Control Beliefs as Mediators of School Connectedness and Coping Outcomes in Middle Adolescence

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The external and internal resources that individuals bring to the coping process have been the focus of increasing theoretical and empirical research. Within the framework of conservation of resources theory (Hobfoll, 1989, 2002) this study examines the interplay between school-, teacher- and peer-connectedness, and mastery, coping self-efficacy and coping behaviours in a sample of 300 9th and 10th grade high-school students. Structural equation modelling analyses supported predictions that coping self-efficacy and mastery mediate the effects of school connectedness factors on the utilisation of nonproductive coping strategies. While coping self-efficacy partially mediated the relationships between school connectedness factors and productive coping behaviours, contrary to expectations this relationship was not partially mediated by mastery. These results support a cognitive mediational model of coping resources and may have implications for school-based intervention programs that promote positive coping in adolescence.

Adolescence is a period of transition characterised by accelerated processes of change in cognitive, social and psychological functioning, as well as the marked physical restructuring of puberty (Archibald, Graber, & Brookes-Gunn, 2003; Seiffge-Krenke, 1995). Both Australian and international studies have repeatedly expressed concern about the high level of psychological distress experienced by young people through this challenging stage (Cunningham & Walker, 1999; Resnick et al., 1997). For example, a report published by the Department of Education, Employment and Training (DEET, 2001) suggested that over 20% of young people in Victoria between the ages of 12 and 16 have a mental health problem. Though estimates vary considerably, research suggests that it is probable that at any given time approximately one third of young people may be experiencing psychological distress to the extent that it interferes with their academic and psychosocial development (Roeser, 1998). Given the magnitude of the problem, it is imperative to address the allied and predisposing factors of these psychological states.

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The present study seeks to extend current understanding of adolescent wellbeing through exploration of a model of adolescent coping based upon conservation of resources (COR) theory (Hobfoll, 1989, 2002). This study examines contextual and personal resources that predict the use of adaptive and maladaptive coping behaviours in a middle-adolescent population. The contextual resources considered are perceived school-, peer- and teacher-connectedness, and the personal resources are internal coping self-efficacy and mastery. Additionally, working within the COR theoretical framework, this study proposes a key mediational role for personal control-related variables in the coping process.

Conservation of Resources Theory

Conservation of resources (COR) theory emphasises the multitude of internal and external resources that an individual utilises in the coping process. Coping resources are those aspects of the self or the environment that are valued by the individual or serve as a means to gain valued resources. According to COR theory, the more internal and external resources available to the individual, the greater the likelihood of that individual using more effective coping responses and thus successfully negotiating the challenges of life (Hobfoll, 1989, 2002). Conversely, individuals holding fewer coping resources have fewer coping options and are more vulnerable to future resource loss and distress. Furthermore, and congruent with the work of Lazarus and his colleagues (e.g., Folkman & Lazarus, 1985; Lazarus, 1999), COR theory suggests that certain personal control-related variables (e.g., optimism, self-efficacy) are key mediating resources in the coping process in that they determine how other internal and external resources are managed effectively (Hobfoll, Banerjee, & Britton, 1994). In particular, control-related coping resources may contribute to the management of other resources and the selection of coping strategies during stressful or challenging encounters (Hobfoll, 2002; Lazarus, 1999).

COR theory was originally developed within an adult context through consideration of particular resources that were highly valued for this population in their own right or as a means to an end (e.g., marriage, health, personal possessions and social support). However, Cunningham (2002a) applied the COR framework to an early adolescent population (Grades 5 and 6) by identifying valued resources for this population and examining the interplay between these resources. Cunningham found that internal coping self-efficacy, as operationally defined by perceived control over one’s thoughts, feelings, and behaviours, mediated the relationships between support from the family environment (external resource) and productive and nonproductive coping behaviours. The current study includes consideration of school, rather than family, connectedness as a highly valued external or environmental resource for this population.

School Connectedness

School connectedness refers to a sense of belonging to one’s school and experiencing care and support from individuals within that environment, such as teachers and peers (Maddox & Prinz, 2003). In particular, school connectedness is widely considered to be a key component in the development of psychosocially healthy and well-adjusted adolescents (McNeely, Nonnemaker, & Blum, 2002). Numerous reports suggest that
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when adolescents feel cared for or supported by the people in their school environment they are less likely to experience emotional distress or to engage in a range of high-risk behaviours (McNeely et al., 2002, Patton et al., 1999; Resnick et al., 1997). In their study of 12,118 American adolescents Resnick and his colleagues found that the students who felt supported and cared for by teachers and peers in the school environment experienced decreased levels of emotional distress and suicidal thoughts, compared to those feeling less socially connected. In particular, those who perceived their peers as viewing them negatively reported significantly higher levels of emotional distress and suicidal thoughts. In an Australian longitudinal study of over 2000 secondary school students, Patton et al. (1999) found that students who reported poorer levels of connectedness to the school social environment were up to three times as likely to report experiencing depressive symptomatology as students who felt more closely connected to their teachers and peers. This evidence suggests that connectedness to peers and teachers in the school environment can be characterised as a resource that may promote positive coping responses.

