

## ENHANCING COPING RESOURCES IN EARLY ADOLESCENCE THROUGH A SCHOOL-BASED PROGRAM TEACHING OPTIMISTIC THINKING SKILLS

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This study examined the effectiveness of a universal school-based prevention program that was designed to increase coping resources in preadolescents through the modeling and teaching of optimistic thinking skills. School psychologists, together with classroom teachers, implemented an eight-week program in eight Year 5 and 6 class groups as part of the regular school curricula. One hundred and sixty children who participated in the program were compared to 135 children in 8 control groups on pre- and post-test questionnaires. Post-test responses show that children who participated in the program reported significant improvements in coping efficacy, and reductions in depressive attributions and use of the non-productive coping strategies of worry, wishful thinking, not coping, and ignoring the problem when compared to controls. These results support the feasibility of implementing low-cost, non-intrusive programs in school settings that address the emotional health of all young people. Support is also provided for theories that suggest attributions for events and coping efficacy influence the selection of coping strategies.

**Keywords:** Optimistic thinking; Preadolescents; Coping efficacy; Universal intervention

Reports in the literature have repeatedly expressed concern over the high levels of psychological distress in young people (Petersen *et al.*, 1993; Resnick *et al.*, 1997; Cunningham and Walker, 1999; Roberts, 1999). For example, a nationally representative sample in the United States involving over 12 000 adolescents indicated that 18.4% of 9th- through 12th-graders experienced significant emotional distress (Resnick *et al.*, 1997). While estimates vary considerably, it is probable that at any given time approximately one-third of young people may be experiencing difficulties in psychological functioning to such an extent as to interfere with their academic and psychosocial development (Compas and Hammen, 1994; Roeser, 1998; Cunningham and Walker, 1999). Given the pervasiveness of the problem, it is critical to address the associated and predisposing factors of these states. Furthermore, intervention programs that concentrate only on high-risk individuals are not feasible in reaching the needs of

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many children and adolescents who might benefit from such programs. In a report recently published in *The Medical Journal of Australia*, Rosenman (1998) argued strongly that health promotion programs reducing overall risk in whole populations were urgently needed. Roberts (1999) further suggested that such programs should be implemented as preventive programs in late childhood in order to offset marked increases in psychological problems after puberty.

In essence, problems in psychological functioning reflect difficulties in coping with the concerns and stresses of everyday living (Frydenberg, 1997). Coping strategies are frequently grouped into coping styles that may be broadly considered as either adaptive or maladaptive (Folkman and Lazarus, 1985; Ebata and Moos, 1991; Frydenberg, 1997). There is convincing evidence that coping styles are important predictors of distress. Studies with adolescents have consistently found that depression is inversely associated with productive or problem-focused coping, and positively associated with avoidance or non-productive coping (Glyshaw *et al.*, 1989; Ebata and Moos, 1991; Seiffge-Krenke, 1993; Garnezy, 1994; Cunningham and Walker, 1999) even in situations that are perceived as unchangeable (Conway and Terry, 1992). In a study involving 115 Year 9 students, Cunningham and Walker (1999) found a significant interaction effect between self-reported coping styles and depression scores using the Adolescent Coping Scale (Frydenberg and Lewis, 1993) and the Children's Depression Inventory (Kovacs, 1992). Low self-reported use of problem-focused or productive coping strategies was associated with high depression scores *only* when students also reported high utilization of non-productive or avoidance coping strategies. They suggested that future preventive interventions should focus more on the reduction of maladaptive coping strategies rather than the more common goal of increasing problem-focused coping.

Efficacy beliefs have been suggested to be a fundamental mechanism underlying successful program interventions (Steptoe, 1989; Bandura, 1991; Pallant, 2000). Furthermore, coping efficacy is theorized to predict the use of certain coping styles and strategies (Folkman and Lazarus, 1985). Coping efficacy is as an individual's belief or confidence in enacting particular coping strategies to achieve specific outcomes. As such, it is consistent with Lazarus and Folkman's (1984) transactional model of coping whereby coping efficacy forms part of the secondary appraisal process in which individuals evaluate coping resources in response to stressful situations. In particular, efficacy beliefs may be central to determining how coping resources are effectively managed (Hobfoll *et al.*, 1994). In a study of 39 children responding to vignettes portraying parental and peer emotions, Creasey *et al.* (1997) found that children who expressed low confidence in their ability to make themselves feel better when faced with negative affective situations involving significant others were more likely to report using avoidant coping strategies to reduce their own distress. They suggested that low coping efficacy in the affective domain may influence children to feel helpless and hence prevent them from utilizing more effective coping strategies.

