
Stress and Coping in Adolescents

Sandra Allen and Bryan Hiebert

University of Calgary

Abstract

Two hundred and eighty-five grade 10, 11 and 12 students were surveyed regarding the types of demands they faced, how well they thought they coped with those demands, and the level of stress they experienced in those situations. The students were also asked about their general anxiety level, prevalence of stress-related symptoms, and general coping facility. The results suggest that adolescents with greater coping resources demonstrated lower levels of stress and less frequent stress symptoms. Furthermore, stress levels in adolescents are higher and their coping resources are more meagre than the population at large. Differences in stress levels and coping adequacy for gender and other demographic variables were also noted.

Résumé

Deux cent quatre-vingt-cinq étudiants de 10^e année, 11^e année et 12^e année ont été évalués sur les types de demandes auxquelles ils font face, dans quelle mesure ils croyaient être capable de faire face à ces demandes, et en plus du niveau de stress expérimenté dans ces situations. Ils ont aussi été questionnés sur leur niveau général d'anxiété, la fréquence de l'apparition des symptômes reliés au stress, et comment ils y font face de façon générale. Les résultats suggèrent que les adolescents ayant plus de ressources pour faire face au stress démontraient des niveaux plus bas de stress et une apparition moins fréquente des symptômes reliés au stress. De plus, il a été noté que les adolescents présentaient des niveaux plus élevés de stress et possédaient moins de ressources pour y faire face que la population en général. Des différences en ce qui a trait aux niveaux de stress ainsi que leur habileté à y faire face ont été notées en fonction du sexe et des variables démographiques.

People are faced with increasingly complex demands throughout all levels of society. These pressures necessitate the development of new and better coping skills (cf. Antonovsky, 1987; Moos, 1986; Rice, 1987). According to Elkind (1981) and Rice (1987) this increase in complexity of demands is beginning to be experienced also by children and adolescents. The large-scale changes in the nature and number of demands faced by children has important implications for the field of adolescent stress.

There is increasing convergence amongst theorists and researchers towards a transactional model of stress (Torestad, Olah & Magnuson, 1985). Patterned after the work of Richard Lazarus and colleagues (Lazarus, 1974, 1986; Lazarus & Folkman, 1984), transactional models hold that stress does not arise from the demands people face *per se*. Rather, stress arises when people perceive the demands of the situation in which they are involved as overtaxing their resources for dealing with the situation (i.e., their own abilities and the assistance they can draw from others), and where dealing with the situation unsatisfactorily is seen to have dire consequences (Hiebert, 1983, 1987a, 1988; Kasl, 1984; Lazarus

& Folkman, 1984; Magnusson, 1982). At the most basic level, it is not the situations that people encounter that produce stress for them, but their perception of the inadequacy of their resources for dealing with the situation in a way they deem satisfactory.

Perceived coping ability occupies a central role in transactional models. Individuals with meagre coping resources will be more vulnerable to being overtaxed by the demands they face, and conversely, people with extensive coping resources will be more likely to take a demand in stride and not find the experience as stressful. Although some data exist supporting this reciprocal relationship between stress and perceived coping effectiveness for adults (Hiebert & Basserman, 1986; Lazarus & Folkman, 1984), empirical support for this theorized relationship in adolescents is sparse.

There is some controversy regarding the extent to which discord is an integral part of adolescence, for while many adopt a stereotypic view of adolescence as a turbulent time, others point out that not all adolescents have the same experiences as they move through this transition (Antonovsky, 1987; Petersen & Spiga, 1982; Price, 1985; Thoresen & Eagleston, 1983; Violato & Holden, 1988). It seems likely that a wide range of coping options could assist adolescents to better handle the demands they face and avoid being stressed (Chandler, 1982; Compas, Malcarne & Fondacaro, 1988; Thoresen & Eagleston, 1983). Therefore, the study of adolescent stress should include also a study of adolescents' perceptions of the demands they face and their coping sufficiency.

A few recent studies have examined adolescent coping strategies. Compas et al. (1988), found that adolescents use both problem-focused (attempts to deal with the problem) and emotion-focused (attempts to deal with their emotional reaction to the problem) coping strategies to deal with interpersonal and academic stressors. As well, they found that adolescents who were less adept at problem-focused coping experienced more adjustment problems. Patterson and McCubbin (1987) found that adolescent coping patterns were greatly influenced by their social context and that any given coping behaviour may serve more than one function. Such studies provide evidence that coping behaviours are important when studying adolescent stress. However, further work is needed to clarify the nature and sufficiency of adolescent coping (Compas, 1987; Petersen & Spiga, 1982).