Perceived Control
Numerous studies acknowledge the importance of perceived control in promoting adaptive and healthy functioning in young people (Bandura, 1997; Thompson, 2002; Weisz, Southam-Gerow and McCarty, 2001). Perceived control refers to ‘beliefs that one can determine one’s own internal states and behaviours, influence one’s environment and/or bring about desired outcomes’ (Wallston, Wallston, Smith, & Dobbins, 1987, p. 5). In the literature, perceived control is frequently investigated separately as external or primary control and as internal or secondary control (Compas et al., 2001). In this study mastery or perceived control of external stressors is having the ability to produce given outcomes (Compas, 1987) and coping self-efficacy is the perceived control of internal emotional states in response to extant stressors (Bandura, 1997; Pallant, 2000).

Perception of control over the outcome of specific events plays an important role in determining perceptions of wellbeing and the types of coping strategies that young people will employ. For example, a study by Weisz, Southam-Gerow, and McCarty (2001) explored the relationship between mastery (e.g., getting a desired grade) and depressive symptoms in child and adolescent populations. For the adolescent participants (aged 12 to 17) in this study, a direct and strong relationship was found between low mastery-related beliefs and self-reports of depressive symptoms. The results indicated that higher levels of mastery were linked to adaptive coping behaviours. In their cross-sectional and longitudinal study of 315 adolescents, Ebata and Moos (1994) assessed students on the strategies they used to deal with the greatest perceived stressor in the preceding year as well as the perceived degree of control they felt they had over the stressor. They found that youth who engaged in more adaptive coping strategies also reported having higher perceived control over the focal stressor and more ongoing social resources. Low perceived control over external circumstances was also related to use of coping processes such as distraction, avoidance or denial rather than to active coping processes that solve the problem and change the environmental circumstances.

Internal coping self-efficacy also influences whether young people engage in adaptive or maladaptive behaviours. In a study focusing on internal coping self-efficacy,
Creasey et al. (1997) had children respond to vignettes portraying parental and peer emotions. The children who perceived they had poorer abilities to make themselves feel better when faced with negative emotional states also reported greater use of avoidance-coping strategies that do not lead to successful problem resolution. This study suggested that children who are not able to successfully regulate their emotional states are more likely to feel helpless and thus select poor or inappropriate coping strategies to address problems. In a longitudinal study of over 2000 13- to 14-year-olds, Prior, Sanson, Smart and Oberklaid (1998) investigated an 'at-risk' cohort, identified by their higher ratings over the preceding four years on a range of adversity measures (e.g., experiencing two or more negative life events, recently unemployed parent). The cohort was classified into three groups according to whether they were coping well, were average copers or were coping poorly. Classification was as defined using the operational definition by Gresham and Elliot (1990) that focuses on personal attributes important to maintaining successful social relationships (e.g., being assertive, taking responsibility and displaying empathy). Prior et al. (1998) found that personal control-related variables such as an ability to self-regulate or control emotions were consistently higher among the group of adolescents who were coping well, despite adversity, than the other groups. These studies suggest that internal coping self-efficacy is related to young people's coping choices.

Coping Behaviours

In the coping literature, factor-analytic studies have frequently clustered coping behaviours and strategies into a smaller number of coping styles or factors (Compas et al., 2001; Cunningham, 2002b; Ebata & Moos, 1991; Frydenberg & Lewis, 1993). These factors are then broadly considered as either adaptive/productive/problem-focused or maladaptive/unproductive/emotion-focused on the basis of their associations with other indices of psychological wellbeing or distress. In adolescent populations, the use of nonproductive or avoidance-coping styles have been consistently and positively associated with negative outcomes such as depression (Cunningham & Walker, 1999; Frydenberg & Lewis, 1999; Seiffge-Krenke, 1993). While associations between productive or problem-focused coping styles have been more mixed (see Cunningham, 2002b), studies based on the productive coping style from the Adolescent Coping scale (ACS; Frydenberg & Lewis, 1993) have reported associations in the expected direction, with other measures of positive or negative outcomes (see Frydenberg & Lewis, 1999). Furthermore, when using an adapted version of the ACS, Cunningham (2002b) found that, unlike many studies that reported positive associations between all coping factors, the relationship between the productive and nonproductive coping factors was relatively independent and the two factors were significantly associated in the expected directions with measures of family support and coping self-efficacy.