A further key factor that differentiates people who cope effectively from those who may not is their attributional style (Abramson *et al.*, 1978; Gladstone and Kaslow, 1995). When faced with negative events, children who exhibit a pessimistic attributional style perceive the event as permanent in time (stable), and global in effect. Furthermore, they believe that they are personally at fault because of some characteristic about themselves (internal). In contrast, an optimistic attributional style is characterized by

explaining bad events as temporary and limited to the specific event, for which there are many possible causes beyond the self. When positive events happen, the attributional pattern is reversed. That is, pessimists interpret positive events as temporary, specific, and caused by good luck, while optimists believe positive events are permanent, pervasive and caused by themselves (Nolen-Hoeksema *et al.*, 1992). The reformulated learned helplessness model posits that when individuals habitually rely on internal, stable, and global attributions for bad events, and external, unstable and specific attributions for good events, helplessness deficits in the motivational, cognitive, and emotional domains are likely to follow (Abramson *et al.*, 1978). In a meta-analysis examining the relationship between attributional style and depression in children, Gladstone and Kaslow (1995) found consistent evidence that higher levels of depressive symptoms were associated with a more pessimistic attributional style consisting of internal-stable-global attributions for negative outcomes and external-unstable-specific attributions for positive outcomes. Seligman (1995) further suggested that children's attributions for events tend to become habitual by the time a child is about nine years old, unless these attributions are challenged.

Relationships between attributional styles and coping styles might be expected given that both constructs have independently reported consistent empirical associations with depression and other indices of emotional distress. In one of few studies reporting direct associations between attributions and coping, Bruder-Mattson and Hovanitz (1990) found that a pessimistic attributional style for negative events was positively associated with a maladaptive emotion-focused coping style in their sample of 176 college students. Positive associations between problem-focused coping and stable and global attributions for positive events were found only for men. In unpublished studies, Brandon (1998) failed to find any associations between attributional style for positive or negative events and productive and non-productive coping styles in a sample of 110 children in years 5 and 6. In contrast, when attributional style for positive and negative events was combined, and specific coping strategies were examined, Cotta (1999) found a depressive attributional style was significantly associated with the non-productive coping strategies of self-blame, not coping, keeping to oneself, and tension reduction in her sample of 88 Year 7 students. From a theoretical perspective, it would seem that attributing causation would precede the choice of coping strategies, perhaps determining that choice through influencing the appraisal process (Bruder-Mattson and Hovanitz). If such a pattern were the case, it would be expected that changing attributional style should effect changes in coping.

In a review of prevention intervention programs for young people, Roberts (1999) concluded that universal programs were virtually non-existent. Nonetheless, a number of published studies have reported positive outcomes for programs that promote healthy development in selected groups of young people (e.g., Clarke *et al.*, 1993, 1995; Jaycox *et al.*, 1994; Compas, 1995; Dadds *et al.*, 1997). The usual mode of delivery of such programs is via external facilitators implementing intervention programs to targeted groups of individuals. For example, Jaycox *et al.* (1994) implemented a program designed to teach optimistic thinking and social problem-solving skills to a group of depressed pre-adolescents. Compared to a wait-list control, significant improvements in optimistic thinking and decreased levels of depressive symptoms were found two-years post-program (Gillham *et al.*, 1995). Brandon *et al.* (1999) also found that children who exhibited a negative attributional style made significant gains in developing a more

adaptive attributional style following participation in a program designed to teach optimistic thinking skills. Extending on their previous work, Cunningham *et al.* (1999) implemented an adapted program on teaching optimistic thinking skills as a universal program to four class groups of children in years 5 and 6. Post-program, children reported significant increases in coping efficacy, together with reductions in depressive attributions, and use of the non-productive coping strategies of worry, wishful thinking, and not coping.

