negatives (Spence, 1997).

Consenting students identified as high-risk at follow-up assessments were then interviewed using the Anxiety Disorders Interview Schedule for Children (ADIS-C;

Silverman & Albano, 1996; see below). For ethical reasons, students who received a diagnosis of an anxiety or depressive disorder were referred to the school guidance counsellor, and a letter was sent home to the parents of these students.

Program implementation. The *FRIENDS* intervention (see below) was implemented within schools assigned to the intervention condition as part of the curriculum within the subject areas of Health and Physical Education (HPE), or Social and Personal Development (SPD). The intervention consists of 10 sessions, of approximately 70 minutes 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, Lowry-Webster, & Turner, 1999a; 1999b) was offered to Grade 6 intervention participants and *Friends for Youth* (Barrett, Lowry-Webster, & Turner, 1999c; 1999d) was implemented with Grade 9 intervention participants. The *FRIENDS* program is a brief cognitive-behavioural intervention designed and validated as a group-based treatment for clinically anxious children (Shortt, Barrett, & Fox, 2001). The program, described in detail by Barrett (1999), assists children and youth to learn 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 clinically trained research project staff for the first cohort of students, and by teachers for the second cohort of the study, following a one-day standardised teacher-training workshop. An earlier study reported that there were no differences in post-intervention 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 their children were completing and to discuss parenting and reinforcement strategies. The *FRIENDS* program is now in its 4th edition; the most recent edition now called "*FRIENDS* for Life!" (Barrett, 2004). The word *FRIENDS* is an acronym, which helps participants to learn and remember the skills taught (see Table 2 for the *FRIENDS* for Life! acronym).

Measures

Spence Children's Anxiety Scale. The Spence Children's Anxiety Scale (SCAS; Spence, 1997) is a 44-item scale assessing anxiety symptoms. Six subscales, corresponding to DSM-IV anxiety disorders are developed from the anxiety items (Obsessive-Compulsive Problems, Separation Anxiety, Social Phobia, Panic/Agoraphobia, Generalized Anxiety/Overanxious Symptoms, and Physical Injury Fears), and a Total Anxiety score (used in the current 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, Barrett & Turner (2003) reported high internal consistency in community child ($r = .92$) and adolescent populations ($r = .92$) respectively, and 6-month test-retest reliability of .60 for children (Spence, 1998) and 12-week test-retest reliability of .63 for youth (Spence, Barrett & Turner, 2003). Good convergent and discriminant validity was also reported.

Children's Depression Inventory. Depressive symptoms were assessed using the 27-item Children's Depression Inventory (CDI; Kovacs, 1980/1981). 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 3 response alternatives, with each increasing in symptom severity. Higher scores reflect more severe symptomatology. In the present study, and in line with other research studies

(eg., Shochet et al., 2001; Hannon et al., 2000; 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 a community sample of children and youth (r = .90) and 6-month test-retest reliability of .66.

Revised Children's Manifest Anxiety Scale (RCMAS: Reynolds & Richmond, 1985). The RCMAS provides a measure of anxiety symptomatology. The questionnaire contains 37 items, nine 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).

Student, Parent and Teacher Program Evaluations. For those schools assigned to the intervention condition, a program evaluation form was provided to participants, their parents, and their teachers at the end of the 10-session *FRIENDS* intervention. Whilst this data was not presented in Lock and Barrett (2003), it was considered to be interesting and of significance; hence will be reported in this follow-up paper. Student evaluation forms asked how much students enjoyed the program, how much they felt they learned from the program, how often they implemented the skills they had learned, and which skills were the most useful to their everyday life. Teachers were asked to rate how useful they felt the program was, how much they learned, how much they felt the students learned, how easy was it to implement the program within the classroom setting, and how well they felt the program complemented the school curriculum. Parents were asked to rate how useful they felt the program was to their child, how much their child enjoyed the program, how often

their child employed the skills learned, and how important they felt it was that schools should incorporate the program into the curriculum.