Summary of Proposed Model

The present study aimed to test a conceptual model of coping based on COR theory by assessing the direct and indirect effects of school connectedness factors on coping behaviours. It was hypothesised that students’ sense of connectedness to their school environment, peers and teachers would influence their choice of coping strategies. In particular, higher levels of connectedness were expected to predict
greater use of productive coping strategies and less reliance on nonproductive coping strategies. Furthermore, it was hypothesised that perceptions of mastery and internal coping self-efficacy would mediate or partially mediate the relationships between perceived school connectedness and the use of productive and nonproductive coping strategies.

Method

Participants
Letters and consent forms requesting permission for young people to complete questionnaires pertaining to the study were sent to 484 parents or guardians of Year 9 and Year 10 students from five government schools in three regional rural areas of Victoria. The schools cater predominantly for students from lower to middle socioeconomic backgrounds. The resultant response rate was 62% and all 300 student participants subsequently agreed to participate. The final sample comprised 136 males and 164 females who ranged in age from 14 to 17 years (M = 15.33, SD = .81)

Instruments

Children's Coping Scale (CCS; adapted from the Adolescent Coping Scale (ACS), Frydenberg & Lewis, 1993). The CCS (Cunningham, 2002b) consists of 45 coping actions describing 10 coping strategies formed by grouping the responses of 4 to 6 coping actions. Participants are asked to indicate on a 3-point scale of never, sometimes, or a lot the extent to which they used each coping action when dealing with concerns or problems. Scores are then calculated for each of the coping strategies by averaging the scores of the relevant coping actions from each coping domain.

Coping strategies are further grouped into the two coping styles or dimensions of productive and nonproductive coping. The productive coping style includes the strategies of solving the problem, work hard, focus on the positive, seek relaxing diversions and physical recreation. The remaining coping strategies, namely wishful thinking, not cope, tension reduction, ignore the problem, self-blame and keep to self, belong to the nonproductive coping dimension. However, when confirmatory factor analysis (CFA) was used to assess a measurement model of coping strategies using the 3-point response mode, Cunningham (2002b) found that the two cognitive avoidance strategies of ignore the problem and wishful thinking formed part of both the productive and nonproductive coping factors. In addition, the 3-item strategies of seek relaxing diversions and physical recreation were better represented as a single strategy referring to recreational diversions. In this study the Cronbach alpha internal consistency reliabilities for the individual strategies ranged from a low of .52 for wishful thinking to a high of .78 for self-blame.

Social Questionnaire for Secondary Students (SQSS; Department of Education, Employment and Training (DEET), Victoria, 2000). The SQSS is a 26-item questionnaire designed to assess students' perceptions about their school environment. Of interest to the present study are the three school connectedness measures. The connectedness measures examined students' perceptions of their connectedness to the school (4 items; e.g., I look forward to going to school), connectedness to teachers (5 items; e.g., At this school there is a teacher who cares about me), and con-
nectedness to peers (4 items; e.g., *I get on really well with most of my classmates*). Students were asked to indicate on a five-point Likert-style scale the extent to which each statement was true for them, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A score was calculated for each domain by averaging the scores of the relevant items. Higher scores on the individual factors indicated a greater perception of that resource. For the secondary school samples originally surveyed (DEET, 2000) Cronbach’s alpha internal consistency reliabilities ranged from .76 to .88. In the present study, Cronbach’s alpha was .74 for peer-connectedness, .83 for teacher-connectedness and .84 for school-connectedness.

**Children’s Internal Coping Self-Efficacy Scale** (CICESS; adapted from the Perceived Control of Internal States Inventory, Pallant, 2000). The 15-item CICSES (Cunningham, 2002b) is a unidimensional measure of coping self-efficacy that assesses the degree to which young people feel that they have control over their thoughts, feelings and physical reactions when faced with negative or stressful situations (Pallant, 2000). For each item, participants read a statement regarding a coping self-efficacy belief (e.g., *I have a number of ways of staying calm that I know will help me cope*). Participants then indicate their level of agreement with the statement using a four-category response format of *very wrong*, *wrong*, *right* or *very right*. In a primary school sample, Cunningham (2002b) reported a Cronbach’s alpha of .83. In the present study the Cronbach’s alpha was .91.

