

Running head: STUDENT STRESS AND COPING

Maladaptive Coping Strategies in Health Professional Students Dealing with Stress

by

© Pamela L. Button

A thesis submitted to the

School of Graduate Studies

in partial fulfillment of the requirements for the

Doctorate of Psychology in Clinical Psychology

Department of Psychology

Memorial University, Newfoundland

May 2014

St. John's

Newfoundland and Labrador

Abstract

This thesis is comprised of two manuscripts exploring health professional student stress, coping, and help-seeking behaviours in an Atlantic Canadian university, using a sequential mixed methods design. The first manuscript examines students' self-reported levels of stress and use of coping strategies to manage their stress. In this study, 120 students (82 females, 38 males) enrolled in the second year of medical, nursing, and pharmacy programs completed measures including the How I Deal With Stress survey, Perceived Stress Scale, and the SCOFF. Students reported high levels of stress, with those in nursing reporting significantly higher levels of stress than those in medicine, though neither group differed significantly from those in pharmacy. Gender was also found to be a significant contributor to student's own reports of stress, with females reporting higher levels of stress and a multiple regression analysis revealed that gender accounts for more of the variance than any other factor on both measures of stress. On the HIDS, 2.5% of students reported engaging in NSSI, below rates found in other research, while 85% endorsed using eating as a coping strategy and 44% coped by trying to control their weight. On the SCOFF, 17.5% of students were found to be at risk of having a diagnosable eating disorder. An examination of other coping strategies revealed that 66% of students have used alcohol as a means of coping with stress. The second manuscript is a qualitative analysis of interviews conducted with ten students in which I explored the students lived experiences of stress, coping, and views on help-seeking behaviours. Thematic content analysis revealed that students identified their academic program as their greatest source of stress, although financial concerns, personal relationships, health, a lack of balance, professional socialization and living situations were also listed as

stressors. Students indicated that they often sought social support, used exercise, staying on top of work, prioritizing, and decreasing and setting realistic expectations as coping strategies that worked for them. Other strategies discussed included eating pathology such as restriction and emotionally driven eating, use of alcohol, lack of sleep, a history of self-injurious behaviours, smoking, and pushing beyond productivity. Students had varied levels of awareness of the mental health services available on campus, and students cited concerns around stigma, confidentiality, and conflict of interest as reasons for not seeking help from the appropriate services provided. The role of a hidden curriculum and the culture of health professional training programs are noted throughout the student interviews providing interesting insight into what impacts student functioning and identifying an important topic to be explored in future research.

Acknowledgments

This journey of PsyD has been a meaningful one, filled with lots of opportunities to grow and learn and has been immeasurably supported by some major players in my academic and personal life. First, I have to acknowledge and give my warmest and most heartfelt thanks to my primary supervisor, Dr. Olga Heath. Olga has been my supervisor, mentor, sounding board, editor, cheerleader, and an amazing source of encouragement throughout this entire process. Without her boundless help and enthusiasm, this journey would have been far more challenging. I would also like to thank my co-supervisor, Dr. Natalie Beausoleil for her expertise, knowledge, support, honesty, and ability to help me grow as a researcher and critical thinker. Both of your support, confidence, and high expectations have helped me be a better student, researcher, and future psychologist.

I would also like to recognize and thank the members of my committee for their support. Dr. Ken Fowler, you have always been a calming force and a believer in my abilities since undergraduate psychology. Thank you for being part of this journey, and for helping me gain insight on the big picture throughout this process. Dr. Nancy Heath, you have been a wonderful source of knowledge and support, and despite the distance you have always been available for help and for feedback. Thank you both.

I also have to give a huge thank you to my PsyD cohort, without whom this process would have been much more difficult, and far less fun. Without each of you, I would have been at a loss. From the start of this program, we have had a unique and wonderful bond; this bond has developed into lifelong friendships. I also want to make a special note of the importance of those coffee dates, e-mail threads, YB times, yoga excursions, and hugs whenever they were needed.

To my wonderful family, I can never adequately express my gratitude to you. I know our relationship is one that is unique and built upon a strong foundation. Mom and Dad, without your help in so many ways, I would not be here doing what I am doing. From being amazing parents to amazing friends, I count on you both for more than you know and you inspire me always. I am infinitely grateful and will never be able to thank you both enough. Also, thank you to my brother and sister in law - you are always in my corner, and have given me so much to be happy for. I am also forever blessed with wonderful friends who understand me, support me, and are always there. You are my rocks, through and through. I would like to thank LCP for giving me such support and providing me with things I did not even know I was missing. Finally, thanks to those magical places and sources of calm that have been my home during this process including my regular fix at Fixed and finding my flow at Nova.

I would also like to thank all the faculty, staff, and students I have had the pleasure to work with at Memorial University. Everyone I have crossed paths with and worked with have helped me get to where I am today. I am so lucky to have pursued my education at this fine institution, and have been able to draw from such a fountain of knowledge. This degree was completed with the support of Newfoundland and Labrador Centre for Applied Health Research (NL-CAHR).

Table of Contents

Abstract.....	ii
Acknowledgments.....	iv
Table of Contents.....	vi
List of Tables and Figures.....	ix
List of Appendices.....	x
Chapter 1. Introduction and Review of Literature.....	1
Coping with Stress.....	3
Maladaptive Coping Strategies.....	5
Help-Seeking Behaviours.....	9
The Present Research.....	11
Research Method: Approach and Design.....	12
Co-authorship Statement.....	15
Chapter 2. Manuscript 1.....	16
<i>Student Stress, Prevalence, and Overlap of Maladaptive Coping Behaviours Among Second Year Health Professional Students</i>	
Abstract.....	17
Introduction.....	19
Student Stress.....	19
Health professional student stress.....	20
Coping.....	21
Maladaptive coping.....	25
Intervention.....	31
The Current Study.....	32
Method.....	33
Participants.....	33
Measures.....	34
HIDS.....	34
SCOFF.....	35
PSS-10.....	36
Procedure.....	37
Results.....	38
Demographics.....	38
Student Stress.....	40
The How I Deal With Stress (HIDS) self-report stress measure.....	40
The Perceived Stress Scale (PSS-10) self-report stress measure.....	42
Coping with stress: The use of maladaptive coping.....	44
Non-Suicidal Self-Injury (NSSI).....	44
Eating Pathology.....	45
The HIDS.....	45

The SCOFF.....	46
Eating pathology on the HIDS and SCOFF.....	47
Alcohol.....	47
Discussion.....	48
Limitations.....	58
Conclusions.....	60
References.....	63
Chapter 3. Manuscript 2.....	74
<i>Exploring the Lived Experience of Health Professional Students: Stress, Coping, and Help-Seeking Behaviours</i>	
Abstract.....	75
Introduction.....	77
Method.....	86
Participants.....	86
Measures.....	87
Interview Guide.....	88
Methodological Reflexivity.....	89
Interview Process.....	92
Data Analysis.....	93
Results.....	94
Demographics: Placing the Students in Context.....	94
Qualitative Analysis.....	96
Sources of Stress in Health Professional Student Lives.....	96
Physical and Mental Health Implications of Student Stress.....	98
Coping with Stress: Health Professional Student Perspective.....	99
Adaptive coping.....	99
Maladaptive coping.....	102
Professional Socialization and the Hidden Curriculum.....	105
Help-Seeking Behaviours.....	108
Barriers and facilitators to help-seeking behaviours.....	111
Mental Health Service Provision at the Health Sciences Centre.....	113
Discussion.....	113
Student Stress.....	114
The Hidden Curriculum.....	117
Coping with Stress.....	120
Help-Seeking Behaviours.....	124
Limitation.....	126
Conclusions.....	128
References.....	131
Chapter 4. Conclusion.....	139
Summary of Findings and Contribution to Knowledge.....	139
Limitations and Strengths of the Study.....	147
Clinical and Applied Implications of the Research.....	149

Future Research.....	152
Final Thoughts.....	153
References.....	154
Appendices.....	171

List of Tables and Figures**Manuscript 1**

Table 1. Demographic Characteristics of 120 Health Professional Students.....	38
Table 2. Item Responses by Males and Females Endorsing DE on the SCOFF.....	46
Figure 1. Health Professional Student Self-Reported Stress Over the Past Two Weeks.....	41
Figure 2. Health Professional Student Perceived Stress Ratings (PSS-10).....	43

List of Appendices

Appendix A. Quantitative Study Consent and Measures.....	171
Appendix B. Qualitative E-mail Interview Invitation.....	177
Appendix C. Qualitative Study Consent and List of Questions.....	179

Introduction and Review of Literature

The transition to university can be a stressful one for students, posing a variety of challenges for those entering academia (Beck, Hackett, & Srivastava, 1997; Law, 2007; Ramsey, Jones, & Barker, 2007; Zascavage, Winterman, Buot, Wies, & Lyzinski, 2012). There are many factors that impact the mental health of university students including life changes and transitions, academic workload, competition, and financial stress (Zascavage et al., 2012). Research has shown that during this time of transition, students experience greater stress than in later years (Jay & D'Augelli, 1991; Zascavage et al., 2012). Undergraduate students who effectively manage stress show improved academic, personal-emotional, and social adjustment (Friedlander, 2007; Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012). Stress can pose challenges for students, with at least 25% of university aged Canadians experiencing a mental health problem, most commonly anxiety or depression, often related to stress (Lunau, 2012). The literature shows that there has been an increase in more complex mental health issues, the use of mental health and counselling services at universities, and the presentation of more complex mental health issues (Lunau, 2012).

While research cited above highlights the effect of stress on undergraduate students, it is important to examine the impact of stress on other student groups, particularly those who provide services to others. The present research stems from the primary author's own training and experience in Clinical Psychology and questions that began to emerge as part of this training and the health professional education field in general. Students in health professional degree programs including medicine, nursing, and

pharmacy can experience additional stressors due to factors including: the challenges of academic pressures and workload (including high expectations for grades and academic performance); entering a complex clinical environment involving the challenges and responsibility of working with and caring for others; needing to gain competencies in the complex areas of interacting with patients and confronting the reality of patient mortality and other burdens inherent in caring for others; professional socialization; and personal stressors (Andrew, McGuinness, Reid, & Corcoran, 2009; Canales-Gonzales, Kranz, Grangerry, & Tanguma, 2008; Gibbons, Dempster, & Moutray, 2008; Lo, 2002; Moffatt, McConnachie, Ross, & Morrison, 2004; Pryjmachuk & Richards, 2007; Pulido-Martos et al., 2012; Radcliff & Lester, 2003). The health professional cultures in which these students train may result in students in these fields believing that they are being held to a different level of expectations (personal, interpersonal, academic, and societal), and that to deviate from these expectations might be viewed as a failure.

Understanding the impact of stress on health professional students is important to consider for many reasons. Stress can have detrimental effects not only on a student's own functioning including mental, physical, and psychological health, but also can have adverse effects on the quality of care to patients (Lo, 2002; Radcliff & Lester, 2003; Sabih, Rashid Siddiqui, & Baber, 2013). Stress in health professionals has been associated with burnout, decreased quality of patient care, and impaired job performance (DiGiacomo & Adamson, 2001; McCann, Beddoe, McCormick, Huggard, Kedge, Adamson, & Huggard, 2013). Stress and burnout can result in negative behavioural changes including: a decreased concern about or detachment from patients; irritability with patients and colleagues, rationalizing failure by blaming patients or the overall

“system”; higher absenteeism and turnover; resistance to change; and can impact the enthusiasm, commitment, and emotional responsiveness of the health professional (DiGiacomo & Adamson, 2001). A potential challenge of being a student in a health professional program is that these students might be viewed as having a different or enhanced set of skills with which to deal with health related problems, including mental and physical health issues; however, this has not necessarily been shown to be the case (Pulido-Martos et al., 2012; Stark, Hoekstra, Lindstrom Hazel, & Barton, 2009). Several questions then emerge about health professional students and their experiences of stress: How stressed are these students?; When they are stressed, how do they actually deal with their stress?; How willing are these students to seek help for their stress?; And, what kinds of interventions might help these students and young professionals deal with their experiences of stress? The current research explores these questions.

Coping with Stress

Stress has been defined as “a perceived discrepancy between the demands of the situation and the resources of the person” and coping as “a process by which people try to manage this perceived discrepancy in a stressful situation” (Niemi & Vainiomaki, 1999, p. 126). Stress has been proposed as both a motivator and a challenge in higher education. In general, people try to alleviate or reduce their experience of stress via the process of coping, in which people use strategies to manage the discrepancy between the perceived demands of a situation and their available resources (Kohn, Hay, & Legere, 1994; Niemi & Vainiomaki, 1999). There are over 400 ways of coping identified in the coping literature, and these strategies have typically been categorized into function (e.g., problem- versus emotion-focused), method (e.g., approach versus avoidance, or active

versus passive) or action (e.g., primary versus secondary control, assimilation and accommodation) (Skinner, Edge, Altman, & Sherwood, 2003). Research has found that more effective coping behaviours can be related to factors including increased age, higher levels of educational experience, social support, and an ability to reflect on one's own experiences (Canales-Gonzales et al., 2008; Zascavage et al., 2012). In addition, research with health professional students has found that those who rely on more active, approach-based and problem-solving coping strategies cope more adaptively with their experience of stress than those who engage in more avoidant or emotion-based coping strategies (Lees & Ellis, 1990; Lo, 2002).

DiGiacomo and Adamson (2001) state that because of the challenges inherent in being a health professional student and a newly practicing health professional, it is essential to help students and new practitioners to be able to “overcome, tolerate, or minimize the negative aspects” of their work, thereby reducing the likelihood of burnout (p.106). Furthermore, in teaching these skills to students early in their education there is a greater likelihood that these individuals might learn the skills needed to help protect them from professional burnout. Students in health professional programs need to have insight about and reflect upon their own physical and psychological health, as stress as a compromise to functioning can impact both their own health as well as that of their patients (DiGiacomo & Adamson; Lo, 2002; Radcliff & Lester, 2003; Sabih et al., 2013).

While research has found that physicians' personal experiences with illness can affect their behaviours and attitudes toward patients, increasing empathy and sympathy, others note that stress and burnout in health professionals can contribute to decreased quality of patient care and poor job performance (DiGiacomo & Adamson, 2001; Dunn,

Green Hammond & Weiss Roberts, 2009; McCann et al., 2013). It is important to examine the nature of maladaptive coping in health professional students because they are the future professionals who will be advising our vulnerable populations about how to manage major life stresses. If unable to manage their own stress in constructive ways, it is less likely that they will be effective in helping individuals who face similar challenges (Edwards et al., 2006; Moore & Cooper, 1996).

It is important to have a better understanding of the stressors health professional students experience and the ways they cope. This can help develop interventions that will help these students learn to cope adaptively and with strategies that will benefit them throughout their academic life and into their future careers. It is not enough to identify the stressors or coping strategies; rather, understanding these factors and applying this knowledge to facilitate further understanding and design effective intervention is key.

Maladaptive Coping Strategies

While many students deal with stress in functional and adaptive ways, others engage in maladaptive behaviours (Whitlock, Eckenrode, & Silverman, 2006; Whitlock & Knox, 2007). The use of maladaptive coping strategies have been linked to test anxiety, academic dissatisfaction, increased alcohol consumption, and depression in students (Nurmi, 1997). Maladaptive coping behaviours found to be particularly prevalent and problematic in the university student population include eating pathology (including problematic behaviours associated with eating and body image, encompassing both disordered eating (DE) and eating disorders (ED)) (Taylor et al., 2006; Wright, Bewick, Barkham, House, & Hill, 2009) and non-suicidal self-injury (NSSI; Gollust, Eisenberg, & Golberstein, 2008; Ross, Heath, & Toste, 2009; White, Trepal-Wollenzier, & Nolan,

2002; Whitlock et al., 2006). As noted by Duggan & Heath (2014), NSSI and DE are self-destructive behaviours that can be easily concealed and are often done in private. They note that self-destructive behaviours can represent a youth or young adults' attempt to modify their feelings and thoughts and can include other behaviours such as substance misuse and engaging in risky behaviours.

NSSI has been defined as intentional direct, deliberate damage of bodily tissue that leads to minor or moderate physical harm, without intention of suicide (Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008; Klonsky, 2007; Klonsky, May, & Glenn, 2013; Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007). Commonly reported methods of NSSI include cutting, burning, scratching, wound picking, skin carving, needle sticking, and bruising, but not socially sanctioned bodily mutilation (Gratz, 2003; Klonsky, 2007). Prevalence rates of NSSI have been found to vary throughout the literature, with rates of approximately 20% in adult clinical samples (Briere & Gil, 1998; Klonsky, 2011; Klonsky, Oltmanns, & Turkheimer, 2003), 1-4% in a general adult population (Briere & Gil, 1998; Klonsky et al., 2003), 10% - 20% in community samples of adolescents in high school (Heath, Schaub, Holly, & Nixon, 2009; Lloyd-Richardson et al., 2007; Muehlenkamp & Gutierrez, 2007; Ross & Heath, 2002), and 14% - 17% of adolescents and young adults having engaged in self-injurious behaviour at least once (Ross & Heath, 2002; Whitlock et al., 2006). Heath and colleagues (2008) note that prevalence of NSSI in the community varies considerably, depending on the way in which NSSI is evaluated. Some research includes checklists of all possible NSSI behaviours and prevalence rates are based on every behaviour in which that person had engaged, thus resulting in higher prevalence rates than those who ask about NSSI behaviours in general, which will

typically have lower prevalence rates. As noted by Ross, Heath, and Toste (2009), this could contribute to the varying prevalence rates in the literature, noting that it makes it more difficult to measure how prevalent NSSI might be in the population. The HIDS, a measure used by Heath and colleagues (2008), is used as a screening measure, in which students are asked to respond to various items outlining different coping strategies. One item, "hurt myself on purpose" screens for NSSI behaviours, which is then followed up this item with a more detailed NSSI questionnaire to those who endorsed using NSSI behaviours to cope with stress (Heath et al., 2008).

Eating pathology is a term that is used to encompass both eating disorders (ED) and disordered eating (DE) behaviour. Eating disorders are complex and multidimensional psychological disorders that are more prevalent in females than males (Giordano, 2005). They are often considered a maladaptive strategy used to cope with underlying issues that can include but is not limited to emotional dysregulation, perfectionism, psychopathology, high levels of anxiety, and a history of abuse (Thompson, Roehrig, & Kinder, 2011). The medical and psychological complications of an ED are significant, and mortality (20%) is the highest of any psychiatric disorders (Giordano, 2005). The DSM-5 (APA, 2013) reports a 1-month prevalence rate for anorexia nervosa (AN) at 0.4% and between 1% - 1.5% for bulimia nervosa (BN), although debate exists about the actual prevalence of these disorders. For example, Taylor and colleagues (2006) report that in young adult females, the prevalence of full-syndrome ED is 2% - 4%, with typical onset around the age of 16-20 years.

Taylor and colleagues (2009) note that prevalence rates found in the literature often do not include individuals who present with Disordered Eating (DE) behaviours or

“partial-syndrome” EDs, suggesting combining those presenting with ED and DE behaviours would far exceed the prevalence rates reported in the literature. DE has been defined as including behaviours symptomatic of eating disorders that do not reach clinical levels and do not warrant a formal clinical diagnosis although they can cause distress, functional impairment, and negative consequences such as depression and poor coping (Ferrier & Martens, 2008). Estimated prevalence rates of DE are thought to be much higher than those of EDs, with rates of DE female university students ranging from 12% - 19% (Keel, Heatherton, Dover, Joiner, & Zalta, 2006; Zivan, Eisenberg, Gollust, & Golberstein, 2009). Keel and colleagues (2006) propose rates between 12% - 19% in first year female university students meeting either full diagnostic criteria or clinically significant subthreshold symptoms of ED’s, while Zivan and colleagues (2009) study found that 18% - 19% of college students had clinically significant eating pathology.

Research indicates that a significant number of women in college engage in unhealthy weight loss behaviours, with some proposing that this might be due to increased pressure and competition to succeed in a college environment (French & Jeffery, 1994). The literature suggests that there appears to be increasing rates of both ED and DE in college women, and White, Reynolds-Maeler, and Cordero (2011) propose that undergraduate university students are an “at-risk population,” noting increases in rates of Eating Disorders - Not Otherwise Specified (EDNOS), although they state that there is still a lack of understanding about the mechanisms and risk factors for the development of eating pathology in this population.

The Royal College of Psychiatrists (2003) suggest that the development and exacerbation of ED among students in university and higher education may result from

academic and social pressures, loss of routine, the challenge of developing an identity, and an absence of course structure that “allows perfectionist traits free rein” (p. 29). It is also proposed that students might be able to better conceal an ED because of a lack of a family mealtime schedule or regular monitoring of meals when a student moves away from home.

Help-Seeking Behaviours

There are many factors that impact the mental health of university students including life changes and transitions, academic workload, competition, and financial stress (Zascavage et al., 2012). While the literature highlights that stress can act as a motivating factor and can help a student to gain strengths and independence, others note that stress can pose challenges for students, with at least 25% of university aged Canadians experiencing a mental health problem, most often stress-related including anxiety or depression (Lunau, 2012).

Students in health professional training programs face particularly high levels of stress and often fail to seek help in dealing with stressors. Tyssen, Vaglum, Gronvold, and Ekeberg (2001) found that even though stress experienced by students in medical school is likely to predict later mental health problems, the students seldom seek help for their stress during their program. Furthermore, Midtgaard, Ekeberg, Vaglum, and Tyssen (2008) note that although a third of medical students report mental health problems requiring treatment, over half of them do not seek professional help to deal with these issues. In one study, a large proportion of medical students felt that they needed to conceal mental and emotional problems, noting the existence of a “hidden distress” in which students fear disclosure of issues (Walter, Soh, Jaconelli, Lampe, Malhi, & Hunt,

2013). While research shows that students in health professional programs face significant stressors and mental health issues, a majority of these students do not seek mental health services to help work through and deal with these stressors and issues (Givens & Tjia, 2002; Midtgaard et al., 2008; Walter et al., 2013). Additional research highlights that students in medicine, pharmacy, and social work report fewer mental health issues and less stress than those in nursing (Beck et al., 1997).

In their review of help-seeking for mental health issues on college campuses, Eisenberg, Hunt, and Speer (2012) state that barriers including stigma account for some of the high prevalence of untreated mental disorders of university students. In addition, they found that students' lack of perceived need for services and a person's negative attitudes and beliefs toward treatment created barriers to seeking help. Research exploring health professional students and their help-seeking behaviours for mental health issues suggests that this could have implications as health professional students become practicing professionals (McCann et al., 2013; Pulido-Martos et al., 2012; Royal College of Psychiatrists, 2003). It has been suggested that physicians are unlikely to seek treatment and at times might diagnose and treat themselves or seek health advice from their colleagues (Tyssen, Rovik, Vaglum, Gronvold, & Ekeberg, 2004). This can be detrimental because untreated or inappropriately treated mental health problems have the potential to negatively influence a physician's work, thereby impacting patient care (Tyssen et al., 2004). Further understanding and development of interventions to encourage help-seeking behaviours can help alleviate some of the stress, maladaptive coping, and mental health issues for these students as well as future patient treatment and safety. Despite mental health services being available, many students are unaware of such

on-campus services, with research suggesting that students who are distressed are more likely to know about services and use them if they perceive that they have a need to use these services (Yorgason, Linville, & Zitzman, 2008). As the research shows, the health professional student body might not seek help when it is needed, for a variety of reasons. Gaining a more in-depth understanding not only of the barriers but also the potential facilitators to help-seeking behaviours is an important step in helping these students cope with stress and learn pro-active coping strategies that can help them into their careers, as well as have implications on patient care.

The Present Research

It is essential to examine the nature of maladaptive coping in health professional students because they are the future professionals who will be advising our vulnerable populations about how to manage major life stresses. If unable to manage their own stresses in a constructive way, it is unlikely that they will be effective in helping individuals who face similar challenges (Edwards et al., 2006; Moore & Cooper, 1996). The present research explored how second year health professional students in medicine, nursing, and pharmacy experience and cope with stress and their lived experiences with help-seeking behaviours. It is imperative to gain a deeper understanding of the nature of the stresses associated with this population and how they cope, and a goal of this research is to inform the development and modification of student support programs. The current research will increase the understanding of health professional student stress, maladaptive coping strategies, as well as facilitators and barriers to help-seeking.

Research Method: Approach and Design

This research includes the use of a sequential quantitative to qualitative mixed method design (QUAN → QUAL; Ivankova, 2014). The use of a mixed methodology design has been noted to be an increasing trend, particularly in applied research (Creswell, 2010). In line with Ivankova's (2014) QUAN → QUAL design, the quantitative design of the first study was essential to the development of the questions that were asked in the interviews in the second study. This allowed for the qualitative interviews to contribute a more in-depth analysis and exploration of the data, which makes this research stand out in the current body of literature in this area. The questions regarding prevalence and level of student stress and coping strategies were explored from a quantitative perspective, in part due to the measures available in the current body of research to explore stress and coping in other populations. In addition to following Ivankova's (2014) sequential design, the present research also followed Green and Thorogoods (2004) view that qualitative research can include the opening of new lines of inquiry and generating new lines of exploration based on findings emerging from the quantitative research. Given the clinical psychology focus of the author's training and some of the questions regarding student experiences with stress and help-seeking behaviours, it became important to explore these topics in greater depth through qualitative interviews. It is important to note that the goal of the qualitative interviews is to be more descriptive than theoretical, and that the primary purpose for conducting the interviews was to gain confidence in the quantitative findings, opening new lines of inquiry (i.e., help-seeking behaviour), as well as enhancing outcome interpretation and the integration of the quantitative and qualitative findings. Furthermore, the primary

researcher was new to qualitative research and sought to design and follow-through on a study that was in line with mixed method designs, as well as to create a final product that was of clinical utility and application.

In both the quantitative and qualitative components of the research, systematic and non-probabilistic sampling was used in which students in their second year of a health professional program were asked to complete a survey, and then asked to self-select and participate in a qualitative interview. As highlighted by Mays and Pope (1995), the purpose of using such systematic and non-probabilistic sampling was to help identify the nature of stress, coping, and help-seeking in a group of students relevant to that which is being studied, with the goal of further understanding these students and their issues both within the context of their own educational experiences and also to expand beyond these students to provide information that may then be relevant to other health professional students.

Given the mixed method design of this research, it is also important to note some of the challenges in writing this document. For the quantitative component of the research, the document is written in an impersonal style. This is in contrast to the writing of the qualitative component, in which a personal rather than impersonal stance is adopted to explore the data, analysis, and interpretation of the results. While these two styles might seem contradictory, in fact they complement each other. The quantitative approach involved a broad-brush data collection and examination of experienced issues from a large group of students in a way that allowed for a feeling of confidentiality and anonymity. The analysis of this data explores overall trends among students and the different disciplines. The interviews, however, based on the data from the quantitative

study, take a more personal stance - one that allows the student to have a voice, and myself as the writer to also become part of the co-construction of the research via the interview process, the iterative analysis process, and the exploration and interpretation of the overall findings.

Co-authorship Statement

Although the studies reported in this thesis are co-authored by Drs. Olga Heath and Natalie Beausoleil, I am the primary author of the work presented. As primary author, I was responsible for the development of the research questions as well as the project coordination. As part of these responsibilities, I formulated the line of inquiry with health professional students, recruited participants, collected and analyzed the data, as well as the writing of this thesis in full. As my doctoral supervisors, Drs. Olga Heath and Natalie Beausoleil were advisors throughout, including the conceptualization of the study, the formulation of the research questions, and the writing of the thesis. The data used in this thesis were collected under the scope of Dr. Heath's research project at Memorial University. In addition, the current research was supported by a doctoral fellowship by the Newfoundland and Labrador Centre for Applied Health Research (NLCAHR).

CHAPTER 2
MANUSCRIPT 1

Student Stress, Prevalence, and Overlap of Maladaptive Coping Behaviours Among
Second Year Health Professional Students

Pamela L. Button, Dr. Olga Heath
Memorial University, St. John's Newfoundland

Abstract

Students transitioning into health professional programs find themselves facing significant academic stress as well as the challenges of professional socialization and preparation for entrance into practice-based environments (Lo, 2002). While many students deal with stress in functional and adaptive ways, others engage in maladaptive behaviours (Whitlock & Knox, 2007). Examples of adaptive functioning include approach strategies such as problem solving, talking with people, exercise, and prioritization; examples of maladaptive functioning include avoidance strategies such as procrastination, distraction, and substance use such as alcohol, smoking, or drugs (Skinner et al., 2003). This study examines the self-reported stress levels and prevalence of the use of the maladaptive coping strategies including non-suicidal self-injury, eating pathology, and alcohol use in 120 health professional students in the second year of medicine, nursing, and pharmacy programs. These students completed an adapted How I Deal with Stress (HIDS) Questionnaire, the Perceived Stress Scale - 10 items (PSS) and the SCOFF. Students reported experiencing high levels of stress over the past two weeks (mean score 7.3 out of 10) on the single-item HIDS, and higher than average levels of stress on the PSS. Students in nursing reported experiencing significantly higher levels of stress than those in medicine, although neither medicine nor nursing differed significantly from pharmacy. Females reported significantly higher levels of stress than males. In terms of coping strategies, as measured by the HIDS, 2.5% of students reported NSSI behaviours, which is below rates found in other research. In contrast, 85% of students reported using eating as a coping strategy, 44% coped with stress by trying to control

their weight on the HIDS, 65.8% coped by drinking alcohol, and 17.5% were at risk of having a diagnosable eating disorder, as measured by the SCOFF.

Introduction

Student Stress

Niemi and Vainiomaki (1999) define stress as “a perceived discrepancy between the demands of the situation and the resources of the person” and they define coping as “a process by which people try to manage this perceived discrepancy in a stressful situation” (p. 126). Stress has been implicated as both a motivator and a challenge in higher education. In their report *The Mental Health of Students in Higher Education*, The Royal College of Psychiatrists (2003) highlight that “stress is not pathological in itself, and indeed it may be necessary for maximal performance” while also recognizing that stressors can contribute to a high level of emotional distress and have mental health implications for students (p.7). It has been noted that higher education is associated with significant stressors including: the transition to living away from home; a less structured environment; need for independent study; financial pressures; and, as the number of mature students increases, additional demands can include domestic responsibilities, including child care. Other studies suggest that higher education is also a time in which students can experience heightened anxiety, stress, or depression that can have implications for student mental health and functioning (Cooke, Bewick, Barkham, Bradley, & Audin, 2006; Lunau, 2012; Zascavage, Winterman, Buot, Wies, & Lyzinski, 2012). Furthermore, it has been proposed that the stress of university might exacerbate or precipitate emotional and psychiatric problems in some students (Eisenberg, Hunt, & Speer, 2012).

Health professional student stress.

It has been proposed that students in health professional programs face additional stress based on practice-based environments and professional expectations (Lo, 2002). Students in health professional programs have been found to experience three main sources of stress: academic (e.g., examinations, work-load, competition), clinical (e.g., placements, mistakes, patient mortality), and personal (e.g., finances, lack of free time) (Gibbons, Dempster, & Moutray, 2008; Park & Adler, 2003; Prymachuck & Richards, 2007). These stresses related to health professional programs have been found to impact students' physical and mental health (McCann, Beddoe, McCormick, Huggard, Kedge, Adamson, & Huggard, 2013; Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012; Wolf, 1994).

A survey of the literature reveals that stress is a common phenomenon and can contribute to burnout for students in health professional programs (Beck, Hackett, & Srivastava, 1997; McCann et al., 2013). Dealing with the mortality of patients, heavy work-loads, lack of confidence and concerns about incompetence, performing under supervision, low autonomy, and a discrepancy between the theory that is taught in school and the application of the skills in a real-work setting have all been found to be sources of stress for health professional students (Gibbons, 2010; Lees & Ellis, 1990; McCann et al., 2013; Pulido- Martos et al., 2012).

