STRESS MANAGEMENT AND·HEALTH PROMOTION BEHAVIORS IN YOUNG MEN IN TERTIARY EDUCATION SETTINGS IN AUSTRALIA

Nikom Moonmuang[*] and [1]Marion Kostanski[**]

* *Department of Community Health Nursing, Faculty of Nursing, Burapha University, 20131 Thailand.*
** *Psychology Department, Faculty of Art and Human Development, Victoria University, Australia*

ABSTRACT

The concept of stress has been identified as being a major protagonist of ill health and poor sense of well-being amongst all age's groups. One group that has been identified as being particularly vulnerable to high levels of stress is male tertiary students. The purpose of this study was to test the relationships among stress and specificity of academic concerns among tertiary males. The current study sought to elucidate what were the particular avenues of concern, which resulted in high levels of stress among these young men. Moreover, in order to extrapolate information on how best to address stress related concerns among these young men, a secondary purpose of the study was to examine the health-promoting behaviors utilized by young men, and identify areas which may be pertinent to future educational and clinical intervention and health promotion programs. The participants for this study comprised a cohort of 226 male students from four universities in Melbourne. The theoretical framework for this study was Pender's health-promotion model and Lazarus' stress adaptation model. Instrumentation included the Health-Promoting Lifestyle Profile II (HPLP II) and the Daily Stress Inventory (DSI). Only two demographic factors, nationality and language spoken at home, were found to differentiate between levels of stress and impact. They were also found to report these events had a higher impact on them than Australian and English speaking students. Male students in the current study were also found to report a higher level of stressful events and greater sense of impact comparable to the normative data. The major factors identified by these young men were varied stressors and environmental hassles. Analysis indicated that there were two factors related to health-promoting behaviors namely cognitive/emotional and physical health-promoting behaviors. The results also indicated that there was an inverse relationship between increases in the reported experience of stress and health-promoting behaviors.

Keywords: Health promotion, stress management, young men, in tertiary students.

* Corresponding author: E-mail address: nmoonmuang@yahoo.com

INTRODUCTION

The concept of stress has been identified as a major syndrome of modern society. Even though some stress is helpful for individuals in meeting new challenges, persistently high and unrelieved stress can lead to psychological, physical, and behavioral ill health. Physical stress is primarily concerned with one's biological responses to an event; psychological stress focuses on one's cognitive and affective responses to the evaluation of threat, while social stress focuses on the resultant disruption of one's social system following an event. A high level of stress has been recognized as a predictor of depression and suicidal ideation in young people (Dixon et al., 1993). Similarly, while physical ill health is caused by many factors, stress has also been found to be strongly associated with the onset of illness and perceived or actual deterioration in well-being (Byrne, 2000; Hong and Chongde, 2003; Reynolds et al., 2001; and Sordi, 2004). Stress has been reported to lead to the development of negative effect and a reduction in psychological well-being (Beasley et al., 2002; Lange and Byrd, 1998). In terms of behavioral and social stress systems, it appears that stressful experiences motivate individuals to engage in a variety of behavioral methods, many of which are considered to be negatively motivated.

One population of adolescent, young adult groups, which has been identified as experiencing high levels of stress, is tertiary students. A study by Edwards et al. (2001) found that 30 per cent of the undergraduate students in Canada reported elevated psychological distress. Jameson and Jon (1996) found that an increased level of stress in university students had serious implications in relation to the students' academic performance, interpersonal relationships, and social activities. Gacad and Babiera (2002) have pointed out that high level of stress lead to low health promoting behaviors. This was particularly so if the student had a less well developed ability to resolve stressful

life events when they arose. Many reasons have been proposed to account for the sex differences in health. Fourteen percent of young people in Australia have mental health problems (Sawyer et al., 2000). Overall young men have a higher prevalence of mental health problems than young women by approximately 2:1 (Raphael and Martinek, 1996). In Australia and New Zealand, young men have one of the highest suicide rates in the world with a rate of 4.2 times higher than young women (Australian Bureau of Statistic; ABS, 2000; Laws, 1998). The overall mortality rate for young men, aged 15-24 years, is nearly three times that of young women (ABS, 2000). Men in general are four times more likely to commit suicide than women, but in the 15-24 years age group men are five times more likely than women to commit suicide (ABS, 1994, 2000).