The purpose of this study was to obtain more information on the coping sufficiency of adolescents and to see how that related to the stress they experienced. Given the role of perception in transactional models of stress, we felt it was important also to tap adolescents' perceptions of the demands they faced, how well they cope with the situations in which those demands occurred, and how stressfully they experienced those situations. (As an aside, we also felt that this information could be an

important first step in curriculum development—first identify highly demanding and poorly coped-with situations and then develop programs to teach better ways to deal with those situations.) We also wished to investigate the extent to which stress and coping patterns might differ for males and females and to see what sorts of demographic factors might impact on stress and coping effectiveness.

METHODOLOGY

Sample

The sample consisted of all the students enrolled in a Career and Life Management course (CALM) in one half of the senior high schools in a large Western Canadian city. All students are required to complete CALM in order to graduate from high school and most take it during grade 11. Our sample consisted of 285 grade 10, 11 and 12 students ranging in age from 14 to 20 years, although the majority of the students were 16 years old and in grade 11. There were 170 females and 111 males.

Measures

A combination of standardization measures and author-developed measures were used in this study. The standardization tests were used to obtain normative statements about stress levels and coping sufficiency. The author-developed measures were used to assess the relationship between perceived demands, stress and coping effectiveness, and to determine the sorts of situations most likely to produce a demand-coping imbalance.

State-Trait Anxiety Inventory (STAI). The STAI (Spielberger, 1983) is a 40-item self-report scale assessing situational anxiety (A-State) and general anxiety (A-Trait). Both scales demonstrate a high degree of internal consistency and validity (Brook, 1976; Cattell & Scheier, 1961; Metzger, 1976; Spielberger, Gorsuch & Luschene, 1970). The STAI has been used in research with high-school students to ascertain both state and trait anxiety (Brook, 1976; Hiebert & Eby, 1985; Leal, Baxter, Martin & Marx, 1981; Saigh, 1985; Wehr & Kaufman, 1987).

Symptoms of Stress Inventory (SOSI). The SOSI (Leckie & Thompson, 1979) is a self-report questionnaire in which subjects are asked to rate on a 5-point scale, the frequency with which they have experienced 94 stress-related symptoms during the past two weeks. The SOSI yields a total score and ten subscale scores. The SOSI has high face validity and a positive correlation ($r = .82$) with the SCL-90, an external criteria of psychological stress. The internal consistency for the total SOSI is .97 while the test-retest correlation is .83 (Thompson, 1987). Of particular relevance to this study, the SOSI also has been useful in assessing stress with children and adolescents (Eagleston et al., 1986; Hiebert & Eby, 1985).

Coping Resources Inventory for Stress (CRIS). The CRIS (Curllette, Aycock, Matheny, Pugh & Taylor, 1988) contains 280 items designed to assess a person's coping resources and to identify habits and conditions which interfere with a healthy lifestyle. The CRIS provides a global Coping Resource Effectiveness score (CRE), as well as 12 Primary scales, 3 Composite scales, 16 Wellness Inhibiting Items, and 5 Validity scales.

Situations Faced by Adolescents (SFA). This scale was developed by the authors to examine the relationship between demands, stress and coping effectiveness. A pilot investigation involving 105 grade 11 volunteers was used to generate a list of 34 most demanding and most frequently encountered situations. These items were randomly ordered and students were asked to indicate on a scale from 0 to 5 how frequently they encountered each situation (SFA-F), the level of stress they experienced in it (SFA-S), how demanding they found the situation (SFA-D), and how effectively they thought they handled it (SFA-CE). Basic demographic information also was requested. This questionnaire format has been used in previous investigations (Hiebert & Basserman, 1986; Hiebert & Mendaglio, 1988), and has shown promise for assessing the relationship between demands, stress and coping effectiveness.

Procedure

The four questionnaires were administered to the students during two of their scheduled CALM classes. The CRIS was administered in one class and the other three questionnaires were administered in the other class. The order of administration was counterbalanced across the classrooms.