Program Fidelity Checklist. Prior to implementing the program, Group Leaders were each given a program fidelity checklist to determine their adherence to the intervention protocol. The checklist invited Group Leaders to record whether or not they completed each activity within the session. For those participants commencing the program in 1999, project staff implemented the intervention and adherence to program content ranged from 88.88% – 95.5%. Of the 18 teachers who implemented the intervention in 2000, only 5 returned fidelity checklists, and adherence to the intervention content ranged from 72.3% – 91.66%. Both project staff and teachers cited time as the most common reason for failing to implement all the session activities. Project resources did not extend to allowing random reliability checks.

Results

Attrition and Missing Data

Patterns of missing data from 12 months follow-up to 24 months follow-up and 36 months follow-up were examined to determine drop-out and absenteeism rates in order to assess potential influences of these factors on the long-term outcomes. At 24 months follow-up there were no differences in the frequency of missing data across grade; with 32% of data missing for the Grade 6 cohort and 33% of data missing for the Grade 9 cohort. There were significant differences between the intervention condition and the monitoring condition on the frequency of missing data, with the monitoring condition having significant more missing data (45%) then the intervention group (26%) χ^2 (1, 1296) = 48.71; $p < 0.001$. There were no differences in the frequency of missing data between males and females or between students at “high-risk” and within “healthy” range.

At 36 months follow-up there were no differences in the frequency of missing data across grade; with 44% of data missing for the Grade 6 cohort and 49% of data missing for the Grade 9 cohort. There were significant differences between the intervention condition and the monitoring condition on the frequency of missing data, with the monitoring condition having significant more missing data (56%) then the intervention group (42%) χ^2 (1, 1296) = 23.39; $p < 0.001$. There were also differences between males and females in frequency of missing data at 36 months, with males having significantly more missing data (50%) than females (43%) χ^2 (1, 1275) = 5.76; $p < 0.05$. There were no differences in the frequency of missing data between students at "high-risk" and within "healthy" range. Patterns of missing data from pre-intervention to post-intervention to 12 months follow-up are presented in Lock & Barrett (2003).

Risk Group Status

Participants were stratified into "high-risk" and "healthy" groups, based on their scores on both the SCAS and CDI. Students were allocated to the "high-risk" group based on elevated scores on *either* the SCAS (42.48 or above) or the CDI (14 or above). All other students were classified as within "healthy" range. Table 3 presents the frequency and percentage of students at "high-risk" for both Grade cohorts and group conditions across time. Chi-square tests revealed significant differences between the intervention and monitoring conditions for the Grade 6 cohort at 24 months follow-up χ^2 (1, 362) = 19.41; $p < 0.001$; and at 36 months follow-up χ^2 (1, 176) = 4.45; $p < 0.05$, with significantly more students in the monitoring condition at "high-risk" at both follow-up points. Chi-square tests revealed significant differences between the intervention and monitoring conditions for the Grade 9 cohort at 24 months follow-up χ^2 (1, 593) = 5.92; $p < 0.01$, with significantly more students at "high-risk" in the treatment condition.

Table 4 presents the frequency and percentage of students who were identified as being at "high-risk" at pre-intervention, who continued to meet criteria for "high-risk" over the long-term follow-up points.

Long-term Follow-up of Universal Prevention Effects across Grade and Time

Prior to evaluating prevention effects across time and intervention condition, a 3-level (schools, students, occasions) multi-level 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 MANCOVA to maximise power. To evaluate the long-term prevention effects of the *FRIENDS* program on measures of anxiety and depression, a 2 (Group: Intervention, Monitoring) X 2 (Grade: Cohort Grade 6, Cohort Grade 9) X 3 (Time: 12 months follow-up, 24 months follow-up, 36 months follow-up) repeated measures multivariate analysis, controlling for pre-intervention group differences (MANCOVA), was conducted on the dependent variables (DV's: CDI, SCAS, RCMAS). There were significant multivariate main effects of Group, Pillai's F (3, 299) = 4.94, $p < 0.01$; Grade, Pillai's F (3, 299) = 3.47, $p < 0.05$; and Time, Pillai's F (6, 296) = 5.28; $p < 0.001$. There was also a significant multivariate interaction for Group X Grade X Time, Pillai's F (6, 296) = 4.21, $p < 0.001$.