Martinelli (1999) indicated that during tertiary education, young men students would be confronted with situational and environmental influences that can have impact on their entire adult life. Although the majority of the studies indicated that females experience higher stress levels than males, a study by Ranjina et al. (2000) showed that females had a control of their time, set and prioritized goals, planned, and had a more organized approach to their studies than males.

To date, there is little understanding of the specific needs of young tertiary males in relation to other levels of stress. Of concern, while the literature does indicate the increasing prevalence of stress in young males within tertiary settings, little is known about the specific causes of this phenomenon. Moreover, there has been limited research conducted into the development of an understanding of how to proactively work towards reducing the negative impact of life events on young men in order to reduce engagement in negative health promoting behaviors and to improve their biopsychosocial well-being. It is by understanding how the individual perceives stress,

the specific factors which produce stress, and the motivational behavior associated with coping with stress that we would have a stronger basis from which to develop appropriate preventative and intervention strategies. The purpose of the current study is to address these issues. Specifically the current study proposes that by understanding the specificity of stress as it relates to young men in tertiary education, and the relationship of this to health promotion behaviors, we will be more able to initiate proactive educational and social changes which can eliminate poor biopsychosocial health among this population.

The health promotion model (HPM) is a framework that explores the biopsychosocial process (Gorin and Arnold, 1998). The model used in this research is Pender's Health Promotion (PHPM) framework (Pender, 1996). PHPM is an attempt to explain the multidimensional nature of one's interaction with their environment in relation to their health and health promotion behaviors. PHPM provides detail about the factors that influence an individual's level of stress. In this framework, Pender identified three central domains: Individual Characteristics and Experiences, Behavior-Specific Cognition and Affect, and Behavioral Outcome, which result in people participating in health-promoting behaviors.

As noted by Lazarus and Folkman (1984) the concept of stress has been defined as the relationship between the person and environment that an individual's perception of an event is a direct result of their cognitive appraisal of the event. Cognitive appraisal is the evaluative process used by the individual to determine why and to what extent a particular transaction or series of person-environment transactions occur. This concept is in line with the conceptual framework developed by Pender, which focuses on the individuals' interaction with their environment in relation to health. Lazarus and Folkman (1984) stated that the judgment of whether a particular person-environment

relationship is stressful depends on the cognitive appraisal by the individual. Lazarus described three types of cognitive appraisals - primary, secondary, and reappraisal - that individuals use to evaluate their situation.

The objectives of this study were aimed at determining factors that affect the onset and management of stress in young men, health-promoting behaviors that young men use to help them cope with stress and prevent the onset of stress.

MATERIALS AND METHODS

The researcher used a self-report survey to collect the data on stress and health-promoting behaviors. Ethics approval was obtained to conduct the study, and permission was sought from the appropriate lecturer to distribute the questionnaire to students at mutually agreed times. The researcher explained the project to the students, summarized the conditions of consent, and answered any questions. The questionnaire was then distributed to the students by the researcher. Students completed the questionnaire and returned it to the researcher via reply paid envelopes.

All data was entered into the Statistical Package for Social Sciences (SPSS), Version 10. In regards to the DSI, three scores were calculated for each student. The event score refers to the frequency of stressful events experienced by the respondent and indirectly reflects the level of the respondent's involvement in the environment. The impact score represents a personal appraisal of stressful events and indicates an individual's personal experience of stress. The Impact/Event Ratio (I/E Ratio) represents the average amount of stress associated with weekly events. T-tests, ANOVA, and factor analysis were used to analyze the data.

Instruments

The questionnaire comprised three parts: (1) Demographic data, (2) Daily Stress Inventory (DSI),

and (3) the Health-Promoting Lifestyle Profile II (HPLP II) instrument. DSI focuses on stress in everyday life, and the HPLP II explores the health-promoting behaviors that individuals use to cope with stress. The details of the questionnaires are as follows:

Demographic data

The demographic data are composed of 15 items as follows: gender, age, level of study (first, second, third, and fourth year), institution (The University of Melbourne, Latrobe University, RMIT, and Victoria University of Technology), status, residence, nationality, home language, living arrangement, source of income for education expenses, and working status.

Daily Stress Inventory

The DSI (Brantley and Jones, 1989) is composed of 58 items. The items of the DSI are divided into five content areas, i.e., interpersonal problems (IP), personal competency (PC), cognitive stressors (CS), environmental hassles (EH), and varied stressors (VS).