Beck and colleagues (1997) found that nursing students experienced higher levels of stress and more physical and psychological symptoms than students in social work, medicine, and pharmacy, suggesting that this could lead to burnout while still in training. This relationship appears to persist into post-licensure practice. Pulido-Martos and

colleagues (2012) note that nurses report a higher number of stressors and negative health consequences when compared to other health professionals. This highlights that nurses in particular and health professionals in general experience high levels of stress, and this stress can lead to burnout and impact patient care (Lo, 2002; Radcliff & Lester, 2003; Sabih, Rashid Siddiqui, & Baber, 2013).

Coping

Coping occurs when people use strategies to manage the perceived discrepancy between the demands of a situation and their perception of the resources available to deal with those demands (Kohn, Hay, & Legere, 1994; Niemi & Vainiomaki, 1999). In a review and critique of methods of classifying coping strategies, Skinner, Edge, Altman, and Sherwood (2003) note that the literature identifies over 400 ways of coping. According to the authors, coping strategies are often grouped into functions (e.g., problem - versus emotion-focused), methods (e.g., approach versus avoidance, or active versus passive) or action (e.g., primary versus secondary control, assimilation and accommodation).

Similarly, the coping literature highlights a myriad of ways to operationalize and conceptualize coping. One of the oldest and most commonly used distinctions for coping is that of approach versus avoidance (Skinner et al., 2003). Approach coping brings an individual into closer contact with a stressful situation to deal with the stressor directly while avoidance coping is comprised of ways of coping that allow an individual to withdraw from the stressor. While both approach and avoidance can be considered adaptive, Skinner and colleagues (2003) note that generally, approach strategies provide a person a chance to act on and integrate their stressful experiences. This affords the

individual the opportunity to learn how to deal with the stressor in a way that can help them in the future. Examples of approach strategies include: problem solving, seeking understanding, positive thinking, and seeking social support. Avoidance, on the other hand works to alleviate distress by shifting one's attention away from the stressor, while not necessarily helping the person to learn how to deal with the stressor in the future. Examples of avoidance can include: procrastination, self-isolation, trying not to think about the issues, denial, distraction, and risky behaviours such as drinking, drugs, or smoking (Skinner et al., 2003). Research has found that university and college students use both coping strategy styles including adaptive strategies (involving acceptance and positive action), and those that are based on avoidance behaviours which are typically deemed maladaptive (Brougham, Zail, Mendoza, & Miller, 2009). It is important to note that both adaptive and maladaptive coping can provide relief from stress. However, maladaptive coping typically provides short-term relief, rather than the more long-term relief typically provided by more adaptive coping strategies.

The distinction between approach or avoidance, and also adaptive or maladaptive coping occurs on a continuum, in which behaviour can fit into either category depending on the extent to which it is used or the purpose that it serves. Despite this distinction, coping strategies are often presented as a dichotomy. In the current research, adaptive coping is defined as consisting of behaviours or actions that help a person to deal with the stressor and maladaptive coping consists of behaviours that a person uses to avoid dealing with or is unrelated to the stressor. This study explores avoidant coping strategies including non-suicidal self-injury (NSSI; including behaviours that are self-destructive to the body that are not socially sanctioned and are without suicidal intent; Favazza &

Contiero, 1989) and eating pathology (encompassing problematic eating behaviours associated with eating and body image) which are particularly problematic because of their apparent prevalence and significant negative impact in the university student population. This study will also explore the use of alcohol in this population, as research has found that use of alcohol has been prevalent in health professional students (Baldwin, Scott, Agrawal, Bartek, Davis-Hall, & Reardon, 2006; Baldwin, Scott, DeSimone, Forrester, & Fankhauser, 2011; Steed, Groome, Rice, Simpson, Day, & Ker, 2012).

Research has found that a person often relies on similar coping strategies throughout his or her life (Park & Adler, 2003), although coping can be influenced by factors including age (APA, 2013; Zascavage et al., 2012), gender (APA, 2013), experience, and exposure to education on how to cope (Zascavage et al., 2012). The American Psychological Association Stress in America study (2013) found that as people age, their ability to manage stress improves and that women report experiencing higher levels of stress compared to men. Zascavage and colleagues (2012) found that both age and general educational experience can impact the ways in which students cope with stress, with senior students and graduate students reporting significantly less stress than those earlier in their academic program. With this in mind, it is important to not only examine stress and coping in students based on their education level, but also based on variables including age and gender, as these factors might impact ability to cope with stress.

Niemi and Vainiomaki (1999) conducted a longitudinal study of Finnish medical students during their preclinical medical training. It was found that students reported experiencing moderate to high levels of stress throughout their program with an increase

in stress related symptoms as the students progressed from first year to second year in their programs. Reflection on priorities and reprioritizing were found to be the most adaptive coping strategies, with students who endorsed using these coping strategies reporting a stress level that remained relatively low and stable during their preclinical years when compared to their peers. It is important to note, however, that while the coping strategy of “reflection on priorities” was found to be the most adaptive, the authors did not specify how this strategy was operationalized for measurement. Niemi and Vainiomaki caution that the students who did not report using any coping strategies and those who primarily coped using social means appeared to be at a negative risk. The authors hypothesize that those who reported not having any coping strategies might not be able to articulate their means of coping, which they suggest demonstrates a non-reflective and avoidant coping style contributing to poor stress management. The authors also propose that those who cope socially appear to have a lower expectation of success, dissatisfaction with their own performance, and a decreased feeling of self-mastery of medical skills, as evidenced by scores on self-report measures of success and achievement. The authors propose that it is important to identify high levels of stress early to help students develop more adaptive ways to cope with stress.

Park and Adler (2003) examined the coping style of first year medical students at the start and end of their first year of training. Seventy-one students responded to mailed questionnaires (51% response rate) assessing demographic characteristics, coping style (problem- or emotion-focused), physical and psychological health, and well-being prior to the start of their schooling; 51 completed the same measures at the end of the first year of their program. Problem-focused coping was defined as an active attempt to solve the

problem or stressor. Emotion-focused coping was defined as dealing with the emotions generated by the problem involving either cognitively *approaching* the problem and changing the meaning of the problem into something more benign (i.e., positive reappraisal) that they felt better able to handle or *avoiding* the problem through denying distress by evading or escaping it. It was found that while students' physical and psychological well-being declined throughout the academic year, the greater the use of problem-focused and approach emotion-focused coping, the less their physical health declined. Although coping method did predict physical health in the study, it was not found to predict change in psychological health. Park and Adler suggest that there was stability in the coping styles used by these students during their training, and propose that teaching problem-solving coping and approach emotion-focused coping including positive reappraisal strategies early in medical school curriculum might contribute to a greater likelihood that these strategies would be used throughout training, thus decreasing the impact of stressful situations on physical health. As Park and Adler (2003) note, it is imperative to gain better understanding about the ways in which health professional students cope, recognizing that how they learn to cope during school likely impacts how they cope in their careers.

Maladaptive coping.

While many students deal with stress in functional and adaptive ways, others engage in maladaptive behaviours (Whitlock, Eckenrode, & Silverman, 2006; Whitlock & Knox, 2007). Maladaptive coping behaviours found to be particularly prevalent and to have major negative impact in the university student population include pathological eating (Taylor et al., 2006; Wright, Bewick, Barkham, House, & Hill, 2009) and non-

suicidal self-injury (NSSI; Gollust, Eisenberg, & Golberstein, 2008; Ross, Heath, & Toste, 2009; White, Trepal-Wollenzier, & Nolan, 2002; Whitlock et al., 2006). Other maladaptive coping behaviours found in university students include heavy drinking, high-risk behaviours (including nicotine use, drug use, externalizing behaviours such as anger and fighting), procrastination, self-distraction, denial, disengagement and avoidant behaviours (Andersson, Berglund, Johnsson, & Ojehagen, 2009; Lo, 2002). Research indicates that such high risk and self-destructive behaviours typically begin in adolescence and young adulthood, and often stem from an individual trying to deal with uncomfortable feelings and thoughts (Nock, 2010; Svirko & Hawton, 2007). While many of these behaviours are public, Duggan and Heath (2014) note that the behaviours of NSSI and eating pathology are typically engaged in privately and can be easily concealed. This poses a challenge in terms of intervention and treatment, as often individuals who engage in these behaviours need help but fail to identify the eating pathology or the NSSI or may seek treatment for another presenting issue.

Eating pathology is a term that encompasses both disordered eating (DE) and eating disorder (ED) behaviours. Eating pathology includes problematic behaviours associated with eating and body image including restriction of food intake, excessive exercise, binge eating and/or purging (e.g., vomiting or using laxatives) and experiencing body dissatisfaction (Giordano, 2005; Taylor et al., 2009) which may lead to the development of an eating disorder. The DSM-5 defines Feeding and Eating Disorders as “persistent disturbances of eating or eating related behaviour that results in altered consumption or absorption of food that significantly impairs physical health or psychosocial functioning.” (p.329). Anorexia Nervosa (AN) has three essential features

including: persistent energy intake restriction; intense fear of gaining weight or becoming fat, or persistent behaviour that interferes with weight gain; and a disturbance in self-perceived weight or shape. In addition, the individual maintains a body weight below the typical level for age, sex, development, and physical health. The DSM-5 notes that a 12 month prevalence of AN is reported to be less than 0.4%, with a 10:1 female to male ratio of presentation. The DSM-5 also notes that the onset of AN is often associated with a stressful life event, such as leaving home for college. Bulimia Nervosa (BN) is defined as having essential features including: recurrent episodes of binge eating; recurrent inappropriate compensatory behaviours to prevent weight gain; and self-evaluation that is influenced by body shape and weight. It is thought to have a 12 month prevalence rate of 1 - 1.5% among young females, and has a 10:1 female to male ratio. Taylor et al. (2006) report that the prevalence of full-syndrome eating disorders in young adult females is 2% - 4%, with average onset around 16-20 years of age. These prevalence estimates do not include individuals who present with eating pathology or “partial-syndrome” ED’s, suggesting that those presenting with either eating disorders or disordered eating behaviours would far exceed this estimated 4% range. In addition, the literature notes that given the new criteria listed in the DSM-5 which lowers the threshold for inclusion in AN and BN, prevalence and incidence of this diagnosis are expected to rise (Birgegard, Norring, & Clinton, 2012).

Disordered eating as highlighted by Ferrier and Martens (2008) includes behaviours symptomatic of eating disorders that do not reach clinical levels and do not warrant a formal clinical diagnosis although they can cause distress, functional impairment, and negative consequences such as depression and poor coping. Estimated

prevalence rates of DE are thought to be much higher than those of EDs, with rates of DE female university students ranging from 12% - 19% (Keel, Heatherton, Dover, Joiner, & Zalta, 2006; Zivin, Eisenberg, Gollust, & Golberstein, 2009).

NSSI has been defined as “self-inflicted destruction of the body for purposes not socially sanctioned and without suicidal intent” (Favazza & Conterio, 1989). There is a large range reported of NSSI incidence in the literature, with estimates in non-clinical community samples of adolescents and young adults found to vary from 4% - 38% (Heath, Toste, Nedecheva, & Charlebois, 2008). While an increase in NSSI has been a concern for health care professionals, gaining a better understanding about the prevalence and determinants of NSSI has been challenging. Part of this challenge has been a lack of consistency in the definition and measurement of NSSI. Historically, this lack of consensus has contributed to the difficulty of objectively measuring and quantifying this maladaptive coping strategy (Hasking, Momeni, Swannell, & Chia, 2008; Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008). While there is agreement that self-injurious behaviours are increasing in both clinical and community populations, others note that this is difficult to establish empirically, and that it is possible that increasing rates might be due to an increase in the knowledge about NSSI and level of comfort for seeking services as well (Heath, Schaub, Holly, & Nixon, 2009). A survey of the literature reveals a shifting landscape of prevalence estimates for those who engage in NSSI behaviours. These numbers shift, based on the population (e.g., clinical vs. community), age range (adolescent, university aged), and co-morbidities. It is imperative not only to assess whether a person self-injures or not, but to also examine the frequency of the different forms of NSSI engaged in, potential risk factors, and its prevalence among different age

groups (Heath et al., 2009). It is of note that while NSSI was considered a part of Borderline Personality Disorder in the DSM-IV-TR (APA, 2000), in the newly revised DSM-5 (APA, 2013) it is now viewed as its own distinct condition for further study in Section III: Emerging Measures and Models.

Based on the challenges to define and operationalize NSSI, the International Society for the Study of Self-injury (ISSS; 2007) put forth the following definition:

The deliberate, self-inflicted destruction of body tissue resulting in immediate damage, without suicidal intent and for purposes not socially sanctioned. As such, this behaviour is distinguished from: suicidal behaviours involving an intent to die, drug overdoses, and other forms of self-injurious behaviours, including culturally-sanctioned behaviours performed for display of aesthetic purposes; repetitive, stereotypical forms found among individuals with developmental disorders and cognitive disabilities, and severe forms (e.g., self-immolation and auto-castration) found among individuals with psychosis.

Eating pathology (i.e., both DE and ED) and NSSI have been found to both co-exist and co-vary (Favaro & Santonastaso, 2000; Ross et al., 2009; Sansone & Levitt, 2002; Svirko & Hawton, 2007; Thomas, Schroeter, Dahme, & Nutzinger, 2002). Both behaviours have been correlated with detrimental and negative outcomes; DE has been associated with development of ED, low self-esteem and feelings of incompetence, and NSSI has been associated with increased risk of suicide and significant day-to-day dysfunction (Ferrier & Martens, 2008; Klonsky, May, & Glenn, 2013; Whitlock & Knox, 2007; Wright et al., 2009). Favaro, Ferrara, and Santonastano (2004) note that while the research has proposed a relationship between ED and NSSI, this relationship is “very

complex” and highlight that much of the research is based on clinical populations which may obscure the potential relationship between these coping strategies. In addition, prevalence rates can be impacted by the way in which NSSI and DE/ED behaviours are operationalized, defined, and measured.

Beukes, Walker, and Esterhuyse (2010) examined stress and disordered eating behaviours in female students at a South African University. They found that there was a statistically significant relationship between perceived stress and a drive for thinness, bulimic behaviour, cultural differences, and body dissatisfaction. They also found that perceived stress was significantly related to bulimic behaviour and body dissatisfaction among the first year females. The authors contend that stress is a risk factor for the development of DE suggesting that increased levels of stress, particularly when avoidant coping behaviours are utilized, can be a risk factor for the development of eating pathology.

In addition to the maladaptive coping strategies of eating pathology and NSSI, other maladaptive coping strategies have been examined in youth and young adult populations, including university students. Drinking alcohol has been identified as a means of coping with stress in over 10% of pharmacy students (Baldwin et al., 2011), and approximately 11.5% of other health professional and allied health students (Baldwin et al., 2006). In a study of medical students, Steed and colleagues (2012) found that 88% perceived alcohol addiction to be a significant problem among medical students, and 54% viewed it to be a significant problem among junior doctors. The Canadian Medical Association (CMA) Guide to Physician Health and Well-Being (2003) notes that there is an increasing rate of drug and alcohol issues in physicians signaling the need to better

understand physician and medical student experiences of stress and coping. The present research explores the impact of stress on health professional students and their use of maladaptive coping strategies including NSSI, eating pathology, and alcohol use.

Intervention

DiGiacomo and Adamson (2001) state that it is essential to help health professional students and new practitioners learn and develop skills to “overcome, tolerate, or minimize the negative aspects” of their experiences given the stressors inherent in their programs as well as later challenges as newly practicing health professionals (p.106). Furthermore, they suggest that by not teaching these skills to students early in their education there is a greater likelihood that these individuals might later suffer from professional burnout, ultimately impacting both the health professional as well as their patients.

There is evidence to suggest that providing interventions and increasing education around stress and coping during student health professional education can increase ability to deal with stress and reduce burnout during school and into careers (Niemi & Vainiomaki, 1999; Stark, Hoekstra, Lindstrom Hazel, & Barton, 2012). Niemi and Vainiomaki (1999) propose a link between the ways in which a student in medical school learns to cope and the way in which they later deal with experiences as a professional, suggesting that the strategies developed during training can provide a foundation for managing stress later in professional situations. Stark and colleagues (2012) note that providing a course on health promotion for students in nursing and occupational therapy significantly increased students’ positive self-care behaviours over the entire school year, suggesting that such immediate behaviour change translates to longer-acting change.

Gaining a greater understanding about health professional student stress and coping can provide information that can be utilized to target and develop effective and appropriate interventions.

The impact of maladaptive coping in the face of perceived stress can impact not only health professionals, but also those patients with whom they work. While research has found that people typically tend to use and rely on the same coping strategies to cope with stress, Park and Adler (2003) have found that factors such as age, experience, and intervention can change the coping strategies that a person uses. Given the potential risks of health professional stress and maladaptive coping to both practitioner and patient, gaining insight into how students cope might help to inform interventions and help facilitate change before such problems arise.

The Current Study

The health professional student stress literature highlights that these students experience high levels of stress and use a variety of both adaptive and maladaptive coping strategies. Little is known about the use of maladaptive coping strategies in this population, including the specific strategies of NSSI and eating pathology (including both DE and ED behaviours) and the more general strategies (including avoidance, engaging in risky behaviours, externalizing behaviours, smoking, doing drugs, and drinking alcohol). Further understanding of the use of these strategies will inform student mental health services and the health professional training programs about these students' experienced level of stress and use of coping strategies. These students are generally perceived to be very strong students who manage stress well and the findings of this study will help to confirm or challenge this perception which, if incorrect, may do a disservice

to these students. Findings from this research are expected to assist the University Counselling Centre located at the university that the participating students attended, in planning how to best meet the mental health needs of this group of students. In addition, the findings will be shared with each training program to allow them to understand and address the internal needs of their students and respond appropriately to those needs. One of the main goals of this applied research is to identify the major stressors that are troubling the health professional students, their coping strategies, and willingness to seek help all of which may affect them not only in their student years but also as practicing professionals impacting both them and their patient care.

The central objective of the current study was to explore second year health professional students' level and experience of stress and the prevalence rate of the maladaptive coping behaviours. Research questions include:

1. What are the self-reported stress levels of second year health professional students?
2. What percentage of health professional students use the maladaptive coping strategies of NSSI and eating pathology to cope with stress?
3. What other maladaptive coping strategies do students use to manage their stress?

Method

Participants

Participants included students enrolled in the second year in the Faculty of Medicine and the Schools of Nursing and Pharmacy at an Atlantic Canadian university. Second year students were selected for this research based on consultation with faculty. These faculty members suggested that the reasons for selecting second year students

were because they would have learned to cope with the stress of being in a new program, and would have recently had or would be anticipating patient contact. All students were asked to participate in the first study of the research; those who completed the first study were invited to participate in the following study, a qualitative interview. For each study of the research, consent was sought and obtained from participating students, and students were informed that they could withdraw from the research at any time with no penalty.

Participants in the first study included 120 out of a possible 125 students (82 females, 38 males), with a response rate of 96%. There were 54 students from the Faculty of Medicine (30 females, 24 males), 30 from the School of Nursing (28 females, 2 males) and 36 from the School of Pharmacy (24 females, 12 males). The average age of the participants was 23.02 ($SD = 3.55$).

Measures

How I Deal with Stress Questionnaire (HIDS; Ross & Heath, 2002, adapted by Heath, 2008). (Appendix A). This questionnaire incorporates the first part of the two part *How I Cope With Stress* questionnaire developed by Ross and Heath (2002) with demographic questions about age, gender, sexual orientation, program, population of the town they grew up in, country of permanent residence and country of birth. This adaption of the HIDS measure included only Part I of the two part HIDS (Ross & Heath, 2002), as Part II (which included more detailed questions about NSSI) was removed as required by ethics due to time limitations with regard to data collection time during the final 15 minutes of class time. In addition, there was expressed concern from faculty about having students completing a detailed questionnaire regarding NSSI behaviours while sitting

close enough to another student to be able to read their responses. The adapted version retained a list of 24 coping strategies commonly used by students to deal with stress including activities such as reading, crying, listening to music, drinking alcohol, doing risky things, eating, trying to control one's weight, or physically hurting oneself on purpose. For each of the coping strategies, participants are asked to indicate if they have engaged in the behaviour never, once, few times, or frequently. An additional item allows for participants to identify any additional coping strategy they commonly use to deal with stress. This questionnaire also asks participants to rate their experience of stress over the past two weeks on a 10-point scale (from 1 = *no stress* to 10 = *the most stressed I have ever felt*). This modified version of the measure has been used in other research, acceptable internal consistency was found, with a Cronbach's alpha of .65 (Duggan, Button, & Heath, 2010). The original HIDS has been found to have a Cronbach's alpha of .78, indicating reasonable internal consistency (Heath, Ross, Toste, Charlebois, & Nedecheva, 2009).

SCOFF (Morgan, Reid, & Lacey, 1999). This self-report measure contains five dichotomous yes/no questions addressing the core features of Anorexia Nervosa (AN) and Bulimia Nervosa (BN). When used in screening in applied settings, this measure includes items that "raise suspicion that an eating disorder might exist" with a score ≥ 2 indicating concern for the presence of an ED. Questions include whether one vomits because of feeling full, has experienced worry about loss of control over how much one eats, has experienced weight loss over a period of time, holds the belief that one is fat when others say they are thin, and if food dominates one's life. The SCOFF has

been found to have good validity and reliability when compared with DSM-IV diagnosis from a clinical interview, with a 100% sensitivity for detecting AN and BN, and an 84.6% sensitivity for detecting EDNOS in a university student population (Hill, Reid, Morgan, & Lacey, 2010). In a primary care setting, the SCOFF had a sensitivity of 84.6% and a specificity of 89.6% for detecting all cases of AN and BN and 78% of EDNOS cases (Hill et al., 2010). It has also been found to be significantly correlated with the EDE-Q global score (a standardized eating disorder diagnostic self-report measure), with a correlation of 0.70 (Mond et al., 2008).

Perceived Stress Scale - 10 Item (PSS-10; Cohen, Williamson, Spacapam, & Oskamp, 1988). This scale measures the degree to which a person appraises events in their life as stressful. Items were designed to assess how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale includes ten items, ranked on a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*). Examples of items include: “how often have you been upset because of something that happened unexpectedly?” and “how often have you felt nervous and “stressed?” over the past month. Total scores range from 0 to 40. PSS-10 scores are obtained by reverse scoring on the positively-worded items and summing across all 10 items. Higher composite scores are indicative of higher perceived stress and more difficulties with making lifestyle change, an increase in one’s vulnerability to compromised health, and increased susceptibility to stress-induced illness (Kelly & Percival, 2006). While Cohen and colleagues (1988) note that there are no cut-offs for high, medium, or low stress, Kelly and Percival (2006) developed an interpretation guideline outlining total scores on the PSS-10, perceived stress level, and health concern. They indicate that a score between 0-7

indicates a *much lower than average* stress level, with very low health concern; scores of 8-11 indicate *slightly lower than average* stress and a low health concern; scores of 12-15 denoting *average* stress and health concern; 16-20 indicating *slightly higher than average* perceived stress and a high level of health concern; and finally, a score of 21 and above suggesting *much higher than average* perceived stress and very high health concern. The PSS-10 has been found to have a Cronbach's alpha reliability of 0.89, and has been found to be a reliable and valid instrument for assessment of perceived stress in college students (Roberti, Harrington, & Storch, 2006).

Procedure

Study procedures were approved by the Health Research Ethics Board as part of a larger study examining student stress and coping. Participants were recruited through the Faculty of Medicine and the Schools of Nursing and Pharmacy. The primary researcher was admitted at the end of three lecture periods, one for each of the health professional programs, where students were given a verbal explanation of the study, informed that their participation was voluntary and they could withdraw at any time. Students were given a package containing the information letter, informed consent, the questionnaires, and an invitation to be contacted via e-mail for participation in the following phase of the research in a manila envelope (Appendix A). Students were asked to complete an anonymous code that would allow data from subsequent phases to be linked to their data. Students were also provided with information about the University Counselling Centre should they become distressed.

Students were allotted fifteen minutes to complete the measures. When students completed their survey they were asked to seal their envelope and deposit it in a box at the front of the room and were thanked for their time.

Results

Demographics

The 120 students who participated completed a demographic information section of the survey, as shown in Table 1. A one way Analysis of Variance (ANOVA) found a significant difference between the ages of students in the three health professional programs, $F(2, 117) = 19.75, p = .00$. Post-hoc comparisons using the Tukey HSD test indicated that the mean age of medical students was significantly higher than students in nursing and pharmacy. The ages of those in nursing and pharmacy did not differ significantly from one another.

Table 1

Demographic characteristics of 120 health professional students.

Demographics	N	%	
Gender			
Female	82	63.8	
Male	38	31.7	
Health Professional Program			
Medicine	54	45.0	
Female	30	55.6	
Male	24	44.4	
Nursing	30	25.0	
Female	28	93.3	
Male	2	6.7	
Pharmacy	36	30.0	
Female	24	66.7	
Male	12	33.3	
	N	Range in years	$M(S.D)$

Age				
Overall	120	18-38	23.03	(3.55)
Medicine	54	22-38	24.89	(3.37)
Nursing	30	18-28	20.70	(2.09)
Pharmacy	36	19-32	22.14	(3.34)

Students were asked if they had completed any workshops or educational sessions covering topics on stress, mindfulness, or developing skills in life balance, and 35% ($n=42$) reported that they had, while the remaining 65% ($n=78$) had not. A Chi-squared test for independence indicated a significant association between health professional program and completion of stress, mindfulness, or skill development through participation in workshops and/or information sessions, $\chi^2(2, n = 120) = 2.14, p = .00, \text{phi} = .42$. Of the 54 students in medicine, 55.6% of the students had completed such workshops, while 27.8% of students in pharmacy and 6.7% of those in nursing participated in such opportunities. When split by gender, it was found that 31% of participants who had attended a workshop or other educational experience were male and 69% were female, although this was not a significant difference, $\chi^2(1, n = 120) = .02, p = .90, \text{phi} = -.01$.

There were further significant differences between faculty based on educational background; a Chi-squared test for independence found a significant association between health professional program and completion of an undergraduate degree, $\chi^2(2, n=120) = 3.69, p = .00, \text{phi} = .56$. A total of 87% ($n = 47$) of medical students indicated that they completed an undergraduate degree, while 33.3% ($n = 10$) of nursing students and 30.6% ($n = 11$) of pharmacy students reported completion of an undergraduate program.

Student Stress

Two measures of self-reported stress were used in this study: one was a single Likert scale question asking students to rate their level of stress over the past two weeks and the other using a 10-item Perceived Stress Scale (PSS-10; Cohen et al., 1988). The Likert scale measure has not been psychometrically evaluated, while the PSS-10 measure has been found to be both reliable and valid. The relationship between the single item self-reported stress measure and the PSS-10 was investigated using a Pearson product-moment correlation coefficient. There was a strong, positive correlation between the two variables, $r = .68$, $n = 117$, $p = .000$, indicating a strong relationship between the two measures.

The How I Deal With Stress (HIDS) self-report stress measure.

Overall, the total mean self-reported stress of the health professional students ($n = 117$) was 7.3, $S.D. = 1.74$, on a scale of 1-10. A one-way between-groups Analysis of Variance (ANOVA) was conducted to explore self-reported level of stress students had experienced over the two weeks prior to completing the measures (ranging from 1 = *no stress at all* to 10 = *the most stressed out you have ever felt*) and the program that the student was enrolled in. There was a statistically significant difference in self-reported stress for students in the health professional programs of medicine, nursing, and pharmacy: $F(2, 114) = 8.58$, $p = .00$, with a large effect size of .13, calculated using eta squared. Post-hoc comparisons using the Tukey HSD test indicated that the mean self-reported stress for students in medicine ($M = 6.71$, $SD = 1.61$) was significantly lower than the self-reported stress for students in nursing ($M = 8.27$, $SD = 1.57$). Self-reported

stress for students in pharmacy ($M = 7.34$, $SD = 1.73$) did not differ significantly from those students in either medicine or pharmacy.

An independent samples t-test was conducted to compare the self-reported stress scores on the HIDS for males and females. There was a significant difference in the scores for females ($n = 81$, $M = 7.77$, $SD = 1.49$) and males ($n = 36$, $M = 6.25$, $SD = 1.84$); $t(115) = -4.72$, $p = 0.00$. The magnitude of the differences in the means (mean difference = -1.52 , 95% CI: -2.15 to $-.88$) was large (eta squared = 0.20). A multiple regression analysis was conducted to assess the extent to which the variables of age, gender, and program accounted for the variance in the student self-reported stress. The model (including age, gender, and program) explained 19.7% of the variance in perceived stress, with gender accounting for the strongest unique contribution to self-reported stress, with a beta coefficient of $.37$, $p = .00$. Neither age nor program was found to make a unique contribution to the variance (beta = $-.15$, $p = .11$ and beta = $.07$, $p = .43$, respectively).

Figure 1: Self-reported stress over the past two weeks

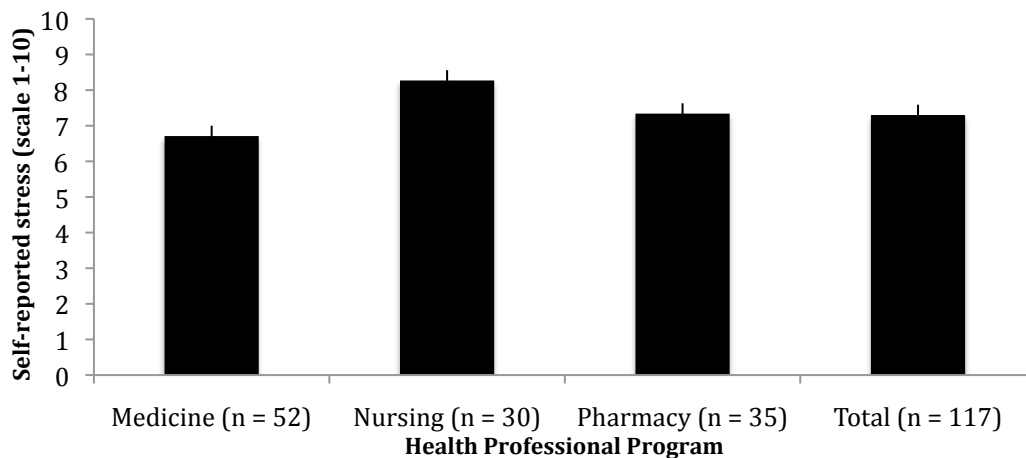


Figure 1: Health professional student self-reported stress based on the HIDS.

The Perceived Stress Scale (PSS-10) self-report stress measure.

Students also completed the Perceived Stress Scale-10, used to assess their perceived stress over the past month. Higher PSS-10 scores are associated with higher levels of stress and indicate that the stress is interfering with a persons' lifestyle and functioning (Cohen et al., 1998). Overall, on this measure, the health professional students ($n = 117$) reported a mean stress level of 19.72 ($SD = 7.04$), indicating a higher than average perceived stress level and a high level of health concern as noted by Kelly & Percival's interpretation of the PSS-10 measure (2006). Students in medicine reported slightly higher than average mean stress levels ($M = 17.22$; $SD = 6.43$). Students in both nursing and pharmacy reported even higher perceived stress levels ($M = 22.97$, $SD = 6.70$ and $M = 20.78$, $SD = 7.00$, respectively) indicating that their stress is elevated with a very high level of health concern.

A multiple regression analysis was conducted to assess the extent to which the variables of age, gender, and program accounted for the variance in the student self-reported stress on the PSS-10. The model (including age, gender, and program) explained 22.5% of the variance in perceived stress, with gender accounting for the strongest unique contribution to self-reported stress, with a beta coefficient of .41, $p = .00$, followed by a significant unique contribution of health professional program to self-reported stress, beta = .18, $p < .05$. Age was not found to make a unique contribution to the variance (beta = -.03, $p = .78$).