An additional two multivariate Group X Grade X Time interactions were examined, with Gender (male vs. female) and Risk (high-risk vs. healthy) as the added between subjects factors. There were significant multivariate interaction effects for Group X Grade X Time X Gender, Pillai's F (6, 296) = 3.53, $p < 0.01$; and for Group X Grade X Time X Risk, Pillai's F (6, 296) = 3.25, $p < 0.01$. Further analyses to examine these

interaction effects were conducted separately for the Grade 6 cohort and Grade 9 cohort. Bonferroni adjustments were made for all further analyses.

Long-term Follow-up of Prevention Effects for Grade 6 Cohort across Time

To examine the multivariate effects within the Grade 6 cohort a number of multivariate interactions were examined. There were significant interactions for Time X Group, Pillai's F (6, 108) = 4.70, $p < 0.001$; Time X Group X Gender, Pillai's F (6, 108) = 2.69, $p < 0.05$; and Time X Group X Risk, Pillai's F (6, 108) = 4.30, $p < 0.001$. To investigate these effects across each of the dependent variables, the univariate interactions were examined.

For the Time X Group interaction there was a significant effect on CDI scores, F (2, 226) = 7.69; $p < 0.001$; and on RCMAS scores, F (2, 226) = 3.03; $p < 0.05$. There was no significant interaction for SCAS scores within the Grade 6 cohort. Pairwise comparisons for the CDI scores revealed no significant change over time for the intervention condition, which experienced consistently lower scores across time than the monitoring condition. There was however, a significant increase in CDI scores for the monitoring condition from 12 months to 24 months follow-up, followed by significant reductions in CDI scores for the monitoring condition from 24 months to 36 months follow-up. Pairwise comparisons for the RCMAS scores revealed significant reductions in anxiety for the intervention condition from 12 months to 36 months follow-up, and from 24 months to 36 months follow-up. Scores for the intervention condition were consistently lower than scores for the monitoring condition across time. There were no changes for the monitoring condition over time.

For the Time X Group X Gender interaction there was a significant univariate interaction on CDI scores, F (2, 226) = 4.82; $p < 0.01$. There were no significant univariate effects on SCAS scores or RCMAS scores. To examine the effects of Gender

on CDI scores, separate univariate Time X Group interactions were performed for female and males within the Grade 6 cohort. There was a significant Time X Group interaction on CDI scores for females, F (2, 214) = 8.08; $p < 0.001$, however there was no significant interaction for males. Examination of pairwise comparisons revealed significant changes over time for females in the monitoring condition, with a significant increase in CDI scores from 12-months to 24-months, and from 24-months to 36-months follow-up. There were no changes over time in female's scores within the intervention condition, which remained consistently lower than those in the monitoring condition. Table 5 presents the means and standard deviations for dependent variables across grade, group condition and time.

For the Time X Group X Risk interaction, there was a significant interaction on CDI scores, F (2, 226) = 3.90; $p < 0.05$. There were no significant univariate effects on SCAS scores or RCMAS scores. To examine the effects of Risk, separate multivariate Time X Group interactions were performed on the "high-risk" sub-sample and on the "healthy" sub-sample within the Grade 6 cohort. There was a significant interaction for the "healthy" sample, Pillai's F (6, 89) = 8.08; $p < 0.001$. There was no significant interaction for the "high-risk" sample. The Time X Group interaction for the "healthy" sample was significant for CDI scores only, F (2, 188) = 21.06; $p < 0.001$. Pairwise comparisons revealed a significant increase in CDI scores for the monitoring group from 12 months to 24 months follow-up, followed by a significant decrease in CDI scores from 24 months to 36 months follow-up. There was no significant change for students within the "healthy" range in the intervention condition. Table 6 displays the means and standard deviations for the "high-risk" and "healthy" groups across grade and time.

Long-term Follow-up of Prevention Effects for Grade 9 Cohort across Time

To examine the multivariate effects within the Grade 9 cohort a number of multivariate interactions were examined. There was a significant interaction for Time X Group X Gender, Pillai's F (6, 180) = 2.71, $p < 0.05$; however there were no significant interactions for Time X Group, or Time X Group X Risk within the Grade 9 cohort of students. To investigate the significant Time X Group X Gender interaction further, across each of the dependent variables, the univariate interactions were examined for males and females separately.