This study investigates the effectiveness of the same program that was used in the Cunningham *et al.* (1999) study, and extends this work by including a control group. School-based psychologists, in conjunction with classroom teachers, implemented the program to class groups of children in years 5 and 6. This approach combines the strengths of school psychologists and their familiarity with the principles of rational-emotive theory and practice, together with the strengths of classroom teachers and their knowledge of students and principles of effective classroom management. The direct involvement of class teachers in program facilitation has the additional advantage in that they are in a position to model and reinforce program skills beyond the duration of the program. Compared to controls, it is expected that children participating in the program will report increases in optimistic attributions, coping efficacy, and productive problem-focused coping strategies, together with decreases in the use of non-productive, emotion-focused coping strategies.

## METHOD

### Participants

Letters and consent forms requesting permission for children to complete questionnaires pertaining to the study were sent to 432 parents of sixteen year 5 and year 6 classes in three regional rural areas of Victoria. Eight classes from one region were designated as the program groups, while the remaining eight classes from the other two regions served as the wait-list control groups. Consent was received from 352 parents and all student participants subsequently agreed to participate. The resultant response rate was 81%. Nineteen students were absent on the first day of testing. The 333 student participants were almost exclusively from Anglo-European backgrounds and 62% were in year 5. Children from the region that formed the program group ( $n = 178$ ) largely came from a lower socio-economic background when compared to the control-group children ( $n = 155$ ). The final sample comprised 159 males and 174 females who ranged in age from 9.70 to 13.30 years ( $M = 11.36$ ,  $SD = 0.71$ ).

### Instruments

#### *Children's Attributional Style Questionnaire (CASQ; Seligman et al., 1984)*

The CASQ is a self-report measure consisting of 48 forced-choice items describing, in equal numbers, hypothetical positive and negative events. For each item, respondents are required to choose between two possible reasons for the cause of the hypothetical event. The item responses are worded such that two of the three dimensions of attributional style are held constant while a third is allowed to vary. For example, for the item "You play a game with some friends and you win", respondents may choose either

“The people that I played with did not play the game well” (external) or “I played the game well” (internal) as the cause of winning the game. The responses to this positive outcome vary only on the internality dimension of attributional style while stability and globality are not assessed. However, given that more psychometric support has been found for the overall measure of attributional style than any of the sub-scales (Robins and Hinkley, 1989), CASQ responses were all scored in a depressive attributional direction. Hence, for negative events, a value of 1 was assigned to each internal, stable, or global response and a value of 0 to each external, unstable, or specific response while for positive events, the scoring pattern was reversed. Higher scores are indicative of a more depressive attributional style. Eight items with negative or very low loadings were found in a reliability analysis of the overall scale ( $KR-20=0.43$ ). Cole and Turner (1993) also found 5 negative or weak loadings in their factor analysis of the negative event items of the CASQ. After removing the eight items (items 1, 4, 13, 17, 20, 26, 34, and 47), the  $KR-20$  internal consistency reliability was moderate at 0.61, and consistent with that found in other studies (Gladstone and Kaslow, 1995). Test-retest reliability of 0.61 over a 3-month period for this score has also been found (Nolen-Hoeksema *et al.*, 1986).