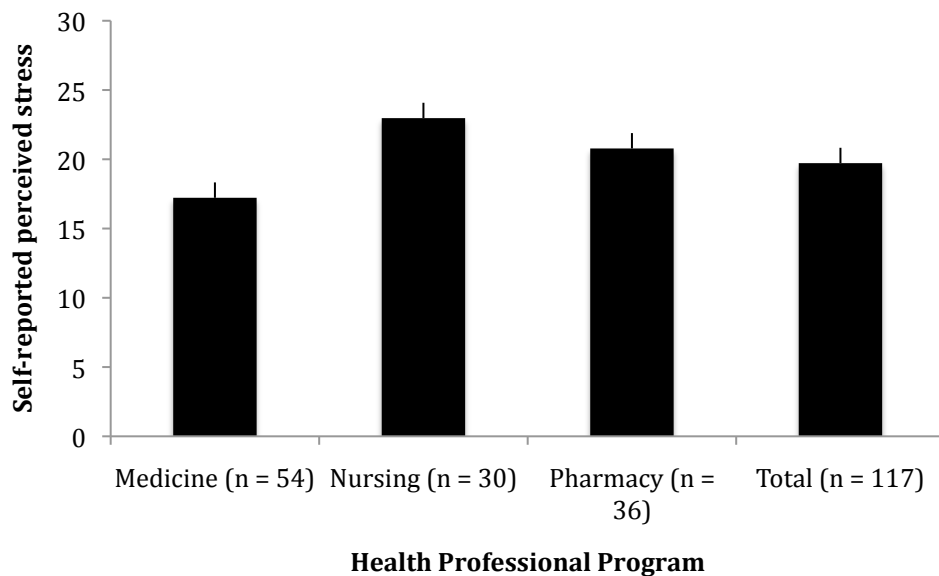
Figure 2: Self-reported Perceived Stress Ratings (PSS-10)

Figure 2: Health professional student self-reported stress ratings on the PSS-10.

A one-way between groups Analysis of Variance (ANOVA) was conducted to explore each of the health professional programs' students' level of perceived stress. There was a significant difference in perceived stress for the three groups: $F(2, 117) = 7.79, p = .001$, with the effect size, eta squared = .12, indicating a large effect. Post-hoc comparisons using the Tukey HSD test indicated that, consistent with the Likert Scale Stress measure results, the mean score for students in medicine ($M = 17.22, SD = 6.43$) was significantly lower than that reported by students in nursing ($M = 22.97, SD = 6.70$). Students in pharmacy ($M = 20.78, SD = 7.00$) did not differ significantly from students in either medicine or nursing.

An independent samples t-test was conducted to compare the students' level of perceived stress scores for males and females. There was a significant difference in scores for females ($n = 82, M = 21.80, SD = 6.45$) and males ($n = 38, M = 15.24, SD = 6.18$), t

(118) = -5.25, $p = .00$. The magnitude of the differences in the means (mean difference = -6.57, 95% CI: - 9.04 to -4.10) was large (eta squared .25).

Coping with Stress: The use of maladaptive coping

The overarching goal of this study was to assess second year health professional students' perceived levels of stress and understand how they cope. The How I Deal With Stress measure (HIDS; Ross & Heath, 2002; adapted, 2008) was used to determine the prevalence and overlap of the specific strategies of NSSI and pathological eating behaviours among the health professional students as well as to explore the prevalence of other maladaptive coping strategies used, and the SCOFF provided more detailed information about the students' eating pathology.

Non-Suicidal Self-Injury (NSSI).

The HIDS was developed as a screening tool for NSSI. The item used to screen for this behaviour ("*physically hurt myself on purpose*") found that 2.5% of students reported having engaged in NSSI at some point in their lives; no students reported engaging in self-injurious behaviours frequently, with one person (0.8%) reporting doing so a few times, two people (1.7%) once, and 97.5% ($n = 117$) never having engaged in this coping strategy. A Chi-square test for independence found no significant association between students in medicine, nursing, or pharmacy, and their reports of using NSSI at least once in their past to cope with stress, $\chi^2(1, n = 120) = 3.76, p = .15, \phi = .18$. When split by gender, no males and 3 females (3.7%) females indicated that they had used NSSI behaviours as a coping strategy in the past; this difference was not found to be significant, $\chi^2(1, n = 120) = 1.43, p = .23, \phi = .11$, with a small effect.

Eating Pathology.***The HIDS.***

A total of 85% (n = 102) students reported using the coping strategy of “eat” in response to stress with 32.5% (n = 39) reporting that they do so frequently, 41.7% (n = 50) reporting doing so a few times, 10.8% (n = 13) once, and 15% (n = 18) reporting that they had never engaged in this behaviour to cope with stress. A Chi-square test for independence found no significant association between health professional program and student’s endorsement of ever having used eating as a coping strategy, $\chi^2 (1, n = 120) = 4.5, p = .11, \phi = .19$. When split by gender, it was found that 71.1% (n = 27) of the males and 91.5% (n = 75) of the females in the sample endorsed using eating as a coping strategy at least once, which was a significant difference, $\chi^2 (1, n = 120) = 8.48, p = .00, \phi = .27$, with a medium effect size.

For the item “try to control my weight” a total of 44.2% (n=53) respondents endorsed using this strategy with 9.2 % (n = 11) doing so frequently, 20% (n = 24) a few times, 15% (n = 18) doing so once, while over half of the respondents (55.8%, n = 67) reported that they did not engage in this behaviour at all to cope with stress. A Chi-square test for independence indicated no significant association between health professional program and endorsement of having tried to control one’s weight at least once in their lifetime to cope with stress, $\chi^2 (1, n = 120) = 1.16, p = .56, \phi = .10$. When split by gender, however, it was found that 10.5% (n = 4) of the males and 59.8% (n = 49) of the females surveyed endorsed using trying to control their weight as a coping strategy which

was a significant difference, $\chi^2(1, n = 120) = 25.52, p = .00, \phi = .46$, with a medium effect.

The SCOFF.

Of the 120 students who responded, 17.5% (n = 21) indicated responses suggestive of eating disorder behaviour while 82.5% (n = 99) had SCOFF scores that did not indicate clinical concern for an eating disorder. A Chi-squared test for independence indicated no significant association between health professional program and level of concern for the presence of an eating disorder, $\chi^2(1, 120) = 1.35, p = .94, \phi = .03$. Seventy-eight percent (n = 64) of females and 92.1% (n = 35) of males had SCOFF scores that fell below the score of 2, indicating no clinical concern for eating pathology, while a total of 22.0% (n = 18) of females and 7.9% (n = 3) of males, had elevated SCOFF scores, suggesting clinical concern for an eating disorder. From those who were found to report results indicative of clinical concern for an eating disorder, a Chi-square test for independence was done and indicated no significant different association between gender and reported disordered eating behaviours endorsed on the SCOFF, $\chi^2(1, n = 120) = 3.55, p = .06, \phi = .17$. These results must be interpreted cautiously given the discrepancy between the sample size of females (n = 18) and males (n = 3) compared. Responses by males and females to each question of the SCOFF are listed in Table 2.

Table 2:

Item responses by males and females endorsing ED behaviours on the SCOFF

Item	Females (n = 82)		Males (n = 38)	
	n	%	n	%
Do you make yourself vomit because you feel uncomfortably full?				
Yes	2	2.4	-	-

No	80	97.6	38	100.0
Do you worry that you have lost control over how much you eat?				
Yes	23	28.0	5	13.2
No	59	72.0	33	86.8
Have you recently lost more than 15lbs in a 3-month period?				
Yes	6	7.3	2	5.3
No	76	92.7	36	94.7
Do you believe that you are fat when others say you are too thin?*				
Yes	14	17.1	1	2.6
No	68	82.9	37	97.4
Would you say food dominates your life?				
Yes	11	13.4	2	5.3
No	71	86.6	36	94.7

Note: *There was a significant difference in the scores reported by males ($n = 38$, $M = 1.87$, $SD = .16$) and females ($n = 82$, $M = 1.83$, $SD = .38$); $t(118) = 2.25$, $p = .00$. The magnitude of the differences in the means (mean difference = .14, CI: .02 to .27) was small (eta squared = .04). No other significant gender differences were found for the remaining items on the SCOFF.

Eating pathology on the HIDS and SCOFF.

The relationship between the HIDS measures assessing eating pathology (“eat” and “try to control my weight”) and the SCOFF were investigated using a Pearson product-moment correlation coefficient. There was a positive correlation between the “eat” variable and the SCOFF, $r = .23$, $n = 120$, $p = .01$, indicating a strong relationship between the two measures. The “try to control my weight” item and scores on the SCOFF were also positively correlated, $r = .45$, $n = 120$, $p = .00$, indicating a strong relationship as well.

Alcohol

Consistent with the objectives of this research, an exploration of the data collected found that the responses to the HIDS coping items highlighted an interesting pattern in the maladaptive coping strategy of “drink alcohol.” A total of 65.9% ($n=79$) of respondents reported that they have used this behaviour to cope with stress, with 16.7 %

($n = 20$) doing so once, 38% ($n = 38$) a few times, and 17.5% ($n = 21$) frequently. A Chi-square test for independence indicated no significant association between health professional program and students' use of drinking alcohol to cope with stress, $\chi^2 (1, n = 120) = .68, p = .71, \phi = .08$. When split by gender, Chi-square test for independence (with Yates Continuity Correction) found a significant difference between the 57.0% ($n = 47$) of females and 84.0% of males ($n = 32$) reported having used alcohol at least once to cope with stress, $\chi^2 (1, n = 120) = 7.20, p = .01, \phi = -.26$, with a medium effect size.

Discussion

The purpose of the current research was to explore second year health professional students' self-reported stress and to examine the use of the maladaptive coping behaviours of NSSI, eating pathology, and alcohol use. Overall, this study found that the second year health professional students reported experiencing high levels of perceived stress. These students reported using a variety of maladaptive coping strategies, including 2.5% of students who reported engaging in NSSI, 85% who coped by eating, 44% who reported that they had tried to control their weight, and 66% who reported using alcohol to cope with stress. Of the 120 students who participated, 17.5% scored at a level suggesting clinical concern for the presence of an ED.

Second year health professional students self-reported stress using two measures, the first a one-item question asking students to rank their stress on a scale of 1 to 10 (ranging from 1 = "*no stress at all*" to 10 = "*the most stressed out you have ever felt*") and the second was the Perceived Stress Scale-10 (PSS-10). On the single-item rating scale, students reported that they had experienced high levels of stress over the past two weeks

(with a mean score of 7.3 out of 10). Similarly, on the PSS-10 students scored higher than average levels of stress, which according to Kelly and Percival (2006) also suggests a very high health concern level. On both measures, students in all three disciplines reported experiencing moderate to high stress, with students in nursing reporting significantly higher stress than those students in medicine, although neither group differed significantly from those in pharmacy. This is consistent with prior research that has indicated that students in health professional programs report elevated levels of stress, with nurses reporting higher levels of stress than their health professional peers (Beck et al., 1997). It is also of note that there was a strong positive correlation between the single-item stress question and the longer stress-measure. Both of these measures provided a gauge of the student's own perceived levels of stress, however the brevity of a 1-10 Likert question is a useful and practical way for both students and faculty to garner a snapshot of how students are functioning, as well as identify need for interventions.

In the current study, there was a significant difference in the age of students in each of the health professional programs, with those in medicine being significantly older than those in nursing, while pharmacy students did not significantly differ in age from either medicine or nursing students. Research has found that students who are older or more advanced in their degrees report lower levels of stress (APA, 2013; Zascavage et al., 2012). Similarly, 87% of students in medicine had already completed an undergraduate degree while 33% of nursing and 30% of pharmacy students had. It is possible that students in medicine view their stress differently than those in the other discipline programs, in part as a result of being mature and having learned to manage stress through attaining a university degree.

The current research supports past research findings that nursing students report experiencing higher levels of stress than other health professional roles (Beck et al., 1997), and highlights that other factors might contribute to this difference. Age was not found to make a significant contribution to self-reported student stress, as indicated by a multiple linear regression, suggesting that while age is an important factor it is not as important as gender and health professional program were found to be. This relationship is an important one to consider, as some of the literature suggests that students develop coping strategies and continue to use similar coping skills throughout their education and into their experiences as early professionals (Park & Adler, 2003). If students have learned coping strategies prior to attending their program, or as a function of experiences gained as part of maturing and aging, these strategies could be further developed. The impact of these factors needs to be incorporated as health professional schools develop stress management programs for their students. For example, if a school or faculty (such as medicine) was admitting more females, interventions could be targeted toward the females in the class and they could be designed to meet their particular needs.

It is likely that there are additional factors impacting how stress is perceived and coped with, as gender was found to be. The finding that gender is a significant contributor to the variance in students' self-reported stress is an important one. Females reported significantly higher levels of stress than males. A regression model including age, gender, and program, found that these factors explained 20% - 22% of the variance in self-reported stress scores on the one-item stress scale and the PSS-10, respectively. Of these factors, gender explained the most variance in stress for both measures. Although program was found to make a unique contribution to self-reported stress on the PSS-10, it

did not on the one-item measure, suggesting that gender contributes more than age or professional program overall in explaining perceived stress. This is consistent with what was found in the *Stress in America* study conducted by the APA (2013) that found women continue to report higher stress levels than men. It is important to note that the APA acknowledges that while women report higher stress levels, it is possible that they are more likely to endorse being stressed, as well as more likely to be more aware of the impact that stress and lifestyle can have on their physical and mental health. The results as presented in this study suggest that the significant differences in reported stress levels may be more of a gender than a professional or age issue. While the gender breakdown in medicine was 56.6% females and 44.4% males, and 66.7% female and 33.3% males in pharmacy, in nursing there were considerably more females who responded than in the other two professional programs, with respondents being 93.3% female and 6.7% male which is likely a factor in explaining the significant differences found between professional programs.

Another contributing factor to the differences between programs in the reported levels of perceived stress might be the fact that there is a significant association between health professional program and completion of stress management skills development sessions, with over half of the students in medicine participating in such sessions while just over a quarter of pharmacy students and less than 7% of nursing students had. It should be noted that the Faculty of Medicine has a wellness coordinator who organizes these sessions and is available to provide counselling to medical students, thus offering more opportunities for those students to access various levels of intervention for stress than students in other health professional programs. Interestingly, and consistent with the

gender findings, more females across all programs attended the stress management sessions than males although this difference was not statistically significant. It is possible that services such as those provided by the Wellness Consultant helped provide students in medicine with additional coping strategies or ways to deal with their stress. Prior research has found that students in health professional programs (nursing, occupational therapy, speech-language pathology) were well served by taking a required course on health promotion intervention, with the authors suggesting that the students in these programs experienced semester-long improvements in their health responsibility and coping (Stark et al., 2012). Other researchers have suggested that inclusion of courses and interventions based on coping with stress and focused on self-care provides health professional students with skills that they can use throughout their program and careers (Nieme & Vainiomaki, 1999; Pulido-Martos et al., 2012; Stark et al., 2012).

The How I Deal With Stress (HIDS) measure was used to explore the strategies that the health professional students used to cope with stress. This tool has been used as a screening tool for the use of NSSI as a coping strategy in past research (e.g., Heath, et al., 2009; Heath et al., 2008; Ross & Heath, 2002). The present study explores health professional student use of maladaptive coping behaviours including NSSI, eating pathology, and alcohol. The item used to screen for NSSI behaviour found that 2.5% of students had engaged in NSSI, with one student reporting doing so a few times, two people once, and the vast majority (97.5%) reported not engaging in this behaviour at all. There were no gender differences in the use of NSSI as a coping strategy. These rates are well below what has been found in the literature, which has found rates of NSSI to vary from an estimated 4% in undergraduate students, 4% - 6% in the adult general population,

11.7% in college students, and 20% in adult clinical populations (Briere & Gil, 1998; Heath et al., 2008; Klonsky, 2011; Klonsky et al., 2013; Klonsky, Oltmanns, & Turkheimer, 2003; Royal College of Psychiatrists, 2003). It is important to understand the discrepancy between results found in this research when compared to other studies of university students. The literature suggests that in general, students tend not to seek help or services because they are concerned about being judged, or the lack of confidentiality and privacy keep students from disclosing if they are struggling (Chew-Graham, Rogers, & Yassin, 2003; Dunn et al., 2009; Givens & Tjia, 2002). While students were assured that their responses were confidential, it is possible that the students might have been influenced by social desirability and underreported their NSSI behaviour. It is important to note that while prior research used this same measure and found higher rates of high school and university student reports of engaging in NSSI as a coping strategy (Heath et al., 2008), the current study used an adaptation of the HIDS measure that removed the second part of the measure which included more detailed questions about the NSSI. It is likely that this resulted in a less accurate measure of the NSSI. Therefore, while there is the possibility that the health professional students surveyed engage in less NSSI behaviours than has been found in past research, results might be due to a less precise measure of this variable. The implications of this are not explored in this study, although future research using both parts of the HIDS with this population might help provide further understanding around this finding.

Using the HIDS as a screening tool for eating pathology, a majority (85%) of students reported using “eat” as a way of coping with stress. Significantly more females endorsed using “eat” as a coping strategy to deal with stress. Approximately 44% of

students reported that they would “try to control my weight” as a means of dealing with stress. Similarly, significantly more females than males endorsed using this coping strategy to cope with stress. As a means of further exploring the eating pathology of health professional students, students completed the SCOFF, a screening tool used to assess for potential eating disorders. SCOFF scores indicated that 17.5% of the 120 students scored above the cutoff for clinical concern for a diagnosis of an eating disorder. Unlike the HIDS results, however, there was no significant difference between gender and scores on the SCOFF. It is possible that this is due to the low number of males who were found to be at risk for an eating disorder ($n = 3$) and the number of females who were also found to be at risk ($n = 18$). It is important to note, however, that while there were low numbers of males, given the ratio of males to females (1:10) who meet criteria for a diagnosis of eating disorder references in the ED literature and in the DSM-5 (APA, 2013), these numbers have practical significance in the clinical and applied setting. Given the detrimental and potentially life-threatening nature of ED, despite a low prevalence for men, understanding these relationships and the gravity of a diagnosis is clinically important, as it helps with intervention and treatment.

The prevalence of eating pathology both on the HIDS (a measure of disordered eating) and the SCOFF (an eating disorder diagnostic indicator) in this study is higher than that found in many studies. DSM-IV–TR diagnosed eating disorders are reported as having prevalence rates ranging from 2% - 4% (APA, 2000; Taylor et al., 2009) in contrast to the rates suggested by the 17.9% of students in the current study scoring above the cut-off for clinical concern on the SCOFF. The findings using the HIDS suggest that the vast majority of the students coped with stress at least once by eating (85%), and just

under half (44%) tried to control their weight, which is higher than rates of DE in university aged females (12% - 19%) (Keel et al., 2006; Zivin et al., 2009). When one uses the more standardized screening tool that has been correlated with eating disorder diagnosis, the SCOFF, 17.5% of students were found to be at risk for a diagnosable ED. These findings suggest that eating pathology defined broadly and not just ED behaviours, as defined by the current version of the DSM 5 (APA, 2013) are maladaptive coping strategies commonly used by students and need to be addressed. Eating pathology is an umbrella term that encompasses both disordered eating and eating disorders; while engaging in DE (i.e., behaviours symptomatic of EDs that do not reach clinical levels) does not necessarily mean that an ED will develop, there is research to suggest that it increases the risk (Ferrier & Martens, 2008) and those with ED clearly are engaging in DE behaviours. The findings of this study suggest that a large number of the students engaged in behaviours such as eating and controlling one's weight in an effort to manage stress, which might put those students at increased risk of developing more serious eating pathology. What raises additional concern, however, is the fact that on the SCOFF, 17.5% of the students were also found to be at risk for an ED which is more than five times the prevalence rates for eating disorders in the general population. There is a strong association between the SCOFF and the EDEQ, which is typically considered a gold standard in ED assessment and diagnosis (Parker, Lyons, & Bonner, 2005). It is evident that in this group of health professional students, eating pathology is present and should be explored further. Given the number of students who were at risk for an ED, this could be something that the health professional schools and student mental health services can

screen for, with the aim of supporting the student as well as implementing intervention if warranted.

If the rates found in this study are reflective of eating pathology in a health student population, it is important to understand the factors that might contribute to these rates as well as what kinds of interventions might be helpful. Further research into the factors that might increase eating pathology risk in health professional students is particularly essential, as these are professionals who will be advising others on healthy behaviours and adaptive coping. If these young professionals are engaging in eating pathology it seems unlikely that they are going to serve as good role models for those who seek their services and may in fact be motivated to overlook signs of eating pathology in their patients. More generally the literature suggests that the ways in which a health professional copes with stress will impact patient care and if a professional is unable to manage his/her own stress in constructive ways, it is less likely that they will be effective in helping individuals who face similar challenges (Edwards et al., 2006; Moore & Cooper, 1996).

White, Reynolds-Maeler, and Cordero (2011) state that university students are an “at-risk” population for eating pathology, noting that there has been an increase in these behaviours in this population. Research acknowledges that there are sub-threshold eating disorders in which symptoms do not reach clinical levels but do result in distress, functional impairment, and negative consequences such as depression, and can lead to the development of a diagnosable ED (Taylor et al., 2009). Understanding eating pathology in general can help provide insight into the risk factors, development of, and potential intervention for eating pathology in a “high risk” population. Importantly, the current

study's findings demonstrate that health professional students are also an "at risk" group, with rates of eating pathology (particularly ED risk, as evaluated by the SCOFF) higher than found in typical university populations and this may be contrary to what is expected.

The current research also found that 65.9% of students indicated that they had used drinking alcohol as a way of coping with stress at least once, although there were no significant differences between health professional programs in the use of this coping strategy. There was, however, a significant difference in the use of alcohol to cope by males and females, with males using this coping strategy more often than females. Research has found that drinking alcohol is very common in health professional students, with students in medicine, pharmacy, and nursing using alcohol at high rates, as high as 85.8% in allied and health professional students, with 89% of medical, 85% nursing, and 81% pharmacy students reporting using alcohol over the past year (Baldwin et al., 2006). It is a concern that 11% of pharmacy students were found to use drinking as a means of coping (Baldwin et al., 2011), and 88% of students in their first and second year of medical school felt that drinking and alcohol addiction is a significant problem among medical students (Steed et al., 2012). Particularly troubling is the research that has also found that students in pharmacy and nursing report engaging in high-risk behaviours including driving while drunk, attending classes inebriated, and at times engaging in patient interactions while drunk (Baldwin et al., 2006; Hensel, Middleton, & Engs, 2013). The current research confirms that students in medicine, nursing, and pharmacy who participated in this research are using alcohol to cope with stress, with over 55% indicating that they did so a few times to frequently. These numbers suggest that students are coping with stressors in a maladaptive manner by using alcohol. This also raises the

question about whether students have engaged in risky behaviours after drinking, and the relationship between the drinking to manage stress, and the development of alcohol abuse. Future studies with this student population will explore these issues.

Limitations

There were several limitations to the current research. The data collected in this study was using self-report. Inherent in this form of data-collection is the possibility that students' responses are not fully representative of their experiences due to social desirability, and possibly other factors including but not limited to response style, exaggerated responses (either responding on the polar ends of the spectrum or staying toward the mean), personal concerns about feeling embarrassed or not wanting to reveal private details about themselves, and memory bias. Student responses on the HIDS measure might not accurately represent their use of the coping strategies because of the strong face validity of the measure; students might have been aware of what the questions are asking about and concerns for self-presentation and engaging in socially appropriate or desirable behaviours affected their responses. In addition, it is important to note that an adaptation of the HIDS was used for this study, which did not include the Part II of the measure. It may be that the adaptation of the HIDS that removed Part II (as required by ethics) resulted in a less accurate measure of NSSI behaviours.

The generalizability of the study might be limited as the sample of students consisted of students in medicine, nursing, and pharmacy from one academic institution. Future research expanding the sample of students to other universities might expand the generalizability of the results, although there is no reason to believe that this group would significantly differ from any other health professional student groups, as the findings of

this research generally align with the literature. Future research exploring other undergraduate university health professional programs, such as occupational therapy and speech pathology might provide further insight into possible age related or educational attainment related influences on students' experience of stress. In addition, exploring how differences between students who have worked professionally before returning to their health professional program, or those with children and additional life experiences might impact their stress compared to those students who have not would be of interest. Finally, the impact of gender on self-reported stress should be further examined. Gender has been found as an important factor on reporting and the experience of stress; understanding the way in which stress might be impacted by gender can help to further delineate the role of gender in coping in this population. Exploration of these factors could help provide a more in-depth understanding of the protective factors that might shield against the effects of elevated levels of stress.

Based on advice from faculty and advisors during the development of this research, health professional students in the second year of their programs were asked to participate. In part, this was advised based on convenience in terms of when the students would be available to participate. A potential limitation of this decision is that some student programs might have begun clinical experiences while other students are still in their class-based learning environment. As the literature indicates, health professional students who are in a clinical and/or applied setting experience different sources of stress in their program, including working with patients, working with other professionals, professional socialization, and a shift in the way they both learn and consolidate information and learning (Andrew et al., 2009; Lo, 2002, Moffatt et al., 2004; Pulido-

Martos et al., 2012). Future research could benefit from exploring health professional student stress longitudinally across all years of their programs to explore the potential impact that their level of academic and clinical experiences might have.

As highlighted earlier, the age and educational experience of a student influences their ability to cope with the stress of their program (Zascavage et al., 2012). Findings indicated a significant association between health professional program and the completion of an undergraduate degree, with 87% of students in medicine, 33.3% of nursing, 30.6% of pharmacy students having completed a prior degree. It is important to note that only 57% of students responded to this item on the demographic measure. Due to the lack of response on this question, it is possible that the questions asked in this section of demographics did not appropriately capture the education attained by the students who participated. Future research might benefit from asking more detailed questions to explore this variable. Based on findings in past research (e.g., Zascavage et al., 2012), it is possible that students who have had prior university and/or post-graduate educational experience might have different ways of coping and dealing with academic stress than those who have completed an undergraduate degree only or are pursuing an undergraduate health professional program.

Conclusions

The present study demonstrates that the health professional students who participated were experiencing high levels of stress. Despite this, no statistically significant differences were found between students in each of the health professional programs and their use of NSSI as a coping strategy, as screened by the HIDS. The role of gender in self-reported stress is also important to note; gender was found to have a

significant impact on the extent to which male and female students reported their own experiences in stress. In terms of eating pathology as a coping strategy, females were found to more significantly use eating and trying to control their weight than males, while males were found to use drinking as a coping strategy significantly more than females, as screened by the HIDS. This suggests that students in each of the health professional programs engaged in these coping strategies at similar rates. In addition, the finding that almost 18% of students indicated eating pathology and a risk of an ED demonstrated that this group of students are coping maladaptively during their program. It is evident from this study that the students in medicine, pharmacy, and nursing at the institution in which this research was conducted find themselves dealing with high levels of stress. The effect that this stress can have on them in the future is uncertain, although research suggests that the implications can extend into their own careers and, if coping is poor, patient interactions and patient safety can be compromised (Lo, 2002; Radcliff & Lester, 2003; Sabih et al., 2013). Further research will explore the role of coping and examine the use of mental health services that are available to these students.

This research was conducted as part of an applied program. As such, one of the goals of this research was to help explore and provide information to the institution in which the research took place. While the limitations section notes some of the challenges of this research, the utility and application of this study must be noted. The current study demonstrates that health professional students are experiencing high levels of stress which impacts how these students function and their own mental health; and as research demonstrates, this can have an impact on future career and patient interaction. The students who participated in this research indicated that they coped in a variety of

maladaptive ways, most notably through eating pathology behaviours and use of alcohol. These coping strategies need to be further explored to help understand some of the underlying motivation and function of these behaviours. What is notable, however, is that this research can be used, supported by past research, to help inform students, faculty, student services, and the university about potential issues to be aware of in the way in which these students are functioning and coping.

