The purpose of this study was to examine the effectiveness of a non-intrusive and brief screening measure for identifying young people at risk for depression. Coping and depression questionnaires were completed by a sample of 115 Year 9 students from two post-primary schools in Melbourne, Australia. The study replicated the frequently reported findings in the literature of positive associations between an avoidant, emotion-focused, or non-productive coping style, together with inverse associations with an active or productive coping style, and depressive syndromes. When results were analysed based on a median split of coping style scores, adolescents who utilised more non-productive coping strategies together with fewer productive coping strategies reported significantly higher levels of depressive syndromes than any of the other categories. The findings not only suggest that a brief measure of coping may be appropriate in the early identification of students who may be at risk for depression, but also have implications for the design of future preventive and early intervention programs.

**Adolescent Depression and Coping**

In an address summarising findings in depression research with children and adolescents, Kovacs (1997) concluded by stating:-

*There is a need for more aggressive efforts at early identification of and intervention with youngsters who have developed this disorder. Ignoring depression at younger ages is likely to have more deleterious consequences. Much of what we know about depression in childhood strongly indicates the importance of primary prevention of the disorder in those who are at risk for it. Confirmed risk factors include the presence of subclinical depressive syndromes (pp. 294-295).*

Depression describes a range of thoughts, feelings, and behaviours that vary in intensity and duration, and in the literature is commonly operationalised at three levels (Compas & Hammen, 1994). Depressive symptoms refer to sad, depressed or dysphoric mood, or unhappiness. Depressive syndromes are mostly identified empirically through questionnaires, and refer to patterns of emotions and behaviours that co-occur statistically. Clinical depression is a categorical classification as per DSM-IV (American Psychiatric Association, 1994) which includes syndromes of associated symptoms, but also protracted duration and functional impairment (Compas & Hammen, 1994). While the
debate on dimensional or categorical views on depression is far from resolved (Cantwell & Rutter, 1994), the focus of this study is the prediction of depressive syndromes in young people through self-report as a step towards early identification of risk for depression. Hence a syndrome approach, where depression is measured on a continuum ranging from mild to more severe, is appropriate (Compas & Hammen, 1994).

Concern has been expressed over the widespread prevalence of depression in the community as a whole, and the continuing high rates of suicide in young people (Roberts, 1999; Rutter, 1994; Shochet & O’Gorman, 1995). In recent times there has been a shift in depression research in acknowledging much can be learned from non-referred samples (Garmezy, 1994; Rosenman, 1998). For most young people in schools, the presence of depressive syndromes in the absence of a diagnosis of clinical depression is more probable. While at any given time approximately two per cent of adolescents might be considered to be clinically depressed, Shochet (personal communication) estimates that between 21 and 32 per cent of Australian adolescents report mild to more severe depressive syndromes. Preliminary results recently released in the United States, and involving a nationally representative sample of over 12,000 adolescents, indicated that 18.4 per cent of 9th- through to 12th-grade adolescents experienced significant emotional distress (Resnick et al., 1997). The results, based on extensive interviews, found that nearly 9 per cent of all adolescents reported suicidal thoughts without suicide attempts in the past year, while 3.6 per cent reported suicide attempts. In a longitudinal study, Kandel and Davies (1986) found that self-ratings of depression in non-referred adolescents predicted similar patterns in early adulthood, and higher levels of depressive syndromes were associated with substance abuse and antisocial behaviour. Furthermore, the presence of depressive syndromes in the absence of any diagnostic or clinical classification of depression not only interferes with school performance, academic achievement, and age appropriate social functioning (Compas & Hammen, 1994), but is indicative of potential risk for depressive disorders later in life (Kovacs, 1997).

While the number and content of the dimensions of the coping construct are far from resolved (Compas, 1998), most theorists agree that coping may be considered in the broader framework of functional and dysfunctional coping styles (Frydenberg, 1997). In particular, there is convincing evidence that coping styles are important predictors of distress. For example, Billings and his colleagues (Billings, Cronkite, & Moos, 1983; Billings & Moos, 1984) found less problem-solving, less information seeking, and more emotional discharge coping in a sample of people with unipolar depression. Furthermore, problem-solving and affective-regulation styles of coping were associated with less severe dysfunction, whereas emotional discharge and avoidance styles were linked to more serious depression. In a one-year prospective study of people who differed in their reported use of avoidance coping, Holahan and Moos (1986) found that, of those subjects who experienced a high degree of stress in the intervening year, those who initially reported a greater tendency to use avoidance coping had significantly more psychosomatic symptoms.
Adolescent coping and depression

Studies with adolescents show similar patterns. Depression has been negatively associated with problem-solving coping (Glyshaw, Cohen, & Towbes, 1989) and approach or active coping (Seiffge-Krenke, 1993; Garmezy, 1994), and positively associated with avoidance coping and withdrawal (Ebata & Moos, 1991; Seiffge-Krenke, 1993). It is possible that active or problem-focussed coping may act as a protective mechanism for depression, while emotion-focussed or avoidance coping may be a risk factor (Rutter, 1994). Equally, it may be that a predisposition to depression is associated with reduced coping skills, or that good coping skills are associated with less depression, or that both are inter-related and affect each other, subject to a range of genetic and environmental and familial factors (Brown & Harris, 1978; Dinan, 1994).