***Children's Coping Scale (CCS; adapted from the Adolescent Coping Scale (ACS), Frydenberg and Lewis, 1993)***

The ACS consists of 79 items that form 18 coping strategies and three coping styles or coping dimensions. For this study only items from the Productive and Non-Productive coping styles were used. The two items pertaining respectively to drug use and attending school regularly were omitted because of their lack of variance in this age group. Furthermore, items pertaining to the strategies of investing in close friends and seeking to belong were also omitted because of ambiguous findings pertaining to these strategies in previous studies (Frydenberg and Lewis, 1993, 1996; Cunningham and Walker, 1999). Hence the 50-item CCS comprised 12 distinct coping strategies that formed two coping styles. In addition to simplifying some of the wording, the adapted version of the scale required children to indicate on a 3-point scale of ‘never’, ‘sometimes’ or ‘a lot’ the extent to which each coping action was used in dealing with a specific, self-nominated concern. The number of items for each coping strategy ranged from 3 to 5, and averaging the sum of the item responses for each strategy formed specific strategy scores. An exploratory factor analysis of coping strategies on a separate sample of 216 children provides support for the same grouping of coping strategies for the CCS as found for the ACS (Cunningham *et al.*, 1999). The Productive coping style, which consists of the five strategies of problem-solving, working hard, focusing on the positive, relaxation, and physical recreation, combines strategies which focus on solving the problem or acting on the concern while remaining physically fit and healthy. The Non-Productive coping style, which can be considered as avoiding the problem because of an inability to cope with the concern, comprises the seven coping strategies of worry, wishful thinking, not coping, tension reduction, ignoring the problem, self-blame and keeping to oneself. In this study, Cronbach alpha internal reliability coefficients were respectively 0.82 and 0.79 for the 19-item Productive coping style and the 31-item Non-productive coping style.

***Children's Internal Coping Efficacy Scale (CICES; adapted from the Perceived Control of Internal States Inventory (PCOISI; Pallant, 2000)***

The uni-dimensional 18-item CICES is a measure of coping efficacy that assesses individual perceptions of the degree of control they have over their internal states. The scale was revised for use with children so that those items containing double negatives were rewritten to exclude double negatives. In addition, a number of scale items were re-written in language more appropriate for this age group. Sample items include "When bad things happen I have a number of ways that help me think more clearly about them" or "There are lots of things I can do to feel better when bad things happen" or "I have a number of ways that help me relax when I get uptight". Respondents are required to tick on a 4-point scale of 'very wrong', 'wrong', 'right' and 'very right' the extent of their agreement with various statements pertaining to the control they have over their thoughts, feelings, and behavior. This response mode was chosen because children in this age group have been found to naturally respond in this manner in the affective domain (Tisher *et al.*, 1992). Higher scores indicate higher coping efficacy and, in this study, the resultant Cronbach alpha internal reliability was 0.83.

***The Program***

"Bright Ideas: Skills for Positive Thinking" (Brandon and Cunningham, 1999a, 1999b) consists of eight weekly 60–90 min sessions, and includes a comprehensive manual for facilitators teaching optimistic thinking skills, together with a student workbook. The program material is modeled on Seligman's (1995) work and covers the four basic skills of optimistic thinking, namely (1) listening to our self-talk; (2) evaluating the accuracy of our self-talk; (3) generating alternative attributions; and (4) challenging catastrophic thinking (McWhirter *et al.*, 1999). Children are taught to dispute negative self-talk in response to real and hypothetical events along internal, stable and global dimensions within the framework of rational-emotive education (Ellis, 1998). Learning is facilitated through the use of stories, cartoons, hypothetical examples, practice, and role-plays. The program has been described in more detail elsewhere (e.g., Brandon *et al.*, 1999).

***Procedure***

After obtaining permission from the Department of Education and agreement from school principals, school psychologists and classroom teachers who were facilitating the program attended a 3-hour workshop with the primary author prior to program implementation. They were briefed in the program principles and provided with detailed step-by-step facilitator notes and student workbooks. In both the program and control groups, school psychologists, in the presence of the classroom teacher, administered the questionnaires to class groups by reading all questionnaire items out to the class. Children completed the CASQ, the CCS, and the CICES over two sessions in the week prior to the commencement of the program. Given that post-test scores completed immediately after a program generally shows trends in the direction hypothesized, post-testing was delayed for four weeks after the completion of the program. During that time, children also had a two-week holiday break from school.

The program was facilitated by school psychologists in conjunction with classroom teachers, and conducted over an eight-week period within the normal hours of the school day. Program fidelity was monitored through meetings with the school psychologists after the third, sixth, and final week of the program. No significant departures from the program manual were reported.

