

SHINING A LIGHT:
COMPASSION FATIGUE IN PSYCHIATRIC NURSING AND NURSING STUDENTS

A Dissertation Submitted to the
College of Graduate and Postdoctoral Studies

In Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy in Nursing
College of Nursing
University of Saskatchewan, Saskatoon

By

KATHRYN CHACHULA

© Copyright Kathryn Chachula, July, 2020. All rights reserved.

PERMISSION TO USE DISCLAIMER

In presenting this dissertation in partial fulfillment of the requirements for a Postgraduate degree from the University of Saskatchewan, I agree that the Libraries of this University may make it freely available for inspection. I further agree that permission for copying of this dissertation in any manner, in whole or in part, for scholarly purposes may be granted by the professor or professors who supervised my dissertation work or, in their absence, by the Head of the Department or the Dean of the College in which my dissertation work was completed. It is understood that any copying or publication or use of this dissertation or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me in any scholarly use which may be made of any material in my dissertation.

Dean
College of Graduate and Postdoctoral Studies
University of Saskatchewan
116 Thorvaldson Building, 110 Science Place
Saskatoon, Saskatchewan S7N 5C9
Canada

Dean
College of Nursing
University of Saskatchewan
Health Science Building - 1A10
107 Wiggins Road
Saskatoon, Saskatchewan S7N 5E5
Canada

ABSTRACT

Background: Low levels of compassion satisfaction (CS) and high levels of compassion fatigue (CF), comprised of burnout (BO) and secondary traumatic stress (STS), have been identified as a serious concern among students within health science disciplines.

Purpose: To conduct a cross-sectional survey to determine what factors are related to the development of BO and STS within a pre-licensure health studies student population of undergraduate nursing and psychiatric nursing disciplines, groups that have seldom been studied.

Methods: Data was collected through an anonymous online survey to determine the presence of compassion satisfaction and fatigue among participants. The survey was comprised of demographic questions and four validated measures that included the *Professional Quality of Life Scale* (version 5), the *Core Self-Evaluations Scale*, the *Perceived Stress Scale*, and the *Life Events Checklist* (version 5).

Results: Findings revealed 31% of students reported low levels of CS, 27% had high levels of BO, and 28% had high levels of STS. Students in long-term care/palliative care rotations reported significantly higher levels of BO in comparison to students placed on in-patient units such as medical-surgical areas and episodic care areas that include out-patient and emergency departments. Regression analysis revealed that students with low self-efficacy and high perceived stress were predictive of BO. Students with increased exposures to prior traumatizing life events were predictive of STS. Despite having less sleep, students with high levels of self-efficacy and commitment to their program with less intent-to-leave were predictive of having CS.

Significance: To date, this is the only study that has explored compassion fatigue within undergraduate nursing and psychiatric nursing students in Canada. Findings of the study assist educators, clinicians, and policy makers to better understand at-risk clinical settings and predictors of compassion satisfaction and fatigue in undergraduate nursing and psychiatric nursing students prior to entering the workforce as newly-licensed professionals.

Keywords: Nursing students; Psychiatric nursing students; Undergraduate students; Compassion satisfaction; Compassion fatigue; Professional quality of life; Self-efficacy; Perceived stress; Prior traumatic experience; Intent-to-leave.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my co-supervisors, Dr. Noelle Rohatinsky and Dr. Gerri Lasiuk, for your mentorship prior to taking me on as a graduate student and during my educational journey at the University of Saskatchewan. I am thankful for the guidance I received from the current and past-interim Chairs of the College of Nursing graduate program, Dr. Lorraine Holtslander and Dr. Jill Bally. In addition, I would like to thank my Advisory Committee that included Dr. Phillip Goernert at Brandon University and Drs. Valerie MacDonald-Dickinson, Carol Bullin, and Don Leidl at the University of Saskatchewan. Many thanks are offered to my work colleagues at Brandon University. All of you have been instrumental to my studies and success as a graduate student.

Financial assistance for the project was received by the Canadian Nurses Foundation TD Meloche Monnex PhD award. SurveyMonkey® costs were provided by the University of Saskatchewan. Access to the Statistical Package for the Social Science® (SPSS) was provided by Brandon University.

Throughout my PhD journey, I would like to thank my family for their over-and-above unwavering support as I spent countless hours ‘holed up’ in front of a computer. This included online classes, self-study, data analysis, and numerous hours writing and re-writing. Without your support and understanding, I would not be where I am today.