**The Mastery Scale** (Pearlin, Lieberman, Menaghan, & Mullan, 1981). The Mastery Scale is a seven-item, unidimensional measure of mastery beliefs which relates to one’s perceived ability to control stressful situations and bring about particular outcomes (e.g., *I have little control over the things that happen to me*). Based on previous research, two items were not included because of their poor factor loadings due to their reverse-ordered wording (Deardorff, Gonzales, & Sandler, 2003). In this study, participants indicated their level of agreement with the statements by using the four category format of *very wrong*, *wrong*, *right* or *very right*. Pearlin et al. (1981) reported Cronbach’s alpha at .83 in an earlier study with an adult population. Cronbach’s alpha in the present study was quite low at .69.

### Procedure

An information pack explaining the research process and aims was given to all teachers involved in the administration of questionnaires. Questionnaire administration was conducted in class groups within regular school hours and was supervised by class teachers with whom the students were familiar.

### Results

Prior to analysis, data were screened for possible response sets, outliers, and missing or out-of-range values. Only two missing values were found and these were replaced with the mean score for all cases with respect to those items.

Maximum-likelihood confirmatory factor analyses of the covariance matrices were conducted using AMOS 5.0 to evaluate two-dimensional models of coping. As per Cunningham (2002b), the first model hypothesised that the strategies of *solving*...
the problem, focus on the positive, work hard and seek recreational diversions would comprise a productive coping factor. The second factor, a nonproductive coping factor, was hypothesised to consist of the strategies of self-blame, not cope, tension reduction and keep to self. The strategies of wishful thinking and ignoring the problem were allowed to cross-load because Cunningham (2002b) found that these two strategies formed part of both productive and nonproductive coping. The data was found to be a poor fit to the model, $\chi^2(32, N = 300) = 105.82, p < .001$, RMSEA = .09, GFI = .94, TLI = .85 and CFI = .89. Given that the aim was to establish a two-factor model of coping for use in structural equation modeling (SEM), a second model in which the strategies of wishful thinking and ignoring the problem were removed from the model was evaluated and found to be an adequate fit to the data, $\chi^2(19, N = 300) = 46.75, p < .001$, RMSEA = .07, GFI = .97, TLI = .92 and CFI = .94. All factor loadings were significant and the correlation between the two latent coping factors was -.48 ($z = -4.76, p < .001$).

Prior to testing a structural model of coping resources, a 5-factor independent cluster measurement model of all the constructs was evaluated. The main purpose of this analysis was to ensure that the constructs under consideration demonstrated discriminant validity. The connectedness latent variable comprised indicator variables referring to peer-, teacher- and school-connectedness. For mastery, the 5 items were used as indicators while control over thoughts, feelings and behaviours were the indicators of internal coping self-efficacy beliefs. The latent variables of productive and nonproductive coping were each represented by the cluster of four different coping strategies found in the previous section. The data was found to be an adequate fit to the model, $\chi^2(142, N = 300) = 243.05, p < .001$, RMSEA = .05, GFI = .92, TLI = .93 and CFI = .95. Importantly, the intercorrelations between the latent constructs ranged from a low of .34 to a high of .65 and all factor loadings exceeded 0.4.

Consistent with COR theory (Hobfoll, 1989, 2001), a structural model was tested which hypothesised that the relationships between the connectedness factor and productive and nonproductive coping were mediated by the key perceived control resources of mastery and coping self-efficacy. A model consisting of both direct and indirect pathways between the connectedness and coping factors was compared to a model in which these direct pathways were removed. Comparison of the fit of the models, based on the chi-square difference test, indicated that the model that included direct relationships between connectedness and productive and nonproductive coping was a significantly better fit than the mediated model in which these pathways were removed, $\Delta \chi^2 (2, N = 300) = 26.72, p < .001$. An inspection of the parameter estimates revealed that the direct pathway from connectedness to nonproductive coping was not significant. When the model was respecified by removing this path, the data was a reasonable fit to the model, $\chi^2(145, N = 400) = 264.74, p < .001$, RMSEA = .05, GFI = .91, TLI = .92 and CFI = .94. Figure 1 presents the standardised parameter estimates for the structural model of coping resources. With the exception of the pathway from mastery to productive coping ($\beta = .13, p = .06$), all remaining structural paths and factor loadings were significant. The total indirect effect of connectedness on nonproductive coping via mastery (indirect effect = -.15) and coping self-efficacy (indirect effect = -.28) was -.43. In contrast the total effect of .68 of connectedness on productive coping comprised a direct effect of .48 together
with an indirect effect via coping self-efficacy of .20. The model respectively explained 52 and 50 percent of the variance in productive and nonproductive coping.