For males there was a Time X Group multivariate interaction, Pillai's F (6, 81) = 2.24; $p < 0.05$; which at the univariate level was significant for CDI scores, F (2, 172) = 3.81; $p < 0.05$; and for RCMAS scores only F (2, 172) = 5.17; $p < 0.01$. Pairwise comparisons revealed that for CDI scores, there were no differences across time for males in the monitoring group; however, there was a significant decrease in CDI scores for males in the intervention group from 24 months to 36 months follow-up. Examination of the means indicates that the intervention group was lower on CDI scores at both 12-months and 36-months follow-up; however, the intervention group did report higher CDI scores than the monitoring group at 24-months follow-up. For RCMAS scores, pairwise comparisons revealed there were significant differences across time for males in the monitoring group, with a decrease in scores from 12 months to 24 months follow-up, and an increase in scores from 24 months to 36 months follow-up. For males in the intervention group, there was a significant decrease in scores from 12 months to 24 months follow-up, and a further significant decrease in scores from 24 months to 36 months follow-up. Examination of the means reveals that both the intervention and monitoring groups reported similar scores at 12-months follow-up and 24-months follow-up, whereby there were significant decreases across follow-up for both groups; however at

36-months follow-up, gains were maintained in the intervention group with lower RCMAS scores in comparison to the monitoring group, which actually reported an increase in RCMAS scores from 24-months to 36-months follow-up. Tables 5 and 6 display means and standard deviations for the Grade 9 cohort across group condition, time, gender and risk.

Student, Teacher and Parent Evaluations

All students, parents and teachers were asked to provide program evaluations at the end of the final session. 56% of grade 6 and 46.2% of grade 9 participants reported that they enjoyed the program somewhat to very much; 52.6% of grade 6 and 47.7% of grade 9 reported that they learned a moderate amount to a lot from the program, and 31% of grade 6 and 22.2% of grade 9 students reported that they used the ideas they had learned some of the time to all of the time. Participants were also given the opportunity to provide additional comments regarding the program. Feedback was positive and indicated that participants were using the skills that they had been taught. The following comment was typical of those received from grade 6 children. “I think that it was very useful for when I had a problem, and it helped me when I was having problems with my friends.” Similar comments were also received from grade 9 students, for example, “It helped me to realise other people’s feelings in more depth, and it made me realise that my problems could be broken down and really weren’t so big after all”.

Teacher and parent ratings were positive, with 87.5% of grade 6 and 77.8% of grade 9 teachers reported feeling that the students had learned a lot from the program; 88.9% of grade 6 and 88.9% of grade 9 teachers reported that the students enjoyed the program, and 100% of grade 6 and 88.9% of grade 9 teachers reported finding the program easy to implement within the school setting. With respect to parent ratings, 45.8% of grade 9 and 62.2% of grade 6 parents believed that the FRIENDS programs were

somewhat to very useful; 45.8% of grade 9 and 59.5% of grade 6 parents felt it was important that a program like FRIENDS be implemented as part of the school curriculum; and 25.2% of grade 6 parents, and 11.9% of grade 9 parents felt that their child learned a lot about how to cope with feeling worried or upset. Comments received from parents also indicated that their children had received benefit from participating in the program. For example, the following comments were typical of those received from parents. "I think this is an excellent program for children to learn about their feelings, to learn to understand themselves, and to learn to cope with life situations that they will come face-to-face with. You have helped me to help my son improve." "My son enjoyed the program. He sometimes says, after an event, that he was worried and that he used his Friends program and found it much easier. Thank you."

Discussion

The present study examined the long-term prevention effects of the *FRIENDS* program within the context of a randomised controlled universal school-based prevention trial. The *FRIENDS* intervention was offered to both primary and secondary school students, and evaluated against a no-intervention control monitoring condition in Lock and Barrett's longitudinal study (2003). Lock and Barrett reported outcomes on anxiety and depressive symptoms (as measured by self-report) and diagnoses at post-intervention and 12-months follow-up. Results from Lock and Barrett (2003) demonstrated a *FRIENDS* intervention effect, with significant reductions in anxiety for students in the intervention condition at both post-test and 12-months follow-up. Results also demonstrated a delayed intervention effect for depressive symptoms, with significant reductions in depression at 12-months follow-up. Lock and Barrett (2003) provided evidence that the optimal time for intervention effects may be in primary school versus high school, with children in Grade 6

reporting significantly higher levels of anxiety prior to the intervention and at post-intervention, yet greater reductions in anxiety at 12-months follow-up, as well as lower levels of depression across time compared to Grade 9 children. Furthermore, Grade 6 females appeared to be the most responsive to the intervention, in that they reported greater reductions in anxiety compared to females in Grade 9, and males across grades.