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. revised). Arlington, VA: American Psychiatric Association.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Association.
- American Psychological Association. (2012). *Stress in America: Stress by gender*. Retrieved from <http://www.apa.org/news/press/releases/stress/index.aspx>
- American Psychological Association. (2012). *Stress in America: Stress by generation*. Retrieved from <http://www.apa.org/news/press/releases/stress/index.aspx>
- Andersson, C., Johnsson, K. O., Berglund, M., & Öjehagen, A. (2009). Intervention for hazardous alcohol use and high level of stress in university freshmen: A comparison between an intervention and a control university. *Brain Research, 1305*, S61-S71. doi:10.1016/j.brainres.2009.08.030
- Andrew, N., McGuinness, C., Reid, G., & Corcoran, T. (2009). Greater than the sum of its parts: Transition into the first year of undergraduate nursing. *Nurse Education in Practice, 9*(1), 13-21. doi:10.1016/j.nepr.2008.03.009; 10.1016/j.nepr.2008.03.009
- Baldwin, J. N., Scott, D. M., Agrawal, S., Bartek, J. K., Davis-Hall, R. E., Reardon, T. P., & DeSimone, E. M. (2006). Assessment of alcohol and other drug use behaviors in health professions students. *Substance Abuse, 27*(3), 27-37. doi:10.1300/J465v27n03_05
- Baldwin, J. N., Scott, D. M., DeSimone II, E. M., Forrester, J. H., & Fankhauser, M. P. (2011). Substance use attitudes and behaviors at three pharmacy colleges. *Substance Abuse, 32*(1), 27-35. doi:10.1080/08897077.2011.540470

- Beck, D. L., Hackett, M. B., Srivastava, R., McKim, E., & Rockwell, B. (1997). Perceived level and sources of stress in university professional schools. *The Journal of Nursing Education, 36*(4), 180-186.
- Beukes, M. M., Walker, S., & Esterhuyse, K. (2010). The role of coping responses in the relationship between perceived stress and disordered eating in a cross-cultural sample of female university students. *Stress and Health, 26*(4), 280-291. doi:10.1002/smi.1296
- Birgegård, A., Norring, C., & Clinton, D. (2012). DSM-IV versus DSM-5: Implementation of proposed DSM-5 criteria in a large naturalistic database. *International Journal of Eating Disorders, 45*(3), 353-361. doi:10.1002/eat.20968
- Briere, J. J. & Gil, E. (1998). Self-mutilation in clinical and general population samples: Prevalence, correlates, and functions. *American Journal of Orthopsychiatry, 68*(4), 609-620. doi:10.1037/h0080369
- Brougham, R. R., Zail, C.M., Mendoza, C.M., & Miller, J.R. (2009). Stress, sex differences, and coping strategies among college students. *Current Psychology, 28*(2), 85-97. doi:10.1007/s12144-009-9047-0
- Canadian Medical Association. (2003). *CMA guide to physician health and well-being: Facts, advice and resources for Canadian doctors*. Canadian Medical Association.
- Chew-Graham, C. A., Rogers, A., & Yassin, N. (2003). 'I wouldn't want it on my CV or their records': Medical students' experiences of help-seeking for mental health problems. *Medical Education, 37*(10), 873-880. doi:10.1046/j.1365-2923.2003.01627.x

- Cohen, S., Williamson, G., Spacapan, S., & Oskamp, S. (1988). Perceived stress in a probability sample of the United States. *The social psychology of health*. Claremont symposium on applied social psychology.
- Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance & Counselling*, 34(4), 505-517. doi:10.1080/03069880600942624
- Duggan, C., Button, P., & Heath, O. (2010). *Stress level and coping in first year university students*. Symposim at the annual Canadian Psychological Association Convention, Winnipeg, MB.
- Duggan, J.M., & Heath, N.L. (2014). Co-occurring health risk behaviours of non-suicidal self-injury and eating disorders. In L. Claes, & J. Muehlenkamp (Eds.), *Non-Suicidal Self-Injury in Eating Disorders*, (pp. 217-236). New York, NY: Springer.
- Dunn, L. B., Green Hammond, K. A, & Weiss Roberts, L. (2009). Delaying care, avoiding stigma: Residents' attitudes toward obtaining personal health care. *Academic Medicine*, 84(2), 242-250. doi:10.1097/ACM.0b013e31819397e2
- Edwards, D., Burnard, P., Hannigan, B., Cooper, L., Adams, J., Juggessur, T., . . . Coyle, D. (2006). Clinical supervision and burnout: The influence of clinical supervision for community mental health nurses. *Journal of Clinical Nursing*, 15(8), 1007-1015. doi:10.1111/j.1365-2702.2006.01370.x
- Eisenberg, D., Hunt, J., & Speer, N. (2012). Help seeking for mental health on college campuses: Review of evidence and next steps for research and practice. *Harvard Review of Psychiatry*, 20(4), 222-232. doi:10.3109/10673229.2012.712839

- Favaro, A., Ferrara, S., & Santonastaso, P. (2004). Impulsive and compulsive self-injurious behavior and eating disorders: An epidemiological study. In J.L. Levitt, R.A. Sansone, & L. Cohn (Eds). *Self-Harm Behavior and Eating Disorders: Dynamics, Assessment, and Treatment*. (pp. 31-44). New York, Brunner/Routledge.
- Favaro, A., & Santonastaso, P. (2000). Self-injurious behavior in anorexia nervosa. *The Journal of Nervous and Mental Disease*, 188(8), 537-542. doi:10.1097/00005053-200008000-00010
- Favazza, A. R., & Conterio, K. (1989). Female habitual self-mutilators. *Acta Psychiatrica Scandinavica*, 79(3), 283-289. doi:10.1111/j.1600-0447.1989.tb10259.x
- Ferrier, A. G., & Martens, M. P. (2008). Perceived incompetence and disordered eating among college students. *Eating Behaviors*, 9(1), 111-119. doi:10.1016/j.eatbeh.2007.06.004
- Gibbons, C. (2010). Stress, coping and burn-out in nursing students. *International Journal of Nursing Studies*, 47(10), 1299-1309. doi:10.1016/j.ijnurstu.2010.02.015
- Gibbons, C., Dempster, M., & Moutray, M. (2008). Stress and eustress in nursing students. *Journal of Advanced Nursing*, 61(3), 282-290. doi:10.1111/j.1365-2648.2007.04497.x
- Giordano, S. (2005). *Understanding eating disorders: Conceptual and ethical issues in the treatment of anorexia and bulimia nervosa*. Oxford, England: Oxford University Press. doi:10.1093/0199269742.001.0001
- Givens, J. L., & Tjia, J. (2002). Depressed medical students' use of mental health services and barriers to use. *Academic Medicine: Journal of the Association of American Medical Colleges*, 77(9), 918-921. doi:10.1097/00001888-200209000-00024

- Gollust, S. E., Eisenberg, D., & Golberstein, E. (2008). Prevalence and correlates of self-injury among university students. *Journal of American College Health, 56*(5), 491-498. doi:10.3200/JACH.56.5.491-498
- Hasking, P., Momeni, R., Swannell, S., & Chia, S. (2008). The nature and extent of non-suicidal self-injury in a non-clinical sample of young adults. *Archives of Suicide Research, 12*(3), 208-218. doi:10.1080/13811110802100957
- Heath, N.L., Ross, S., Toste, J.R., Charlebois, A., & Nedecheva, T. (2009). Retrospective analysis of social factors and non-suicidal self-injury among young adults. *Canadian Journal of Behavioural Science, 41*, 180-186. Doi: 10.1037/a0015732
- Heath, N., Schaub, K., Holly, S., & Nixon, M. (2009). Self-injury today: Review of population and clinical studies in adolescents. In M.K. Nixon & N.L. Heath (Eds). *Self-Injury in Youth: The Essential Guide to Assessment and Intervention* (pp. 9-27). New York, NY: Routledge/Taylor & Francis Group.
- Heath, N. L., Toste, J. R., Nedecheva, T., & Charlebois, A. (2008). An examination of nonsuicidal self-injury among college students. *Journal of Mental Health Counseling, 30*(2), 137-156.
- Hensel, D., Middleton, M. J., & Engs, R. C. (2013). A cross-sectional study of drinking patterns, prelicensure nursing education, and professional identity formation. *Nurse Education Today, 27*(8), 801-806. doi:10.1016/j.nedt.2013.08.018
- Hill, L. S., Reid, F., Morgan, J. F., & Lacey, J. H. (2010). SCOFF, the development of an eating disorder screening questionnaire. *The International Journal of Eating Disorders, 43*(4), 344-351. doi:10.1002/eat.20679

- Hilt, L. M., Nock, M. K., Lloyd-Richardson, E. E., & Prinstein, M. J. (2008). Longitudinal study of nonsuicidal self-injury among young adolescents rates, correlates, and preliminary test of an interpersonal model. *The Journal of Early Adolescence, 28*(3), 455-469. doi:10.1177/0272431608316604
- International Society for the Study of Self-Injury. (2007). *Definitional issues surrounding our understanding of self-injury*. Conference Proceedings from the Annual Meeting.
- Keel, P. K., Heatherton, T. F., Dover, D. J., Joiner, T. E., & Zalta, A. K. (2006). Point prevalence of bulimia nervosa in 1982, 1992, and 2002. *Psychological Medicine, 36*(01), 119-127. doi:10.1017/S0033291705006148
- Kelly, G., & Percival, M. (2006). Perceived stress scale. Retrieved from <http://healthsceneinvestigation.com/files/2010/07/Perceived-Stress-Scale.pdf>
- Klonsky, E.D (2011). Non-suicidal self-injury in United States adults: Prevalence, sociodemographics, topography and functions. *Psychological Medicine, 41*(9), 1981-1986. doi:10.1017/S0033291710002497
- Klonsky, E. D., May, A. M., & Glenn, C. R. (2013). The relationship between nonsuicidal self-injury and attempted suicide: Converging evidence from four samples. *Journal of Abnormal Psychology, 122*(1), 231-237. doi:10.1037/a0030278
- Kohn, P. M., Hay, B. D., & Legere, J. J. (1994). Hassles, coping styles, and negative well being. *Personality and Individual Differences, 17*(2), 169-179. doi:10.1016/0191-8869(94)90023-X
- Lees, S., & Ellis, N. (1990). The design of a stress-management programme for nursing personnel. *Journal of Advanced Nursing, 15*(8), 946-961. doi:10.1111/j.1365-2648.1990.tb01951.x

- Lo, R. R. (2002). A longitudinal study of perceived level of stress, coping and self-esteem of undergraduate nursing students: An Australian case study. *Journal of Advanced Nursing*, 39(2), 119-126. doi:10.1046/j.1365-2648.2000.02251.x
- Lunau, K. (2012). Campus Crisis: The Broken Generation. *Macleans*. Retrieved from <http://www2.macleans.ca/2012/09/05/the-broken-generation/>
- McCann, C. M., Beddoe, E., McCormick, K., Huggard, P., Kedge, S., Adamson, C., & Huggard, J. (2013). Resilience in the health professions: A review of recent literature. *International Journal of Wellbeing*, 3(1), 60-81. doi:10.5502/ijw.v3i1.4
- Moffat, K. J., McConnachie, A., Ross, S., & Morrison, J.M. (2004). First year medical student stress and coping in a problem-based learning medical curriculum. *Medical Education*, 38(5), 482-491. doi:10.1046/j.1365-2929.2004.01814.x
- Mond, J. M., Myers, T. C., Crosby, R. D., Hay, P. J., Rodgers, B., Morgan, J. F., . . . Mitchell, J. E. (2008). Screening for eating disorders in primary care: EDE-Q versus SCOFF. *Behaviour Research and Therapy*, 46(5), 612-622. doi:10.1016/j.brat.2008.02.003
- Moore, K. A., & Cooper, C. L. (1996). Stress in mental health professionals: A theoretical overview. *The International Journal of Social Psychiatry*, 42(2), 82-89. doi:10.1177/002076409604200202
- Morgan, J. F., Reid, F., & Lacey, J. H. (1999). The SCOFF questionnaire: Assessment of a new screening tool for eating disorders. *British Medical Journal*, 319(7223), 1467-1468. doi:10.1136/bmj.319.7223.1467

- Niemi, P. M., & Vainiomäki, P. T. (1999). Medical students' academic distress, coping, and achievement strategies during the preclinical years. *Teaching and Learning in Medicine, 11*(3), 125-134. doi:10.1207/S15328015TL110302
- Nock, M.K. (2010). Self Injury. *Annual Review of Clinical Psychology, 6*, 339-363. doi:10.1146/annurev.clinpsy.121208.131258
- Nurmi, J. E. (1997). Self-definition and mental health during adolescence and young adulthood. In J. Schulenberg, J. Maggs & K. Hurrelman (Eds.), *Health risks and developmental transitions during adolescence* (pp. 395-419). Cambridge, England: Cambridge University Press.
- Park, C. L., & Adler, N. E. (2003). Coping style as a predictor of health and well-being across the first year of medical school. *Health Psychology, 22*(6), 627-631. doi:10.1037/0278-6133.22.6.627
- Parker, S. C., Lyons, J., & Bonner, J. (2005). Eating disorders in graduate students: Exploring the SCOFF questionnaire as a simple screening tool. *Journal of American College Health, 54*(2), 103-107. doi:10.3200/JACH.54.2.103-107
- Paul, T., Schroeter, K., Dahme, B., & Nutzinger, D. O. (2002). Self-injurious behavior in women with eating disorders. *American Journal of Psychiatry, 159*(3), 408-411. doi:10.1176/appi.ajp.159.3.408
- Prymachuk, S., & Richards, D. A. (2007). Mental health nursing students differ from other nursing students: Some observations from a study on stress and coping. *International Journal of Mental Health Nursing, 16*(6), 390-402. doi:10.1111/j.1447-0349.2007.00494.x

- Pulido-Martos, M., Augusto-Landa, J., & Lopez-Zafra, E. (2012). Sources of stress in nursing students: A systematic review of quantitative studies. *International Nursing Review, 59*(1), 15-25. doi:10.1111/j.1466-7657.2011.00939.x
- Radcliffe, C. C. & Lester, H. (2003). Perceived stress during undergraduate medical training: A qualitative study. *Medical Education, 37*(1), 32-38.
- Roberti, J. W., Harrington, L. N., & Storch, E. A. (2006). Further psychometric support for the 10-Item version of the perceived stress scale. *Journal of College Counseling, 9*(2), 135-147. doi:10.1002/j.2161-1882.2006.tb00100.x
- Ross, S., & Heath, N. (2002). A study of the frequency of self-mutilation in a community sample of adolescents. *Journal of Youth and Adolescence, 31*(1), 67-77. doi:10.1023/A:1014089117419
- Ross, S., Heath, N. L., & Toste, J. R. (2009). Non-suicidal self-injury and eating pathology in high school students. *American Journal of Orthopsychiatry, 79*(1), 83-92. doi:10.1037/a0014826
- Royal College of Psychiatrists. (2003). The mental health of students in higher education. Council Report, CR112. London: Royal College of Psychiatrists.
- Sabih, F., Siddiqui, F. R., & Baber, M. N. (2013). Assessment of stress among physiotherapy students at Riphah centre of rehabilitation sciences. *Journal of Pakistan Medical Association, 63*(3), 346-349.
- Sansone, R. A., & Levitt, J. L. (2002). Self-harm behaviors among those with eating disorders: An overview. *Eating Disorders, 10*(3), 205-213. doi:10.1080/10640260290081786

- Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin, 129*(2), 216-269. doi:10.1037/0033-2909.129.2.216
- Stark, M. A., Hoekstra, T., Lindstrom Hazel, D., & Barton, B. (2012). Caring for self and others: Increasing health care students' healthy behaviors. *Work: A Journal of Prevention, Assessment & Rehabilitation, 42*(3), 393-401. doi:10.3233/WOR-2012-1428.
- Steed, H., Groome, M., Rice, P., Simpson, K., Day, A., & Ker, J. (2012). A brief report on perceptions of alcohol and society among Scottish medical students. *Alcohol and Alcoholism, 47*(1), 75-78. doi:10.1093/alcalc/agr139
- Svirko, E., & Hawton, K. (2007). Self-Injurious behavior and eating disorders: The extent and nature of the association. *Suicide and Life-Threatening Behavior, 37*(4), 409-421. doi:10.1521/suli.2007.37.4.409
- Taylor, C. B., Bryson, S., Luce, K. H., Cunning, D., Doyle, A. C., Abascal, L. B., . . . Wilfley, D. E. (2006). Prevention of eating disorders in at-risk college-age women. *Archives of General Psychiatry, 63*(8), 881-888. doi:10.1001/archpsyc.63.8.881
- Thomas, T., Schroeter, K., Dahme, B., & Nutzinger, D. (2002). Self-injurious behaviour in women with eating disorders. *American Journal of Psychiatry, 159*(3), 408-411.
- Thompson, J. K., Roehrig, M., & Kinder, B. N. (2011). Eating disorders. In M. Hersen, S. M. Turner & D. C. Beidel (Eds.), *Adult psychopathology and diagnosis* (pp. 571-600). Hoboken, New Jersey: John Wiley & Sons, Inc.

- White, S., Reynolds-Malear, J. B., & Cordero, E. (2011). Disordered eating and the use of unhealthy weight control methods in college students: 1995, 2002, and 2008. *Eating Disorders, 19*(4), 323-334.
- White, V. E., Trepal-Wollenzier, H., & Nolan, J. M. (2002). College students and Self-Injury: Intervention strategies for counselors. *Journal of College Counseling, 5*(2), 105-113. doi:10.1002/j.2161-1882.2002.tb00212.x
- Whitlock, J., Eckenrode, J., & Silverman, D. (2006). Self-injurious behaviors in a college population. *Pediatrics, 117*(6), 1939-1948. doi:10.1542/peds.2005-2543
- Whitlock, J., & Knox, K. L. (2007). The relationship between self-injurious behavior and suicide in a young adult population. *Archives of Pediatrics & Adolescent Medicine, 161*(7), 634-640. doi:10.1001/archpedi.161.7.634
- Wolf, T. M. (1994). Stress, coping and health: Enhancing well-being during medical school. *Medical Education, 28*(1), 8-17. doi:10.1111/j.1365-2923.1994.tb02679.x
- Wright, F., Bewick, B. M., Barkham, M., House, A. O., & Hill, A. J. (2009). Co-occurrence of self-reported disordered eating and self-harm in UK university students. *British Journal of Clinical Psychology, 48*(4), 397-410. doi:10.1348/014466509X410343
- Zascavage, V., Winterman, K. G., Buot, M., Wies, J. R., & Lyzinski, N. (2012). Student-life stress in education and health service majors. *Higher Education Research & Development, 31*(4), 599-610. doi:10.1080/07294360.2011.653957
- Zivin, K., Eisenberg, D., Gollust, S. E., & Golberstein, E. (2009). Persistence of mental health problems and needs in a college student population. *Journal of Affective Disorders, 117*(3), 180-185. doi:10.1016/j.jad.2009.01.001

CHAPTER 3

MANUSCRIPT 2

Exploring the Lived Experience of Health Professional Students: Stress, Coping, and
Help-Seeking Behaviours

Pamela L Button, Dr. Natalie Beausoleil, Dr. Olga Heath

Memorial University, St. John's, Newfoundland

Abstract

The first study in this research examined the self-reported stress of second year health professional students at an Atlantic Canadian university, the prevalence of maladaptive coping strategies (specifically eating pathology including disordered eating/eating disorders (DE/ED), non-suicidal self-injury (NSSI), and the use of alcohol). The students who responded in the first study had lower prevalence rates for NSSI and higher eating pathology prevalence rates compared to those found in university and community samples, and alcohol use similar to other health professional students. In the chapter that follows, ten students from the health professional programs of medicine, nursing, and pharmacy speak to their lived experiences with stress and coping, perspectives on help-seeking behaviours, reasons why they have or have not sought services to help cope with stress, and their perceptions of availability and services on campus.

Students identified their academic program as being the most predominant source of stress, also citing clinical experiences, financial concerns, personal relationships, health, a lack of balance, and living situations as sources of stress. They spoke about the advantages and risks of seeking social support for their stress, noting that at times their academic peers increased their experience of stress. Many acknowledged that stress could be beneficial and help them become more productive, although when stress became too much their own ability to cope decreased. Students coped with stress by trying to stay on top of the work, seeking social support, exercising, prioritizing tasks, decreasing or eliminating some stressors, and setting realistic expectations. Maladaptive coping strategies identified by students included eating behaviours such as restriction or emotion-

based eating, lack of sleep, self-injurious behaviours, drinking alcohol, smoking, and pushing beyond productivity. Notably, students also spoke about the culture of “work hard and party hard” and the role of drinking in their programs, highlighting the impact of professional culture and the hidden curriculum consisting of expectations implicit within their own respective programs and peer groups related to acceptable behaviour, roles, and customs. Students indicated that they had limited awareness about the mental health services available on campus. Many cited concerns about stigma, confidentiality, and professional implications for seeking help for themselves, again highlighting the pervasive nature of the hidden curriculum which defined what was acceptable behaviour in their program. This research explores the potential impact that student stress, coping, and help-seeking behaviour can have on health professional students, as well as recommending possible interventions.

Introduction

Literature highlights the importance of the university setting in assessing and addressing the mental health needs of students. It is during this time in a person's life that many individuals have first onset of mental health issues. While mental health varies across demographic and social factors, the university setting provides additional sources of stress which might impact mental health including the academic workload, competition, financial stress, and personality variables such as perfectionism which might serve to exacerbate or contribute to poor mental health functioning of students (Hunt & Eisenberg, 2010). As such, university is an important environment in which to provide services to help prevent, detect, and treat mental disorders. Hunt and Eisenberg (2010) note that students enrolled in university are part of an integrated setting that provides them with career and social opportunities, as well as health services and other supports; these services are often offered free or at a very reduced cost to students, which can greatly facilitate earlier identification and intervention (Zivin, Eisenberg, Gollust, & Golberstein, 2009). Research has found that use of university counselling services are significantly associated with undergraduate student retention (Lee, Olson, Locke, Michelson, & Odes, 2009). Specifically, it has been found that providing undergraduate students access to mental health services that focus on emotional, social, and psychological needs can help increase student retention and decrease the use of maladaptive coping strategies in these students (Lee et al., 2009). Despite this, research shows that only a small number of students needing mental health services actually seek them, and as many as 30% - 60% of students are unaware of on-campus mental health services (Yorgason, Linville, & Zitman, 2008).

Research suggests that the prevalence and severity of significant mental health problems in universities are on the rise with at least 25% of university aged Canadians found to be experiencing a mental health issue, often stress-related, anxiety, or depression (Gallagher, 2007; Lunau, 2012), while other research has found that one third of students report some form of mental health problems, with the most commonly presenting issues being eating disorders and depression (Zivin et al., 2009). University students were recently referred to as “the broken generation” due to the increase of mental health issues in students in Canadian universities, with one university noting a 200% increase in demand for services for students in crisis situations, including mental health crises (Lunau, 2012). Despite such findings, others note that while university settings typically have mental health services available, many students do not access these services (Eisenberg, Hunt, & Speer, 2012; Grant, 2002). Gollust, Eisenberg, and Golberstein (2008) suggest that the low utilization of mental health services among undergraduate and graduate students who engage in NSSI might reflect a failure of these students to perceive a need for help, a lack of awareness of where to go for help, negative attitudes about the potential effectiveness of services, or feelings of shame about their behaviour(s). It has been proposed that part of the increase in service utilization is due to a decreasing stigma associated with getting help and better education about student health, although it seems unlikely that these factors alone could account for the drastic increase in use of these services (Royal College of Psychiatrists, 2003). By increasing understanding about the issues students face as well as the potential barriers that might keep them from seeking help, student services and interventions can better provide what students need.

Health professional students have unique pressures and stressors that research has found can adversely affect these students' physical and psychological health, which in turn has been found to have a negative impact on the quality of patient care provided by the students (Lo, 2002; Radcliff & Lester, 2003; Sabih, Rashid Siddiqui, & Baber, 2013). As suggested in the literature, those in health professional programs are well served by learning coping skills and accessing treatment for mental health issues during their program, which in turn has the potential to impact patient care in the future (Tyssen, Rovik, Vaglum, Gronvold, & Ekeberg, 2004). Similarly, DiGiacomo and Adamson (2001) state that students and new practitioners need to learn ways to "overcome, tolerate, or minimize the negative aspects" of their work early in their education, as there is a greater likelihood that they can apply these coping skills to their professional work and the treatment of their patients (p. 106).

Hays, Lawson, and Gray (2011) note that students in medicine are often drawn to the profession because of the intellectual challenge, a desire to help people, financial security, and having an elevated position in society. They note that medical school is not only about training students in relevant medical knowledge, it is also about learning skills including professionalism, communication and team work, and learning how to respect one's own limits in balancing personal and professional lives. It is reasonable to suggest that those working in other health professional programs face similar expectations. Much of the research exploring stress, mental health, and coping in health professional students has been with those in medicine or nursing, although students in other health professional programs can also be adversely impacted by these challenges (Pulido-Martos, August-Landa, & Lopez-Zafra, 2012; Sabih et al., 2012; Stark, Hoekstra, Lindstrom Hazel, &

Barton, 2012). While research has found that health professional students are impacted by stress, between-groups differences in health professional student stress have been noted. In a comparison of level and sources of stress in health professional students, Beck, Hackett, and Srivastava (1997) explored perceived stress in students enrolled in nursing, medicine, pharmacy, and social work programs during years 2, 3, and 4 of their programs. Results indicated that students in nursing, regardless of their year in program, reported higher levels of perceived stress and higher levels of both physiological and psychological symptoms than students in the other programs. Exploring stress between health professional groups can help to provide valuable information not only about the impact of stress on those in helping professions, but also potential differences between the groups as well.

Canales-Gonzales, Kranz, Granberry, and Tanguma (2008) found that pharmacy students reported their stress as average or above average while pre-medical students have reported feeling moderate to high levels of stress (Niemi & Vainiomaki, 1999). Research has found that health professional students, including those in pharmacy, nursing, medicine, and social work report stressors including: coursework; financial concerns; a lack of free time; time management; exams and grades; high personal standards; and the attitudes and expectations of other professionals toward their own profession (Beck et al., 1997; Canales-Gonzales et al., 2008; Niemi & Vainiomaki, 1999). In turn, health professional students have used various means of coping strategies to deal with this stress, including seeking support, physical activity, and distraction activities (Canales-Gonzales et al., 2008). Niemi and Vainiomaki (1999) note that medical students typically reported using one means of coping only and that it was uncommon for a student to report using

several means of coping. In the interviews, students reported using hobbies and sports, studying harder, and prioritizing as the ways in which they coped with academic stress. During a longitudinal study in which students in their preclinical medical training completed three measures over a 2.5 year period (commencing at the start of their training and finishing at the end of their 5th term), Niemi and Vainiomaki found that stress symptoms increased as the students progressed in their programs, and that reflection on priorities was found to be the most adaptive strategy. It is unclear what the authors meant by “reflection on one’s priorities” as they did not define the term *priorities*. It is possible that priorities include students’ prioritizing school tasks or alternatively they meant maintaining a work-life balance, which would translate into a very different coping strategy.

Recognized throughout the literature is that amid this pressure to perform competently, to contribute to the profession (e.g., through teaching, interprofessional activities, conduct research), as well as strive to lead a productive and balanced life, health professional students and health professionals alike can experience high levels of stress and potential mental health problems (Midtgaard, Ekeberg, Vaglum, & Tyssen, 2008; Tyssen, Vaglum, Gronvold, & Ekeberg, 2001). The present study builds on the existing research, examining health professional students’ lived experiences in their programs and their functioning and ability to cope with stress.

Help-Seeking Behaviour

While a survey of the literature on students in health professional programs finds that these students face mental health stressors and experience mental health issues, it also highlights that many of the students in these programs do not seek mental health services

to help with these issues (Givens & Tjia, 2002; Midtgaard et al., 2008; Walter, Soh, Jaconelli, Lampe, Malhi, & Hunt, 2013). Research with health professional students has found that while they acknowledge the importance of mental health and wellness, they do not feel that they require help for mental health issues, or seek services for issues that they consider “minor” (Hays et al., 2011). Hays and colleagues proposed an intervention framework to address the needs for student support services for students enrolled in medical school. Using an iterative process, a framework of characteristics of students presenting problems was developed by those involved in medical education and school administration. The descriptive features of immaturity, poor learning skills, poor organizational skills, transient personal crises, poor mental health, and poor insight were proposed as the issues students would present to and seek help for from student services.

Stigma about mental illness has been described as one of the most powerful barriers to seeking mental health services (Eisenberg, Downs, Golberstein, & Zivin, 2009). In a study of 13 American universities, Eisenberg, Golberstein, and Gollust (2007) found that students’ self-stigma around mental health and mental illness was negatively associated with help-seeking; therefore, those who held negative views about mental health and mental illness were less likely to seek help including therapy, medication, and non-clinical forms of support from family and friends even when perceived as needed. Corrigan, Watson, and Bar (2006) propose that stigma often happens sequentially - a person becomes aware of a public stigma, forms one’s own personal attitude, and then may experience self-stigma if they feel they fit the profile or identify with the stigmatized group. In a group of medical students, Chew-Graham, Rogers, and Yassin (2009) found that the presence of the perception of stigma associated with mental health issues,

including stress, resulted in the students avoiding seeking help. It was found that these students believed that if they were viewed as experiencing a mental health problem that their program would view it as a form of weakness. Inherent in this is the view that while others might experience mental health issues and should seek help for them, it is not the same when a health professional student seeks help for these same issues. In a longitudinal nationwide study of 631 Norwegian medical students in the final year of their undergraduate medical training and during the first and fourth years of their postgraduate training, it was found that while the prevalence of mental health problems needing treatment increased from 11% to 17% from first to fourth postgraduate year, there was no increase in help-seeking behaviour during this time (Tyssen et al., 2004). One-third of the students and young physicians reported experiencing mental health problems and approximately two-thirds of that group sought help, but many who recognized that they needed treatment did not seek it. The authors propose that a reason for this lack of help-seeking might be the self-stigma associated with mental disorders. While health professional students might recognize that they are struggling, that is not necessarily enough to get them to seek help.

Walter and colleagues (2013) found that while 90% of medical students were aware of mental health services available to them, many felt that if they were struggling with mental or emotional problems they would have to conceal their struggles. Research has found that students in medical school avoid seeking help due to barriers including: fears of being viewed as having a weakness; potential implications on future working relationships and career; lack of confidentiality; lack of time; privacy concerns; difficulty with emotional openness; lack of perceived need for help; lack of awareness of services;

and overall a skeptical view of the efficacy of treatment (Chew-Graham et al., 2003; Dunn, Green Hammond, & Weiss Roberts, 2009; Eisenberg et al., 2007; Givens & Tjia, 2002; Komiya, Good, & Sherrod, 2000).

The term hidden curriculum has been used to describe the implicit and unstated rules within organizations and cultures (Lempp & Seale, 2004). This can include customs and rituals as well as norms which dictate the way one is expected to behave within a particular role in that structure or group. Dunn and colleagues (2009) note that there is hidden curriculum in health professional training programs in which unstated rules and expectations define the behaviours that are acceptable within the profession, and depending on the culture of the professional environment students will experience acceptance or ostracism based on whether they conform to the rules implicit in the hidden curriculum. This may help to explain the resistance of some health professional students to seeking help for mental health issues, and highlights the potential implications of maladaptive coping, stress, and burn out on these students. The present research explores some of the aspects of hidden curriculum present in the programs that the students attend, related to coping with stress and help-seeking behaviours. It is important to explore the underlying reasons why students do not seek help for issues that impact their functioning and well-being. Ideally the training programs for these students provide an opportunity for education about and intervention for mental health issues as well as establishing an environment in which service providers are understanding of the distress that these students might be experiencing. While the literature suggests that health professional students acknowledge that stigma exists around admitting to mental health issues and that these issues can impact patient treatment, there appears to be a gap between

acknowledging the impact that such stigma might have on how they treat patients and concerns about the personal impact of seeking needed treatment within the context of the training program.

Research has explored barriers to help-seeking behaviours of students, but there is much less known about how interventions, policies, and resources impact help-seeking behaviours. Research has found that service uptake has increased for student services in general, although anecdotally it has been found that health professional students seek services typically for “minor” issues, concerns about confidentiality, privacy, stigma, and implications for one’s career are cited as common barriers to help-seeking behaviours. The current study aims to explore barriers and enablers to help-seeking behaviours in health professional students. This focused examination will help to provide information specific to the mental health services of the university in which the study has taken place, with the goal of contributing to the development of interventions to address the barriers and improve services at this institution in the future.

It should be acknowledged that this study is more exploratory and descriptive than theoretical, particularly when compared with similar studies with a purely qualitative focus. However, it must be noted that the primary purpose for conducting the interviews was to gain confidence in the quantitative findings, as well as explore questions and issues that were identified as being directly relevant to the university and programs, as identified by faculty and staff (e.g. help-seeking). The qualitative findings serve to enhance the other findings rather than being a stand-alone piece of qualitative research.

Method

Participants

Participants included students enrolled in the second year of coursework in the Faculty of Medicine and the Schools of Nursing and Pharmacy at an Atlantic Canadian university. Students who self-selected to participate provided their e-mail address following the completion of the first study of the research. The findings for the first study are discussed in the previous chapter.

Thirty-five students indicated that they would be interested in being contacted for this study. Each of the 35 students were contacted and informed that the 45 - 90 minute interview would take place with the doctoral student conducting the research, and the ten students who indicated interest and availability to participate arranged a time with the researcher. Those students who did not respond to the first e-mail were contacted again the following week. By the tenth interview I was no longer getting new themes emerging suggesting we had reached saturation. Due to the low numbers of students from nursing and pharmacy who took part in the interviews, additional e-mails were sent to students in these programs to recruit participants. Unfortunately no further students participated. Interviews were scheduled over a one-month time period between the months of March and April, based on students' schedules. Each student was given a \$25.00 participation fee for taking the time to be interviewed.

Of the 35 students who indicated interest, ten students were available to participate in the one-on-one interview. There were six students from medicine, three from pharmacy, and one from nursing. Attempts were made to recruit additional students from pharmacy and nursing, but were not successful. The individual interviews took place

in an office located in the University Counselling Centre. Prior to the start of the interview, I outlined the purpose of the interview and verbally reviewed the consent form (Appendix C). I provided the participants with a written copy of the consent to read and sign before the start of the interview and informed each participant that s/he could end the interview at any time, and participation was voluntary. I provided participants with a list of the questions that were asked during the interview to review if they wished. Interviews were semi-structured in that each question/theme was discussed during the interview following the flow of the interview rather than in a set and structured order. At the completion of the interview, I provided participants with pamphlets and contact information about the Counselling Centre and informed them that there was a counsellor available on site if they wished to discuss anything related to the interview.

Each interview was audio-recorded on a digital recorder and transcribed by two trained transcribers. I checked the interview transcripts against the audio-recordings and made any edits necessary to ensure that the transcripts were as accurate as possible.

Measures

In the first study, students completed three measures of student stress, coping, and eating disordered behaviours. Students also created a unique identifier code which could match their responses on these measures to their participation in the qualitative interviews. I matched them to their demographic information, self-reported stress, and use of coping strategies to provide contextual descriptive information, followed by the qualitative analysis of their interviews.

These measures included: (1) How I Deal with Stress Questionnaire

(HIDS; Ross & Heath, 2002, adapted by Heath, 2008) which was comprised of 24 statements exploring different coping strategies used by students to deal with stress on a 4-point scale and a Likert scale measuring their experience of stress over the past two weeks; (2) Perceived Stress Scale (PSS-10; Cohen, Williamson, Spacapam, & Oskamp, 1988) a ten-item scale which measures the degree to which a person appraises events as stressful, with higher scores indicating higher levels of stress; and (3) SCOFF (Morgan, Reid, & Lacey, 1999) which, when used in clinical settings, can “raise suspicion that an eating disorder might exist.” These measures have been found to have good reliability and validity (Heath, Ross, Toste, Charlebois, & Nedecheva, 2009; Morgan, Reid, & Lacey, 1999; Roberti, Harrington, & Storch, 2006).