While teachers frequently make assessments or initiate referrals concerning students' coping abilities in the emotional domain, the extent to which these assessments are reliable is mixed. In a meta-analysis of 119 previously published studies on the consistency between various informant reports and the subjects themselves, Achenbach, McConaughy, & Howell (1987) found only 4 per cent of the variance in student self-report measures was associated with teacher ratings. Overall mean correlations were significantly higher for 6-11 year olds than for adolescents, and there was greater consistency in teacher ratings for student problem behaviours than for emotional problems. Wolfe et al. (1987) found a similarly low yet significant correlation (r = .24) between teacher ratings on the Internalising scale (sub-scales including Depression, Anxiety, and Social Withdrawal) of the Child Behaviour Checklist -Teacher Report Form (Achenbach & Edelbrock, 1983) and self-reported depression as measured on the Children' Depression Inventory (CDI) in a sample of 102 hospitalised psychiatric children and adolescents, and concluded that teachers may not be very sensitive in picking up children's emotional distress.

By adolescence, young people have the maturity to comment on their own feelings and behaviours. Self-report measures which focus to some degree on internalised emotion-focused coping strategies more characteristic of girls, and active problem-focused coping strategies more characteristic of boys, may be more suitable than overt behaviour observation for identifying young people at risk for depression (Gore & Eckenrode, 1994).

This study aims to take a step towards meeting the challenges Kovacs (1997) presented by examining the utility of a brief measure of coping as a screening measure for adolescents at risk for depression. It is expected that levels of depressive syndromes reported by adolescents will be positively associated with self-reported non-productive or avoidance coping styles, and inversely associated with productive coping styles.

Method

Participants

Potential student participants were recruited via letters to parents of all Year 9 students at two metropolitan post-primary schools in Victoria, Australia. Active parental consent represented a response rate of 40 per cent. Nine students were absent on the day of testing. Adolescents from whom parental consent had been obtained all agreed individually to participate. The final sample of
115 students (59 males, 56 females) ranged in age from 13 to 15 years (M= 14.59 years; SD= 0.34 years). Ninety per cent stated their ethnic background as Anglo-European, 5 per cent as Asian, and 5 per cent as other or not sure. Both schools cater for students from diverse backgrounds and socio-economic levels.

**Instruments**

*The Adolescent Coping Scale - General Short Form* (ACS-GSF, Frydenberg & Lewis, 1993).

The ACS-GSF is a pencil and paper self-report coping measure consisting of 18 forced-choice responses representing distinct coping strategies, and one optional open question on additional ways one copes. The scale is derived from the long form of the Adolescent Coping Scale (ACS), which was developed from the open ended responses of 643 Australian adolescents aged 12 to 18 years. Respondents indicate on a five-point Likert-type scale the extent to which each specific coping strategy is generally used. The numbers from 1 to 5 respectively represent "doesn't apply or don't do it"; "used very little"; "used sometimes"; "used often" and "used a great deal". Three coping styles, derived by factor analyses, yield two functional coping styles of Productive Coping and Reference to Others, and one dysfunctional Non-Productive coping style. The Productive Coping style, which consists of items referring to problem-solving, working hard, belonging, positive thinking, relaxation, and physical recreation, combines strategies which focus on solving the problem or acting on the concern while remaining physically healthy and socially connected. Reference to Others includes strategies for seeking support from others in the social, social action, spiritual and professional domains. The Non-Productive Coping style, comprising items relating to worry, spending time with friends, belonging, wishful thinking, not coping, tension reduction, ignoring the problem, keeping to self, and self-blame, can be conceptualised as avoiding the problem because of an inability to cope with the concern.

In a recent replication study of the scale structures of both the long and short form of the ACS, Frydenberg & Lewis (1996) generally confirmed the psychometric properties of the coping styles. However, ambiguous factor loadings were found on the behaviour of strategies relating to socially-oriented interpersonal relationships, namely improving one's relationships with others (item 6) and spending more time with friends (item 5). The replication study found both these items contributed only to Productive coping. Frydenberg and Lewis suggested that these strategies might potentially contribute to either Productive or Non-Productive coping styles.

*Children’s Depression Inventory* (CDI, Kovacs, 1992).