Subjects are asked to rate items on a seven-point rating scale ranging from "Not stressful" (rating of 1) to "cause me to panic" (rating of 7). Subjects indicate for each day the number of minor, annoying events that occurred and how stressful they believed a given event to be. For scoring one-day administration, the researcher counted the number of items that received a rating and enters this number as the labeled "Event". Sum the item ratings and enter this number as the labeled "Impact". Divide the Impact score by the Event score and enter the result as the labeled "I/E Ratio". I/E Ratio is an indicator of the average amount of stress. High score may be indicative of an individual who is vulnerable to stressful events and who is less able to cope with stress than the average individual.

Health-Promoting Lifestyle Profile II

The HPLP II questionnaire is derived from Nebraska's Health Science Center, University of Nebraska Medical Center, in the U.S.A. The HPLP II is used to measure health-promoting behaviors, conceptualized as a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of wellness, self-actualization, and fulfillment of individuals. This questionnaire is composed of 52 items and contains six subscales of health-promoting lifestyle, which are intended to measure a healthy lifestyle: health responsibility, physical activity, nutrition, interpersonal relations, spiritual growth, and stress management.

Sample size

The simple random sampling was used to draw four universities from ten universities. A sample size of 226 young male students in a Melbourne setting (undergraduate course, aged 17-25 years, Australian citizens or permanent residents) was an appropriate sample size.

Limitations of the current study

There are several cautionary points that need to be kept in mind when considering the results of this investigation. First of all, the questionnaires were undertaken at the end of semester two, the time in which participants were expecting to undertake examination. This may have raised the number of responses affected by examination stress. At the same time, students identified the examination/assessment period of semester as a period when they actively decreased the amount of health-promoting behaviors in order to manage their workloads. Secondly, this study was conducted at four universities in Melbourne with 226 students participating in the study. This may provide a strong generalize overview of the current perception of events which lead to stress, and the impact of

stress in Australian students. However, it is also apparent that cultural and normative issues are involved. Therefore, caution needs to be taken in extrapolating these findings to a more universal account.

The measurement of stress utilized in the current quantitative component of the study was limited to one daily account. As such it does not offer the opportunity for moderation of the reported level of events in consideration of potential confounding factors that may have been particular to that specific day. While the overall database was derived from a two-week testing period, thus offering some control over these issues. It does not take into account potential major social issues or concerns that may have been evident at the time. This limitation may also account for the elevated less of reported stressful events and impact experienced by the participants.

RESULTS

All data were entered into the Statistical Package for Social Sciences (SPSS), Version 10.

The first section used ANOVA analysis to determine if any of the demographic variables (age, level of study, status, resident status, nationality, home language, living arrangement, source of income for education expenses, and working status) significantly affected DSI scores and also HPLP II scores.

The second section used t-tests to determine the representativeness of the current sample by comparing it to a normative university student sample. Thus, the current DSI scores were compared to a normative sample studied by Brantley and Jones (1989). The current HPLP II scores were compared to a normative sample studied by Deckro et al. (2002).

The third section used factor analysis to determine whether any of the five subscales of the DSI (interpersonal problem, personal competency,

cognitive stressors, environmental hassles, and varied stressors) were particularly salient for the current male university student sample. Also whether any of the six subscales of the HPLP II (health responsibility, physical activity, nutrition, interpersonal relations, spiritual growth, and stress management) was particularly salient for the current sample.

The fourth section analyzed the relationship between the DSI and the HPLP II, that is, whether a relationship existed between perceived daily stress and health promotion behaviors.

Section 1: Do demographic variables affect stress (DSI) and health promotion behaviors (HPLP II)?

The dependant variables are the DSI event, impact, and I/E ratio scores, and the overall health promotion behavior score (HPLP II). Following are the numbers and percentages of students in each category in which the researcher divided into two tables for each of the variables listed above. Table 1 represented age, level of study, status, resident status, living arrangement, source of income for education expenses, and working status variables, and Table 2 represented the nationality and home language as these two variables had a significant with dependent variable.

As seen in Table 1, the population age ranged from 18 to 41 years, with a mean age of 21. The majority of participants was in the early stages of the tertiary studies. The highest proportion of participants was single. 2/3 of participants still resided with their parents. The majority of young men in this study was employed on a part-time/casual basis, and was self-supporting or had parental support with their education expenses. As seen in Table 1, the highest proportion of participants had Australian citizenship/nationality or permanency. Table 1 shows that English was the predominant language spoken at home.