## RESULTS

Prior to analyses, data were screened for missing values, possible response sets, outliers, and normality (Tabachnick and Fidell, 1996). The pre-test questionnaires indicated that responses from 3 students showed evidence of response bias, and a further 7 students were absent on the second day of testing. These students were omitted from further analyses. A further 27 students were absent on one or both of the post-testing days. Of the remaining students with missing data, no respondent had more than 5% missing data. The expectation-maximization (EM) algorithm, in which other variables relevant to the construct of interest are used in a regression analysis to predict the values of the missing variables was used to input missing values (Graham *et al.*, 1997). All scale scores were converted to percentages of the maximum possible score prior to analyses in order to facilitate the meaning and substantive interpretation of the scores (Cohen *et al.*, 1999). In total, pre- and post-test data were available for 296 students.

Table I displays the correlations between the coping and attribution measures at pre-test, together with the means and standard deviations of these variables for the two groups. Coping efficacy and depressive attributions were significantly and negatively associated, and respectively significantly positively and negatively associated with productive coping. The inverse of these associations was found between non-productive coping, and coping efficacy and depressive attributions. A weak, significant relationship was also found between the productive and non-productive coping styles.

A one-way MANOVA comparing program and control children at pre-test was conducted on the questionnaire scores obtained at baseline. A significant difference was found at baseline between the program and control children (Wilks'  $\Lambda = 0.87$ ,  $F(4, 318) = 12.08$ ,  $p < 0.001$ ). When compared to the program children, scores for the control children were significantly higher for productive coping ( $F(1, 321) = 14.82$ ,  $p < 0.001$ ) and coping efficacy ( $F(1, 321) = 25.37$ ,  $p < 0.001$ ), and significantly lower for depressive attributions ( $F(1, 321) = 32.21$ ,  $p < 0.01$ ). No significant difference in the reported use of non-productive coping strategies was found at baseline

TABLE I Correlations, means and standard deviations for attributional style, coping efficacy, and productive and non-productive coping for program and control groups at baseline

Measure	1	2	3	Program (n=175)		Control (n=148)	
				M	SD	M	SD
1. Attributional style	—			39.93	10.31	33.77	8.99
2. Coping efficacy	-0.29**	—		56.55	14.87	64.48	13.12
3. Productive coping	-0.25**	0.49**	—	64.83	14.88	70.97	13.53
4. Non-productive coping	0.18**	-0.14*	0.14*	47.79	11.67	46.03	12.34

Note: N = 323. \* $p < 0.05$ ; \*\* $p < 0.001$ .

TABLE II Post-test means, standard deviations and *F* ratios for attributional style, coping efficacy, and productive and non-productive coping or program and control groups

Measure	Program ( <i>n</i> = 163)		Control ( <i>n</i> = 132)		<i>F</i> (1, 289)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Attributional style	35.30	11.13	37.79	10.66	4.02*
Coping efficacy	63.32	14.81	59.97	16.36	4.15*
Productive coping	64.68	15.07	64.82	14.04	1.26
Non-productive coping	43.03	11.43	47.81	13.74	11.83**

Note: *N* = 295. \**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001.

TABLE III Post-test means, standard deviations and *F* ratios for non-productive coping strategies for program and control groups

Measure	Program ( <i>n</i> = 163)		Control ( <i>n</i> = 132)		<i>F</i> (1, 292)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Worry	29.65	13.97	34.61	15.71	9.63**
Wishful thinking	55.94	19.03	60.53	21.65	4.01*
Not coping	40.04	15.56	44.41	19.91	4.97*
Tension reduction	37.27	18.50	39.30	18.97	0.98
Ignoring the problem	41.73	22.16	48.48	20.41	7.34**
Self-blame	38.65	25.57	43.21	25.88	2.70
Keep to self	44.84	20.63	44.70	20.13	0.04

Note: *N* = 295. \**p* < 0.05; \*\**p* < 0.01.

(*F*(1, 321) = 1.74, *p* > 0.05). A further one-way MANOVA comparing students who were absent at post-testing to those remaining in the study on the baseline questionnaire scores was not significant (Wilks'  $\Lambda$  = 0.99, *F*(4, 318) = 0.85, *p* > 0.05).