In the present study, the widely used 27 item self-report CDI was modified for use with school populations by omitting the suicide item because of concerns expressed by the School’s Division of the Department of Education. The remaining 26 items cover affective, cognitive, somatic, and behavioural aspects of depression. Each item contains a choice of three statements reflecting increased severity of an aspect of depression, and the items are answered in relation to feelings and behaviours experienced in the previous two weeks. Items are scored on a 0, 1 or 2 basis, resulting in individual scores from 0 to 52. The CDI has been extensively used with adolescents (Kent, Vostanis, & Feehan,
Adolescent coping and depression

1997), and the easy readability of items makes it appropriate for Years 5 to 9 (Berndt, Schwartz, & Kaiser, 1983).

Procedure

Students completed the CDI and the ACS-GSF during normal class-time under the supervision of a regular classroom teacher and the researcher. The questionnaires were counterbalanced. In one school, students who elected not to take part, or for whom parental permission was not obtained, completed questionnaires pertaining to internal school matters during the time. In the other school, students were withdrawn from regular classes to complete the questionnaires.

Results

Scale Validation

Because of the existing ambiguity in the factor structure of coping styles, an exploratory factor analysis (principal-axis with oblique rotation) was conducted. Table 1 shows the two factor solution which accounted for 27.9 per cent of the variance. The two factors found closely resembled the Non-Productive and Productive factors of Frydenberg and Lewis's (1993, 1996) studies. Furthermore, each item in the solution loaded unambiguously onto a single factor, and the resultant correlation between the two factors of -0.11 is low. Neither factors included items 5 and 6 which refer to socially orientated interpersonal relationships and were found to be ambiguous in previous studies (Frydenberg & Lewis, 1993; Frydenberg & Lewis, 1996). These two items were subsequently omitted in further analyses. The strategy, Seeking Social Support, was included in the Productive coping style because of its centrality to depression as reported in numerous studies (Boekaerts, 1996; Brown & Harris, 1978). Hence the Non-productive (excluding items 5 and 6) and Productive (excluding item 6 and including item 1) coping style scores used in this study contain identical item content to the replication study of Frydenberg and Lewis (1996), except for the inclusion of item 1. No support was found for the coping style Reference to Others. Cronbach alpha coefficients of 0.74 for the 7 item Productive Coping scale and 0.68 for the 6 item Productive Coping scale were moderate, and final respective scale scores ranged from 7 to 35 and 6 to 30.

Primary analysis

Significant correlations were found between the depression measure and both the coping styles. As expected, the CDI was positively associated with Non-Productive coping (r = .69, p < .001), and inversely associated with Productive coping (r = -.57, p < .001). A two-way analysis of variance with between-groups factors of Productive (low and high) and Non-productive (low and high) coping, based on a median split of the two scales, and depression scores as the dependent variable, was conducted. Significant main effects were found for Non-Productive (F (1, 111) = 51.50, p < .001) and Productive coping (F (1, 111) = 39.36, p < .001), and a significant interaction was found (F (1, 111) = 13.30, p < .001). Because the interaction effect was significant, main effects were ignored and an analysis of simple effects for those respectively low and high on Non-Productive coping was conducted (Green, Salkind, & Akey, 1997). To control for Type 1 error across the two simple main effects, alpha was
Table 1. Eigenvalues and factor loadings for the Adolescent Coping Scale - General Short Form.

<table>
<thead>
<tr>
<th>Factor Eigenvalues</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>12. Self-Blame</td>
<td>.71</td>
<td></td>
</tr>
<tr>
<td>13. Keep to Self</td>
<td>.63</td>
<td></td>
</tr>
<tr>
<td>11. Ignore the Problem</td>
<td>.58</td>
<td></td>
</tr>
<tr>
<td>4. Worry</td>
<td>.58</td>
<td></td>
</tr>
<tr>
<td>14. Seek Spiritual Support</td>
<td>.52</td>
<td></td>
</tr>
<tr>
<td>7. Wishful Thinking</td>
<td>.49</td>
<td></td>
</tr>
<tr>
<td>8. Not Coping</td>
<td>.35</td>
<td></td>
</tr>
<tr>
<td>15. Focus on the Positive</td>
<td></td>
<td>.69</td>
</tr>
<tr>
<td>17. Seek Relaxing Diversions</td>
<td></td>
<td>.66</td>
</tr>
<tr>
<td>18. Physical Relaxation</td>
<td></td>
<td>.54</td>
</tr>
<tr>
<td>2. Focus on Solving the Problem</td>
<td></td>
<td>.52</td>
</tr>
<tr>
<td>1. Seek Social Support</td>
<td></td>
<td>.30</td>
</tr>
</tbody>
</table>

Note: Factor loadings less than .30 have been omitted.