Interview Guide

Building on a mixed method sequential design (Ivankova, 2014), the qualitative interview questions were developed to gain deeper insight and understanding and elaborate upon what was found during the quantitative part of the research and to study the students’ views in more depth. Interview questions and themes were designed to explore students’ experience of stress and coping strategies. These questions were developed primarily based on the goals of this research and drawn from what has been found in the literature as well as prior inquiry of students in a similar study conducted at the university. Following the quantitative study, it was also important to develop questions to further explore the ways in which students coped maladaptively, as well as how they viewed student services offered on campus, specifically help-seeking behaviours and attitudes toward services that were available. This also stemmed from areas of concern expressed by faculty and staff in the health professional training

programs. This opened a new and important line of inquiry that was in line with the applied nature of this research. To explore each of these themes the following themes and questions used included:

To explore student experience with stress, questions included:

- Could you please tell us about your experience as a medicine/nursing/pharmacy student and feeling stressed?
- What are the things that made you feel especially stressed? Tell me about what you found most stressful about your program this year?

To explore student coping, questions included:

- How have you coped with the stress?
- Can you talk about some of the coping mechanisms that you have used and how well they worked for you? (Prompt: Coping can include things like exercising, drinking alcohol, eating, talking with friends, self-injury etc.)
- What are some ways you have tried to cope that didn't work so well?
- Are there other coping mechanisms that you use which you think might be helpful to other students? Please tell us more about that.

To explore student help-seeking behaviours, questions included:

- Over the past year, have you sought help for your stress at the university or from people in your program (like other students or advisors)?
- What kinds of help do you see as available for students in your program to deal with stress? What about students in general?

To explore students' thoughts on services and how they could be improved, questions included:

- How do you think that help for students could be improved? Do you have specific ideas or examples?
- Do you think that you would be more likely to use a service like the University Counselling Centre if there was an office at the Health Sciences Centre?

Methodological Reflexivity

Reflexivity has been defined as “the recognition that the researcher is part of the process of producing the data and their meanings and conscious reflection on that

process” (Green & Thorogood, 2004, p. 194). With this in mind, I was aware that I, as the researcher, am a collaborator in the interviews and am part of the research. I had to be aware and reflective of my own role in the qualitative interviews, data collection, analysis, and the interpretation and writing of the data. Self-reflection had to be ongoing. In the process of planning and conducting the interviews, I, as the principal investigator and a new qualitative researcher had to be aware of the potential impact of that on the research process. There were a number of similarities between the participants I interviewed and myself. As a doctoral clinical psychology student, I myself am in a health professional program. As a student who was simultaneously working on my degree, I was also amid course work, clinical practice, professional socialization, and my thesis research; I was a health professional student dealing and coping with my own sources of academic and life stress. I was also within the age range of those I was interviewing, and we lived and worked in the same city. It was important for me to recognize the influence of this both on how I related to and engaged with the participants, as well as the potential for the participants to relate to me in view of these factors. Typically, the interviews were more relaxed in nature, with less differentiation between myself and the students as interviewer/interviewee and more as academic peers and a doctoral student researcher/student. For this reason, I found myself relating differently to the health professional students than when I had conducted prior interviews for a similar study with first year undergraduate students. During my self-reflection on the process, I had to be aware of times that I was becoming aligned with the students and their experiences. It was important for me to be critical in the analysis and interpretation phase to ensure that it was representative of the students’ experiences and views.

I became more comfortable with each new interview, and similarly the participants appeared to be more at ease during the interview as I gained more experience. The interviews moved from more to less structured and became more exploratory and conversational. As such, the interviews typically took longer to conduct and analysis suggests that the participants provided more in-depth responses and I asked questions that accessed deeper and at times, more thoughtful responses.

As a student in clinical psychology, I had to remain aware that I was conducting a qualitative research interview and not a clinical interview. Many of the issues that were being discussed were similar to what I would cover as a psychologist, including stress, coping, and support systems. I needed to remind myself that my goals were different from the goals I would have during a clinical interview and I was aware not to blur the lines between both. For example, in a clinical interview I would be working from a diagnostic perspective, conceptualizing the “client,” asking questions that would help to inform my case conceptualization and working diagnosis. This is in contrast to the interviews for the research in which I would ask questions to gather more in-depth understanding of student issues and each student’s experiences, but would not ask these questions as a means to inform clinical conceptualization or intervention planning. This became particularly apparent during times when some of the participants disclosed information that as a psychologist in training I would have challenged or questioned, but as a researcher I did not pursue as it was not part of the aim of the research or the research objective. Navigating this line between researcher and my clinical psychology training was something that I had discussed and processed with my supervisors.

Each of the interviews was initiated in the same way with me contacting the students via e-mail to participate. Those students who consented to participate were quick to book times, and all appeared eager to participate. The majority of the participants (eight participants) made reference to wanting to participate to help with research and student services. Two reported that they had used the services on campus (specifically the University Counselling Centre) and felt it was important to discuss their positive experiences and offer suggestions in hopes of helping more students to access the services.

Interview Process

Each interview was an active process in which the questions were asked and topics were discussed, but it was a two-way conversation that was both interactive and meaning making (Holstein & Gubrium, 2004; Rapley, 2004).

It was important for me to let the participants know how important their interviews were, and that any suggestions that they had for student services would be delivered back to the university and their own programs, with an assurance of confidentiality being maintained. The impact of conducting the interviews at the University Counselling Centre was not lost on either the participants or myself. Three participants indicated that they had not used the UCC before, and that they felt vulnerable sitting in the waiting room before the interview. These students each said that they were aware that they were waiting with clients, and that although they knew they were there for research purposes, they felt uncomfortable. The interviews were held at the UCC for three reasons: (1) the UCC was an environment in which the interviews could be held with as much confidentiality as possible, with the interview room soundproofed and designed for

clinical work; (2) the students interviewed were on campus, attending classes, so the location would provide an easy to access environment for the interview; and (3) this study was part of a larger research project for which the ethical application required having a registered psychologist available to see any student who felt that, as a result of the interview they needed psychological services was required.

Data Analysis

With student permission, I taped each interview using a digital recorder, and the data was transcribed into a Microsoft Word file. During analysis, each transcript file was repeatedly reviewed for recurring patterns and themes. The process used with this data was iterative and dynamic, using a thematic content analysis and constant comparison method during data collection and analysis. As noted by Green and Thorogood (2004), this is an approach commonly used in health research, and is useful in answering questions about issues that are found in particular groups. This approach required constant comparison by which the interviews were compared with each other to help identify recurring themes, moving beyond categorizing the data to thinking about how the themes and data relate to each other, asking more complex questions and presenting a more in depth and rich depiction of the experiences and stories shared by the participants (Green & Thorogood, 2004). In this approach, I, the researcher, used the interview transcripts as well as my own notes on the interviews to categorize students' responses in a way that could then be summarized. As the segments of the interviews were categorized, they were compiled with the creation of separate documents for each emerging theme. An example of this would be the themes around the hidden curriculum, as explored by the students' own feelings toward what it means to be thought of as

struggling in their program, the implications that they felt this could have on their education and future clinical experiences and career, and fears of being seen as “weak” or different from their fellow students that surfaced throughout the student interviews.

Results

Demographics: Placing the Students in Context

Ten health professional students participated in individual face-to-face interviews to qualitatively explore their lived experience of stress, use of coping strategies, help-seeking behaviours, barriers and enablers to seeking help, and their perceptions of availability and access to services at an Atlantic Canadian university. Using the anonymous code that the students provided through the preceding phase of the research, I matched them to their demographic information, self-reported stress, and use of coping strategies. The following provides this contextual descriptive information, followed by the qualitative analysis of their interviews.

Of the ten participants interviewed, there were six medical, one nursing, and three pharmacy students. Participants had a mean age of 24.20 years ($SD = 3.08$), ranging from 20 - 32 years of age. There were three male participants and seven female participants who completed interviews. When asked if they had completed any workshops or educational sessions covering topics on stress, mindfulness, or developing skills in life balance, four participants reported that they had, while the remaining six had not. Of the ten participants, eight students indicated that they had completed an undergraduate degree while one person indicated that they completed a master’s degree.

Overall, the ten students reported experiencing high levels of stress, as measured by the single-item self-reported stress measure on the HIDS (Ross & Heath, 2002,

adapted by Heath, 2008). On the HIDS stress measure Likert scale ranging from 1 = *no stress* to 10 = *the most stressed I have ever felt*, the mean level stress reported was 8.11 (*S.D.* = 1.17) compared to a mean score for the entire group in the first study (*n* = 117) of 7.3 (*S.D.* = 1.74). The stress reported on the HIDS by those in the first study and the second study was not found to be significantly different. Similarly, on the more detailed Perceived Stress Scale-10 item measure, six respondents (60%) reported a stress level of 20.20 (*SD* = 8.74), indicating a higher than average perceived stress level and a high level of health concern (Cohen et al., 1983; Kelly & Percival, 2006). This was higher than the PSS-10 scores reported in the first phase of the research, which was 19.72 (*SD* = 7.04). The stress levels reported by students in the first study and the second study were not found to differ significantly. Of the other four students, two students indicated a level of stress lower than average, one indicated an average level of stress, and one student reported a slightly higher than average perceived stress and a high level of health concern.

In terms of maladaptive coping strategies, one student (10%) reported engaging in NSSI behaviours, eight students (80%) indicated that they have used “eat” as a way of coping with stress either a few times or frequently, five people (50%) had used “try to control my weight” a few times or frequently as reported by the screening instrument the *HIDS*. In study 1, 2.5% of students were found to endorse NSSI behaviours, 85% using the coping strategy of “eat,” and 44.2% “trying to control [their] weight.” In terms of the presence of eating pathology, two respondents were found to report scores that indicated concern for eating disordered behaviours on the SCOFF, while 17.5% indicated responses suggestive of ED behaviours in the first phase. Finally, five people (50%) had used

alcohol to cope with stress at least once, with 40% of those interviewed having done so a few times or frequently, in comparison to 65.9% of students in the first phase of research.

Qualitative Analysis

The following qualitative analysis explores the students' lived experiences of stress, use of coping strategies to deal with stress (including NSSI, eating pathology, and use of alcohol), and student help-seeking behaviours and perspectives on service provision. Another theme that appeared throughout the interviews was that of a hidden curriculum that influenced students' experiences of stress, coping strategies, and most importantly help-seeking behaviours. The findings presented provide a deeper understanding of the challenges and experiences faced by students and the ways that their programs and university student services might impact student help-seeking behaviours.

The names used throughout this manuscript are pseudonyms. To help maintain confidentiality, no specific ages are provided, although age ranges are given where appropriate.

Sources of Stress in Health Professional Student Lives.

Students were asked about their stressors and experiences with stress during the second year of their program. Research has proposed that students in health professional programs face academic stress that extends beyond the pressures of studying and workload to include the socialization into their profession and forming a professional identity, combined with a focus on developing clinical and applied skills (Andrew, McGuinness, Reid, & Corcoran, 2009; Lo, 2002). Students interviewed experienced program related and academic stress, ranging from short time periods of stress during examinations to more pervasive and long-term stress. Each student recognized and

discussed academic stress, with a majority citing the volume of work and scheduling, as well as the pace of the program as being predominant stressors in their lives. Students also reported experiencing stress from their program beyond coursework, including clinical skills and patient safety, the level of expectations, fear of failure, and dealing with “other life” stresses including finances, living situations, family conflicts, maintaining relationships, and experiencing a lack of balance in their lives. Emily (medicine) discussed this experience of stress when using clinical skills in treatment of patients, and her perception of the expectation for perfection in her program:

I am like, okay, am I going to be able to do this well in clinical skills so that if I get out into the real world, am I going to be able to pick up whatever disease I am looking at and actually be able to make a diagnosis and help this person. It's a completely different kind of stress; I never really had a lot of stress actually until I hit medical school, because the bar is set at like perfection because if, you know realistically if you're not at the top then it's not like if you make a mistake nothing will happen, you know? You have to know it inside out and upside down and you have to be able to take everything and apply it clinically, so that has been super stressful, cause it's like this whole burden of being the best you can be.

Half of the students acknowledged that they experience two kinds of stress: three students noted a baseline level that keeps them motivated to stay on top of their workload and an elevated stress level that can become overwhelming. Emma (medicine), spoke about when her stress moved beyond being motivating to overwhelming:

I find it scary when I have a lot of stress and I'm not just dealing with it, and I don't think that helps me deal with it that well. I usually just start freaking out and trying to do everything at once.

While each student interviewed acknowledged academic and program-related stress, three students reported that they felt that the stress that they were experiencing was short-term and would end when the program finished. The students who felt this way spoke about their experience of stress as something that was worth it, in some cases expressing

acceptance or even enjoyment of the short-term stress. As Jane (pharmacy) noted, the stress of her program was worth it in light of the profession she could be entering:

It's only 4 years. And I guess it's worth it, after that. Cause you, you know, you have a good job that you like...I always say when I hear other people complaining, just remind them that it's just delayed gratification. You know, right now unfortunately all of this is supposed to be like the glory days, in your 20s having fun you know, but you'll just have that fun after you leave 4 years later.

Physical and Mental Health Implications of Student Stress.

To explore the students' own reactions to stress, I asked questions that explored the ways in which students physically and emotionally experienced and reacted to stress in their lives. Four of the students responded that they often felt stress physiologically, including feeling tired or unwell, having difficulty sleeping, loss of appetite, and headaches, with some acknowledging that they have visited their own physicians to make sure they are "healthy." Five students responded that they felt stress emotionally, noting that at times of elevated stress they have less capacity to deal with their emotions.

Kathy, a student in nursing, reported that when she was experiencing a period of high stress, she also experienced the physiological symptoms of anxiety when she felt physically unwell and sought medical attention:

I know last semester it [stress] was bad that I just didn't know what to do. Like I got to the point where I like, where like I don't know if I can cope with this on my own anymore. So it's like I get a lot of physiological symptoms. I get, I start to shake. I have heart palpitations, and I can't sleep...I get really nervous and I just can't concentrate on anything. It's really awful; I go to the doctor like every month with something new. Like "this is wrong with me," but there's nothing...there's never anything wrong.

In addition to having difficulty sleeping, Emily (medicine) reported that she has experienced both physical and mental exhaustion when stressed, and described her

experience of stress over the academic year. What she describes is a stress reaction that impacts both her physical and psychological health:

I have found that I sleep less and less well... I have even found that I am getting like aches, like my back hurts, my leg hurts, my knees hurt and things like that... it is like a mental exhaustion and a physical exhaustion. It has taken everything out of me, everything that I have to give. I just don't have anymore left... I just don't feel like myself. I feel different. I feel like an old woman; as the year gets further and further on I get more burnt out and it's harder and harder to reach out and make connections because the stress is just like, it's a build up, it's a snowball.

Stress was also found to impact students' emotional lives. Hannah (medicine) described feeling overwhelmed and unable to take advice when feeling stressed:

When I get to my peak level of stress I'm irrational, so no matter what anyone says to me I'm not going to respond very well, and so sometimes I will seek out help out those times but I also know underneath that I'm not really willing to take any advice.

Coping with Stress: Health Professional Student Perspective.

Adaptive coping.

Students discussed using coping strategies to deal with the stress they experienced during their academic careers. Many conceptualized their coping in terms of “shoulds” and “should nots.” All students interviewed reported ways that they coped with their academic and life stress, with some of the coping strategies including making decisions to decrease stressors (e.g., living at home to lessen financial stress), shifting priorities (e.g., less time with friends outside of school), and decreasing their expectations for themselves academically or within their own lives while in school.

Three students believed that by the time students enter into a health professional program they should already know what coping strategies help them deal with stress. Six students noted that the maladaptive coping strategies they have engaged in (e.g., drinking,

procrastination, cramming) were things they did in their undergraduate degrees but have moved beyond in their current programs. Kate (medicine) discussed her views on the ways in which students have learned which behaviours they can engage in and still maintain a productive level of work:

I think people manage it pretty well, I think they get their destructive drinking habits out of the way in their first degree, right? If you have gotten into med school, you probably have a good idea of how to manage partying and getting your work done; you've gotten to the point where you know your limits and you know how much you are going to study, and you make mistakes every once and a while... but you know if you can do it.

When asked about the ways that they cope with stress, students discussed a number of things that they did including decreasing their number of activities, keeping up on work, positive self-talk, exercise, relaxation, talking with others and social support, and avoiding stressful situations and negative interactions with classmates. Five discussed strategies that were “productive” uses of time, including cooking healthy meals as a study break, and using exercise as a constructive way to cope with anxiety and take a break from studying.

Six of the students recognized that they made a conscious decision to cut down on activities and commitments that required time outside of school, including extracurricular activities, work, and prioritizing the activities they felt they could manage. Four students implied that cutting things out of their schedules to cope with stress was less of an active choice and more of a necessity to ensure that their work would get done. As Anna (pharmacy) highlighted:

I have high standards from everything for myself, so learning how to let go of some of those is good because it just, like, I can't do everything.

Rather than cut out activities, Jake (pharmacy) made the decision to decrease his expectations of himself academically, which helped to decrease academic stress:

It used to be more of a demand, I guess, to get a good grade, but I've given that up. Now I'm more get-through-the-program focus than trying to get A's in everything, so that's helped decrease some stress.

Seven students spoke to the importance of having someone to talk to when they were experiencing stress or difficult times, including family, partners, friends, and fellow classmates. Emma (medicine) found that talking with others helped to lessen the negative self-talk that she typically engaged in:

Talking with people really helps. It puts things in perspective, and I'm not in my own head making it a big deal and doing that whole like, you know, worthlessness talk that I tend to do, you know, so it does help.

Half of the students interviewed felt as though their classmates contribute to an increase in their stress levels. These students often find themselves avoiding students that elicit stress. Ethan (medicine) felt that this avoidance strategy worked well for him:

I just choose not to hang out with them [the high-stress students] if they get kind of frustrating, so I think I've got a pretty good coping mechanism with that. Just avoidance is the main thing... I just kind of leave them to their own thing.

In general, however, Kate (medicine) summed up many of the students' sentiments:

I think relying on your friends and having a support system is pretty important.

Students spoke about the importance of exercise to help cope with stress. For half of the students, exercise was deemed an important part of helping students take a break from their studies and was a productive use of their time, providing a space to quiet their thoughts. As Ethan (medicine), Jane (pharmacy) and Kate (medicine) describe:

Ethan: Definitely staying active is probably my biggest method of [coping], yeah, just keep things off my mind... exercise is definitely my number one thing.

Jane: [exercise] *is a way of, you know, decluttering your mind and not actually thinking about it for a while.*

Kate: *exercising helps a lot, I think. It gives me something to do. Cause I think when I am stressed if I just kind of take my mind off of it a little bit, that helps.*

Raising the idea of being “healthy,” Anna (pharmacy) acknowledged the importance of being healthy and exercise to her mental state and happiness:

I like to stay active...if I don't feel healthy, then I don't feel happy, so that's a big priority for me.

Maladaptive coping.

When asked about their coping strategies, I prompted students with examples of both adaptive and maladaptive coping. Seven students described their coping strategies but did not identify their behaviours as maladaptive. Some of the coping strategies used by students included pathological eating behaviours, deliberately abstaining from sleep to do work, seeking distractions, smoking, and self-injurious behaviour in the form of hair pulling. Students also discussed their use of alcohol, which has been outlined in the literature as an issue for health professional students (Baldwin et al., 2006; Baldwin, Scott, DeSimone, Forrester, & Fankhauser, 2011; Steed, Groome, Rice, Simpson, Day, & Ker, 2013). Many minimized their behaviours, often not describing their behaviours in detail.

Six students described the ways in which their relationship with food changed during times of high stress. For some, this meant an appetite that shifted between not being hungry to eating constantly. Anna (pharmacy) described inconsistent eating patterns during times of stress,

Sometimes it's like I will overeat, and other times I completely lose my appetite... I almost felt like physically sick just the thought of studying and having to get

through all that, and I know like if you eat healthy it gives you more energy or whatever, you know, and shouldn't be eating junk during exams; but, yeah, and then there's other times where it's just like "oh screw it, I don't care what I eat" and I'll just eat whatever and deal with the consequences at the end of the exams when I, you know, it's just like back to the gym, back to the regular routine.

Medical student Hannah describes the way in which she avoids overeating during stressful times by studying at school. While she described herself as being comfortable with her weight, her comments suggest an ambivalent relationship with her weight and she also spoke about food being a distraction for her. Her way of coping with this was to eliminate the distraction:

I probably don't eat enough when I'm studying because I probably go too far the one way because if I'm sitting at home studying I eat a lot. I think everyone does. They just sit and... I don't know, sit home and eat and study, so I go to the library where I can't eat, and so then I probably don't eat enough and I just go through my business there... I've chosen to go to the library where I can't eat for that purpose... Weight has always been something that has been in the back of my mind and what you eat and that kind of thing, and I just know if I ever study at home that's some time when the weight - the scale just creeps right up and you don't - and when I'm home and there's food there I think about it a lot, and so it's just the thought of food is distracting, and then the eating of it makes me not feel as good about myself. So if I go to school I don't think about it and then I don't eat and then, and then everything just sort of seems to fall into place; I'm very comfortable with my weight and that kind of thing, so it's more of a distraction thing that anything because I find thinking about food is a huge distraction, and so when I'm home I think about it a lot, so the eating part, I guess worries me - or is a bother a bit, but it's more the thinking about it.

Emma (medicine) described a different relationship with eating and stress. She describes herself as a stress eater, recognizing that while she understands the importance of eating well and exercising that she does not maintain this behaviour while she is experiencing stress in school,

I'm a stress eater I do believe. Since starting med school I think I gained like 20 to 30 pounds, maybe even more. I stop paying attention to what I'm eating and just eat just about anything that's in front of me and my energy goes down.

When asked about what things she does to deal with stress that have not worked, Emma acknowledged that her stress eating does not help her cope,

I think probably things that don't help, probably the eating thing because if I'm eating poorly I'm going to feel poor and then I can't get as much done; one of the ways in the past that I tried to deal with my stress was by eating better and feeling better because I was eating better and exercising, and it's not something that I'm doing so much anymore, and I think it would help me because it did help before, so, but I just haven't been doing it.

Anna (pharmacy) described her relationship with food and body image, having disclosed earlier that she had struggled with binge eating during her undergraduate degree. She spoke about her shifting relationship with her body while in the pharmacy program,

I used to be really... not obsessed with how I look, but it really mattered to me that, you know, I have a flat stomach and my legs are thin enough, that I maintain my muscles... I put a lot of stress on myself to try to keep that up, and then I kind of realized - well this year - it doesn't really matter because everyone always views you the same. Everyone always says to me "you look the same; I don't see anything different." So I realize that, this past week too I've also accepted the fact that I can't keep up my workouts as much as I really wanted to.

Eight of the students interviewed did not disclose engaging in self-injurious behaviours, even when prompted. One student in pharmacy, Jane, spoke about her hair-pulling behaviour which had developed since starting her program, although she did not express any concern about having developed this habit:

I do have a nervous tick that comes out when I'm studying and I like pull on hair like here, and I don't know if it's just like, what kind of weird habit but it just started the last couple of years. And I've got this little piece back here now that doesn't grow any longer that like that long. My hairdresser always comments on it.

Smoking was described as one way in which Emma (medicine) copes with stress. While she recognized this as a maladaptive behaviour, she continues to smoke as a coping strategy,

Smoking is an issue every time. I quit smoking about every two days, and then I get into high stress and end up with a pack in my hand and smoking again, so it's, I didn't even think about it, but it's a big way of coping with stress and a ridiculous way of coping with stress, but it is something I do, which is unfortunate because I'm in med school, but it is something I do. You can always tell that an exam is coming up depending on how many packs of cigarette I've bought in the past week.

Professional Socialization and the Hidden Curriculum

It is interesting to note that as students spoke about their programs and cohorts, they also discussed the issue of professional socialization and the presence of a hidden curriculum in the social structure of their programs. Professional socialization involves the adoption of the knowledge, skills, attitudes, norms, role, and culture of a professional role. This process can occur both through structured and visible curricular experiences and through hidden and unspoken expectations and values that are very much a part of the development of the student's professional identity (Dunn et al., 2009). Some of the students spoke about the fact that they felt there were expectations of them and they felt pressured to participate and would be viewed poorly if they did not, such as participating in social events planned by their school, or medical students indicating that they were encouraged without being specifically directed "wink wink nudge nudge" to spend their free time shadowing physicians and participating in school-related extracurricular activities. While some students felt that these expectations were stressful for them, others noted that they found the structure and expectations of their programs helpful in coping in that they felt it helped to unite them with other students and be a part of the culture in their program.

Eight students discussed the fact that they shared all their classes with the same students. Two felt that this was helpful, while the other five found this contributed to

stress. Ethan (medicine), felt that some students in his program forget that all of them had similar workloads, and noted that some students speak more to their experiences of stress which he felt increased the stress of other students in his class:

Everybody has that much work to do, so I think its people are just maybe a little bit more vocal about their own issues of stress, which is kind of funny because we're all in the same class and we all take all the exact same courses.

In contrast, Josh (medicine) expressed that because all the students in his class share the same courses it helps the students to understand each other and talk about their experiences with stress:

Usually it helps that everyone is in the same situation... I find everyone is in the same boat together. So just by being able to talk to other people and, you know, friends and that, that everyone deals with it. It's easier to talk about it. I find that helps.

Students spoke about their social interactions with fellow students, particularly outside of class time and during extracurricular events. Four students expressed that they felt that it was necessary to participate, even if they did not want to. Emma (medicine) expressed her views on how the social dynamic of her class differed from her expectations:

The social structure in med school is different than what I thought it was going to be... like it's a very weird social structure that everyone else seems to have understood and gotten into very easy, and I don't, so I find that kind of thing stressful to feel like I should be doing these things and I have to be doing these things - just the pub crawls and the MunDal and the med games where medical schools get together and do sports. I don't know the purpose of it, but it's a big culture in med school, and it singles me out that I don't do them sometimes... I feel obligated to do these things that I don't want to do - you know, like I have no interest in - so it's a bit hard sometimes.

Six students noted that while they did not really enjoy the social and extracurricular activities, they recognized the importance of participating and being social with their

fellow students which contributes to the sense of commitment to the professional culture and therefore the potential impact of the hidden curriculum. Jake (pharmacy) expressed the importance of this:

You have to maintain good relationships because, you know, there's lots of times when you miss class or, you know, you have, you get put in groups with people to do group work and you know, you have to be, they have to be your friends... you have to try to make an effort, I guess, to stay involved even if you don't really want to.

Jake added that a lot of the extracurricular activities in his program involve drinking. Three students said that drinking was a good “stress relief” after an exam, and a way of socializing and celebrating with fellow students. Jane (pharmacy) describes the culture of drinking:

The nature that is in all of these professional programs is that there is a lot of drinking, like when all the stress is off, when the exams are over, when there's a few weeks that are free, you know, whatever it is there's like just this binge drinking atmosphere I don't particularly enjoy or endorse and I find it stressful and there's that pressure to like, go to parties and drink that much and I don't know, I don't, I find that to be a little bit annoying... I think there's this sense of, like, losing control. Once you're having to maintain control all this time, I find there's a build up for months or whatever, and then there'll be this opportunity to go out to a party or something, some pharmacy related thing... and it's just everybody gets so drunk and like intoxicated... I guess it's typical behaviour, but it's not.

Many of the extracurricular and social activities within the health professional programs are described as having the “work hard, party hard” mentality. Kate, a student in medicine, suggested that this mentality has its time and place and is present in medical schools across the country based on her experiences within interactions with medical students from other schools,

It is a very work hard party hard mentality, especially in first and second year because you know in third year you don't have as much time to party... but I think people manage it pretty well; I am sure, like med school drinking is not the best

habit 'cause lots of people in my class drink a fair amount and I went to med games in January, and I think it's a trend pretty much across the country.

Anna, a student in pharmacy, discussed her different “lives” - one life as a student, participating in social events and the drinking activities and her other life in her hometown and with her old friends:

It's weird because I'm in a class of like younger people, so I find like my, I kind of lead two lives. When I go back home all of my friends are sort of like older, and you know, like when we go out for drinks, it's only a few. Nobody is making a fool out of themselves, but here everybody does. At least in my class almost everybody does, and it's fine and whatever. I mean, I think everybody would call me the responsible one. Like I'll go out drinking, but I'm not, I don't see the point of drinking to the point of puking.

Help-Seeking Behaviours

Students were asked to share their thoughts on help-seeking behaviours and to discuss times that they had sought help. They talked about seeking help from their faculty/program, through the university, and outside of the university. When asked if she would seek any help from anyone within her program for help, either academic or related to stress, Jane (pharmacy) categorically stated that she would not seek help from the faculty:

Definitely no faculty members. I find the faculty are very, they are the ones kind of putting the pressure down I find. So I would never never approach them.

Students in medicine spoke about the services that were available to them. Four students spoke about sessions held by the Wellness Program and the services offered by the wellness coordinator, located in the main undergraduate student office. Two had directly spoken with her, while the remaining two had not but have heard both positive and negative things about other students experiences visiting the office. Emma described the role that the wellness coordinator has had during her time in the program:

I think that the things that help is, of course, talking so, you know, I talk to [the wellness coordinator] and she has this wonderful way I assumed she's learned because she's a counsellor, making me realize exactly what's bothering me, or making me realize that the things I'm worrying about don't really matter... I find that is my best positive coping mechanism.

Students also recognized the wellness coordinator's presence within the Faculty of Medicine and their concerns were based on negative feedback and confidentiality concerns from other students. Emily (medicine) said:

We have heard from other years as well as from personal experiences within the class that it is a bad idea to avail of any services that are offered by the medical school, because they are not helpful and there have been some not so good things that happened regarding confidentiality with students in my class that has made students in my class very wary of approaching anybody and saying that I need help... I have heard from three different people in my class who have used these services that it was not good and it made them feel worse than they did before. One says that confidentiality was broken and she heard office workers talking about her case... so we all avoid that like the plague"; "I don't think I would ever take anything school affiliated, I would come straight here [the UCC].

It is unclear if the critical statement made is about the services of the wellness coordinator, or of the undergraduate student office in general. Kate (medicine), spoke about her experience going to the undergraduate office that has impacted her interest in further interaction or help-seeking behaviours from them:

Going to the undergrad office if you are concerned about something is pretty much useless. They are not very understanding about stress. You know, the student affairs office is really great, but sometimes I feel like they are a little too hard on us.

Students were asked about seeking help from services within the broader university community as well. Three students indicated that they had limited awareness of the University Counselling Centre (UCC) unless they were directly involved in the peer counselling program offered by the medical school, had attended their first undergraduate degree at the university, or had sought out services themselves.

When asked about her decision to visit the UCC, Kathy (nursing) said that she had been “going through a lot that week” and decided to go when a friend told her that she was going:

I didn't even know it existed, actually, and I had... actually, I had been thinking that maybe I should go talk to someone about this because I am so stressed, and then I found out this was here [the UCC], so it's perfect because we're students.

Jane, a student in pharmacy, discussed a time that she used the UCC, but felt as though it was not effective in helping her work through her presenting issue:

I did book a counselling service here once before. I think it was last year. It's wasn't so much about coping with stress. It was more about some other personal issues. But I found that, like, it was helpful I guess, but for me not as beneficial as like not think about it and just go for a long run and you know, and just deal with it on my own like that. I find that to be a little better. I find I can forget things or like kind of forget the problems for a little while rather than just talk it out to a stranger. I found in this particular sessions that I did I found it just made me more upset.

Jake (pharmacy) spoke about the UCC in line with other services offered at the university and those services covered by student insurance. He was an advocate for using all the services available as a way of coping with stress:

They have all these things for us to help us cope with stress, so I'm using every single one of them. Like I'm using the massage and the chiro through the [university] insurance plan, you know, and go to the counselling centre. I have a doctor, a psychiatrist, that I can go see whenever I need to go. I keep, try to, I go like every couple of months just to make sure I don't get bumped off the list, you know.