The results of this study revealed that the demographic variables of age, level of study, status, resident status, living arrangement, source of educational income, or work status were not statistically associated with health promotion behavior.

Table 1. Demographic characteristics and one-way ANOVA analysis for sample size N = 226.

Characteristics	Percentage	DSI (Ratio)		HPLP II	
		F	Sig	F	Sig
Age					
< 20	34.10	1.11	0.33	0.23	0.79
20-24	55.70				
> 24	10.20				
Level of study					
First year	47.30	1.59	0.19	0.57	0.63
Second year	23.00				
Final year	26.50				
Post-graduate student	3.10				
Status					
Single	88.10	0.05	0.95	0.53	0.59
Married/de facto	8.80				
Divorce/separate	3.10				
Resident status					
Australian permanent/citizenship	91.20	1.22	0.27	0.49	0.48
Non-permanent resident	8.80				
Living arrangement					
With parents	66.80	0.11	0.73	0.39	0.54
Independent	33.20				
Source of income for educational expenses					
Self	70.80	1.96	0.12	1.91	0.13
Parents	23.45				
Loans	5.75				
Work status					
Employed, full-time	3.10	1.80	0.14	1.29	0.28
Employed, part-time/casual	67.30				
Unemployed, looking for full-time work	26.10				
Unemployed, looking for part-time/casual work	3.50				

As seen in Table 2, the results showed that the mean event score for the Australian nationality students was 19.47 (SD = 8.38) and for non-Australian nationalities was 22.44 (SD = 7.47). With alpha set at 0.5, a one-way ANOVA showed that non-Australian students had a significantly higher DSI event than Australian students (F [225] = 6.71, p < 0.05). It was concluded that non-Australian students had greater frequency stressful events than Australian students. In other words, they had a greater experience many of the common stressful events in various areas of involvement in the environment.

The results showed that the mean impact score for the Australian nationality students was 56.75 (SD = 34.61) and for non-Australian nationalities was 74.46 (SD = 32.27). With alpha set at 0.5, a one-way ANOVA showed that non-Australian students had a significantly higher DSI impact than Australian students did (F [225] = 13.71, p = 0.00). It was concluded that non-Australian students had greater individual's personal experience of stress than Australian students.

The results showed that the mean I/E ratio for the Australian nationality students was 2.68 (SD = .92) and for non-Australian nationalities was 3.09 (SD = .86). With alpha set at 0.5, a one-way ANOVA showed that non-Australian students had a significantly higher DSI ratio than Australian students did (F (225) = -3.2, p = 0.00). It was concluded that relative to the frequency of stressful events, non-Australian students had greater perceived stress than Australian students did. In other words, they had a greater experience of stress in their weekly lives.

The results showed that the mean impact score for students who spoke English at home was 56.75 (SD = 34.61) and for those who spoke another language at home was 74.46 (SD = 32.27). With alpha set at 0.5, a one-way ANOVA showed that with English as the home language, students had a significantly lower mean DSI impact than ESL home language students (F [225] = 13.71, p = 0.00). It was concluded that students who did not speak English at home had a greater individual personal experience of stress than those who spoke English at home.

Table 2. Demographic characteristics and effects of nationality and language on stress where the sample size is N = 226.

| Characteristics | Percent-age | DSI | | | | | | HPLP II | |
| | | Event | | Impact | | Ratio | | F | Sig. |
		F	Sig.	F	Sig.	F	Sig.		
Nationality									
Australian	66.80	6.71	0.01	13.71	0.00	-3.20	0.00	0.03	0.87
Other	33.2								
Home language									
English									
Other	79.20	2.94	0.08	5.78	0.01	0.03	0.03	0.01	0.91
	20.80								

Also, the results showed that the mean Impact/Event Ratio score for students who spoke English at home was 2.75 (SD = .94) and for those who spoke another language at home were 3.07 (SD = .80). A one-way ANOVA showed that students from non-English speaking homes had a significantly higher I/E Ratio than English speaking students (F [225] = 4.44, p = 0.03). It was concluded that relative to the frequency of stressful events, students from non-English speaking homes had greater perceived stress than those students who used English as their first language. In other words, they had a greater experience of stress in their weekly lives.