The current study aimed to evaluate the longer term prevention effects of the *FRIENDS* program within two distinct age-group cohorts, with long-term follow-up data from 12-months, to 24-months to 36-months follow-up. This study reports on anxiety and depressive symptoms through the use of self-report measures, and presents the longest follow-up data for the universal prevention of *both* anxiety and depression symptoms in children and youth. It was anticipated that students from within the intervention condition would report increased interventions effects; that is, maintain stable low scores on measures of anxiety and depression across time. It was expected that students in the monitoring group would report significant increases in anxiety and depressive symptomatology across time.

The results of the current study were positive and consistent with our earlier research. There was a significant multivariate Intervention X Grade X Time interaction, which was examined further at the univariate level for each Grade cohort separately. Results for the Grade 6 cohort demonstrated strong, positive prevention effects, in that intervention effects were strengthened over time for anxiety symptoms, and maintained over time for depressive symptoms, for children who received the *FRIENDS* program. Results based on RCMAS scores indicated continued improvements over long-term follow-up for intervention students, with significant decreases in scores from 12-months to 36-months follow-up and from 24-months follow-up to 36-months follow-up. For depression symptoms, intervention gains were maintained for students in the intervention

condition, with scores stable and consistently low across time (i.e., *M* = 5.5; 6.4; 5.0). However, scores on the CDI for the monitoring group in the Grade 6 cohort were unstable over time and consistently higher than the intervention group across time (i.e., *M* = 6.4; 12.9; 7.5), with a significant increase in depression symptoms from 12-months to 24-months follow-up, followed by a decrease in depression symptoms from 24-months to 36-months follow-up. There were also Intervention X Time X Gender effects, with females in the monitoring condition in Grade 6 demonstrating the above pattern of change on CDI scores; that is, a significant increase and then decrease in scores over time.

In terms of risk status there was an Intervention X Time X Risk interaction within the Grade 6 cohort. Univariate analyses found that there was a significant interaction on CDI scores for students within the "healthy" range, that is, students below the clinical cut-offs on both the CDI and SCAS. Results demonstrated a significant increase in CDI scores for the monitoring group from 12 months to 24 months follow-up, followed by a significant decrease in CDI scores from 24 months to 36 months follow-up. There was no significant change for students within the "healthy" range in the intervention condition.

In terms of students at "high-risk" in the Grade 6 cohort (that is, elevated scores on either the SCAS or CDI), there were more students at risk in the monitoring condition at each time point in comparison to the intervention condition and this effect was significant at both 24-months follow-up and 36-months follow-up. The frequency of students at "high-risk" in the intervention condition remained relatively stable over time (i.e., 13%, 15%, 19%), whereas there was substantial increase in the frequency of "high-risk" in the monitoring condition over time (i.e., 17%, 36%, 34%). Interestingly, there were consistently fewer females at "high-risk" in the intervention condition across time (i.e., 30 – 33% females) compared to the "high-risk" sample in the monitoring condition (i.e., 50 – 57% females), suggesting stronger prevention effects for females in Grade 6 in

comparison to males and the monitoring condition. Examination of the frequency of female students at "high-risk" in the Grade 9 cohort, indicates that the intervention effects may be strongest for Grade 6 females, as there were consistently more females at "high-risk" across both intervention conditions and time in the Grade 9 cohort (i.e., intervention group = 50 – 56% females at "high-risk"; monitoring group = 46 – 61% females at "high-risk").

For the Grade 9 cohort the preventative effects at long-term follow-up were less clear. There was no multivariate interaction for Intervention X Time; however there was a significant interaction for Intervention X Time X Gender, hence univariate analyses were conducted for males and females separately. There was a significant interaction for males on the CDI and RCMAS; however, there were no Intervention X Time effects for females. Males in the intervention group reported a significant decrease in CDI scores from 24 months to 36 months follow-up; however there were no changes for the monitoring group who reported higher depression at 12-months and 36-months follow-up when compared to the intervention group. In terms of anxiety, results revealed that both the intervention and monitoring groups reported similar RCMAS scores at 12-months follow-up and 24-months follow-up, whereby there were significant decreases across follow-up for both groups; however at 36-months follow-up, gains were maintained in the intervention group with lower RCMAS scores in comparison to the monitoring group, which actually reported an increase in RCMAS scores from 24-months to 36-months follow-up.