Two students indicated that if they found themselves in need of services, they would be more likely to go to Student Health first. Hannah (medicine) noted that she would be more likely to visit the UCC if she had prior visits there, but it would not be her first place to seek help on campus,

I think if I know that in well, in terms of counselling, if I ever had a problem I'd go to student health or something if I really needed someone to talk to. Yes, those would probably be the ones that I would have access to. I think I'd probably be more likely to come to the counselling centre if I had been before and was coming back again for the second time; but maybe if I was in, well, I think if I was in a crisis situation I would definitely come. Yeah, it probably would be here first, but I might present with something else to the doctor and then talk about stress as a secondary complaint or something like that.

Barriers and facilitators to help-seeking behaviours.

In discussing seeking help on campus, students discussed possible barriers to accessing help both within their program as well as at the university in general. Students in medicine were vocal about the potential barrier of stigma when discussing seeking help from the undergraduate student office and the wellness coordinator. Josh stated:

[The wellness coordinator] is in the undergrad office, so you have someone who takes care of any sorts of issues we have just as students like, you know, scholarships, any sort of things that go along with med school; but then if you have a problem like a personal issue and you want to go speak to [the wellness coordinator] you still got to go through the same, like you got to walk in through the same office, you know. So although it has nothing to do with, like, they tell us it won't affect our standing or anything like that, but I think just having to walk through that same sort of room where everything else is done, I think people would be better off or more comfortable going in there... We all are in the faculty there to make sure everyone is okay and we're in the profession to make sure everyone, you know, is comfortable and like confidential and things; but, like I'm saying, everyone is human.

Josh highlighted that while students in health professional programs are taught confidentiality and self-care, stigma related to help-seeking is a concern. Three other students in medicine echoed this and felt that students do not want to be viewed as needing to seek help, as highlighted by Kate:

I am sure students probably don't want to be seen as the one who is struggling or anything like that. That might be it. You know just seeing someone walk in the door to the counselling centre you might be like oh I wonder what's going on, what they are having trouble with. Of course I don't think people would really judge you, but as the person you might be concerned.

Five students also discussed their concerns with confidentiality, acknowledging that the people that they seek help from at school might also be those they have to work with or rely on for academic help or references. They also highlighted their concerns about the impact of stigma if they were seen as needing mental health services. Josh (medicine) spoke to his concern about using the peer counselling service available through his medical program, stating:

I find most people find it probably more comfortable going to speak to [the wellness coordinator] just because, the program we have, although it's anonymous and things, you just always worry that, he's like a year ahead of me and what if I run into him on the wards and he knows something about me.

Beyond expressing concern about seeking help from the wellness coordinator or peer counselors, students in medicine expressed concern about potential conflict of interest in seeking help from their professors and those involved in the program. As Kate noted, her concern was that those they seek help from are also those who will be references, or will have to work with at a professional capacity at a later time.

The problem in medicine is that a lot of your professors who you are having, who are teaching your classes, who are course chairs, who you want to complain to or complain about, they could be your preceptors who you are in clerkship and getting into residency, you kinda need a good reference letter from somebody that is your preceptor in your clerkship. You really don't want to make any of those people mad or at least know you as oh you are the one who complained, or you are the one who deferred the exam ... that could be the doctor you are working with and they could make your life really difficult or a lot easier and they are the ones that are going to be marking you individually and writing your reference letters for residency, you would never really say anything that would make one of those people upset, it's almost like a suck it up game because it's not really about your grades for getting into residency, it's about your references, so that's, you're kind of trapped sometimes about what you can do about various issues that are affecting you.

Mental Health Service Provision at the Health Sciences Centre

When asked about their views on opening a counselling centre at the Health Sciences Centre (HSC), students had mixed feelings about this. Four felt that more awareness of already existing services would be best, highlighting that if students need the services then they could visit the university centre for such services while others felt on-site services would be best.

From a practical perspective, Kathy (nursing) felt that it might not be necessary:

I think it might be too much work to get it. I mean, it's not that far for us to come over here, so I wouldn't be...I don't think it would be too necessary to have it over there [at the HSC].

Similarly, Emma (medicine) felt as though a centre is not needed, but that having a counsellor available would help students:

It's a very good idea to have somebody over there to help, but I don't think having a large counselling centre over there would help.

A student in pharmacy, Jane, who had stated earlier that she had been unaware of the UCC, provided insight into fellow students and their possible level/lack of comfort seeking help at the UCC,

I think it would be a good idea [to have a counselling centre at the HSC], but it would have to be somewhere hidden away. Like I don't know about the other professional schools, but I know I don't know, I feel that people in my class, they don't know that there is a counselling centre here. And I don't think many of them would be comfortable going to speak to someone.

Discussion

Through qualitative interviews, ten second-year health professional students spoke about their experiences with stress, coping, and help-seeking behaviours. Overall, the impression from students was that they were stressed, ranging from a short-term source of

motivation to a consistent factor impeding daily functioning. Students also identified different ways that they have coped with their stress, outlining a variety of strategies they used that could be categorized as adaptive or maladaptive including prioritizing, seeking social support, exercise, eating pathology, and the use of alcohol. While they acknowledged the importance of mental health services, many indicated that these services were good for other people but not for them, indicating that they preferred to seek out social support from family, friends, and classmates perhaps reflecting the self-stigma that characterizes health professional students (Chew-Graham et al., 2003; Walter et al., 2013). Many spoke about the challenges of feeling like they were stressed or struggling and not being sure who they could talk to within their programs and the academic setting. Gaining insight into student stress, coping, and help-seeking is important as health professional student stress not only impacts students' during academia, but has also been found to have far-reaching implications for the future, both within one's own career as well as with patient care (DiGiacomo & Adamson, 2001; Lo, 2002; McCann et al., 2013; Radcliff & Lester, 2003; Sabih et al., 2013).

Student Stress

As has been found in past research, students indicated that they experienced three main forms of stress: academic, clinical, and personal (Beck et al., 1997; Chew-Graham et al., 2003; Gibbons et al., 2007; Pulido-Martos et al., 2012). When asked about current sources of stress in their lives, all students interviewed identified school as the primary stressor. A majority of the students indicated that this stress was primarily based on the program structure and the volume of work they were expected to cover in a short period of time, as well as the struggle to schedule their schoolwork with other program-based

expectations. The level of academic expectations in health professional programs such as nursing, medicine, and pharmacy was notable and the ease with which students' spoke about this stress suggests the pervasiveness of this experience.

Research has found that short and intense periods of coursework and related stress can be "psychologically damaging" to undergraduate students (Law, 2007). When students spoke about their experiences with academic stress, it was evident that they moved from stressful periods of time to stressful periods of time, with short periods of breaks in between. Each of these stressful periods were discussed as something to "get through," at the end of which the students hoped that the stress would end and that they could relax and do more things for themselves before having to enter the cycle again. This cycling between described periods of higher and lower stress could have a damaging impact on students' physical and mental health. Several students acknowledged that during times of elevated stress, self-care behaviours such as eating well, sleeping, exercise, and social interaction often ceased, replaced by more maladaptive behaviours such as stress eating, food restriction, smoking, lack of sleep, and avoidant behaviours. Students acknowledged this lack of balance, often making reference to trying to "bounce back" after the stressful period during which they had essentially relinquished adaptive coping behaviours and returning to healthier behaviours when the stress decreased. While some noted that this stress was anticipated as part of their program and often helped them to be productive and motivated, most of the students acknowledged that at times this stress became overwhelming. Despite this, several of the students in medicine demonstrated a "push through" attitude about their stress, with some speaking about it with a sense of pride. Others felt that their stress was something that they could manage

for a short period of time, but acknowledged that the impact of the stress on their health and daily functioning was not something that they could continue to experience over a long period of time. Either way, there was a resignation with which the students spoke about their academic stress. Some faced it with a pragmatic sense of facing the stress and expectations and dealing with it, while others were more open about feeling overwhelmed at times and having difficulty figuring out how to balance the work and expectations.

When asked about other areas of stress in their program, students who already had clinical experiences spoke about the way they felt stressed by the real world implications of their degree of study. The shift to clinical practice has been found to increase stress and risk of burnout in health professional students, in part due to concerns of patient mortality, heavy workloads, a lack of confidence, concerns about competence, being supervised, and the shift between theoretical and applied knowledge (Gibbons, 2010; McCann et al., 2013; Pulido-Martos et al., 2012). Students who had direct clinical and patient experiences recognized the importance of their coursework and its impact on patient-safety, while two medical students indicated that their responses to questions around program-related stress would be different after they started their clinical experiences. When this was explored, they acknowledged that while they had practice with standardized patients and volunteers, the thought of being on rounds and having to work with “real” patients was something they experienced stress about and felt would add a different perspective to their own levels of stress when they reached that time. Similarly, students noted that the way they learned and studied had changed, as what they were learning in class would impact future patients. Several students acknowledged that rote memorization studying of their past was no longer enough - they had to know

everything more in depth and with greater understanding to ensure that they could use the knowledge in different situations and scenarios. The gravity of these situations were not lost on the students - they acknowledged that very soon within their education they would be making decisions that could have serious consequences for those that they worked for, as noted by Anna (pharmacy) when she stated “somebody’s life will be in my hands when I’m working so I actually need to know this” when referring to her study material.

While many of the students spoke easily about the stress from the volume of work and schedule of their programs, I noticed that most of the students appeared less comfortable discussing other stressors in their lives. When asked an open-ended question about what made them feel stressed, students spoke about academic stressors. However, when prompted with questions regarding other sources of stress, students began to discuss other stressors including those still in the academic realm (including developing clinical skills and patient safety), a fear of failure in their program, as well as “life” stressors including finances, living situations, family conflicts, relationships, and a lack of balance in their lives.

The Hidden Curriculum

What began to emerge from the interviews was the role of a hidden curriculum in the health professional programs, and most notably the way in which it influenced both student stress and help-seeking behaviours. The relationship between these factors is important to note, because it denotes a visible acknowledgment of the power of the underlying messages that comprise this hidden curriculum and how it impacts student perception of what is acceptable in terms of their own experiences. Many students spoke about stress arising from their expectations both of themselves as well as those of their

program, which is consistent with research on the impact of professional socialization and hidden curriculum on students throughout their education and into their careers (Dunn et al., 2009; Lempp & Seale, 2004). The literature suggests that health professional students are often taught early in their academic programs to forgo balance in order to fulfill their expected duties (Lempp and Seale, 2004; Pulido-Martos et al., 2012). Based on the interviews with the students, they expressed that they felt there were specific cultures in each of the health professional programs in which there are implicit expectations that students should be able to stay on top of vast amounts of theoretical work and prepare for their professional roles and that this is of primary importance. While the students indicated that there were discussions around self-care and balance, they felt that these ideas were aspirational rather than achievable.

Hays, Cheever, and Patel (1996) note that students who pursue medical school already have high levels of personal standards. They note that this level of standards then translates into levels of maladaptive perfectionism when the students are in their program. From the interviews, it was my impression that this expectation for perfection was consistent over all three health professional programs, with admittance to these programs denoting a particular level of achievement prior to getting into the program followed by the continuation of these expectations throughout their education and likely into their careers. Many students spoke about the way in which these expectations were communicated, suggesting that the expectations were not directly stated, but rather were part of an unspoken language and culture, with one student suggesting that “the bar is set at perfection.”

Many of the students interviewed spoke about the expectations in their programs; experiences and performance that were not explicitly required but are nonetheless expected from the students in order to remain in positive standing both with peers and in the program in general. Emma, in medicine, spoke to this when she discussed the activities planned by her program, making reference to the “med school culture,” noting that she felt obligated to participate, even though she found it stressful, fearing that she would be singled out if she did not participate. Some spoke about the high level of performance required by their programs in tests and clinical experiences, while others noted that they had anticipated this and did not find it stressful. Several people indicated that the professional socialization and social expectations of the program were challenging for them, while others found that it helped to create a sense of inclusion and being “in it together” which may further increase the pressure to conform.

The students who spoke about their program’s social expectations as being a source of stress felt that their peers increased their stress in the programs by discussing exams and winding each other up in terms of anxiety; prior research has found that social support can, at times, serve to be a negative risk in terms of coping with academic stress in health professional students (Niemi & Vainiomaki, 1999). This is contrary to the view that talking about one’s issues or stressors might help a person to deal with their stress. In some cases, the students interviewed indicated that they had to be careful with whom they spoke about their stress and acknowledged that speaking with some peers resulted in higher levels of stress.

Research has found that use of alcohol is common in health professional students, in some cases with alcohol used as a means of coping (Baldwin et al., 2006), and viewed

by students in medicine as a significant problem among their peer group (Steed et al., 2012). This research found that the prevalence of alcohol use amongst health professional students is due to multifaceted factors including stress and coping, but also related to social pressures within the program. While the students interviewed did not specifically acknowledge drinking as a coping strategy, some spoke about the drinking culture in their program as a predominant stressor. The majority of the students interviewed indicated that drinking was common in their student life, with several noting that this expectation resulted in them behaving in a way outside their norm. As one student noted, she had two different ways of socialization - one with her program and their “work hard party hard” life, and one with her friends which was less focused on drinking and “more grown up.” It is interesting that none of the students spoke about this drinking culture as one of maladaptive coping, and a number of the students spoke about it with a sense of acceptance and bonding (e.g., a way to “blow off steam” with peers). Many noted that they felt that this social behaviour was something that was necessary for them to participate in, as fostering the peer relationships would help them in other ways, including making friends and having people they could talk about their issues with, create bonds that would help them with practical student issues (e.g., knowing people to get notes from), as well as future relationships. This pressure to participate and be part of the group was expressed by those in both medicine and pharmacy.

Coping with Stress

Students identified different ways that they have coped with their stress, outlining a variety of strategies that could be categorized as adaptive or maladaptive. They spoke more openly about their “adaptive” coping including productive and problem-solving

based coping behaviours. As noted earlier, the students spoke about social interactions and seeking social support with peers, with some noting that this could be a double-edged sword, at times serving to wind each other up and escalate stress. Neimi and Vainiomaki (1999) caution that it is possible that students who only use social support as a means of coping may be at a potential risk, as this might provide grounds for students to focus on their stress in a way that is not productive or contribute to a decreased expectation of success and self-mastery of their skills and training. In the present research, students spoke about this dual nature of seeking social support. For many, they felt talking with loved ones and people they trust outside of the program was most helpful, rather than speaking with fellow students. It was these students who appeared to recognize the ways in which their relationships impacted their own levels of stress, showing a sense of insight and understanding about where to seek the best support and what to avoid.

In terms of coping with stress, exercise and healthy eating have been found to be adaptive ways of coping, and they were also cited by all of the students who responded in this research. However, given the findings in the first study of the research as well as the ways in which some of the students discussed restrictive eating and compensatory exercise behaviors, sometimes in the guise of “being healthy” it is important to acknowledge that these behaviours could be viewed as adaptive or maladaptive, depending on the degree to which the person restricts or compensates. While most acknowledged that exercise was a good source of stress reduction, some spoke with a sense of guilt that they were not able to exercise as much or if their weight had increased. This is in line with what research examining health and fitness discourse in adolescents has found; Wright, O’Flynn, and McDonald (2006) found that for the typical adolescent

woman and man, health and fitness discourse involved men typically viewing health and fitness as the capacity to do physical work while young women associate health with processes including monitoring intake and exercise as a way to maintain a socially acceptable body shape. This was evident in the interviews, as many of the males spoke about exercise as a way of staying strong as well as being social. Many of the females, however, discussed their “healthy” behaviours in terms of eating well and exercising, with several placing those behaviours within the context of weight and image, making reference to being strong, staying “small,” or the importance of having well defined body parts. This is consistent with the view that health is equated with a slim body shape for women (Wright et al., 2006).

As has been noted in the past, professional programs often attract people who are high achieving, with perfectionist-oriented personality types. In many ways, the profile of students in those in the programs (specifically women, but also applicable to males) falls within the demographics typically associated with eating pathology. In speaking with the students, I could at times feel their disconnect between talking about being “healthy” while also describing restriction of intake of food or concern about gaining weight; I could feel the sense of resignation of the woman who spoke about her own difficulties with stress eating and the weight gain she had experienced since being in the program. It is interesting to note that this woman also spoke frequently about her feelings of not belonging with her peer group, and struggling to fit in while feeling different. Rice (2007) notes that “fatness” remains a powerful way of creating a sense of otherness about one’s body, through which body size is conflated with health status. This sense of otherness was identified by the student who spoke about being a stress eater and self-identifying as

overweight. She discussed feeling separate from the other women in her program, in terms of ability, social skills and involvement, and social position, also noting earlier in her interview that she felt she was not part of her peer social network. She indicated that being separate was a source of stress for her, making her feel disconnected, which then contributed to her stress eating.

The way in which the students, particularly the female students spoke about eating behaviours and exercise, coupled with the findings from the first study in which a number of students were found to be at risk for an ED warrants further study. Given the indicators of eating pathology, as shown from the results of the first study as well as the ways in which the students spoke about their restrictive eating and compensatory exercising, screening for eating pathology could be something that the health professional schools and student mental health services can engage in, with the aim of supporting the student as well as implementing intervention if warranted.

Based on the interviews, it is interesting to note that only one student discussed engaging in behaviour that would be categorized as NSSI (a history of cutting behaviours), although this student indicated that these behaviours were no longer performed. This finding of one student out of ten is in line with the estimated prevalence rate of NSSI in a general adult population, which has been found to range from 1% - 4% (Briere & Gil, 1998; Klonsky, Oltmanns, & Turkheimer, 2003). As noted in the first study, it is possible that the students underreported NSSI behaviours; this might be related to a number of possible factors: the measure of NSSI used in the first study may not have been sufficiently sensitive, there may have been a reluctance on the part of this population to acknowledge utilizing such a stigmatized coping strategy or this group simply do not

and have never self-injured. It is likely that all three factors had some impact on the prevalence of NSSI found in the first study.

An important observation that came from the student interviews was that often students did not view their coping strategies as adaptive or maladaptive, but rather viewed them in terms of what worked or did not work or had functionality in the immediate sense. For those who spoke about maladaptive behaviours such as stress-eating, smoking, reduced sleeping, avoiding social contact, they often indicated that those behaviours were short-term, and would not last beyond the stressful period in their schooling. Research, however, contests this view, finding that unless new coping strategies are actively learned and implemented, people often maintain their coping behaviours over time (Park & Adler, 2003). Understanding this relationship between current and future coping can provide further evidence of the impact that early intervention and education can have on stress and coping on these students.

Help-Seeking Behaviours

What became evident to me, as both a researcher and someone who has worked clinically with student populations, was that many of the students indicated that they did not often feel comfortable seeking help from faculty or staff associated with their program, with some indicating that they felt they would not use university services for fear of people in their program knowing or it having later implications on their schooling or future career. Many students spoke about the fear of being judged if they were seen to suffer or struggle, noting that the competition in their programs was intense and their challenges could be viewed as something that would adversely set them apart. A barrier that has been identified by medical students early in their educational program is concern

about seeking help for mental health issues and stress and the stigma that might result from this, including feeling that both mental illness and admitting to struggling with stress could reflect poorly on them throughout their education (Chew-Graham et al., 2003). This was evident as interviews were conducted at the University Counselling Centre where the students who participated had to wait in the waiting room prior to the interview. At the time of interviewing, three of the ten students made a comment about feeling uncomfortable waiting in the waiting room. Researchers report students experiencing other barriers to seeking help including lack of time, privacy concerns, lack of emotional openness, financial constraints, a lack of perceived need for help, a lack of awareness about services available, and skepticism about treatment effectiveness (Eisenberg et al., 2007; Givens & Tjia, 2002; Komiya et al., 2000). Interestingly, a couple of students spoke openly about their own struggles in the past with mental health issues, and indicated that due to their past experiences seeking help they were more likely to seek help while in their program, noting that their own health was important and that if they were judged based on these factors that they would deal with the consequences. These students who had had help in the past indicated that they were likely to seek help again, acknowledging that they saw the personal importance of this in their own functioning and mental health.

The premise of a hidden curriculum appeared throughout the discussion about help-seeking in their programs; students often spoke about the culture of expectation and “perfection” within their program, and feeling that they were held to a different standard. In addition, several students spoke to the importance of being better and standing out - the pressure to not only do well academically, but to also appear to have many facets of their

life consistent with what they viewed the expectations of them to be. Students expressed that they were worried about the stigma associated with seeking help, and many indicated that they deal with their struggles either on their own or through seeking help from sources outside of the university, most often social support from friends, family, and partners.

Limitations

It is important to note some limitations of the current research. As noted earlier, there were an unequal number of students representing each faculty and despite efforts to recruit additional nursing and pharmacy students, there were fewer students from these faculties interviewed. It is possible that the perspectives of more nursing and pharmacy students could have contributed to further insights into the issues discussed and themes that were explored. As is often the case with research, in retrospect, there are also other topics I would have liked to have explored or gotten into more in-depth; in part, this might be due to my own lack of experience as a qualitative interviewer, and also perhaps due to my additional experiences working with the student aged population since having completed the interviews. As is the nature with retrospective recollection, it is possible that the students who were interviewed might have recalled different information, or spoken about their experiences in a different light had I interviewed them at a different point in time. With that said, the students who were interviewed responded in what appeared to be an open and honest manner, with transparency about their own situations, stressors, and concerns.

In his exploration of interviews, Rapley (2004) discussed the collaborative and active interview in which an interview is a co-construction between interviewee and

interviewer. This very process was one I was acutely aware of throughout this interview process and would like to explore here. To begin, while I had some prior experience with qualitative interviews for another project, the interviews conducted for this project were the first that I had conducted completely independently. As a result, the initial interviews that were conducted were more tentative and less collaborative, resulting in shorter interviews that possessed less depth and richness than those conducted later in the process. As the interviews continued, my own comfort and participation grew and developed, and became more consistent with what Rapley (2004) describes as a collaborative interview.

Another important element for me to be aware of was my own role as researcher, peer, and clinical psychologist in-training. I was similar in many ways to those I interviewed; I was a similar age, educational experiences, SES profile, attended and worked from the same institution in which the students attended, and lived in the same city in which they lived. I was also in a health professional program and facing many of the same stressors that they were experiencing, including exams, course work, and clinical experiences. Acknowledging this similarity, it is possible that this peer-relationship with the interviewees might have affected the interviews, as the students might have felt that I was similar to them and better able to understand their own positions. I must also acknowledge that my own stage of clinical training might have impeded the open and flowing elements of the active interview (Rapley, 2004), as I was also learning the skills of creating boundaries and limiting provision of personal information as part of my clinical training. While I was very aware of creating boundaries between myself and the interviewees which, upon reflection, may not have been

necessary, I was also able to empathize with them and now with additional experience, I feel that I would conduct the interviews from a different perspective.

Conclusions

This research provided an in-depth and personal account of the unique stresses that health professional students experience, the ways in which they cope with their stress, and their views on and utilization of mental health services. The themes from these interviews are based on the experiences of the students who participated in the study. While the interviews in this study are a sample of health professional student experiences, Green and Thorogood (2004) note that while qualitative analysis does not randomly sample participants to be representative to a larger population, they can still be generalizable in a meaning-making sense. They note that findings of qualitative analysis can be “good to think with,” providing information on a topic that can be unpacked and examined based on the kind of relationship the findings have to other populations and settings. In addition, qualitative research can make sense of concepts to help provide more information about the relationships that we see in other similar contexts (Green & Thorogood, 2004).

The analysis of the interviews with the ten students helped to provide valuable information regarding health professional student stress, coping strategies, and barriers and facilitators to help-seeking behaviours, highlighting the stigma associated with mental health issues for health professional students. These insights can be explored from mainstream and critical perspectives (Nelson & Prilleltensky, 2010). In a problem-solving and mainstream view, the current findings suggest that the problems and the solutions lie within the students themselves and as such, there is a need for additional education and

support for these health professional students. The students interviewed report using maladaptive coping strategies to cope with their stress, and with training and education, research suggests that they can develop more adaptive coping. From this perspective, the faculty and school can help support the students in changing their behaviour and help them to adjust and adapt to the program requirements in order to succeed. Another perspective on the insights garnered from this research is to look at the findings from a more critical perspective, examining the systemic and professional culture that creates these expectations of their students and professionals. Interpreting the interview data from this perspective, we see the students speaking to the hidden curriculum and its impact; these students do not seek mental health services because they are unsure about the impact that it would have on their careers. Furthermore, many of the students interviewed, particularly those in medicine, spoke about their stress as a rite of passage and something to conquer. To acknowledge mental health issues, let alone to seek help for them, creates a conflict with this professional cultural value. This critical perspective calls for the overall system of health professional education to be made accountable for the hidden curriculum, and to be aware of the messages that they give to their students which can be detrimental to the students' functioning and mental health and have implications for their patients once they are practicing professionals.

An advantage to the current research is that this information will be provided both to the training programs and student services in the Atlantic Canadian University in which the research took part. It is evident that many of the students in these programs are experiencing high levels of stress and are not coping in adaptive ways. From a mainstream clinical psychological perspective, understanding this student stress can

inform the development of interventions to not only help students while they are in school, but also facilitate the transition into their careers. Throughout this research, students were asked if they had attended any workshops regarding student stress and coping; of those students who had, significantly lower rates of student stress were reported. Those students in medicine spoke more openly about the services that were available to them, even if they did not avail of them. Education about student stress at the levels of the students, professors, school administration, and student services could help raise awareness of the needs of students. While the work load and expectations of students might not change, a growing awareness about what students need and how they cope could help arm them with additional materials that could assist them in the long run. From a critical psychology perspective, this research highlights the hidden curriculum in the health professional programs. I have found that the hidden curriculum is very much a part of how these students function in their education, having an impact on their health and well-being. Combining the program culture and student coping findings from this research demonstrates the importance of addressing the stress related issues these students face from both the critical and mainstream perspectives. To do either alone would likely fail to create meaningful change.

References

- Andrew, N., McGuinness, C., Reid, G., & Corcoran, T. (2009). Greater than the sum of its parts: Transition into the first year of undergraduate nursing. *Nurse Education in Practice, 9*(1), 13-21. doi:10.1016/j.nepr.2008.03.009; 10.1016
- Beck, D. L., Hackett, M. B., Srivastava, R., McKim, E., & Rockwell, B. (1997). Perceived level and sources of stress in university professional schools. *The Journal of Nursing Education, 36*(4), 180-186.
- Briere, J. & Gil, E. (1998). Self-mutilation in clinical and general population samples: Prevalence, correlates, and functions. *American Journal of Orthopsychiatry, 68*(4), 609-620. doi:10.1037/h0080369
- Canales-Gonzales, P., Kranz, P. L., Granberry, M., & Tanguma, J. (2008). An assessment of stress experienced by students in a prepharmacy curriculum. *Journal of Instructional Psychology, 35*(1), 17-22. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=2008-04999-003&site=ehost-live&scope=site>
- Chew-Graham, C. A., Rogers, A., & Yassin, N. (2003). 'I wouldn't want it on my CV or their records': Medical students' experiences of help-seeking for mental health problems. *Medical Education, 37*(10), 873-880. doi:10.1046/j.1365-2923.2003.01627.x
- Cohen, S., Williamson, G., Spacapam, S., & Oskamp, S. (1988). Perceived stress in a probability sample of the United States. *The social psychology of health*. Claremont symposium on applied social psychology.

- Corrigan, P.W., Watson, A.C., & Barr, L. (2006). The self-stigma of mental illness: Implications for self-esteem and self-efficacy. *Journal of Social and Clinical Psychology, 25*, 875-884.
- DiGiacomo, M., & Adamson, B. (2001). Coping with stress in the workplace: Implications for new health professionals. *Journal of Allied Health, 30*(2), 106-111.
- Dunn, L. B., Green Hammond, K. A., & Weiss Roberts, L. (2009). Delaying care, avoiding stigma: Residents' attitudes toward obtaining personal health care. *Academic Medicine, 84*(2), 242-250. doi:10.1097/ACM.0b013e31819397e2
- Eisenberg, D., Downs, M.F., Golberstein, E., & Zivin, K. (2009). Stigma and help seeking for mental health among college students. *Medical Care Research and Review, 66*(5), 522-541. doi:10.1177/1077558709335173
- Eisenberg, D., Golberstein, E., & Gollust, S. E. (2007). Help-seeking and access to mental health care in a university student population. *Medical Care, 45*(7), 594-601. doi:10.1097/MLR.0b013e31803bb4c1
- Eisenberg, D., Hunt, J., & Speer, N. (2012). Help seeking for mental health on college campuses: Review of evidence and next steps for research and practice. *Harvard Review of Psychiatry, 20*(4), 222-232. doi:10.3109/10673229.2012.712839
- Gallagher, R. (2007). National survey of counseling centre directors, 2006. Monograph Series, No. 8P. International Association of Counseling Services, Inc.
- Givens, J. L., & Tjia, J. (2002). Depressed medical students' use of mental health services and barriers to use. *Academic Medicine : Journal of the Association of American Medical Colleges, 77*(9), 918-921. doi:10.1097/00001888-200209000-00024

- Gollust, S. E., Eisenberg, D., & Golberstein, E. (2008). Prevalence and correlates of self-injury among university students. *Journal of American College Health, 56*(5), 491-498. doi:10.3200/JACH.56.5.491-498
- Grant, A. (2002). Identifying students' concerns: Taking a whole institutional approach. *Students' Mental Health Needs: Problems and Responses*. London, UK: Jessica Kingsley.
- Green, J., & Thorogood, N. (2004). *Qualitative methods for health research*. Thousand Oaks, California: Sage Publications Limited.
- Hays, R. B., Lawson, M., & Gray, C. (2011). Problems presented by medical students seeking support: A possible intervention framework. *Medical Teacher, 33*(2), 161-164. doi:10.3109/0142159X.2010.509415
- Heath, N.L., Ross, S., Toste, J.R., Charlebois, A., & Nedecheva, T. (2009). Retrospective analysis of social factors and non-suicidal self-injury among young adults. *Canadian Journal of Behavioural Science, 41*, 180-186. Doi: 10.1037/a0015732
- Heath, N., Schaub, K., Holly, S., & Nixon, M. (2009). Self-injury today: Review of population and clinical studies in adolescents. In M.K. Nixon & N.L. Heath (Eds). *Self-Injury in Youth: The Essential Guide to Assessment and Intervention* (pp. 9-27). New York, NY: Routledge/Taylor & Francis Group.
- Holstein, J. A., & Gubrium, J. F. (1997). *The Active Interview*. Thousand Oaks, California: Sage Publications.
- Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health, 46*(1), 3-10. doi:10.1016/j.jadohealth.2009.08.008

- Ivankova, N. V. (2014). Implementing quality criteria in designing and conducting a sequential QUAN→ QUAL mixed methods study of student engagement with learning applied research methods online. *Journal of Mixed Methods Research*, 8(1), 25-51. doi:10.1177/1558689613487945
- Kelly, G., & Percival, M. (2006). Perceived stress scale. Retrieved from <http://healthsceneinvestigation.com/files/2010/07/Perceived-Stress-Scale.pdf>
- Klonsky, E. D., Oltmanns, T. F., & Turkheimer, E. (2003). Deliberate self-harm in a nonclinical population: Prevalence and psychological correlates. *American Journal of Psychiatry*, 160(8), 1501-1508. doi:10.1176/appi.ajp.160.8.1501
- Komiya, N., Good, G.E., & Sherrod, N.B. (2000). Emotional openness as a predictor of college students' attitudes toward seeking psychological help. *Journal of Counseling Psychology*, 47(1), 138-143. doi:10.1037/0022-0167.47.1.138
- Law, D. W. (2007). Exhaustion in university students and the effect of coursework involvement. *Journal of American College Health*, 55(4), 239-245. doi:10.3200/JACH.55.4.239-245
- Lee, D., Olson, E. A., Locke, B., Michelson, S. T., & Odes, E. (2009). The effects of college counseling services on academic performance and retention. *Journal of College Student Development*, 50(3), 305-319. doi:10.1353/csd.0.0071
- Lempp, H., & Seale, C. (2004). The hidden curriculum in undergraduate medical education: Qualitative study of medical students' perceptions of teaching. *British Medical Journal*, 329(7469), 770-773. doi:10.1136/bmj.329.7469.770

- Lo, R. R. (2002). A longitudinal study of perceived level of stress, coping and self-esteem of undergraduate nursing students: An Australian case study. *Journal of Advanced Nursing*, 39(2), 119-126. doi:10.1046/j.1365-2648.2000.02251.x
- Lunau, K. (2012). Campus Crisis: The Broken Generation. *Macleans*. Retrieved from <http://www2.macleans.ca/2012/09/05/the-broken-generation/>
- Midtgaard, M., Ekeberg, O., Vaglum, P., & Tyssen, R. (2008). Mental health treatment needs for medical students: A national longitudinal study. *European Psychiatry: The Journal of the Association of European Psychiatrists*, 23(7), 505-511. doi:10.1016/j.eurpsy.2008.04.006
- Morgan, J. F., Reid, F., & Lacey, J. H. (1999). The SCOFF questionnaire: Assessment of a new screening tool for eating disorders. *BMJ: British Medical Journal*, 319(7223), 1467-1468. doi:10.1136/bmj.319.7223.1467
- Nelson, G., & Prilleltensky, I (2010). *Community Psychology: In pursuit of liberation and well being* (2nd ed). New York, NY: Palgrave & Macmillan.
- Niemi, P. M., & Vainiomäki, P. T. (1999). Medical students' academic distress, coping, and achievement strategies during the preclinical years. *Teaching and Learning in Medicine*, 11(3), 125-134. doi:10.1207/S15328015TL110302
- Park, C. L., & Adler, N. E. (2003). Coping style as a predictor of health and well-being across the first year of medical school. *Health Psychology*, 22(6), 627-631. doi:10.1037/0278-6133.22.6.627

- Pulido-Martos, M., Augusto-Landa, J., & Lopez-Zafra, E. (2012). Sources of stress in nursing students: A systematic review of quantitative studies. *International Nursing Review*, 59(1), 15-25. doi:10.1111/j.1466-7657.2011.00939.x
- Radcliffe, C. C. & Lester, H. (2003). Perceived stress during undergraduate medical training: A qualitative study. *Medical Education*, 37(1), 32; 32-38.
- Rapley, T. (2004). In C. Seale, G. Gobo, J. Gubrium & D. Silverman (Eds.), *Qualitative research practice* (pp. 13-31). Thousand Oaks, London: Sage Publications.
- Rice, C. (2007). Becoming “the fat girl”: Acquisition of an unfit identity. Paper presented at the *Women's Studies International Forum*, 30(2) 158-174.
doi:10.1016/j.wsif.2007.01.001
- Richardson, L. (2000). A method of inquiry. In N. Denzin & Y. Lincoln (Eds), *Handbook of Qualitative Research* (pp. 923-948). Thousand Oaks: Sage Publishing.
- Roberti, J. W., Harrington, L. N., & Storch, E. A. (2006). Further psychometric support for the 10-Item version of the perceived stress scale. *Journal of College Counseling*, 9(2), 135-147. doi:10.1002/j.2161-1882.2006.tb00100.x
- Ross, S., & Heath, N. (2002). A study of the frequency of self-mutilation in a community sample of adolescents. *Journal of Youth and Adolescence*, 31(1), 67-77.
doi:10.1023/A:1014089117419
- Royal College of Psychiatrists. (2003). The mental health of students in higher education. Council Report, CR112. London: Royal College of Psychiatrists.