RESULTS

Three sets of analyses were conducted. First, descriptive statistics were used to obtain information about stress levels and coping resources. Next, Pearson product moment correlations were calculated to examine the relationship between demand, stress, and coping effectiveness. Finally, multivariate analyses were used to investigate demographic influences.

Descriptive Results

Coping Effectiveness. The results from the CRIS suggest that the adolescents in this sample have fewer coping resources compared to the adult norms. The CRE Score was 10% lower than the adult normative sample. Of the 15 subscales, students scored highest on Physical Health, Social Support and Self Directedness, and lowest on Tension Control and Cognitive Restructuring (Table 1).

A MANOVA was used to test for gender differences in the CRIS subscale scores. Following a significant omnibus F, $F(15,229) = 6.36$,

TABLE 1

Scale Means and Standard Deviations for CRIS Scores for 245 Adolescents

Scale	Total Score	Gender		<i>p</i>
		Males <i>n</i> =98	Females <i>n</i> =147	
CRE score	58.0(15.8)	59.3(12.6)	57.3(17.5)	.36
Self-Disclosure	55.6(22.6)	47.1(28.7)	61.2(30.4)	<.01
Self-Directedness	58.2(22.6)	62.1(19.8)	56.5(24.0)	.03
Confidence	53.2(26.7)	60.2(23.7)	48.5(27.7)	<.01
Acceptance	50.9(21.1)	49.7(19.2)	51.6(22.4)	.50
Social Support	62.5(26.9)	61.0(25.3)	63.6(27.9)	.46
Financial Freedom	56.1(27.9)	48.5(26.5)	61.1(27.8)	<.01
Physical Health	71.5(22.2)	75.6(19.0)	68.7(23.8)	.02
Physical Fitness	51.6(31.4)	62.4(26.6)	44.4(32.4)	<.01
Stress Monitoring	52.4(27.4)	54.6(23.9)	50.9(29.5)	.31
Tension Control	45.4(24.1)	45.7(23.2)	45.1(24.8)	.86
Structuring	52.6(24.6)	54.3(21.4)	51.5(26.5)	.38
Problem Solving	54.3(24.3)	56.0(21.0)	53.2(26.3)	.37
Cog. Restructuring	48.7(23.5)	50.2(22.3)	47.7(24.2)	.41
Functional Beliefs	52.3(21.4)	53.7(19.0)	51.4(22.9)	.41
Social Ease	58.4(25.9)	55.8(23.9)	60.1(27.1)	.20

Note: Standard Deviations are in parentheses.

$p < .01$, post hoc univariate tests indicated that females scored significantly higher than males on Self-Disclosure and Financial Freedom, while males scored significantly higher on Physical Fitness, Confidence and Physical Health (Table 1). (*Note: The sample size varies from table to table because of missing data.*)

Levels of stress. The means and standard deviations of the SOSI subscales, and A-State and A-Trait are reported in Table 2. It is interesting to note that the total SOSI score in our sample (115.8) is higher than the total SOSI score for participants in a stress management program (98.9) reported by the test authors (Leckie & Thompson, 1979). Our sample also reported higher scores on all SOSI subscales except muscle tension, habitual patterns and cognitive-disorganization. The STAI-S and STAI-T scores of our sample were consistent with the normative results for adolescents reported in the STAI manual (Spielberger et al., 1970).

A MANOVA was used to test for gender differences in the SOSI and STAI subscales. Following a significant omnibus F , $F(1,118) = 5.41$, $p = .02$, post hoc univariate tests showed significant gender differences on all but three SOSI subscales, indicating that females report more frequent stress-related symptoms than do males.

Relationship Between Stress, Demands and Coping

To determine the relationship between stress, demands and coping, Pearson correlations were calculated between the Total SOSI score, STAI-T, STAI-S, CRE and SFA-D, SFA-CE, SFA-F and SFA-S (Table 3). Significant positive correlations were found between all stress measures and all stress measures correlated negatively with the standardized coping scale (CRE). Further, students who encountered more frequent demands reported more intense stress reactions. These data, taken as a whole, generally support the transactional model of stress. They indicate an inverse relationship between stress and coping effectiveness, suggesting that students with more extensive coping repertoires report lower levels of stress and anxiety and experience fewer stress-related symptoms. This pattern was virtually identical for males and females.