In terms of the frequency of students at "high-risk" within the Grade 9 cohort, there were fewer students in the intervention group at 12-months follow-up and 36-months follow-up at "high-risk" compared with the monitoring condition; however, there were significantly more students at "high-risk" in the intervention group at 24-months follow-up. Whilst disappointing, this outcome is consistent with previous universal prevention

trials with adolescent samples, for both anxiety (Spence, Sheffield, & Donovan, 2003) and depression (Harnett, & Dadds, 2004; Pattison & Lynd-Stevenson, 2001), whereby effects in the short term are negligible (i.e., Harnett et al., 2004; Pattison et al., 2001) or effects are limited to immediate post-intervention outcome and not maintained to 12-months follow-up (i.e., Spence et al., 2003). In fact, to our knowledge, only one study has reported positive intervention effects for an adolescent sample with a depression prevention program, with positive effects maintained through to a 10-month follow-up (Shochet et al., 2001). This study found that intervention participants reported lower levels of depressive symptoms on one of two depression measures at post-intervention and 10-month follow-up, and also lower levels of hopelessness. However, this study used trained psychologists as facilitators of the intervention, and implemented the intervention in small groups of 8-10 participants. One of the perceived benefits of universal prevention is that they are cost-effective in comparison to offering selective interventions or tertiary treatments, because they can be implemented by personnel already in place within naturally occurring systems such as schools. When this benefit is lost, for example, by requiring psychologists or mental health staff to implement an intervention within a small group context, this then becomes a significant cost and time consideration.

Of particular note in this study, and possibly of strongest clinical significance, was data examining the percentage of students who were “high-risk” at pre-intervention, who remained at “high-risk” at follow-up assessments. In the Grade 6 intervention condition there were only 31 – 35% of “high-risk” students from pre-intervention who remained within the “high-risk” range across 12-months, to 24-months to 36-months follow-up. Effectively, these estimates indicate that approximately 70% of “high-risk” students from the intervention condition were within the “healthy” range up to 36-months follow-up. For the monitoring condition however, there were substantially more students who remained

within the “high-risk” range from pre-intervention to long-term follow-up, with 38%, 49%, and 70% of students who were “high-risk” at pre-intervention, remaining “high-risk” at each respective follow-up time point. These estimates indicate that only 30% of the sample from the monitoring condition moved from within the “high-risk” category at pre-intervention to within the “healthy” range at 36-months follow-up. This finding is consistent with Lowry-Webster, Barrett, and Lock (2003) who found that 85% of intervention participants who were at “high-risk” at pre-intervention were diagnosis free at 12-months follow-up, compared with only 31.2% of children in the monitoring condition.

This follow-up study provides evidence for both the durability of prevention effects for primary school-aged children, and for the additional cumulative benefits of the *FRIENDS* program over 3-years post intervention, when delivered as a universal prevention program implemented by class-room teachers as part of the standard class curriculum. This study has demonstrated that children in Grade 6 who received the *FRIENDS* program, experience significant reductions in anxiety symptoms up to 3-years following the intervention, and do not experience increased depressive symptoms in comparison to a monitoring control group. Whilst it seems mild anxiety symptoms appear to steadily decline over time for all children (Lock & Barrett, 2003; Lowry-Webster, Barrett & Lock, 2003), delivering an evidence-based universal prevention program such as *FRIENDS* significantly strengthens this trend, and may halt the escalation of anxiety which is typical in children with moderate to severe anxiety symptoms. Based on findings in this study and previous research, it appears that depressive symptoms may follow a different trajectory, in that vulnerability or risk for depression may increase slightly, yet steadily over time. The results of this study have provided evidence that the *FRIENDS* program is effective in preventing the onset of depression, and the increased risk for depressive symptoms over time. The findings for an older sample of adolescents in this

study and in other studies, is less promising and highlights the need for early preventative intervention.