Section 2:   Is the current sample a normative male university student cohort?

As seen in Table 3, the findings indicated that male university students in the current sample reported significantly more stressful events in their daily lives than a normative sample (t [225] = 5.79, p < .05). It was concluded that the current sample perceived more stressful events in their life than a normative male university student and also had a greater involvement with their environment (reference Table 1: Brantley and Jones, 1989).

The findings also indicated that the current sample perceived a significantly greater amount of stress than a normative sample (t [225] = 4.96, p < .05). It was concluded that the male university students appraised greater stress in their personal experience than a normative male university student (reference Table 1: Brantley and Jones, 1989).

There was not a significant difference between the I/E Ratio scores of the current sample to those of a normative sample. It was concluded that in respect to interpreting stressful events the current sample was normative. The current sample had more stressful events in their lives and therefore, this stress resulted in greater impact scores. Thus, the I/E Ratio was not significantly different from the normative sample (reference Table 1: Brantley and Jones, 1989).

In terms of the frequency of the students' health promotion behaviors (HPLP II), the current sample did not differ significantly from the normative group. It was concluded that current samples' performance of health promotion behaviors was not significantly different in quantity to the normative male university student. This lack of difference parallels the lack of difference between the two groups in I/E Ratio (reference Table 3: Deckro et al., 2002).

Table 3. Results of t-test statistic for sample size N = 226.

Content	Sample		Normative college students (N=252)		Sig. (2-tailed)
	M	SD	M	SD	
DSI					
Event	20.46	8.20	17.30	7.83	0.00
Impact	62.63	34.81	51.14	33.65	0.00
I/E Ratio	2.82	0.92	2.85	1.03	0.60
HPLP II	1.36	0.34	2.44	0.50	0.50

Section 3: What are the most salient subscales of the DSI and HPLP II in regard to male university students?

3.1 What are the most salient subscales of the DSI in regard to male university students?

Factor analysis was performed to investigate potential differences in five content areas by principle component extraction with Varimax rotation, selecting for factors with eigen-values greater than 1. The extent to which each subscale in the DSI loaded onto each of this one factor is shown in Table 4. The subscales of varied stressors and environmental stressors most heavily loaded onto this factor. It was concluded that varied stressors and environmental stressors were reported to be the highest sources of daily stress for the students.

Table 4. An analysis of factor-content using principle component extraction with varimax rotation.

Content	Factor	Percentage of variance explained	Cumulative percentage of variance explained
Varied stressors	.775	58.31	58.31
Environmental stressors	.735	13.30	71.61
Interpersonal events	.656	11.12	82.73
Personal competency	.646	8.99	91.72
Cognitive stressors	.645	8.28	100.00

3.2 What are the most salient subscales of the HPLP II in regard to male university students?

An analysis of factors was performed to investigate potential differences in six content areas by principle component extraction with Varimax rotation, selecting for factors with eigen-values greater than 1. Two factors were attracted, which between them accounted for 40.07 per cent of variance. The extent to which each subscale in the HPLP II subscale loaded onto each of these two factors is shown in Table 5. The subscales of interpersonal relations and spiritual growth most heavily loaded onto the first factor. The subscales of physical activity, health responsibility, stress management, and nutrition most heavily loaded onto the factor two. It is concluded that the first factor of HPLP II was related to promoting cognitive/emotional health and well-being (spiritual growth, interpersonal relations), while the second factor was related to the promotion of physical health and well-being (physical activity, health responsibility, and nutrition). The subscale of stress management contributed to both factors.

Table 5. An analysis of factor-content using principle component extraction with varimax rotation.

Content	Factor	
	Cognitive/emotional	Physical
Interpersonal relations	.735	
Spiritual growth	.664	
Physical activity		.598
Health responsibility		.527
Nutrition		.512
Stress management	.360	.457

Section 4: Are stress (DSI) and health promotion behavior (HPLP II) related?

As can be seen in Table 6, with alpha set at .05 a Pearson's bivariate correlation showed that the health promotion behavior of interpersonal relations was significantly and inversely related to the frequency of stressful events (r = -.15, p = .02), suggesting that as interpersonal relationships are worked upon and improved the frequency of stressful events declines.