The correlations between the four subscales of the SFA and the standardized measures also provide some construct validity for the SFA scale. Students who reported more intense stress reactions to specific situations also reported more Symptoms of Stress, greater State anxiety, and greater Trait anxiety. As well, students who reported more intense stress reactions to specific situations also exhibited lower CRE scores.

Demographic Analyses

To explore differences between various subsets of our sample and to determine what sorts of factors were associated with stress and coping, MANOVAs were conducted using various demographic variables as independent measures and the total scores on the SOSI, CRE, STAI-S, STAI-T, SFA-D, SFA-CE, SFA-F and SFA-S as dependent variables. Significant findings resulted for gender, age, grade and GPA. (*Note: The n varies from one analysis to another because of missing data.*)

Gender. A significant omnibus F was found using gender as the independent variable, $F(8,165) = 4.02$, $p < .01$. Univariate analyses yielded parallel results to those reported previously for the SOSI and CRIS subscales. Generally speaking, females reported more frequent stress symptoms than males, $F(1,172) = 8.84$, $p < .01$, experienced more intense demands, $F(1,172) = 4.12$, $p = .04$. Females also reported coping more effectively with the demands they faced, $F(1,172) = 5858$, $p = .02$, although no significant gender differences were found on the total CRE score.

Age. A significant omnibus F was found using age as the independent variable, $F(24,476) = 1.92$, $p < .01$ (Table 4). Univariate analyses and post hoc Scheffés ($p < .05$) indicated that 14- to 15-year-olds reported higher CRE scores than those 18 or older, and students 16 years and younger had higher SFA-CE scores than 17-year-olds. Generally speaking younger students had greater coping resources and perceived themselves as coping more effectively than did older students. A significant omnibus F

TABLE 2

Scale Means and Standard Deviations for SOSI subscales, STAI-S and STAI-T

Scale	Total Score	Gender		<i>p</i>
		Males	Females	
Peripheral Manifestations	8.0 (5.0)	6.6 (4.7)	8.9 (5.0)	<.01
Cardiopulmonary Symptoms	17.8 (10.6)	16.3 (9.6)	18.7 (11.2)	.07
Neurological Symptoms	4.5 (3.8)	3.5 (3.2)	5.0 (4.0)	<.01
Gastrointestinal Symptoms	8.9 (6.3)	7.7 (5.3)	9.6 (6.7)	.02
Muscle Tension	12.3 (7.9)	10.3 (7.0)	13.6 (8.2)	<.01
Habitual Patterns	19.4 (10.8)	18.8 (9.7)	19.7 (11.4)	.53
Depression	11.6 (7.6)	9.3 (6.7)	13.1 (7.8)	<.01
Anxiety/Fear	11.9 (8.6)	8.9 (6.8)	13.8 (9.0)	<.01
Emotional Irritability	13.5 (8.4)	12.7 (8.8)	14.0 (8.1)	.21
Cognitive Disorganization	9.6 (5.9)	8.0 (5.7)	10.6 (5.8)	<.01
SOSI Total	115.8 (62.9)	99.5 (54.1)	125.7 (66.0)	<.01
STAI-S	41.1 (12.5)	40.2 (11.8)	41.7 (13.0)	.35
STAI-T	43.9 (9.0)	44.0 (8.5)	43.9 (9.3)	.91

Note: Standard Deviations are in parentheses.

was also found using grade as the independent variable, $F(16,320) = 2.27$, $p < .01$. In the interest of conserving space these data are not reported, for they parallel the age data, as could be expected.

Grade Point Average. A significant omnibus F was found using GPA as an independent variable, $F(24,461) = 2.68$, $p < .01$. Univariate analyses and post hoc Scheffés ($p < .05$) indicated that students with 65 to 74% averages reported higher STAI-T scores and lower SFA-CE scores than those with averages 85% and higher. As well, the students with highest marks had significantly higher CRE scores than the other three groups of students. Therefore it would appear that students with higher GPAs experience less anxiety and have greater coping resources than students with lower GPAs.

Additional analyses. Several MANOVAs also were conducted using various social/personal characteristics as independent measures. Those which produced significant results are reported below.