A two-way multivariate analysis of covariance (MANCOVA) controlling for pre-test scores, and with sex and program as the between-subjects factors, was conducted on the post-test scores for attributional style, coping efficacy, and productive and non-productive coping styles. The interaction effect between program and sex was not significant (Wilks'  $\Lambda$  = 0.99, *F*(4, 284) = 0.72, *p* > .05). While no significant main effect was found for sex (Wilks'  $\Lambda$  = 0.99, *F*(4, 284) = 0.42, *p* > 0.05), a significant main effect was found for program (Wilks'  $\Lambda$  = 0.94, *F*(4, 284) = 4.30, *p* < 0.01). Table II displays the means and standard deviations for post-test scores for attributional style, coping efficacy, and productive and non-productive coping styles for the program and control groups, as well as the *F* ratios from post-hoc univariate analyses. Inspection of mean scores post-program indicated that program children reported significant increases in coping efficacy, together with significant reductions in depressive attributions and utilization of non-productive coping strategies compared to children in the control groups. No significant difference was found between the program and control groups in the use of self-reported productive coping strategies post-program.

To investigate specific changes in the use of non-productive coping strategies, a further one-way MANCOVA, in which baseline scores for non-productive coping were controlled, was conducted on the post-test scores for the seven coping strategies forming the non-productive coping style. Again, a significant main effect for program was found (Wilks'  $\Lambda$  = 0.93, *F*(7, 286) = 2.90, *p* < 0.01). Table III reports the post-test means and standard deviations for the seven non-productive coping strategies for the

program and control groups, together with the  $F$  ratios derived from univariate post-hoc analyses. Compared to controls, children who participated in the program reported reduced use of the non-productive coping strategies of worry, wishful thinking, not coping, and ignoring the problem.

Because students were nested within class groups, a further one-way MANCOVA was performed on the class means of the coping and attribution variables at post-test after controlling for the baseline mean scores. The program effect was again significant (Wilks'  $\Lambda = 0.24$ ,  $F(4, 7) = 5.68$ ,  $p < 0.05$ ). Post-hoc analyses found significant effects for non-productive coping ( $F(1, 10) = 8.46$ ,  $p < 0.05$ ). However, the effects for coping efficacy ( $F(1, 10) = 0.32$ ,  $p > 0.05$ ) and depressive attributions ( $F(1, 10) = 5.68$ ,  $p > 0.05$ ) were no longer significant.

## DISCUSSION

The primary goal of this study was to evaluate the effectiveness of implementing a universal health promotion program designed to increase the coping resources of preadolescents. As expected, children who participated in the program reported a significant increase in coping efficacy reflecting a greater sense of control over their internal states when compared to controls. These children also reported significantly fewer depressive attributions and reduced usage of the non-productive coping strategies of worry, wishful thinking, not coping, and ignoring the problem. However, contrary to expectations, no change was found in the reported use of productive coping strategies post-program. When class means were analyzed, program effects remained significant, in spite of the low power of such an analysis to detect significant differences (Hopkins, 1982). However, only the reduced usage of non-productive coping strategies was significant in post-hoc analyses.

The correlations between depressive attributions and coping styles support the findings of Bruder-Mattson and Howanitz (1990) and Cotta (1999). The differences found in this study to the Brandon (1998) study may be due to the way the measures were scored. In this study, a number of items were deleted from the CASQ because of negative or negligible item loadings in the reliability analysis, and the productive coping style measure did not include items pertaining to the strategies of friends and seek to belong. In addition, because the overall score on the CASQ has been found to exhibit higher reliabilities than either the positive or negative scale scores (Seligman *et al.*, 1984; Gladstone and Kaslow, 1995), the overall score on the CASQ was used rather than the individual subscales for positive and negative events. However, the overall reliability still remained below 0.7, a minimum figure considered satisfactory for research purposes (Pedhazur and Schmelkin, 1991). The marginal psychometric properties of the CASQ may further explain inconsistent findings in the literature (Robins and Hinchley, 1989). While this study found support for program effects in reducing depressive attributions, these results must be interpreted cautiously due to the low internal consistency of the CASQ.