The total HPLP II score was significantly and negatively related to the impact of stressful events (r = .15, p = .02), suggesting that as health promotion behaviors increase the impact of stressful events is reduced. Moreover, 3 of the 6 subscales of the health promotion scale were significantly and negatively related to the impact of stressful events: interpersonal relations (r = -. 24, p = .005), spiritual growth (r = -.15, p = .02), and stress management (r = -.14, p = .03).

As displayed in Table 6, the relationship between the total HPLP II and the DSI (I/E Ratio) was nearing statistically significant (r = -0.12, p = 0.07), while 3 of the 6 subscales of the HPLP II were significantly and negatively related to the I/E Ratio; interpersonal relations (r = -.21, p = .005),

spiritual growth (r = -.15, p = .02), and stress management (r = -.18, p = .005). These results suggested that as the frequency of health promotion behaviors increases the experience of stress is reduced.

In relation to health promotion behavior, these results suggested that while health promotion behaviors may not be associated with a reduction in potential stressors in one's environment, they are associated with a reduced likelihood that an individual will perceive these events as stressful, and are also associated with an overall reduction in the experience of stress. Of the health promotion subscales interpersonal relations, spiritual growth, and stress management were most closely related to the impact and experience of stress.

Table 6. Correlations between the DSI and HPLP II (including subscales) (N = 226)

HPLP II	Event		Impact		I/E Ratio	
	r	p	r	p	r	p
Total HPLP II	-0.08	0.25	-0.15*	0.02	-0.12	0.07
Health responsibility	-0.02	0.73	0.02	0.81	0.12	0.08
Physical activity						
Nutrition	0.18	0.79	-0.03	0.64	-0.03	0.67
Interpersonal relations	-0.27	0.69	-0.04	0.59	-0.03	0.63
Spiritual growth	-0.15*	0.02	-0.24**	0.00	-0.21**	0.00
Stress management	-0.87	0.19	-0.15*	0.02	-0.15*	0.02
	-0.02	0.76	-0.14*	0.03	-0.18**	0.00

* Correlation is significant at the level of p = 0.05 (2-tailed).

** Correlation is significant at the level of p = 0.01 (2-tailed).

Table 7. Correlations between the DSI subscales and HPLP II (N = 226)

HPLP II	Interpersonal problem		Personal competency		Cognitive stressors		Environmental hassles		Varied stressors	
	r	p	r	p	r	p	r	p	r	p
Total HPLP	-0.21	0.00	-0.02	0.76	-.15*	0.02	-0.07	0.27	-.14*	0.02

* Correlation is significant at the level of p = 0.05 (2-tailed).

With alpha set at .05 a Pearson's bivariate correlation found that health promotion behavior was significantly and inversely related to the Event/Impact ratio score for cognitive stressors (r = -.15, p = .02), suggesting that as health promotion behavior increases the overall experience of cognitive stressors declines as seen in Table 7.

The results of this study also found that overall health promotion behavior was significantly and inversely related to varied stressors (r = -.14, p = .02), suggesting that as health promotion behavior increases the overall experience of varied stressors declines.

It was concluded that of the DSI subscales cognitive stressors and varied stressors were most strongly related to health promotion behavior.

DISCUSSION

The primary purpose of this research was to explore the factors that influence the onset and management of stress in male tertiary education students. Furthermore, this study aimed to explore the specificity of health promotion behaviors associated with perceived stress utilized by male tertiary education students. Outcomes of this study indicated that the primary identified factors identified by male tertiary students within this study were varied stressors associated with their academic and financial security and environmental hassles, such as being from a non-English speaking home or nationality other than Australian. Furthermore, the participants in this study indicated that stress arising from interpersonal difficulties; in particular familial discord and intimate relationship breakdown were a major source of stress in their lives.

The findings of the current study indicated that young tertiary males experienced a variety of physical, psychological and social effects as a result of these stressful events. Overall the sample of young men who participated in the current study reported a significantly higher number of daily stressful events and a greater level of impact related to these events than previously identified normative levels, thus indicating that current perceived levels of stress and impact had increased over time. These findings support current literature, which proposes that stress is an increasing concern for young males (Hunter, 1999; McNamara, 2000; Moon, Meyer, and Grau, 1999). Interestingly, while academic issues were identified as a source of stress, the emotional impact of more generalized issues, such as familial

discord, parental divorce and disharmony, concerns about one's future and financial hassles were as important. Therefore, it would seem that much of the stress and impact experienced by young tertiary males is not necessarily specific to academic life, but a component of the maturation process and social environment.