TABLE 3
Pearson Correlations Between Scale Totals

<i>Subscale</i>	2	3	4	5	6	7	8
1. SOSI	.62 (<i><.01</i>)	.71 (<i><.01</i>)	-.62 (<i><.01</i>)	.19 (<i><.01</i>)	.52 (<i><.01</i>)	.20 (<i><.01</i>)	-.18 (.02)
2. STAI-S	—	.75 (<i><.01</i>)	-.63 (<i><.01</i>)	.15 (<i><.01</i>)	.43 (<i><.01</i>)	.22 (<i><.01</i>)	-.21 (<i><.01</i>)
3. STAI-T		—	-.73 (<i><.01</i>)	.09 (.07)	.51 (<i><.01</i>)	.19 (<i><.01</i>)	.27 (<i><.01</i>)
4. CRE			—	.01 (.44)	-.35 (<i><.01</i>)	.15 (.02)	.36 (<i><.01</i>)
5. SFA-F				—	.45 (<i><.01</i>)	.57 (<i><.01</i>)	.22 (<i><.01</i>)
6. SFA-S					—	.57 (<i><.01</i>)	.11 (.04)
7. SFA-D						—	.18 (<i><.01</i>)
8. SFA-CE							—

Note: Probability levels are in parentheses.

A significant omnibus *F* was found using smoking versus nonsmoking as an independent variable, $F(8,164) = 3.77, p < .01$. Univariate analyses indicated that smokers obtained higher scores than nonsmokers on the SOSI, $F(1,171) = 22.58, p < .01$, the STAI-S, $F(1,171) = 8.60, p < .05$ and the STAI-T, $F(1,171) = 11.43, p < .01$ and lower scores on the CRE, $F(1,171) = 18.01, p < .01$. These results indicate that the smokers in our sample reported greater amounts of stress and anxiety as well as a deficit in their perceived coping resources when compared to nonsmokers.

The number of hours a student worked per week also resulted in a significant omnibus *F*, $F(24,452) = 1.56, p = .05$. Univariate tests and post hoc Scheffés ($p < .05$) indicated that students who worked more than 20 hours per week obtained significantly lower SFA-CE scores than all other groups of students. Further analysis indicated that students who worked more than 20 hours per week were older than those who worked 10 hours per week or less, and students who worked 10 to 20 hours per week were older than students who did not work at all. Also, students with high GPAs tended to not work outside of school, although a small number of them (13%) spent up to 10 hours per week in paid employment. At

present, it is not clear whether the number of hours worked is a key contributor to higher stress and lower coping ability, or whether age and academic achievement also might be contributing to the effect reported above.

One other interesting finding emerged when school and class were introduced as independent variables. A significant omnibus effect was found for both schools, $F(48,950) = 1.69$, $p < .01$ and class, $F(88,1218) = 1.84$, $p < .01$. Univariate tests indicated that schools differed significantly on the SFA-CE scale, $F(6,167) = 3.36$, $p < .01$ and classes differed on SFA-D, $F(11,161) = 2.18$, $p = .02$, SFA-CE, $F(11,161) = 4.28$, $p < .01$, and CRE, $F(11,161) = 2.26$, $p = .01$. Post hoc Scheffés indicated that the significant effects were mostly due to two classes in one school. These findings indicate that some classes in some schools have developed substantially better coping capabilities than their age-mates in other classes and schools.

A MANOVA also was conducted using caffeine intake, alcohol use, the number of hours per week spent studying, and the number of hours per week devoted to extracurricular activities as independent variables. No statistically reliable differences were found for any of these variables.

SUMMARY

Taken as a whole, our data suggest an inverse relationship between stress and the perceived coping facility: students with greater coping resources tended to report less stress. Compared to the adult norms, adolescents in this sample showed higher stress levels (i.e., higher SOSI, STAIS and STAI-T scores) and fewer coping resources (i.e., lower CRE scores). The CRIS subscale scores indicated particular deficits in the areas of Tension Control and Cognitive Restructuring. In addition, females had coping deficits in areas of Physical Fitness, Physical Health and Confidence compared to males, while males scored lower in Self-Disclosure and Financial Freedom compared to females. Other demographic differences also were evident. Females reported more stress symptoms and more intense demands than males. As well, older students perceived their coping to be less effective than younger students. Students with lower marks reported greater levels of anxiety and perceived their coping to be less effective than students with higher marks. Students who smoked reported more symptoms of stress, obtained higher levels of anxiety, and reported deficient coping resources. Finally, students who worked more than 20 hours per week perceived their coping effectiveness to be less than students who worked under 10 hours per week.