set at .025. For adolescents who reported low usage of Non-Productive coping strategies, no significant difference in depression scores was found between those who reported high (M = 4.39, SD = 4.09) or low (M = 6.95, SD = 4.89) use of Productive coping strategies, t(53) = 2.06, p > .025. However, for those adolescents who were high on Non-Productive coping, those who were also high on Productive coping strategies reported significantly lower levels of depression (M = 7.83, SD = 4.77) than those who were low on the use of Productive coping strategies (M = 17.49, SD = 5.94), t(58) = 6.59, p < .001. Figure 1 shows that, for adolescents who reported low use of Productive coping strategies, their self-reported levels of depression were significantly greater when they also reported high use of Non-Productive coping strategies. The Griffith Early Intervention Project (Shochet, personal communication) deemed a CDI score exceeding 9 as indicative of risk for depression, while CDI scores exceeding 16 suggest more severe levels of depressive syndromes (Kovacs, 1992). Using these criteria, only the group which was high on Non-Productive coping and also low on Productive coping (n = 37) self-reported depression levels whose means were indicative of risk for depression. This grouping comprised 32 per cent of the total sample.

Discussion

The results provide strong support for the hypotheses. Self-reports of adolescent depression were strongly and positively associated with self-reported non-productive or avoidance coping style, and inversely associated with a productive or adaptive coping style. In particular, those adolescents who reported high usage of non-productive or avoidant coping strategies together with low usage of productive or problem-focussed coping strategies also reported higher levels of depressive syndromes.

The findings in this study replicated the frequently found associations between coping styles and depressive syndromes reported in the literature (e.g. Sheiffge-Krenke, 1993; Ebata & Moos, 1991). This suggests that depression
Adolescent coping and depression

Figure 1. Mean CDI scores as a function of high and low Productive and Non-Productive coping styles.

<table>
<thead>
<tr>
<th>Non-Productive Coping</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Low</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Mean CDI Depression Scores</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Productive Coping Style

may be the outcome of dysfunctional coping styles, or conversely, ineffective coping styles may be the outcome of higher levels of depressive syndromes in that adolescents with higher levels of depression may manifest different coping styles more as a consequence than a cause. Finally, it is equally plausible that both coping styles and depression could be the result of other common factors such as biological predispositions (Shelton, Hollon, Purdon, & Loosen, 1991) or stressful life events (Brown & Harris, 1978).

The percentage of students identified as at-risk for depression is of a very similar magnitude to the percentage reported by the Griffith Early Intervention Depression Project (Shochet, personal communication) in its sample of Year 9 Australian adolescents. While no single measure of a construct fully represents the underlying construct (Cole, Truglio, & Peeke, 1997), a fundamental consideration is the extent to which the standardised checklists of coping styles and depression capture the constructs they purport to measure. In short, many items on coping scales reflect strategies for managing distress, and presumably respondents are more likely to employ these tactics if they are already distressed (Stanton, Danoff-Burg, Cameron, & Ellis, 1994). In addition, nosological factors seem inherent in the measures used (Cole & Carpentieri, 1990). For example, non-productive or avoidant coping strategies relating to worry, inability to deal with the problem, seeing self at fault, and not letting others know how one is feeling, have analogous items on the depression checklist. Hence the coping and depression questionnaires used in this model may be measuring similar rather than
different constructs, and may explain why the model is so effective.

Overall, the results provide limited support for theories which suggest that productive or problem-focused coping acts as a protective factor for depression, and non-productive or avoidance coping acts as a risk factor (Rutter, 1994). The findings from this study would suggest that young people are at risk for depression when they report high use of non-productive coping strategies in the absence of high use of productive coping strategies. Alternatively, low self-reported use of problem-focused or productive coping strategies only converts to risk when it is combined with high use of avoidance or non-productive coping strategies. This finding has implications for preventive and intervention programs addressing the emotional well-being of students. Frequently depression-prevention programs focus on increasing problem-focused coping in various domains (for a review of depression prevention and intervention programs for children and adolescents, see Roberts, 1999). Future prevention and intervention programs may need to incorporate more elements directed at teaching young people what not to do, rather than simply what to do. Perhaps this is why programs which address children's negative thinking style have been successful in reducing levels of depressive syndromes in children and adolescents (see Seligman, 1995; Gillham, Reivich, Jaycox, & Seligman, 1995; Brandon, Cunningham, & Frydenberg, this issue).

The primary goal of this study was to generate a school-based model for the prediction of depressive syndromes in young people. In many ways, the ACS-GSF is an ideal instrument for use in school settings, not only because of its brevity and its utility in identifying at-risk students, but also because of its potential utility for primary prevention. The ACS-GSF could assist teachers and school counselors in identifying ineffective coping responses, and in facilitating more effective coping strategies into mainstream curriculum practices (Frydenberg, 1997). The instrument may create awareness in students and teachers of individual coping behaviors, and lend itself to individual and group discussion and reflection of strategies that may lead to more desired outcomes.

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Adolescent coping and depression


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