Discussion

The results offer some support for the proposed model of coping that was embedded within COR theory (Hobfoll, 1989, 2002). As expected, the relationship between school-, teacher- and peer-connectedness and nonproductive coping behaviours was fully mediated by the perceived control measures of mastery and internal coping self-efficacy. Young people who were more connected to their peers, teachers and school reported higher levels of the internal resources of mastery and coping self-efficacy. In turn, higher levels of these internal control-related resources predicted less reliance on the nonproductive coping strategies of keep to self, self-blame, tension reduction and not cope.

Coping self-efficacy beliefs also partially mediated the relationship between the school-connectedness indicators and productive coping behaviours. That is, adolescents who were more connected to their peers, teachers and school expressed more control over their thoughts, feelings and behaviours and, in turn, reported using more of the productive coping strategies of solve the problem, work hard, focus on the positive and seek relaxing diversions. Over and above this relationship, there was still a moderately strong direct relationship between connectedness and productive coping behaviours. However, contrary to expectations, mastery did not par-
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tially mediate the relationship between connectedness and productive coping. While higher levels of connectedness predicted higher levels of mastery, there was no direct link between mastery and productive coping behaviours.

Hobfoll et al. (1994) and Lazarus (1999) suggested that personal control beliefs such as mastery and coping self-efficacy may be the mechanism through which external coping resources such as connectedness to the school environment influence coping behaviours. The findings of this study support the mediational role for internal coping self-efficacy beliefs in this regard but offer only partial support for the mediational role of control over external events. This suggests that perceived control over one's thoughts, feelings, and behaviours may be more important than perceptions of control over the external situation if one is to utilise coping resources effectively and engage in positive coping responses (i.e., increased use of productive coping strategies and reduced reliance on nonproductive coping strategies). Perhaps secondary control becomes more powerful in later life (Shapiro & Astin, 1998) or is preferred in many situations where primary or external control is not available (Thompson, Nanni, & Levine, 1994). Alternatively, the 5-item indicators for mastery may not sufficiently capture the notion of perceived external control and further caution must be expressed given that the direct pathway from mastery to productive coping was just short of significance.

The results of the present study support findings in the school-connectedness literature (e.g., Patton et al., 1999; Resnick et al., 1997) that assert positive influences of characteristics of the school social environment on adolescent behaviours. It would seem that young people who cope successfully may draw on the support of teachers and peers in their school environment. Perhaps these adolescents develop positive coping responses through experiencing acceptance from peers, appropriate warmth and supervision from their teachers and through having safe opportunities to demonstrate competence in their school environments.

Two important methodological limitations in this study are monomethod bias and the lack of a longitudinal design. Reliance on self-report measures only potentially generates upwardly biased values of parameter estimates and the lack of a longitudinal design prohibits the testing of mediational models in coping research. While the model posited in this study received some empirical support, the data would equally support a range of alternate models. For instance, it might be argued that coping behaviours mediate or partially mediate the relationships between school-connectedness factors and control-related resources. More longitudinal studies in which interventions target the hypothesised mediating variables are urgently needed to strengthen theories of coping (Sandler, Wolchik, MacKinnon, Ayers, & Roosa, 1997). Furthermore, practical considerations in the scope and design of the present study restricted the range of contextual and personal variables that were incorporated in the model. While the coping resources selected for this study were identified as important influences on adolescent coping, the possibility remains that other key coping resources were omitted from the present study. For example, other forms of contextual resources, such as family support and socioeconomic status, and additional personal resources such as temperament are potentially important variables. Additionally, Resnick et al. (1997) suggested that models predicting adolescent health and wellbeing may be enhanced by including a measure of the inter-
action between the young person and the two main social contexts, that is, school and family.

Despite the limitations of the study, the findings have relevance in regard to design priorities for interventions to increase adolescent wellbeing. The results reinforce previous research that has found that effective interventions must include an element of perceived control (Wallston et al., 1987). Programs that enhance perceived control for adolescents might include direct teaching of control coping skills such as assertion and positive thinking. Alternatively they might focus on ensuring students develop skills to control areas of importance to young people such as academic work, social relationships or sport. Equally, connectedness might be fostered between students themselves through social skills training and developing inclusive classroom environments, and between students and their teachers through teacher professional development that demonstrates the importance of relationships in fostering positive outcomes and provides strategies to teachers for connecting more with their students.

In conclusion, this study highlights the importance of investigating the interplay of factors influencing complex outcomes such as adolescent wellbeing. The results of the study suggest that perceived control and sense of connection are both powerful resources that enhance young people's coping behaviours. Future interventions directed to increasing these resources may not only improve adolescent health and wellbeing in the immediate and longer term but also have the potential to contribute to our understanding of the complexity of coping.

References


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