DISCUSSION

The data from the sample of adolescents in this study confirm and extend other results reported previously. Our finding that symptom

levels were higher for adolescents than for adults is consistent with D'Arcy (1982) who found that adolescents reported consistently higher symptomatology on the General Health Questionnaire than did an adult sample. While a strict comparison between adults and adolescents is neither intended nor possible from our data, it is interesting to note the pattern of these results. Tentatively, it appears that young people report greater stress levels and fewer coping resources than adults. It is not clear whether this is due to an actual coping inadequacy, unreasonable environmental demands, misappraisal of coping repertoires, misappraisal of environment demands, or some other intervening factor. It seems clear from our data, however, that for the most part the perceived coping resources of our adolescent sample have not kept pace with the demands they are facing. This undoubtedly would be a fruitful area for further investigation.

The gender differences in our data deserve comment. First, our finding of no significant gender difference in overall coping ability is consistent with Compas, et al. (1988) who found no gender differences in the generation or use of coping strategies. However, we did find differences in the generation or use of coping resources, with females coping better in areas of self-disclosure and financial freedom and males scoring higher in confidence, self-directedness and physical fitness. Second, females reported more frequent and more intense demands and more stress symptoms than males. This supports earlier studies reporting higher stress levels for females (Bruns & Geist, 1984; Burke & Weir, 1978; D'Arcy & Siddique, 1984; Folkman & Lazarus, 1980; McGuire, Mitre, & Neuman, 1987).

Our finding that younger students perceive their coping abilities to be better than do the older students should be interpreted with care. Folkman and Lazarus (1980) suggest that changes in coping effectiveness across age may be due to changes in stressors rather than differences in coping repertoires. In our study older adolescents reported the additional stressor of working more hours per week, thus supporting the influence of stress change rather than age difference as a factor in coping effectiveness. Older adolescents also face additional demands pertaining to transition into the adult world. Therefore, it is possible that adolescent coping repertoires simply do not keep pace with their growing multiplicity of demands. Future research examining age differences in the types of demands encountered and nature of coping attempts could help to clarify this area.

Our finding that students with higher GPAs had lower trait anxiety scores is consistent with D'Arcy and Siddique (1984). As well, students with higher GPAs reported coping more effectively with the demands they faced than did students with lower marks. Thus it appears that students who are able to get good grades are also able to cope better with

the other, nonacademic, demands in their lives. Conversely, students with lower GPAs may be in particular need of acquiring additional, nonacademic, coping skills.

Our finding that students who smoke reported more stress symptoms, higher STAI scores, and deficient coping resources is consistent with previous findings. For example, Bruns and Geist (1984) found that tobacco use was related to drug abuse and higher levels of life stress, while Penny and Robinson (1986) found that students who smoked had fewer coping resources, lower self-esteem, and higher trait anxiety. While the positive association between smoking, stress levels and reduced coping effectiveness exists, it is difficult to make any causal statement from our data. It is possible that this association may be explained by some third variable to which both life stress and smoking are related.

Finally, a word is warranted on how our data pertain to the transactional view of stress. Generally, the meaningful negative correlations between indices of stress and the measures of coping supports the contention that stress reactions depend on the perceived balance between the demands and perceived coping effectiveness. The prevailing pattern in our data was that students who perceived themselves as possessing adequate coping resources reported lower stress levels and fewer stress symptoms.

Implications

The results of our study have some implications for program development. First, our finding that adolescent stress levels were high and coping resources rather meagre suggests a need for programs to help adolescents develop more extensive coping repertoires. Our finding that coping abilities were particularly deficient in the areas of tension control, cognitive restructuring and stress monitoring suggests these are important skill training areas for adolescents. In contrast, the students' coping strengths in areas of physical health (for males), social support, self-directedness and social ease (for both males and females) suggests that these areas are already being addressed adequately.

The gender differences we found suggest that males and females might profit from different programs aimed at increasing coping repertoires. For example, it might be that the pattern of coping strengths exhibited by males in our sample more adequately addresses the sorts of demands which male adolescents face. In contrast, it might be that the socialization pattern experienced by females not only creates for them a greater number of demands but also leaves them poorly prepared to handle the demands they face. This could be responsible for the lower stress scores reported by males in the sample and found by others (e.g., McGuire et al., 1987). However, as gender role become less entrenched, strengths in one particular coping area may not be sufficient for coping

with all the demands encountered and it may be important for both males and females to expand their repertoire of coping skills.