- Sabih, F., Siddiqui, F. R., & Baber, M. N. (2013). Assessment of stress among physiotherapy students at Riphah centre of rehabilitation sciences. *Journal of Pakistan Medical Association*, 63(3), 346-349.
- Stark, M. A., Hoekstra, T., Lindstrom Hazel, D., & Barton, B. (2012). Caring for self and others: Increasing health care students' healthy behaviors. *Work: A Journal of Prevention, Assessment & Rehabilitation*, 42(3), 393-401. doi:10.3233/WOR-2012-1428.
- Tyssen, R., Røvik, J. O., Vaglum, P., Grønvold, N. T., & Ekeberg, Ø. (2004). Help-seeking for mental health problems among young physicians: Is it the most ill that seeks help? *Social Psychiatry and Psychiatric Epidemiology*, 39(12), 989-993. doi:10.1007/s00127-004-0831-8
- Tyssen, R., Vaglum, P., Grønvold, N. T., & Ekeberg, Ø. (2001). Suicidal ideation among medical students and young physicians: A nationwide and prospective study of prevalence and predictors. *Medical Education*, 35, 110-120.
- Walter, G., Soh, N. L., Jaconelli, S. N., Lampe, L., Malhi, G. S., & Hunt, G. (2013). Medical students' subjective ratings of stress levels and awareness of student support services about mental health. *Postgraduate Medical Journal*, 89, 311-315. doi: 10.1136/postgradmedj-2012-131343.
- Wright, J., O'Flynn, G., & Macdonald, D. (2006). Being fit and looking healthy: Young women's and men's constructions of health and fitness. *Sex Roles*, 54(9-10), 707-716. doi:10.1007/s11199-006-9036-9

Yorgason, J. B., Linville, D., & Zitzman, B. (2008). Mental health among college students: Do those who need services know about and use them? *Journal of American College Health, 57*(2), 173-182.

Zivin, K., Eisenberg, D., Gollust, S. E., & Golberstein, E. (2009). Persistence of mental health problems and needs in a college student population. *Journal of Affective Disorders, 117*(3), 180-185. doi:10.1016/j.jad.2009.01.001

Chapter 5

Conclusion

Summary of Findings and Contribution to Knowledge

The present research provides an in-depth picture of health professional student experiences of stress, coping, and their views and use of mental health services, as well as offering information that can be used to inform service provision in a university setting. Using a mixed method sequential design in which quantitative data was collected and was followed with qualitative interviews (Ivankova, Creswell, & Stick, 2006), this research explored the relationship between stress, coping, maladaptive coping strategies (NSSI, eating pathology, use of alcohol), and facilitators or barriers to seeking mental health services. In addition, students' perspectives about the impact of a hidden curriculum emerged as an important element of student coping and help-seeking behaviours.

Research looking at mental health service utilization shows that in Canada there has been an increase in demand for services, with 25% of university-age Canadians experiencing a mental health problem, most often stress-related issues, anxiety, or depression (Lunau, 2012). The impact of stress on health professional students is important to understand, as the stress can extend beyond personal implications to also impact patient care (Royal College of Psychiatrists, 2003; Tyssen et al., 2004). This research found that the health professional students surveyed reported high levels of perceived stress, with students reporting a level of stress indicative of high levels of health concern (Kelly & Perceval, 2006). In addition, students who were in nursing reported significantly higher levels of stress than those in pharmacy and medicine, similar to prior research on stress and health professional students (Beck et al., 2007; Pulio-

Martos et al., 2012). It was found that students in nursing were significantly younger than those in medicine, with less academic and educational experience, and a large proportion (93.3%) of the respondents in nursing were female. Research has proposed that students who are older or who have had more academic experiences tend to report lower levels of stress than those who are younger or earlier in their academic careers (APA, 2013; Zascavage et al., 2012), and females have been found to report higher levels of stress than males (APA, 2013). An important finding of this research was that gender was found to be the most significant contributor to student self-report of stress. This draws attention to the fact that students in one program might not necessarily cope better than another program; rather, it suggests that there are several factors, most notably gender, that contribute to the differential reporting of stress by students in each of the programs. It is important to understand the factors that might impact the ways in which health professional students experience stress, as this will help the schools and faculties to plan interventions or provide services that can assist these students, particularly women, with stress and coping.

As noted by Ivankova (2014), one aim of the sequential mixed methods qualitative research is to use the qualitative component to elaborate upon and gain a more in-depth and detailed understanding of the topic that was studied in the quantitative part of the study. Ten students from the health professional programs of medicine, nursing, and pharmacy spoke to the primary researcher about their personal experiences with stress. Based on these interviews, students disclosed that they felt the most stressful part of their lives was their academic program, citing high workload, lack of balance, competition, professional socialization, and high expectations as particular sources of

academic stress. It is worth noting that many students highlighted that many of these expectations including the professional socialization process are not explicit nor stated but are rather part of what researchers have called the hidden curriculum (Dunn et al., 2006; Lempp & Seale, 2004). The hidden curriculum has been recognized as having a potentially detrimental effect on health professional students particularly since the hidden curriculum content is difficult to clearly describe and students internalize the values and norms, making it even more difficult for them to identify the source of their distress. In addition, students cited financial concerns, personal relationships, health, a lack of balance, and living situation as sources of stress. These themes echo past research that has found that students in health professional programs typically face stress related to academic, clinical, and personal concerns (Gibbons et al., 2008; Park & Adler, 2003; Prymachuck & Richards, 2007). Students also spoke about the level of expectations that were both placed on them and they placed on themselves as a source of stress. It is evident that entering a health professional program is an accomplishment, demonstrating academic and personal aptitude. Many students indicated that these expectations were a source of stress for them, often feeling that they were concerned about not reaching that high level set by themselves and their programs. The internalization of underlying expectations highlights the pervasiveness of the hidden curriculum in which an implicit norm is that students are expected to maintain a certain prescribed role and level of performance. Furthermore, students spoke to the hidden curriculum by referencing the fact that if they were struggling, they did not necessarily feel safe to disclose it as they felt that it would diminish perceptions of their accomplishments and competency.

Coping is described as the process in which people manage their stress and the discrepancy between the demands of a situation and their resources (McVicar, 2003; Neimi & Vainiomaki, 1999). Throughout the ten qualitative interviews, students outlined various ways of coping, including seeking social support, exercising, prioritizing work, decreasing expectations for their academic performance, reducing sleep, self-injurious behaviours, smoking, and pushing oneself beyond productivity. A number of students also highlighted how eating behaviours including dietary restriction and stress-eating became ways of responding to high levels of stress. This research explored two coping strategies (NSSI and eating pathology) that have been found to co-exist in the literature, and have been proposed as self-destructive behaviours that can be easily concealed and are often done in private (Duggan & Heath, 2014). A follow-up examination of the other self-reported coping strategies found that students reported and spoke to the use of alcohol in their program, highlighting that this is also a form of maladaptive coping used by those students who participated in this research.

Research has found that lifetime prevalence rates of NSSI ranges between 14%-17% in adolescents, 4% in undergraduate students, 4%-6% in the adult general population, and 20% in adult clinical populations (Briere & Gil, 1998; Klonsky, 2011; Klonsky et al., 2003; Ross & Heath, 2002; Whitlock et al., 2006). In the current research, in a survey administered to 120 students, 2.5% of the health professional students reported using NSSI at least once in their lifetime to cope with stress, which is lower than the rates typically reported in the literature. It is possible and perhaps likely that the students in this study engaged in less NSSI behaviours than other populations. It could also be possible that students underreported their NSSI behaviours due to factors that

might include concerns about being judged, lack of confidentiality, or social desirability. In addition, it may be that the adaptation of the HIDS that removed the Part II of the survey (as required by ethics) resulted in a less accurate measure of NSSI. In light of the fact that one student of the ten interviewed spoke about a history of NSSI behaviours, this gives credence to the importance of adequately exploring this issue, whether through quantitative measures or through speaking with the individual. Future studies into NSSI in such a population could help provide further insight into protective factors about health professional students resulting in them engaging in less of this behaviour than other populations or whether this finding is an artifact of either social demands of the situation or measurement error.

The level of eating pathology in this group is surprisingly high; 85% of students reported using eating as a coping strategy for stress and 44% coped by trying to control their weight at least once; 17.5% of students were found to be at a heightened concern for an eating disorder. The prevalence of eating pathology found in this study is higher than that found in other studies where prevalence has been found to range from 2%-4% for ED (APA, 2000; Taylor et al., 2009), to 12%-19% for disordered eating in a female university population (Keel et al., 2006; Zivin et al., 2009). Researchers acknowledge that disordered eating can result in distress, functional impairment, and negative consequences such as depression, and might contribute to the development of an eating disorder (Ferrier & Martins, 2008; French & Jeffry, 1994; Taylor et al., 2009). This study expands this body of research as it highlights that health professional students might be an “at-risk” group for eating pathology (White et al., 2011), while also emphasizing that these behaviours can be detrimental to the functioning and mental health of the students in

these programs. Throughout the interviews, several of the students spoke about their own views on being “healthy,” noting behaviours in which they focused on the kinds of food they were eating and the amount they exercised. These students acknowledged that eating well and exercise were behaviours they viewed as important to coping, although males and females spoke to these behaviours differently. Typically, the men spoke about exercise as an important stress reduction, and often social activity; they did not discuss their food intake other than eating the prescribed “healthy” diet. Several of the female students, however, spoke about their “healthy” habits in a way that celebrated restriction and regular activity, while also expressing guilt and disappointment if they over-ate or did not exercise. In many cases, these women spoke in terms of restricting intake of food or eating “badly” during times of stress, and reducing exercise during these times, making up for it when the stressful period had passed. Through these interviews, many of the students spoke to behaviours that represent pathological eating. This is important to note, as these future health professionals will be counselling patients about stress management, diet, exercise, and healthy lifestyle and having such disordered thought patterns around health, food, and weight might impact not only their own self-care but also the care of their patients. Understanding the level of eating pathology in this population will inform not only the targets and content of potential interventions for student health, but also identifies the impact that such personal views and actions might have on patient care as well.

While past research has found that those with ED are at an elevated risk for NSSI behaviours (Claes, Klonsky, Muehlenkamp, Kuppens, & Vandereycken, 2010; Svirko & Hawton, 2007), prevalence rates have been found to be highly variable throughout the

literature, although the co-existence of these behaviours has typically been found with NSSI and ED in clinical populations (Paul, Schroeter, Dahme, & Nutzinger, 2002; Peebles, Wilson, & Lock, 2011; Sansone et al., 2004). Although the first study had a high response rate (97%), thus capturing a good representation of the overall second year health professional student body at the institution studied, very few students reported engaging in NSSI, making it difficult to determine co-variance of NSSI and eating disorders in this population.

While students were asked about a variety of coping strategies, the use of alcohol was notable in that the majority of students (66%) reported using it to cope with stress and many discussed it in their interviews. Students spoke to the prevalence of alcohol in their school related activities and in many cases, these students spoke to the use of alcohol as a way of “blowing off steam” and as part of a social activity. Interestingly, the students often referred to using alcohol to excess, with a “binge drinking atmosphere” and “drinking to the point of puking.” Often the students spoke about the expectations in their programs to engage in social activities together, and that these activities often included drinking. In some cases, the students spoke about the pressure they felt to act in a way that was not typical for them (e.g., drinking too much) because they felt it was expected of them. This pressure to be “one of the group” was something that several indicated was important to help them with their own work and their own impression management. What is interesting about this fact is that the students did not view this behaviour as a means of maladaptive coping; several students alluded to the fact that a problematic use of alcohol to cope would be something that was a solitary act. Therefore students expressed the view that drinking alone was maladaptive, but drinking with a group was bonding.

Student perspectives were sought on the use of student services at the university; students indicated that they had mixed awareness of the services. While some were aware of the services, this did not mean they would use the services, with some stating that the services were good for others but not for themselves. This supports research that has found that while health professional students acknowledge the importance of mental health and wellness, they do not necessarily “practice what they preach” in that they do not feel that they require help for mental health issues, they seek services for “minor” issues but not more serious issues, or feel that even if they do need help they will not seek it (Hays et al., 2011; Tyssen et al., 2004). The expectation that what would be appropriate to suggest to other people to do, such as seek services, is not viewed as acceptable for the student him/herself highlights the pervasiveness of the hidden curriculum and its impact on health professional students (Chew-Graham et al., 2003). This calls for an education intervention which emphasizes how common mental health issues are for health professional students and what services are available. In addition we need to address the role of the professional program in acknowledging and making explicit the hidden curriculum which subjects students to unrealistic and potentially harmful expectations.

The impact of the high levels of stress, the maladaptive coping strategies, and the hidden curriculum that reduces the ability of the students to name the issues and seek help for them, will be felt not only by the students but also their patients. Several students spoke to their concerns about stigma, confidentiality, and conflict of interest with professors and staff as reasons for not seeking help for mental health issues. Research on medical students identifies a hidden curriculum in which there is a culture and expectations that can dictate how a student acts while in the program (Dunn et al., 2009);

this hidden curriculum was also noted by the students in pharmacy, and nursing in this research. In the literature, students in health professional programs have been found to inhibit help-seeking due to concerns including fears of being viewed as having a weakness, potential implications on future working relationships, lack of confidentiality, lack of time, privacy concerns, difficulty being open about one's emotions, and a lack of awareness about services (Chew-Graham et al., 2003; Dunn et al., 2009; Eisenberg et al., 2007; Givens & Tija, 2002; Komiya et al, 2000). Students interviewed for this study voiced similar concerns. Even for those students in medicine, who had a wellness coordinator available to them acknowledged the challenges in seeking advice or help from her, noting that these concerns about confidentiality and stigmas were very real for them. This exemplifies not only the importance of providing services to students, but also an awareness of the factors that serve as barriers to students accessing those services. These barriers including self-stigma, hidden curriculum messages about health professionals being impervious to stress and mental health issues and more practical and easily addressed issues such as privacy and time constraints need to be named and confronted to ensure that students get the help that they need. Many of the students spoke about the vulnerability that they feel in seeking help; student services and faculty need to be aware of the sense of vulnerability that can be created in seeking help for mental health issues.

Limitations and Strengths of the Study

The generalizability of the study is limited as the sample of students consisted of students in medicine, nursing, and pharmacy from one academic institution. The stress experienced and coping engaged in by these students may not be generalizable to those at

other institutions or in other programs. Future research expanding the sample of students to other institutions might help increase the generalizability of the results.

Based on advice from faculty and advisors during the development of this research, health professional students in the second year of their programs were asked to participate. In part, this was advised based on convenience in terms of when the students would be available to participate. A possible limitation of this decision is that some students had begun their clinical practice experiences while others were still primarily in class-based learning environment. Despite this limitation, students in the programs would have had experiences with standardized patients and education-based patient experiences which might have given them opportunities to reflect on their own future with patient experiences.

In Ivankova's (2014) paper discussing quality criteria for designing and conducting a sequential quantitative to qualitative mixed method study (QUAN → QUAL), the importance of designing a study that is both systematic and rigorous and the challenge of striking this balance is highlighted. This research followed a similar design, which is a strength of the current research, but did encounter some challenges. In this kind of design, it is important to minimize threats to validity, with Ivankova suggesting that one way to do this is to use one set of results to inform the following data collection stages of the research. In the present research, a challenge was the low number of students who reported engaging in NSSI as a coping strategy in the first phase, making it difficult to appropriately examine the risk factors associated with this coping strategy in the second study. In line with Ivankova's QUAN → QUAL design, the quantitative results of the first survey were essential to the development of the questions that were asked in the

interviews. Expanding on Ivankova's QUAN → QUAL design, the current research, based on the levels of maladaptive coping reported by the students in the first study, further explored how these students navigate help seeking for their stress and maladaptive coping strategies. To do this, it was important to understand the ways in which students viewed help-seeking behaviours, as well as the kind of climate they experienced for seeking help themselves. These were questions that emerged from the first study, and were also questions that were asked by those who worked with these students. As a result, the qualitative questions included a combination of Ivankova's QUAN → QUAL approach, as well as opening new lines of inquiry to explore. This allowed for the qualitative interviews to contribute a more in-depth analysis and exploration of the quantitative data, which helps this research stand out in the current body of literature in this area.

A limitation of the qualitative study was the low number of students interviewed from the school of nursing (n=1) and pharmacy (n=3) making it difficult to compare the interview content of students from each of the programs. This is important to note, as nursing students had significantly higher levels of reported stress, as well as had a different demographic profile of students in the other programs in terms of gender, age, and prior university education.

Clinical and Applied Implications of the Research

By understanding how health professional students experience stress and their use of maladaptive coping strategies, it is possible to intervene and modify services and training programs to appropriately meet student needs. Health professional students face unique challenges and stressors in their training, and these factors combined with a

competitive and demanding program with a potentially destructive hidden curriculum that limits time and affects motivation to seek help and engage in self-care and adaptive coping can result in students not seeking help, which impacts their education, treatment of patients, and paves the way for potentially maladaptive coping throughout their careers.

Many of the students interviewed indicated that they were concerned about seeking help due to issues related to the hidden curriculum including stigma, being seen as having a weakness, and impact on academic and professional career. Research has shown that implementation of educational programs can help students to develop skills to cope with stress and improve their self-care (Stark et al., 2012), while others note that depending on the professional culture the hidden curriculum can undermine these explicit attempts to counteract the stigma and resistance to acknowledging the mental health issues and need for help which are common to this group of students (Dunn et al., 2009; Walter et al., 2013). During the interviews, students highlighted the impact of stigma and potential/perceived academic vulnerability associated with seeking mental-health services. Highlighting the confidential, physically removed services available at the University Counselling Centre might address some of the concerns raised. While some acknowledged an awareness of this service, others indicated that they did not know about it. Revisiting service availability each year, providing additional information sessions, and fostering the importance of dealing with stress and the prevalence of mental health issues when faced with high levels of stress would be useful. While the current research found that student services such as workshops and educational sessions on coping with stress, and mental health and wellness can significantly impact how students cope with stress, the literature suggests that implementation of education that challenges stigma

might also influence student help-seeking behaviours (Pulido-Martos et al., 2012; Walter et al., 2013). Furthermore, a thematic thread in the qualitative interviews subtly raised the issue of the need for faculty and staff education around these issues as well; students indicated that there had been discussions of breaches of confidentiality to students who sought services before and that was a deterrent to them. While much of the focus in the literature is about what education to provide to students, student services should also aim to educate faculty and staff around mental health and wellness, confidentiality, and appropriate services available to students both on and off campus. In addition, faculties and schools need to be aware of the hidden curriculum and its impact on their students. This research has identified that these implicit values, norms, and expectations exist in all three programs and are having a negative impact on students. Although this was not one of the objectives of this study, it is an important finding and one that students, faculty members, and administrations should heed.

An important contribution of this research is a recognition that health professional students are not only experiencing heightened levels of stress, but that they are also engaging in both adaptive and most importantly maladaptive coping strategies to deal with this stress. While the rates of NSSI were found to be lower than prevalence rates found in university students in other research projects, eating pathology was higher and alcohol use was common; this research demonstrates that the students who participated are, in fact, not coping as well as one might have predicted. Consistent with past research, these findings have implications not only on how these students cope in the future, but also on their quality of patient care.

Future Research

This research supports prior findings that students in health professional programs experience stress, and that this stress can impact both their current educational experiences but also has the potential of affecting patient care (Lo, 2002; Radcliff & Lester, 2003; Royal College of Psychiatrists, 2003; Sabih et al., 2013). It is possible that providing students with educational opportunities and experiential learning in the areas of developing adaptive coping strategies, time management, prioritizing, and stress reduction might serve to help students learn to cope with their stress differently, thus impacting them in both their program but also in their future careers as well. While tentative, the current results found that students in medicine reported significantly lower stress levels than those students in nursing, and they also had more experience with workshops and professional development in these very areas. While this relationship is not established, it does provide a strong suggestion for implementing educational interventions which could be evaluated in terms of reported stress, anxiety, and coping throughout a student's educational experiences. That being said, it is also important to explore the implications that other life variables, including gender, educational experience, and age might have on coping with stress. Examining student experience of stress in programs that can be completed earlier in one's academic career (e.g., respiratory therapist, recreation specialist) as well as those that traditionally require more education prior to admittance might demonstrate other factors that could help students cope with stress, as well as interventions and services that are more optimal. The current research explored potential risk factors, but also identified what students did and found helpful to cope with their stress. Exploring protective factors and resiliency could help provide an

essential aspect of the study of health professional students, stress, and coping. Furthermore, this study uncovered thematic threads of the impact of a hidden curriculum on students. Gaining a more in-depth understanding of the hidden curriculum and what it entails for each of the health professions so that these destructive messages can be made explicit and challenged would be a critical piece of research that should follow from this work.

Final Thoughts

This research project was designed to be applied; it is meant to not only be about the act of exploring a topic and contributing to the field, but also about creating a body of knowledge that can be used and can inform in a practical way. There are many important themes that emerged and potential areas of exploration that were uncovered by this research; health professional students are stressed, often at levels above those found in general populations. Much of this stress is generated by trying to juggle numerous expectations, many of which are generated by a hidden curriculum and thus difficult to define and respond to effectively; but perhaps most importantly these students speak to a reluctance to seek help when distressed. Overall, while many students are able to function and some thrive under these conditions, one must question to what cost to themselves and to their patients and future career? This research suggests that this question is one that must be asked and answered in order to protect the students themselves and their future patients.

References

- American Psychiatric Association (Ed.) (2000). *Diagnostic and statistical manual of mental disorders* (4th ed revised). Arlington, VA: American Psychiatric Publishing.
- American Psychiatric Association. (Ed.) (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- American Psychological Association. (2012). *Stress in America: Stress by gender*. Retrieved from <http://www.apa.org/news/press/releases/stress/index.aspx>
- American Psychological Association. (2012). *Stress in America: Stress by generation*. Retrieved from <http://www.apa.org/news/press/releases/stress/index.aspx>
- Andersson, C., Johnsson, K. O., Berglund, M., & Öjehagen, A. (2009). Intervention for hazardous alcohol use and high level of stress in university freshmen: A comparison between an intervention and a control university. *Brain Research, 1305*, S61-S71. doi:10.1016/j.brainres.2009.08.030
- Andrew, N., McGuinness, C., Reid, G., & Corcoran, T. (2009). Greater than the sum of its parts: Transition into the first year of undergraduate nursing. *Nurse Education in Practice, 9*(1), 13-21. doi:10.1016/j.nepr.2008.03.009
- Baldwin, J. N., Scott, D. M., Agrawal, S., Bartek, J. K., Davis-Hall, R. E., Reardon, T. P., & DeSimone, E. M. (2006). Assessment of alcohol and other drug use behaviors in health professions students. *Substance Abuse, 27*(3), 27-37. doi:10.1300/J465v27n03_05
- Baldwin, J. N., Scott, D. M., DeSimone II, E. M., Forrester, J. H., & Fankhauser, M. P. (2011). Substance use attitudes and behaviors at three pharmacy colleges. *Substance Abuse, 32*(1), 27-35. doi:10.1080/08897077.2011.540470

- Beck, D. L., Hackett, M. B., Srivastava, R., McKim, E., & Rockwell, B. (1997). Perceived level and sources of stress in university professional schools. *The Journal of Nursing Education, 36*(4), 180-186.
- Beukes, M. M., Walker, S., & Esterhuyse, K. (2010). The role of coping responses in the relationship between perceived stress and disordered eating in a cross-cultural sample of female university students. *Stress and Health, 26*(4), 280-291. doi:10.1002/smi.1296
- Birgegård, A., Norring, C., & Clinton, D. (2012). DSM-IV versus DSM-5: Implementation of proposed DSM-5 criteria in a large naturalistic database. *International Journal of Eating Disorders, 45*(3), 353-361. doi:10.1002/eat.20968
- Briere, J. J. & Gil, E. (1998). Self-mutilation in clinical and general population samples: Prevalence, correlates, and functions. *American Journal of Orthopsychiatry, 68*(4), 609-620. doi:10.1037/h0080369
- Brougham, R. R., Zail, C.M., Mendoza, C.M., & Miller, J.R. (2009). Stress, sex differences, and coping strategies among college students. *Current Psychology, 28*(2), 85-97. doi:10.1007/s12144-009-9047-0
- Canadian Medical Association. (2003). *CMA guide to physician health and well-being: Facts, advice and resources for Canadian doctors* Canadian Medical Association.
- Canales-Gonzales, P., Kranz, P. L., Granberry, M., & Tanguma, J. (2008). An assessment of stress experienced by students in a prepharmacy curriculum. *Journal of Instructional Psychology, 35*(1), 17-22. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2008-04999-003&site=ehost-live&scope=site>

- Chew-Graham, C. A., Rogers, A., & Yassin, N. (2003). 'I wouldn't want it on my CV or their records': Medical students' experiences of help-seeking for mental health problems. *Medical Education*, 37(10), 873-880. doi:10.1046/j.1365-2923.2003.01627.x
- Claes, L., Klonsky, E. D., Muehlenkamp, J., Kuppens, P., & Vandereycken, W. (2010). The affect-regulation function of nonsuicidal self-injury in eating-disordered patients: Which affect states are regulated? *Comprehensive Psychiatry*, 51(4), 386-392. doi:10.1016/j.comppsy.2009.09.001
- Cohen, S., Williamson, G., Spacapan, S., & Oskamp, S. (1988). Perceived stress in a probability sample of the United States. *The social psychology of health*. Claremont symposium on applied social psychology.
- Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance & Counselling*, 34(4), 505-517. doi:10.1080/03069880600942624
- Corrigan, P.W., Watson, A.C., & Barr, L. (2006). The self-stigma of mental illness: Implications for self-esteem and self-efficacy. *Journal of Social and Clinical Psychology*, 25, 875-884.
- Creswell, J. W. (2010). Mapping the developing landscape of mixed methods research. *Sage handbook of mixed methods in social and behavioral research* (pp. 45-68). Thousand Oaks, California: Sage Publications.
- DiGiacomo, M., & Adamson, B. (2001). Coping with stress in the workplace: Implications for new health professionals. *Journal of Allied Health*, 30(2), 106-111.