The results indicate that, by teaching children to think more optimistically, children also learned to use fewer maladaptive coping strategies. In describing the coping tendencies of adults who habitually think in more pessimistic ways, Carver and Scheier (1999) included the strategies of focusing on distress, suppression of thoughts, self-distraction, giving up, cognitive avoidance, and overt denial. These strategies are

similar to the strategies of worry, wishful thinking, not coping and ignoring the problem that children reported using less frequently after participating in the program, and may co-vary with attributional style. The specific program aim was to change maladaptive attributions for negative events along internal-stable-global dimensions. That is, children were taught to generate alternative attributions for negative events in their lives such that (a) the cause was *not* due to (unchangeable) characteristics of themselves; (b) the negative event would *not* last forever; and (c) the negative event need *not* pervade all areas of their lives. As such, the emphasis of the program was directed at teaching young people what not to do, rather than what to do. This may explain why the program did not produce changes in the reported use of productive coping strategies. The fact that other non-productive coping strategies that were not directly addressed in the program material also reduced following participation in the program suggests that attributions for events play a role in the selection of coping strategies (Bruder-Mattson and Hovanitz, 1990).

Coping efficacy beliefs were also stronger post-program. The measure used for coping efficacy was specific to the degree of control children felt they had over their own potentially negative affective states. As children gained skills in optimistic thinking, they reported more control over their emotions, thoughts, and behavior. It seems possible that attributions, together with perceptions of increased control over internal states, may alter the perceived nature of the stressor, and hence influence the selection of coping strategies. The role of perceived cognitive and emotional control in dealing with the emotional consequences of negative events has received little attention in the literature (Creasey *et al.*, 1997; Pallant, 2000). It may be that coping efficacy, and specifically perceptions of personal control of internal states, are fundamental to coping in more adaptive ways.

Prevention and intervention programs redressing emotional well-being have frequently been criticized on the basis of showing positive outcomes as demonstration programs yet failing to maintain these results when disseminated more widely into the community (Elias, 1991). While large effect sizes are rarely found in universal prevention programs since most participants are functioning in the normal range prior to participating in the program, the moderate effect size found in this study is impressive and compares favorably to effect sizes for similar studies in the health promotion prevention area (Durlak and Wells, 1997). The size of the effect supports the capacity of school psychologists and teachers to implement rational emotive education programs within their regular curricula. In fact, the role of the classroom teacher in reinforcing the program principles and skills within the context of everyday situations on an on-going basis may be a key to the success of the program in the longer term, and requires further investigation.

Despite the promising findings, the study has several limitations. In particular, the relatively low internal consistency reliability found for the CASQ questions the validity of this measure for research purposes and suggests caution in interpreting findings related to depressive attributions. Furthermore, evaluations in which only pre- and post-program measures are used frequently show improvements in the short term yet may not be indicative of any longer-term gains. Future longitudinal studies involving a minimum of three waves of data are required for the effective measurement of change (Willett, 1989). The study also relied exclusively on children's self-report measures. Mono-method bias, together with uncertainty regarding the connections between the questionnaires used in this study and actual adaptive

functioning, suggest future studies supplement children's self-reports with alternate data collection methods such as teacher and parent reports and diagnostic interviews. Lazarus (2000) further recommends that moving beyond subjective evaluations to include behavioral observations and physiological measures would enhance research in the stress and coping area.

Any program within a school's curriculum needs to be justified as beneficial for all students. Given that a more optimistic attributional style has been related to improvements in student motivation for learning, classroom behavior and dynamics, and the acquisition of meta-cognitive skills (Abramson *et al.*, 1978; Boekaerts, 1996; Dweck and Sorich, 1999), future studies could address the program's effect on these variables. Findings from such studies would strengthen the potential benefits that may be derived from integrating universal health promotion programs within school curricula, and may be critical to the adoption of such programs by school systems.

Seligman (1995) maintained that the way to enhance resilience to depression is to inoculate all young people with optimistic thinking skills. Reducing overall risk for depression is only likely to be achieved through low-cost, non-intrusive school programs that utilize structures and systems already in place. This study provides support for the feasibility of enhancing the coping resources of young people within an environment that is already part of all young people's lives. The curriculum is the primary planning and organizational unit of school systems (Elias, 1991) and the longer-term success and viability of any universal preventive program redressing emotional well-being may ultimately depend upon the extent to which such programs can be integrated into the core curriculum practices of schools.

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