This study demonstrates the importance of looking beyond the demands associated with the overall developmental process of adolescence, and of addressing the unique demands which adolescents face each day. It also underscores the importance of examining the ways in which adolescents attempt to handle the demands they face. In other words, our findings suggest that before parents, teachers or school counsellors begin stress management training, it is important to consider the nature of the demands students face and the adequacy of their coping skills (Hiebert, 1988; Hiebert & Basserman, 1986). Interventions then can address which coping skills are necessary to deal with which particular situations. When stress control intervention is attempted, it most likely will be successful if it is comprehensive, taking into account stress levels, sources of stress, current coping resources, and prospective demands for which particular coping skills may be needed (Hiebert, 1983, 1988, in press.) By identifying the appropriate intervention thrust, it may be possible to reduce the demands which adolescents must deal with, increase their competence in coping with the demands, and in addition, teach them to deal more effectively with their stress reactions when they do become overtaxed.

References

- Antonovsky, A. (1987). *Unravelling the mystery of health: How people manage stress and stay well*. San Francisco, CA: Jossey-Bass.
- Brook, R.M. (1976). Psychological evaluation of stress on adolescents. *Journal of Clinical Psychology*, 32, 565-567.
- Bruns, C. & Geist, C.S. (1984). Stressful life events and drug use among adolescents. *Journal of Human Stress*, 10, 135-139.
- Burke, R.H. & Weir, T. (1978). Sex differences in adolescent life stress, social support and well being. *The Journal of Psychology*, 98, 277-288.
- Cattell, R.B. & Scheier, J.H. (1961). *The meaning and measurement of neuroticism and anxiety*. New York: Wiley.
- Chandler, L.A. (1982). *Children under stress*. Springfield: Charles C. Thomas.
- Compas, B.E. (1987). Coping with stress during childhood and adolescence. *Psychological Bulletin*, 101, 393-403.
- Compas, B.E., Malcarne, V.L., & Fondacaro, K.M. (1988). Coping with stressful events in older children and young adolescents. *Journal of Consulting and Clinical Psychology*, 56, 409-411.
- Curllette, W.L., Aycocock, D.W., Matheny, K.B., Pugh, J.L., & Taylor, H.F. (1988). *Coping Resource Inventory for Stress manual*. Atlanta, GA: Health Prisms.
- D'Arcy, C. (1982). Prevalence and correlates of nonpsychotic psychiatric symptoms in the general population. *Canadian Journal of Psychiatry*, 27, 316-324.
- D'Arcy, C. & Siddique, C.M. (1984). Psychological distress among Canadian adolescents. *Psychological Medicine*, 14, 615-628.
- Eagleston, J.R., Kirmil-Gray, K., Thoresen, C.E., Bracke, P., Heff, L., & Arnow, B. (1986). Physical health correlates of type A behavior in children and adolescents. *Journal of Behavioral Medicine*, 9, 341-362.