- Duggan, C., Button, P., & Heath, O. (2010). *Stress level and coping in first year university students*. Symposium at the annual Canadian Psychological Association Convention, Winnipeg, MB.
- Duggan, J.M., & Heath, N.L. (2014). Co-occurring health risk behaviours of non-suicidal self-injury and eating disorders. In L. Claes, & J. Muehlenkamp (Eds.), *Non-Suicidal Self-Injury in Eating Disorders* (217-236). New York, NY: Springer.
- Dunn, L. B., Green Hammond, K. A., & Weiss Roberts, L. (2009). Delaying care, avoiding stigma: Residents' attitudes toward obtaining personal health care. *Academic Medicine*, *84*(2), 242-250. doi:10.1097/ACM.0b013e31819397e2
- Edwards, D., Burnard, P., Hannigan, B., Cooper, L., Adams, J., Juggessur, T., . . . Coyle, D. (2006). Clinical supervision and burnout: The influence of clinical supervision for community mental health nurses. *Journal of Clinical Nursing*, *15*(8), 1007-1015. doi:10.1111/j.1365-2702.2006.01370.x
- Eisenberg, D., Downs, M.F., Golberstein, E., & Zivin, K. (2009). Stigma and help seeking for mental health among college students. *Medical Care Research and Review*, *66*(5), 522-541. doi:10.1177/1077558709335173
- Eisenberg, D., Golberstein, E., & Gollust, S. E. (2007). Help-seeking and access to mental health care in a university student population. *Medical Care*, *45*(7), 594-601. doi:10.1097/MLR.0b013e31803bb4c1
- Eisenberg, D., Hunt, J., & Speer, N. (2012). Help seeking for mental health on college campuses: Review of evidence and next steps for research and practice. *Harvard Review of Psychiatry*, *20*(4), 222-232. doi:10.3109/10673229.2012.712839

- Favaro, A., Ferrara, S., & Santonastaso, P. (2004). Impulsive and compulsive self-injurious behavior and eating disorders: An epidemiological study. In J.L. Levitt, R.A. Sansone, & L. Cohn (Eds.). *Self-Harm Behavior and Eating Disorders: Dynamics, Assessment, and Treatment* (pp. 31-44). New York, NY: Brunner/Routledge.
- Favaro, A., & Santonastaso, P. (2000). Self-injurious behavior in anorexia nervosa. *The Journal of Nervous and Mental Disease, 188*(8), 537-542. doi:10.1097/00005053-200008000-00010
- Favazza, A. R., & Conterio, K. (1989). Female habitual self-mutilators. *Acta Psychiatrica Scandinavica, 79*(3), 283-289. doi:10.1111/j.1600-0447.1989.tb10259.x
- Ferrier, A. G., & Martens, M. P. (2008). Perceived incompetence and disordered eating among college students. *Eating Behaviors, 9*(1), 111-119. doi:10.1016/j.eatbeh.2007.06.004
- French, S. A., & Jeffery, R. W. (1994). Consequences of dieting to lose weight: Effects on physical and mental health. *Health Psychology, 13*(3), 195-212. doi:10.1037/0278-6133.13.3.195
- Friedlander, L. L. J. (2007). Social support, self-esteem, and stress as predictors of adjustment to university among first-year undergraduates. *Journal of College Student Development, 48*(3), 259-274. doi:10.1353/csd.2007.0024
- Gallagher, R. (2007). National survey of counseling centre directors, 2006. Monograph Series, No. 8P. International Association of Counseling Services, Inc.
- Gibbons, C. (2010). Stress, coping and burn-out in nursing students. *International Journal of Nursing Studies, 47*(10), 1299-1309. doi:10.1016/j.ijnurstu.2010.02.015

- Gibbons, C., Dempster, M., & Moutray, M. (2008). Stress and eustress in nursing students. *Journal of Advanced Nursing*, *61*(3), 282-290. doi:10.1111/j.1365-2648.2007.04497.x
- Giordano, S. (2005). *Understanding eating disorders: Conceptual and ethical issues in the treatment of anorexia and bulimia nervosa*. Oxford, England: Oxford University Press. doi:10.1093/0199269742.001.0001
- Givens, J. L., & Tjia, J. (2002). Depressed medical students' use of mental health services and barriers to use. *Academic Medicine : Journal of the Association of American Medical Colleges*, *77*(9), 918-921. doi:10.1097/00001888-200209000-00024
- Gollust, S. E., Eisenberg, D., & Golberstein, E. (2008). Prevalence and correlates of self-injury among university students. *Journal of American College Health*, *56*(5), 491-498. doi:10.3200/JACH.56.5.491-498
- Grant, A. (2002). Identifying students' concerns: Taking a whole institutional approach. *Students' Mental Health Needs: Problems and Responses*. London, UK: Jessica Kingsley.
- Gratz, K. L. (2003). Risk factors for and functions of deliberate Self-Harm: An empirical and conceptual review. *Clinical Psychology: Science and Practice*, *10*(2), 192-205.
- Green, J., & Thorogood, N. (2004). *Qualitative methods for health research*. Thousand Oaks, California: Sage Publications Limited.
- Hasking, P., Momeni, R., Swannell, S., & Chia, S. (2008). The nature and extent of non-suicidal self-injury in a non-clinical sample of young adults. *Archives of Suicide Research*, *12*(3), 208-218. doi:10.1080/13811110802100957

- Hays, L.R., Cheever, T., & Patel, P. (1996). Medical student suicide, 1980-1994. *The American Journal of Psychiatry*, 53(4), 553-555.
- Hays, R. B., Lawson, M., & Gray, C. (2011). Problems presented by medical students seeking support: A possible intervention framework. *Medical Teacher*, 33(2), 161-164. doi:10.3109/0142159X.2010.509415
- Heath, N.L., Ross, S., Toste, J.R., Charlebois, A., & Nedecheva, T. (2009). Retrospective analysis of social factors and non-suicidal self-injury among young adults. *Canadian Journal of Behavioural Science*, 41, 180-186. Doi: 10.1037/a0015732
- Heath, N., Schaub, K., Holly, S., & Nixon, M. (2009). Self-injury today: Review of population and clinical studies in adolescents. In M.K. Nixon & N.L. Heath (Eds). *Self-Injury in Youth: The Essential Guide to Assessment and Intervention* (pp. 9-27). New York, NY: Routledge/Taylor & Francis Group.
- Heath, N. L., Toste, J. R., Nedecheva, T., & Charlebois, A. (2008). An examination of nonsuicidal self-injury among college students. *Journal of Mental Health Counseling*, 30(2), 137-156.
- Hensel, D., Middleton, M. J., & Engs, R. C. (2013). A cross-sectional study of drinking patterns, prelicensure nursing education, and professional identity formation. *Nurse Education Today*. doi:10.1016.j.nedt.2013.08.018
- Hill, L. S., Reid, F., Morgan, J. F., & Lacey, J. H. (2010). SCOFF, the development of an eating disorder screening questionnaire. *The International Journal of Eating Disorders*, 43(4), 344-351. doi:10.1002/eat.20679
- Hilt, L. M., Nock, M. K., Lloyd-Richardson, E. E., & Prinstein, M. J. (2008). Longitudinal study of nonsuicidal self-injury among young adolescents rates,

- correlates, and preliminary test of an interpersonal model. *The Journal of Early Adolescence*, 28(3), 455-469. doi:10.1177/0272431608316604
- Holstein, J. A., & Gubrium, J. F. (1997). *The active interview*. Thousand Oaks, California: Sage Publications.
- Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health*, 46(1), 3-10. doi:10.1016/j.jadohealth.2009.08.008
- International Society for the Study of Self-Injury. (2007). *Definitional issues surrounding our understanding of self-injury*. Conference Proceedings from the Annual Meeting.
- Ivankova, N. V. (2014). Implementing quality criteria in designing and conducting a sequential QUAN→ QUAL mixed methods study of student engagement with learning applied research methods online. *Journal of Mixed Methods Research*, 8(1), 25-51. doi:10.1177/1558689613487945
- Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, 18(1), 3-20. doi:10.1177/1525822X05282260
- Jay, G. M., & D'Augelli, A. R. (1991). Social support and adjustment to university life: A comparison of African-American and white freshmen. *Journal of Community Psychology*, 19(2), 95-108. doi:10.1002/1520-6629(199104)19:2%3C95::AID-JCOP2290190202%3E3.0.CO;2-2
- Keel, P. K., Heatherton, T. F., Dover, D. J., Joiner, T. E., & Zalta, A. K. (2006). Point prevalence of bulimia nervosa in 1982, 1992, and 2002. *Psychological Medicine*, 36(01), 119-127. doi:10.1017/S0033291705006148

- Kelly, G., & Percival, M. (2006). Perceived stress scale. Retrieved from <http://healthsceneinvestigation.com/files/2010/07/Perceived-Stress-Scale.pdf>
- Klonsky, E.D. (2007). The functions of deliberate NSSI: A review of the evidence. *Clinical Psychological Review, 27*, 226-239.
- Klonsky, E.D (2011). Non-suicidal self-injury in United States adults: Prevalence, sociodemographics, topography and functions. *Psychological Medicine, 41*(9), 1981-1986. doi:10.1017/S0033291710002497
- Klonsky, E.D., May, A. M., & Glenn, C. R. (2013). The relationship between nonsuicidal self-injury and attempted suicide: Converging evidence from four samples. *Journal of Abnormal Psychology, 122*(1), 231-237. doi:10.1037/a0030278
- Klonsky, E. D., Oltmanns, T. F., & Turkheimer, E. (2003). Deliberate self-harm in a nonclinical population: Prevalence and psychological correlates. *American Journal of Psychiatry, 160*(8), 1501-1508. doi:10.1176/appi.ajp.160.8.1501
- Kohn, P. M., Hay, B. D., & Legere, J. J. (1994). Hassles, coping styles, and negative well being. *Personality and Individual Differences, 17*(2), 169-179. doi:10.1016/0191-8869(94)90023-X
- Komiya, N., Good., G.E., & Sherrod, N.B. (2000). Emotional openness as a predictor of college students' attitudes toward seeking psychological help. *Journal of Counseling Psychology, 47*(1), 138-143. doi:10.1037/0022-0167.47.1.138
- Law, D. W. (2007). Exhaustion in university students and the effect of coursework involvement. *Journal of American College Health, 55*(4), 239-245. doi:10.3200/JACH.55.4.239-245

- Lee, D., Olson, E. A., Locke, B., Michelson, S. T., & Odes, E. (2009). The effects of college counseling services on academic performance and retention. *Journal of College Student Development, 50*(3), 305-319. doi:10.1353/csd.0.0071
- Lees, S., & Ellis, N. (1990). The design of a stress-management programme for nursing personnel. *Journal of Advanced Nursing, 15*(8), 946-961. doi:10.1111/j.1365-2648.1990.tb01951.x
- Lempp, H., & Seale, C. (2004). The hidden curriculum in undergraduate medical education: Qualitative study of medical students' perceptions of teaching. *British Medical Journal, 329*(7469), 770-773. doi:10.1136/bmj.329.7469.770
- Lloyd-Richardson, E. E., Perrine, N., Dierker, L., & Kelley, M. L. (2007). Characteristics and functions of non-suicidal self-injury in a community sample of adolescents. *Psychological Medicine-London-, 37*(8), 1183-1192. doi:10.1017/S003329170700027X
- Lo, R. R. (2002). A longitudinal study of perceived level of stress, coping and self-esteem of undergraduate nursing students: An Australian case study. *Journal of Advanced Nursing, 39*(2), 119-126. doi:10.1046/j.1365-2648.2000.02251.x
- Lunau, K. (2012). Campus Crisis: The Broken Generation. *Macleans*. Retrieved from <http://www2.macleans.ca/2012/09/05/the-broken-generation/>
- Mays, N., & Pope, C. (1995). Rigour and qualitative research. *BMJ: British Medical Journal, 311*(6997), 109-112. doi:10.1136/bmj.311.6997.109
- McCann, C. M., Beddoe, E., McCormick, K., Huggard, P., Kedge, S., Adamson, C., & Huggard, J. (2013). Resilience in the health professions: A review of recent literature. *International Journal of Wellbeing, 3*(1), 60-81. doi:10.5502/ijw.v3i1.4

- McVicar, A. (2003). Workplace stress in nursing: A literature review. *Journal of Advanced Nursing*, 44(6), 633-642. doi:10.1046/j.0309-2402.2003.02853.x
- Midtgaard, M., Ekeberg, O., Vaglum, P., & Tyssen, R. (2008). Mental health treatment needs for medical students: A national longitudinal study. *European Psychiatry: The Journal of the Association of European Psychiatrists*, 23(7), 505-511. doi:10.1016/j.eurpsy.2008.04.006
- Moffat, K. J., McConnachie, A., Ross, S., & Morrison, J.M. (2004). First year medical student stress and coping in a problem-based learning medical curriculum. *Medical Education*, 38(5), 482-491. doi:10.1046/j.1365-2929.2004.01814.x
- Mond, J. M., Myers, T. C., Crosby, R. D., Hay, P. J., Rodgers, B., Morgan, J. F., . . . Mitchell, J. E. (2008). Screening for eating disorders in primary care: EDE-Q versus SCOFF. *Behaviour Research and Therapy*, 46(5), 612-622. doi:10.1016/j.brat.2008.02.003
- Moore, K. A., & Cooper, C. L. (1996). Stress in mental health professionals: A theoretical overview. *The International Journal of Social Psychiatry*, 42(2), 82-89. doi:10.1177/002076409604200202
- Morgan, J. F., Reid, F., & Lacey, J. H. (1999). The SCOFF questionnaire: Assessment of a new screening tool for eating disorders. *British Medical Journal*, 319(7223), 1467-1468. doi:10.1136/bmj.319.7223.1467
- Muehlenkamp, J. J., & Gutierrez, P. M. (2004). An investigation of differences between Self-Injurious behavior and suicide attempts in a sample of adolescents. *Suicide and Life-Threatening Behavior*, 34(1), 12-23. doi:10.1521/suli.34.1.12.27769

- Nelson, G., & Prilleltensky, I (2010). *Community Psychology: In pursuit of liberation and well being* (2nd ed). New York, NY: Palgrave & Macmillan.
- Niemi, P. M., & Vainiomäki, P. T. (1999). Medical students' academic distress, coping, and achievement strategies during the preclinical years. *Teaching and Learning in Medicine, 11*(3), 125-134. doi:10.1207/S15328015TL110302
- Nurmi, J. E. (1997). Self-definition and mental health during adolescence and young adulthood. In J. Schulenberg, J. Maggs & K. Hurrelman (Eds.), *Health risks and developmental transitions during adolescence* (pp. 395-419). Cambridge, England: Cambridge University Press.
- Nock, M.K. (2010). Self-injury. *Annual Review of Clinical Psychology, 6*, 339-363. doi:10.1146/annurev.clinpsy.121208.131258
- Park, C. L., & Adler, N. E. (2003). Coping style as a predictor of health and well-being across the first year of medical school. *Health Psychology, 22*(6), 627-631. doi:10.1037/0278-6133.22.6.627
- Parker, S. C., Lyons, J., & Bonner, J. (2005). Eating disorders in graduate students: Exploring the SCOFF questionnaire as a simple screening tool. *Journal of American College Health, 54*(2), 103-107. doi:10.3200/JACH.54.2.103-107
- Paul, T., Schroeter, K., Dahme, B., & Nutzinger, D. O. (2002). Self-injurious behavior in women with eating disorders. *American Journal of Psychiatry, 159*(3), 408-411. doi:10.1176/appi.ajp.159.3.408
- Peebles, R., Wilson, J. L., & Lock, J. D. (2011). Self-injury in adolescents with eating disorders: Correlates and provider bias. *Journal of Adolescent Health, 48*(3), 310-313. doi:10.1016/j.jadohealth.2010.06.017

- Prymachuk, S., & Richards, D. A. (2007). Mental health nursing students differ from other nursing students: Some observations from a study on stress and coping. *International Journal of Mental Health Nursing, 16*(6), 390-402. doi:10.1111/j.1447-0349.2007.00494.x
- Pulido-Martos, M., Augusto-Landa, J., & Lopez-Zafra, E. (2012). Sources of stress in nursing students: A systematic review of quantitative studies. *International Nursing Review, 59*(1), 15-25. doi:10.1111/j.1466-7657.2011.00939.x
- Radcliffe, C. C. & Lester, H. (2003). Perceived stress during undergraduate medical training: A qualitative study. *Medical Education, 37*(1), 32-38.
- Ramsay, S. S., Jones, E., & Barker, M. (2007). Relationship between adjustment and support types: Young and mature-aged local and international first year university students. *Higher Education, 54*(2), 247-265. doi:10.1007/s10734-006-9001-0
- Rapley, T. (2004). In C. Seale, G. Gobo, J. Gubrium & D. Silverman (Eds.), *Qualitative research practice* (pp. 13-31). Thousand Oaks, London: Sage Publishing.
- Rice, C. (2007). Becoming “the fat girl”: Acquisition of an unfit identity. Paper presented at the *Women's Studies International Forum, 30*(2) 158-174. doi:10.1016/j.wsif.2007.01.001
- Richardson, L. (2000). A method of inquiry. In N. Denzin & Y. Lincoln (Eds), *Handbook of Qualitative Research* (pp. 923-948). Thousand Oaks: Sage Publishing.
- Roberti, J. W., Harrington, L. N., & Storch, E. A. (2006). Further psychometric support for the 10-Item version of the perceived stress scale. *Journal of College Counseling, 9*(2), 135-147. doi:10.1002/j.2161-1882.2006.tb00100.x

- Ross, S., & Heath, N. (2002). A study of the frequency of self-mutilation in a community sample of adolescents. *Journal of Youth and Adolescence*, 31(1), 67-77. doi:10.1023/A:1014089117419
- Ross, S., Heath, N. L., & Toste, J. R. (2009). Non-suicidal self-injury and eating pathology in high school students. *The American Journal of Orthopsychiatry*, 79(1), 83-92. doi:10.1037/a0014826
- Royal College of Psychiatrists. (2003). The mental health of students in higher education. Council Report, CR112. London: Royal College of Psychiatrists.
- Sabih, F., Siddiqui, F. R., & Baber, M. N. (2013). Assessment of stress among physiotherapy students at Riphah centre of rehabilitation sciences. *Journal of Pakistan Medical Association*, 63(3), 346-349.
- Sansone, R. A., & Levitt, J. L. (2002). Self-harm behaviors among those with eating disorders: An overview. *Eating Disorders*, 10(3), 205-213. doi:10.1080/10640260290081786
- Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin*, 129(2), 216-269. doi:10.1037/0033-2909.129.2.216
- Stark, M. A., Hoekstra, T., Lindstrom Hazel, D., & Barton, B. (2012). Caring for self and others: Increasing health care students' healthy behaviors. *Work: A Journal of Prevention, Assessment & Rehabilitation*, 42(3), 393-401. doi:10.3233/WOR-2012-1428.

- Steed, H., Groome, M., Rice, P., Simpson, K., Day, A., & Ker, J. (2012). A brief report on perceptions of alcohol and society among Scottish medical students. *Alcohol and Alcoholism, 47*(1), 75-78. doi:10.1093/alcalc/agr139
- Svirko, E., & Hawton, K. (2007). Self-Injurious behavior and eating disorders: The extent and nature of the association. *Suicide and Life-Threatening Behavior, 37*(4), 409-421. doi:10.1521/suli.2007.37.4.409
- Taylor, C. B., Bryson, S., Luce, K. H., Cuning, D., Doyle, A. C., Abascal, L. B., . . . Wilfley, D. E. (2006). Prevention of eating disorders in at-risk college-age women. *Archives of General Psychiatry, 63*(8), 881-888. doi:10.1001/archpsyc.63.8.881
- Thomas, T., Schroeter, K., Dahme, B., & Nutzinger, D. (2002). Self-injurious behaviour in women with eating disorders. *American Journal of Psychiatry, 159*(3), 408-411.
- Thompson, J. K., Roehrig, M., & Kinder, B. N. (2011). Eating disorders. In M. Hersen, S. M. Turner & D. C. Beidel (Eds.), *Adult psychopathology and diagnosis* (pp. 571-600). Hoboken, New Jersey: John Wiley & Sons, Inc.
- Tyssen, R., Røvik, J. O., Vaglum, P., Grønvold, N. T., & Ekeberg, Ø. (2004). Help-seeking for mental health problems among young physicians: Is it the most ill that seeks help? *Social Psychiatry and Psychiatric Epidemiology, 39*(12), 989-993. doi:10.1007/s00127-004-0831-8
- Tyssen, R., Vaglum, P., Grønvold, N. T., & Ekeberg, Ø. (2001). Suicidal ideation among medical students and young physicians: A nationwide and prospective study of prevalence and predictors. *Medical Education, 35*, 110-120.
- Walter, G., Soh, N. L., Jaconelli, S. N., Lampe, L., Malhi, G. S., & Hunt, G. (2013). Medical students' subjective ratings of stress levels and awareness of student support

- services about mental health. *Postgraduate Medical Journal*, 89, 311-315. doi: 10.1136/postgradmedj-2012-131343.
- White, S., Reynolds-Malear, J. B., & Cordero, E. (2011). Disordered eating and the use of unhealthy weight control methods in college students: 1995, 2002, and 2008. *Eating Disorders*, 19(4), 323-334. doi:10.1080/10640266.2011.584805
- White, V. E., Trepal-Wollenzier, H., & Nolan, J. M. (2002). College students and Self-Injury: Intervention strategies for counselors. *Journal of College Counseling*, 5(2), 105-113. doi:10.1002/j.2161-1882.2002.tb00212.x
- Whitlock, J., Eckenrode, J., & Silverman, D. (2006). Self-injurious behaviors in a college population. *Pediatrics*, 117(6), 1939-1948. doi:10.1542/peds.2005-2543
- Whitlock, J., & Knox, K. L. (2007). The relationship between self-injurious behavior and suicide in a young adult population. *Archives of Pediatrics & Adolescent Medicine*, 161(7), 634-640. doi:10.1001/archpedi.161.7.634
- Wolf, T. M. (1994). Stress, coping and health: Enhancing well-being during medical school. *Medical Education*, 28(1), 8-17. doi:10.1111/j.1365-2923.1994.tb02679.x
- Wright, F., Bewick, B. M., Barkham, M., House, A. O., & Hill, A. J. (2009). Co-occurrence of self-reported disordered eating and self-harm in UK university students. *British Journal of Clinical Psychology*, 48(4), 397-410. doi:10.1348/014466509X410343
- Wright, J., O'Flynn, G., & Macdonald, D. (2006). Being fit and looking healthy: Young women's and men's constructions of health and fitness. *Sex Roles*, 54(9-10), 707-716. doi:10.1007/s11199-006-9036-9

- Yorgason, J. B., Linville, D., & Zitzman, B. (2008). Mental health among college students: Do those who need services know about and use them? *Journal of American College Health, 57*(2), 173-182.
- Zascavage, V., Winterman, K. G., Buot, M., Wies, J. R., & Lyzinski, N. (2012). Student-life stress in education and health service majors. *Higher Education Research & Development, 31*(4), 599-610. doi:10.1080/07294360.2011.653957
- Zivin, K., Eisenberg, D., Gollust, S. E., & Golberstein, E. (2009). Persistence of mental health problems and needs in a college student population. *Journal of Affective Disorders, 117*(3), 180-185. doi:10.1016/j.jad.2009.01.001

Appendix A

Quantitative Study Consent and Measures

Health Professional Student Stress Study

Anonymous Code

We would like you to format an anonymous linking code, using the example provided as a guide. Completing this section is voluntary but essential for us to link responses in order to measure change without asking for any identifying information. The code provided will not allow us to identify you as an individual but will allow us to match your responses to this survey with responses to other surveys you will complete.

We recommend **not** using a **cell phone** as these tend to change frequently but rather a **home phone** or **land line** that is unlikely to change.

Example:

John Martin, born September 20, 1986, whose **home phone** number is 555-8365, would fill it out this way:

Your month of birth (2 digits): 09

Your day of birth (2 digits) 20

Last 4 digits of your **home phone** number (4 digits): 8365

The code for John Martin would be: **09208365**

Please format your own code:

Please remember which phone number you used to generate this code as you will be asked to provide it again on all subsequent surveys.

The anonymous code will be used for analysis purposes but will NEVER BE REPORTED.

Please begin by completing the following information:

Age _____

Sex Male Female**Program** Medicine Nursing Pharmacy Social Work Other (please specify):**Current Year in Program** First Second Third Forth Other (please specify):**Undergraduate Degree** (if applicable, please specify):**Masters Degree** (if applicable, please specify):What **languages** do you speak at home? English French Other (please specify):What was the **population** of the town/community/city where you grew up? under 200 people between 200-500 people between 500 - 1000 people between 1000 – 5,000 people between 5,000 – 25,000 people over 25,000 peopleCountry of **permanent residence** Canada USA Other (please specify):Country of **birth** Canada USA Other (please specify):

Sexual Orientation:

 Heterosexual Gay/Lesbian Bi-sexual Questioning Transgendered

Have you completed any workshops or sessions in coping with stress, mindfulness, or developing skills to help deal with academic work-life balance (e.g., lunch and learns).

 Yes No

HOW I DEAL WITH STRESS

(Heath & Ross, 2007; Adapted by O. Heath, 2008)

Young adults have to deal with a lot of stress. In a recent survey, young adults said they used the following list of strategies to help them deal with problems. We are interested in knowing if you have also used any of these strategies to help you deal with stress.

Please read each item and indicate whether you:

<i>Coping strategies</i>	<i>Never</i>	<i>Once</i>	<i>Few times</i>	<i>Frequently</i>					
1. Try not to think about it	0	1	2	3					
2. Talk to someone	0	1	2	3					
3. Try to solve the problem	0	1	2	3					
4. Do something to keep myself busy	0	1	2	3					
5. Say to myself it doesn't matter	0	1	2	3					
6. Listen to music	0	1	2	3					
7. Exercise	0	1	2	3					
8. Play Sports	0	1	2	3					
9. Go out	0	1	2	3					
10. Go shopping	0	1	2	3					
11. Eat	0	1	2	3					
12. Do risky things	0	1	2	3					
13. Drink alcohol	0	1	2	3					
14. Hit someone	0	1	2	3					
15. Get into an argument with someone	0	1	2	3					
16. Do drugs	0	1	2	3					
17. Smoke	0	1	2	3					
18. Try to control my weight	0	1	2	3					
19. Physically hurt myself on purpose	0	1	2	3					
20. Cry	0	1	2	3					
21. Sleep	0	1	2	3					
22. Pray /engage in other religious activity	0	1	2	3					
23. Other: _____	0	1	2	3					
24. On a scale of 1 to 10 (1 = "no stress at all" to 10 = "the most stressed out you have ever felt") please circle how stressed you have been over the past two weeks.									
1	2	3	4	5	6	7	8	9	10

Perceived Stress Scale

(Cohen, 1994)

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

	<i>Never</i>	<i>Almost Never</i>	<i>Sometimes</i>	<i>Fairly Often</i>	<i>Very Often</i>
1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt you were unable to control the important things in your life?	0	1	2	3	4
3. In the last month, how often have you felt nervous and stressed?	0	1	2	3	4
4. In the last month, how often have you felt confident about your ability to handle personal problems?	0	1	2	3	4
5. In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8. In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9. In the last month, how often have you been angered because of things that were outside of your control?	0	1	2	3	4
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

SCOFF

(Morgan et al., 1999; Adapted by Mond, et al., 2008)

Please respond either **Yes** or **NO** to the following questions:

1. Do you make yourself vomit because you feel uncomfortably full? Yes No
2. Do you worry that you have lost control over how much you eat? Yes No
3. Have you recently lost more than 15lbs in a 3-month period? Yes No

4. Do you believe that you are fat when others say you are too thin? Yes No

5. Would you say food dominates your life? Yes No

Do you engage in any regular physical activity (e.g., exercise, sports)? Yes No

If yes, please explain what kinds of activities you do: _____

How often do you engage in these activities (e.g., daily, a couple times a week, weekly, monthly)?

How would you rate the average level intensity of these physical activities (e.g., low, moderate or high intensity)? _____

Appendix B

Qualitative E-mail Interview Invitation

Hi,

We would like to **thank you for participating** in our Student Stress study. Earlier this semester, you completed **an online survey** about student health and coping behaviours. During this survey, you indicated that you were **interested** in having us contact you to **participate in the final stage** of this study. The final stage involves a trained researcher **talking to you about your experiences of being stressed**, how you have **coped** and how **Memorial could be more responsive** to students who are experiencing stress. This discussion will take place in a comfortable and confidential environment and will likely take about **1 to 1.5 hours**. This final part of the research is **very important**, as it allows us to really understand your concerns and what students need, from your perspective.

We know this is a **hectic time** for students and we will **work with your schedule** so as not to inconvenience you – your participation is **very important** to us. If you are **interested** in being contacted about taking part in an interview, **please reply to this e-mail**. I, **Pam Button**, will then contact you to **arrange a time**. We can arrange a time starting March 24th and if you would prefer to wait until after exams, that would be fine as well. **Participating in the interview is completely voluntary, and responding to this e-mail does not commit you to take part in this phase of the study**. If you have any questions please do not hesitate to contact me, Pam Button by email plbutton@mun.ca.

As a small thank-you for your time and participation, all people participating in the interview will be given \$25.00.

Appendix C

Qualitative Study Consent and List of Questions

12/10/2010

November 2006

Faculty of Medicine, Schools of Nursing and Pharmacy of Memorial
University of Newfoundland; Eastern Health; Dr. H. Bliss Murphy Cancer Centre

Consent to Take Part in Health Research

TITLE: HOW STUDENTS DEAL WITH STRESS: Phase 3

INVESTIGATOR(S): Dr. Olga Heath, Dr. Peter Cornish, Dr. Natalie Beausoleil, Ms. Kelly Neville, Dr. Nancy Heath

SPONSOR: Student Services and Faculty of Medicine

You have been invited to take part in a research study. It is up to you to decide whether to be in the study or not. Before you decide, you need to understand what the study is for, what risks you might take and what benefits you might receive. This consent form explains the study.

The researchers will:

- explain the study to you
- answer your questions
- keep confidential any information which could identify you personally
- be available during the study to deal with problems and answer questions

If you decide not to take part or to leave the study this will not affect your student status

1. Introduction/Background:

We know that university life can be very stressful for students especially at certain times and those students find ways to handle that stress. It is important to understand how many students use poor coping skills which may create problems so that we can find ways to help.

2. Purpose of study:

The purpose of this project is to learn about the different ways that students at MUN cope with the stresses they are facing. The purpose of this project is to learn about the different ways that students at MUN cope with the stresses they are facing. We are particularly interested in understanding more about some of the common kinds of poor coping strategies that students use so that we can find better ways to help these students.

3. Description of the study procedures and tests:

This interview will take between one and two hours. We are interested in understanding your experience of stress, how you have coped and your views on the services available to students at MUN who are stressed and how they could be improved. We would like to tape the interview so that we can better examine and understand your views.

4. Possible risks and discomforts:

While there are no physical risks to being involved in this research project, some participants might be upset by or uncomfortable with, some of the questions. If you feel this way, you are free not answer any questions or to simply stop the interview at any time, without penalty or prejudice. If you are upset by answering the questions, you can see a

12/10/2010

counsellor at the Counselling Centre today by going to the centre (5th floor of the University Centre) and asking to see the counsellor on call or by calling 737-8874 and setting up a time.

If during the interview, the interviewer is concerned about your immediate safety or well being he/she is obliged to do whatever is necessary to ensure that you have access to appropriate services including violating confidentiality if required.

5. Benefits:

It is not known whether this study will benefit you.

6. Liability statement:

Signing this form gives us your consent to be in this study. It tells us that you understand the information about the research study. When you sign this form, you do not give up your legal rights. Researchers or agencies involved in this research study still have their legal and professional responsibilities.

7. Confidentiality:

All of the information provided is kept completely confidential. As was the case in the first two phases of this study, you will create the same anonymous code based on directions provided so that your answers from the first and second part of the study can linked to these answers. Once the interviewer has removed identifying information from the transcript, there will be no way to tie this information to you personally. This will maintain your confidentiality and anonymity in this study.

With your permission the interview will be digitally recorded on an MP3 player and the transcripts will have all identifying information removed by the interviewer. The transcripts will be kept entirely anonymous, and consent forms will be stored separately, in a locked cabinet accessible only to the primary researcher. This will maintain your confidentiality and anonymity in this study. Participation in this research is voluntary and will not, in any way, affect your grades or any evaluation of your course work.

8. Questions:

If you have any questions about taking part in this study, you can meet with the investigator who is in charge of the study at this institution. That person is:

Dr. Olga Heath 737-8874

Or you can talk to someone who is not involved with the study at all, but can advise you on your rights as a participant in a research study. This person can be reached through:

Office of the Human Investigation Committee (HIC) at 709-777-6974

Email: hic@mun.ca

12/10/2010

Signature Page

Study title: HOW STUDENTS DEAL WITH STRESS: Phase 3

Name of principal investigator: Dr. Olga Heath

To be filled out and signed by the participant:

Please check as appropriate:

- I have read the consent Yes { } No { }
- I have had the opportunity to ask questions/to discuss this study. Yes { } No { }
- I have received satisfactory answers to all of my questions. Yes { } No { }
- I have received enough information about the study. Yes { } No { }
- I understand that I am free to withdraw from the study Yes { } No { }
 - at any time
 - without having to give a reason
 - without affecting my student status
- I agree to allow the interview to be audio taped Yes { } No { }
- I understand that it is my choice to be in the study and that I may not benefit. Yes { } No { }
- I agree to take part in this study. Yes { } No { }

Signature of participant Date

Signature of witness Date

To be signed by the interviewer:

I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participant fully understands what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

Signature of interviewer Date

Telephone number: _____

Health Professional Student Stress Interview Questions

Thank you for agreeing to do the interview with us.

Can you please tell us about your experience of being a medicine/nursing/pharmacy student and feeling stressed?

What are the things that made you feel especially stressed? Tell me about what you found most stressful about your program this year?

How have you coped with the stress?

Can you talk about some of the coping mechanisms that you have used and how well they worked for you? Coping can include things like exercise, drinking, eating, talking with friends, self-injury etc.

What about some that didn't work so well?

Over the past year have you sought help for your stress at the university or from people in your program (like other students or advisors)?

What kinds of help do you see as available for students in your program to deal with stress? What about students in general?

How do you think help for students could be improved? Do you have specific ideas or examples?

Do you think that you would be more likely to use a service like the University Counselling Centre if there was an office at the Health Sciences Centre?

Are there other coping mechanisms that you use which you think might be helpful to other students? Please tell us more about that.

Thank you very much for your help.