Overall the outcomes of this study indicated that positive health promotion behaviors were associated with reduced impact of stress among young tertiary males. These findings indicated that although the number of identified stressors was equivalent across the sample, for those young men who adopted health behaviors, the impact was greatly reduced.

Is the current sample a normative male university student cohort?

The findings of this study indicated that male tertiary education students reported higher stressful events (an average of 20 daily events that caused them stress) than those reported for a normative sample group (an average of 17 daily events) (Brantley and Jones, 1989). The participants reported experiencing many of the common stressful events than individuals experience in various areas of their personal environment. They further indicated that daily schedules, poor organization of time and activities or an aggravating environment, led them to feel overloaded. It is significant to note that these data were collected at the end of semester two. This may have raised the number of responses for stress related to academic life, as it is a time of focus on the taking of exams and pressures to complete assignments.

The number of daily events, as well as an individual's personal appraisal of daily events, made up an impact score of composite scores that were influenced. Impact scores represent the best indicators of an individual's personal experience of stress. It was concluded that the male university students studied appraised greater stress in their personal experience than normative male university students did. As earlier stated some students may have arising perceived academic stress. These findings were in line with many studies that indicated that academic stress and examination are among the main sources of evaluation stress in male university students (Baldwin et al., 2003; Greenberg, 1996; Nwadiani and Ofoegbu, 2001; Owen, 2003; Schafer, 1996). However, the participants also indicated that varied life stressors and environmental hassles were also an important source of stress, which had strong impact on their sense of well-being. As noted by others (e.g., Beasley et al., 2002; Edwards et al., 2001), high stress was associated with poorer physical and psychological health. This high level of non-specific academic stress may be a confounding factor in elevating the reported high prevalence of stress among male university students. Therefore, it is important that university health services do not become too reductionism in their focus when working with young males who are present with difficulties in their studies.

Do demographic variables affect stress and health promotion behaviors?

The findings of the current study indicate that only two independent variables, nationality and home language, had a significant effect on reported daily stress scores. The findings of the current study indicated that non-Australian nationality students had more stressful events than those with Australian citizen/permanent status. In other words, they reported a greater level of academic and common stressful events arising from various areas of involvement with their environment. They also showed that non-Australian nationality had greater individual's personal experience of stress than Australian nationality students. Minority group membership has been identified as having a strong impact on the individual, through ongoing strain or chronic

stress. Some of participants in the current study indicated their ethnic background was associated with the experience of negative effect in relation to their study and also their intimate relationships. Slavin et al. (1991) indicated that being a member of a minority group could increase the frequency of certain stressors. Similarly, Lay and Safdar (2003) reported that immigrant/minority status university students reported more overt group hassles compared to the non-minority university students. Furthermore, Wong (1999) found that one third of Hong Kong Chinese immigrants in Australia could be classified as psychological 'at risk'. The outcomes of the current study provide further evidence that daily hassles and perceived stress were positively and significantly related to mental distress in non-English speaking migrant students.

In terms of home language, the finding indicated that there was no significant difference in the number of daily stressful event scores between those students who spoke English at home and those who spoke another language. This suggests that students who spoke English at home had nearly the same frequency of stressful events as those who spoke another language at home. In other words, they had nearly the same experienced many of the same common stressful events in various areas of involvement in the environment. However, while the number of events was equivalent, the reported impact of these events was found to be greater for the non-English speaking students than the English-speaking students, indicating that non-English speaking homes had greater individual's personal experience of stress than those who spoke English at home. These findings support previous research (Alati et al., 2003) that has indicated that issues such as financial hardships and difficulties in language acquisition are major sources of stress for non-English speaking students. Furthermore, Alati et al. (2003) indicated the many cultural and normative changes required to adapt to a new

country are major sources of stress for the immigrant student. The greater the difference between the two cultures and societies are the greater is the likely distress.

With the increasing prevalence of international on-shore teaching being offered by Australian and other Western universities, it is important to note that these students have a high need for appropriate and consistent social and personal support, as well as remedial language and writing skills. To date, this is not an area of service that is prioritized within the tertiary sector.

What are the most salient aspects of stress in regard to male university students?