Future research could aim to examine a multi-level approach to prevention for 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. Furthermore, prevention outcomes may be further improved through examining the effectiveness of intervening even earlier in childhood, for example in pre-school aged children, given that anxiety symptoms and disorder are often evident in early childhood.

Furthermore, this study is the first to present long-term preventative effects for a universal prevention program targeting anxiety and associated depression. Strengths of the current study that serve to increase the generalisability of findings include; random assignment of schools to intervention conditions, the presence of a monitoring control group, large sample size, intervention fidelity checklists, student, parent and teacher social validity data, implantation 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. Feedback obtained from students, parents, and teachers in the current study indicated that the program was liked, and that the students received significant benefit from the skills learned. Many parents telephoned our staff to thank them for introducing the program into the school, and for helping their child. This feedback suggests to us that the intervention had a positive impact, both in short-term and most importantly in the years that followed. The present findings are limited due to the absence of consistent diagnostic data at long-term follow-up, and the absence of multi-informant measures (i.e., teacher and parent report).

The current study has provided evidence for the worth in pursuing universal prevention in reducing the incidence of childhood 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 in children and youth is a long and challenging process for researchers. The *FRIENDS* program now has a very solid evidence-base at every level of intervention. As highlighted by the World Health Organisation project summary on the prevention of mental illnesses (Hosman, 2004), it is the *political*, *ethical* and *professional* obligation of policy makers, educators, researchers, and consumers to persist with efficacy and effectiveness research using evidence-based programs, such as the *FRIENDS* program. Effectively this means that evidence-based program should be prioritised in both research and practice; given that these programs have typically had large amounts of national money invested in them (*political*); consumers have the right to best-practice programs (*ethical*); and *professionally*, it is our obligation to deliver services based on best-practice recommendations and research-based evidence, and commit to ongoing research evaluation of such high quality programs.

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Footnotes

[1] One school withdrew from the study prior to commencement, leaving 7 participating schools

Table 1

Sample Size and Gender Distribution for Grade 6 and Grade 9 Students across Follow-Up

		N at 12 months grade 7 / 10	N at 24 months grade 8 / 11	N at 36 months grade 9 / 12
Grade 6	Treatment	329	261	226
	Monitoring	180	99	71
	% female	44	43	44
Grade 9	Treatment	508	387	274
	Monitoring	260	178	146
	% female	47	48	51
Total	Treatment	836	648	500
	Monitoring	439	277	217
	Combined	1275	925	717
	% female	46	46	49

Table 2

Acronym for the *FRIENDS for Life!* Program

F	=	**F**eelings
R	=	**R**elax and feel good
I	=	**I** can do it! I can try my best!
E	=	**E**xplore solutions and coping step plans
N	=	**N**ow reward yourself! You've done your best!
D	=	**D**on't forget to practice
S	=	**S**mile! Stay calm for life!

Table 3

Frequency and Percentage of Students at "Hi-Risk" across Grade and School Condition for each Follow-Up Time Point

		12-months		24-months		36-months	
		n	%	n	%	n	%
Grade 6	Intervention	43	13	40	15 [a]	25	19 [c]
	% Female	14	33	12	30	8	32
	Monitoring	31	17	36	36 [a]	14	34 [c]
	% Female	17	55	18	50	8	57
Grade 9	Intervention	113	22	117	29 [b]	46	23
	% Female	62	55	66	56	23	50
	Monitoring	69	26	38	20 [b]	29	31
	% Female	32	46	23	61	14	48

Note. [a] Significance between intervention and monitoring groups within grade 6 at 24 months $p < 0.05$

[b] Significance between intervention and monitoring groups within grade 9 at 24 months $p < 0.05$

[c] Significance between intervention and monitoring groups within grade 6 at 36 months $p < 0.05$

Table 4

Frequency and Percentage of Students who were “Hi-Risk” at Pre-Intervention and Remained at “Hi-Risk” across each Follow-Up Time Point.