- Elkind, D. (1981). *The hurried child*. Reading, MA: Addison-Wesley.
- . (1986). Stress and the middle grade. *School Counsellor*, 33, 196-206.
- Folkman, S. & Lazarus, R. S. (1980). An analysis of coping in a middle aged community sample. *Journal of Health and Social Behavior*, 21, 219-239.
- Hiebert, B.A. (1983). A framework for planning stress control interventions. *Canadian Counsellor*, 17, 51-61.
- . (1987a). Refining understandings about stressors, stress, and coping. *Canadian School Executive*, 6(10), 12-17.
- . (1987b). Dealing with stress. In M. Wideen, P. Holbourn, & I. Andrews (Eds.), *Becoming a Teacher*, 271-287. Toronto: Kagan and Woo.
- . (1988). Controlling stress: A conceptual updates. *Canadian Journal of Counselling*, 22, 226-241.
- . (in press). Nature and treatment of stress-related problems in schools. In R. Short, L. Stewin, & S. McCann (Eds.), *Educational psychology in Canada*. Toronto: MacMillan.
- Hiebert, B.A. & Basserman, D. (1986). Coping with job demands and avoiding stress: A gram of prevention. *The Canadian Administration*, 26, 1-6.
- Hiebert, B. & Eby, W. (1985). The effects of relaxation training for grade twelve students. *The School Counsellor*, 32, 205-210.
- Hiebert, B. & Mendaglio, S. (1988, March). *A transactional look at school principal stress*. Paper presented to the annual meeting of the American Educational Research Association, San Francisco (ERIC Document Reproduction Service No. 296268).
- Kasl, S.V. (1984). Stress and health. In L. Breslow, J.E. Fielding, & L.B. Lave (Eds.), *Annual review of public health* (Vol. 5, 319-342). Palo Alto: Annual Reviews Inc.
- Lazarus, R.S. (1974). Cognitive and coping processes in emotion. In B. Weiner (Ed.), *Cognitive views of human motivation*, 21-32. New York: Academic.
- . (1986). Stress, appraisal and coping capacity. In A. Eichler, M.M. Silverman, & D.M. Pratt (Eds.), *How to define and research stress*, 5-12. Washington: American Psychiatric Press.
- Lazarus, R.S. & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Leckie, M.S. & Thompson, E. (1979). *Symptoms of Stress Inventory: A self assessment*. Seattle: University of Washington.
- Leal, L.L., Baxter, E.G., Martin, J. & Marx, R.W. (1981). Cognitive modification and systematic desensitization with test anxious high school students. *Journal of Counselling Psychology*, 28, 525-528.
- Magnusson, D. (1982). Situational determinants of stress: An interactional perspective. In L. Goldberg & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects*, 231-253. New York: The Free Press.
- McGuire, D.P., Mitre, W., & Neuman, B. (1987). Perceived stress in adolescents: What teenagers worry about. *Canada's Mental Health*, 35(2), 2-5.
- Metzger, R.L. (1976). A reliability and validity study of the State-Trait Anxiety Inventory. *Journal of Clinical Psychology*, 32, 276-278.
- Moos, R.H., Ed. (1986). *Coping with life crises: An integrated approach*. New York: Plenum.
- Patterson, J.M. & McCubbin, H.I. (1987). Adolescent coping style and behaviors.: conceptualization and measurement. *Journal of Adolescence*, 10, 163-186.
- Petersen, A.C. & Spiga, R. (1982). Adolescence and stress. In L. Goldberg & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects*, 515-528. New York: The Free Press.
- Penny, G.N. & Robinson, J.O. (1986). Psychological resources and cigarette smoking in adolescents. *British Journal of Psychology*, 77, 351-357.
- Price, J.H. (1985). A model for explaining adolescent stress. *Health Education*, 16, 36-40.
- Rice, P.L. (1987). *Stress and health: Principles and practice for coping and wellness*. Monterey, CA: Brooks/Cole.
- Saigh, P.A. (1985). An experimental analyses of chronic posttraumatic stress among adolescents. *Journal of Genetic Psychology*, 146, 125-131.

- Spielberger, C.D. (1983). *The State-Trait Anxiety Inventory (Form Y)*. Palo Alto, CA: Consulting Psychologist Press.
- Spielberger, C.D., Gorsuch, R.L., & Lushene, R. (1970). *Test manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologist Press.
- Thompson, E.A. (1987). *Interpretation of the Symptoms of Stress Inventory*. Seattle, WA: Department of Psychosocial Nursing, University of Washington.
- Thoresen, C.E. & Egleston, J.R. (1983). Chronic stress in children and adolescents. *Theory into Practice, 22*, 48-56.
- Torestad, B., Olah, A., & Magnusson, D. (1985). *Coping, control, and experience of stress: An interactional perspective*. Reports from the Department of Psychology (No. 643), The University of Stockholm.
- Violato, C. & Holden, W.B. (1988). A confirmatory factor analysis of a four factor model of adolescent concerns. *Journal of Youth and Adolescence, 17*, 101-113.
- Wehr, S.H. & Kaufman, M.E. (1987). The effects of assertive training on performance in highly anxious adolescents. *Adolescence, 22*, 195-205.

About the Author

Sandra Martin has a M.Sc. in Counselling from the University of Calgary and is a Chartered Psychologist in Alberta. She is a counsellor at a treatment centre for emotionally disturbed children and adolescents.

Bryan Hiebert is an associate professor in the counselling psychology program at the University of Calgary. He has been investigating applications of stress control in the school system. He also has been part of several investigations exploring the way counsellors and clients conceptualize the problems they face.

Address correspondence to: Dr. Bryan Hiebert, Department of Educational Psychology, University of Calgary, Calgary, Alberta, T2N 1N4