Interestingly, the outcomes of the current study indicated that it was not university life that was the most pertinent source of stress in their lives. Rather, varied stressors and environmental hassles were identified as among the highest sources of daily stress for the students. For example, issues such as 'was misunderstood', 'hurried to meet a deadline', 'store lacked a desired item', 'competed with someone', and 'ran out of food/personal articles', etc., were cited as sources of varied stress in their daily lives. Similarly, environmental hassles such as 'experienced money problems', 'had car trouble', 'experienced unexpected expenses', and 'property was damaged', etc., also provoked a high level of stress in their daily life. These findings suggest that everyday living is in itself a major source of stress for young men, and could possibly be comparable to non-tertiary males as well.

CONCLUSION

The current findings confirm previous reports that there was an elevated level of reported daily events, which led to perceived stress in tertiary male students' lives. Furthermore, the current study indicated that the perceived impact of the events was also reported to be high for a large proportion of the students. Of importance, however, the

majority of this stress was not specific to academic life. Rather, ongoing developmental factors, social influences and environmental issues were also cited as sources of much stress provoking events in the young men's lives. Further research is needed to assess the generalize ability of our results. It would be valuable to compare male with female university students to identify the specificity of academic stress related factors to males in comparison to females.

REFERENCES

Australia Bureau of Statistic. 1994. *National health survey: User's guide.* ABS, Canberra, Australia.

Australia Bureau of Statistic. 2000. *National health survey: User's guide.* ABS, Canberra, Australia.

Baldwin, D.R., Chambliss, L.N. and Towler, K. 2003. Optimism and stress: an African-American college student perspective. *College Student Journal,* 37(2):276-286.

Beasley, M., Thompson, T., and Davidson, J. 2002. Resilience in response to life stress: the effect of coping style and cognitive hardiness. *Personality and Individual Differences* 34: 77-95.

Brantley, A., and Jones, G.N. 1989. *Daily Stress Inventory: professional manual.* Psychological Assessment Resources, Florida.

Byrne, D.G. 2000. Cigarette smoking, psychological stress, and cardiovascular arousal. *Australian Journal of Psychology* 52(1):1-8.

Cox, T. 1987. *Stress.* Macmillan Education, London.

Greenberg, J.S. 1996. *Comprehensive stress management.* McGraw-Hill, Boston.

Jameson, K.H., and Jon, B.E. 1996. Differences in life stress and reason for living among college suicide ideators and non-ideators. *College Student Journal* 30:377-387.

Gacad, H., and Babiera, L. 2002. The relationship of powerlessness, stress, social support and selected demographic variables to health-promoting behaviors in late adolescents. *Dissertation Abstracts International: Section B: The Science and Engineering* 63(3-B): 1269.

Gorin, S.S., and Arnold, J. 1998. *Health promotion handbook.* Mosby, Missouri.

Hong, L., and Chongde, L. 2003. College stress and psychological well-being of Chinese college students. *Acta Psychology Sinica* 35(2):222-230.

Lange, C., and Byrd, M. 1998. The relationship between perceptions of financial distress and feelings of Psychological Well-being in New Zealand university students. *International Journal of Adolescence and Youth* 7:193-209.

Laws, T. 1998. *Promoting men's health: an essential book for nurses.* Ausmed, Victoria, Australia.

Lazarus, R.S. 1999. *Stress and emotion: a new synthesis.* Springer, New York.

Lazarus, R.S., and Folkman, S. 1984. *Stress, appraisal, and coping.* Springer, New York.

McNamara, S. 2000. *Stress in Young People; what's new and what can we do?* Continuum, London, UK.

Pender, N.J. 1996. *Health Promotion in Nursing Practice.* (3rd ed.). Appleton and Lange, Connecticut.

Ranjina, M., Michaelle, M.K., Sarah, W. and Tony, R. 2000. Academic stress of college student: comparison of student and faculty perceptions. *College Student Journal* 34:236-246.

Sawyer, M.G., Arney, F.M., Baghurst, P.A., Clark, J.J., Graetz, B.W., and Kosky, R.J. 2000. *The Mental Health of Young People in Australia.* Australian Government Publishing Service, Canberra, Australia.

Selye, H. 1978. *The stress of life.* Mc Graw-Hill, New York.

Slavin, L.A., Rainer, K.L., McCreary, M.L., and Gowda, K.K. 1991. Toward a multicultural model of the stress process. *Journal of Counseling and Development* 70:156-163.