		12-months		24-months		36-months	
		n	%	n	%	n	%
Grade 6	Intervention	27	35	19	31	10	35
	Female	12	44	9	47	4	40
	Monitoring	22	38	16	49	7	70
	Female	9	41	8	50	4	57
Grade 9	Intervention	58	49	43	49	21	39
	Female	33	57	29	67	13	62
	Monitoring	34	53	25	49	14	52
	Female	17	50	17	68	7	50

Table 5

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	4.65	5.07	6.54	8.65	4.80	5.67	12.89	7.67	13.60	13.80	8.32	5.99	5.98	5.72	7.00	6.13	4.93	5.08
	Male	6.27	7.18	6.41	7.11	5.18	5.99	12.00	16.67	9.02	12.30	7.11	9.33	5.85	6.25	5.54	5.89	4.00	4.46
	Total	5.53	6.35	6.47	7.82	5.00	5.80	12.41	13.25	11.30	13.14	7.67	7.95	5.91	6.01	6.20	6.02	4.41	4.76
Grade 9	Female	9.06	7.95	12.17	10.32	7.51	7.53	19.41	12.85	18.39	16.10	15.34	13.56	10.56	6.53	8.35	6.23	7.68	6.23
	Male	7.90	7.23	10.64	9.62	8.46	9.55	16.25	13.75	12.90	13.41	9.78	8.18	8.50	5.67	6.00	5.48	6.07	5.49
	Total	8.52	7.63	11.46	10.00	7.95	8.52	18.06	13.28	16.04	15.20	12.96	11.86	9.59	6.22	7.24	5.99	6.92	5.93
Monitoring																			
Grade 6	Female	4.89	4.83	13.63	11.35	7.15	6.80	23.91	12.45	27.45	16.60	20.0	9.46	8.12	5.63	7.81	7.00	7.15	5.00
	Male	7.80	6.66	12.31	9.61	7.86	7.80	15.06	10.00	15.00	15.40	10.69	10.18	7.72	7.04	7.52	5.92	6.83	5.54
	Total	6.39	5.98	12.95	10.40	7.51	7.28	18.67	11.70	20.07	16.86	14.48	10.76	7.91	6.35	7.65	6.40	6.98	5.24
Grade 9	Female	11.48	7.86	11.98	8.58	9.24	6.64	19.19	9.35	17.26	10.18	11.00	7.18	12.06	6.30	9.35	5.67	8.17	5.59
	Male	9.78	9.71	8.2	6.61	8.45	6.62	16.94	18.86	11.66	11.14	12.29	17.95	8.23	6.44	6.44	5.21	6.94	6.59
	Total	10.61	8.84	10.07	7.84	8.86	6.61	17.92	15.39	14.10	11.01	11.73	14.21	10.14	6.62	7.90	5.61	7.55	6.12

Table 6

Means and Standard Deviations for SCAS, RCMAS and CDI across Grade, Condition, Risk Status 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	Hi Risk	9.58	7.96	9.94	9.37	7.67	7.65	17.95	12.56	15.53	14.06	12.05	8.11	9.93	7.40	9.93	7.06	7.06	5.93
	Healthy	4.12	4.99	5.26	6.85	4.08	4.74	11.14	13.15	10.12	12.81	6.66	7.61	4.57	4.78	4.96	5.09	3.53	3.95
Grade 9	Hi Risk	15.38	8.76	16.56	9.43	12.62	9.66	26.74	14.64	24.51	16.66	19.37	15.17	15.17	5.82	10.64	6.55	10.61	6.26
	Healthy	6.32	5.71	9.82	9.65	6.45	7.56	15.11	11.44	13.17	13.60	10.79	9.66	7.70	5.12	6.09	5.34	5.67	5.28
Monitoring																			
Grade 6	Hi Risk	10.67	7.96	14.93	9.82	10.87	6.90	31.50	12.49	40.00	23.79	21.17	10.65	12.00	7.66	10.53	6.25	9.47	4.78
	Healthy	4.83	4.20	12.22	10.64	6.30	7.11	15.00	8.68	14.38	8.66	12.57	10.25	6.38	5.10	6.58	6.18	6.05	5.16
Grade 9	Hi Risk	16.84	9.13	16.81	8.18	13.0	6.91	24.68	19.63	20.21	14.01	11.74	16.03	14.74	6.90	11.68	6.35	10.65	6.19
	Healthy	7.70	7.06	6.90	5.30	6.90	5.52	14.93	12.20	11.40	8.21	11.72	13.54	7.95	5.26	6.09	4.19	6.08	5.53