DEDICATION

☞ For Andrea ☛

TABLE OF CONTENTS

PERMISSION TO USE DISCLAIMER.....	i
ABSTRACT	ii
ACKNOWLEDGEMENTS.....	iii
DEDICATION.....	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS.....	xi
CHAPTER 1: INTRODUCTION.....	1
Evolution of Compassion Fatigue.....	1
Discussion of Terms.....	3
Compassion	3
Compassion Satisfaction (CS).....	3
Compassion Fatigue (CF)	4
Post-Traumatic Stress Disorder (PTSD).....	5
Secondary Traumatic Stress (STS).....	5
Burnout (BO)	6
Research Objectives	7
Research Questions	7
RQ 1.	7
RQ 2.	7
RQ 3.	7
RQ 4.	8
Hypotheses	8
H 1.....	8
H 2.....	8
H 3.....	8
H 4.....	8
Relevance and Significance.....	8

CHAPTER 2: LITERATURE REVIEW	9
Background.....	9
Search Strategy	11
Inclusion criteria.....	12
Exclusion Criteria.....	12
Search Results and Appraisal	12
Concept Analysis of Compassion Fatigue.....	17
Antecedents	17
<i>Coping Ability</i>	17
<i>Self-Efficacy</i>	17
<i>Clinical Setting and Occupational Hazards</i>	18
Defining Attributes.....	19
<i>Psychological Stress</i>	19
<i>Witnessing Negative Experiences of Others</i>	20
<i>Depression</i>	21
Consequences	22
<i>Decreased Well-Being</i>	22
<i>Program Withdrawal and Intention-to-Leave</i>	23
Discussion.....	26
Conclusion	27
CHAPTER 3: METHOD & RESEARCH DESIGN.....	28
Study Population	28
Sampling Procedure.....	28
Sample Size.....	29
Ethical Considerations	30
Instruments and Research Variables.....	31
<i>The Professional Quality of Life Scale (ProQOL-Version 5)</i>	32
<i>Core Self-Evaluations Scale (CSES)</i>	33
<i>Perceived Stress Scale (PSS)</i>	34
<i>Life Events Checklist (LEC-Version 5)</i>	34
<i>Demographic Data</i>	35
Data Analysis Plan	36

Cut Scores	36
Analysis of Variance	37
Correlation Analysis	37
Multiple Regression.....	38
Discussion.....	38
Conclusion	38
CHAPTER 4: RESULTS	39
Reliability	41
RQ 1: Prevalence of Compassion Satisfaction and Fatigue	41
RQ 2: Program-Type and Year-in-Program Comparisons	41
Gender Comparisons	43
Clinical Type Comparisons	43
RQ 3: Bivariate Correlation of Outcome Variables.....	44
Bivariate Correlation of Variables	45
RQ 4: Hierarchal Multiple Regression of Dependent Variables	47
Burnout Regression Model	48
Secondary Traumatic Stress Regression Model.....	49
Compassion Satisfaction Regression Model.....	50
Conclusion	51
CHAPTER 5: DISCUSSION AND IMPLICATIONS	52
RQ 1: Prevalence of Compassion Satisfaction and Fatigue	52
RQ 2: Program-Type and Year-in-Program	53
RQ 3: Variable Relationships	53
Dependent Variable Relationships	54
Demographics, Clinical Settings and Dependent Variables	54
RQ 4: Predictor and Dependent Variables	55
Burnout	55
Secondary Traumatic Stress.....	57
Compassion Satisfaction.....	57
Fostering Student Self-Care in Pre-Licensure Programs	58
Mindfulness.....	58
Coping and Crisis Peer-Debriefing	59

Emotional Intelligence.....	59
Limitations.....	60
Areas of Future Research	61
Dissemination Strategies	61
Conclusion	62
REFERENCES	63
APPENDIX A: ETHICAL APPROVALS	78
APPENDIX B: RECRUITMENT LETTER	80
APPENDIX C: CONSENT & CONFIDENTIALITY	81
APPENDIX D: SURVEY INSTRUMENTS	84
Demographic Data	84
Professional Quality of Life (Version 5).....	88
Core Self-Evaluations Scale	90
Perceived Stress Scale.....	91
Life Events Check List (Version 5 – Standard).....	92
APPENDIX E: BUDGET.....	94

LIST OF TABLES

Table 2.1. Search strings.....	10
Table 2.2. Appraisal of cross-sectional studies (n = 10).....	14
Table 2.3. Appraisal of prevalence studies (n = 2).....	14
Table 2.4. Studies of Compassion Fatigue in Undergraduate, Pre-Licensure Students	16
Table 4.1. Demographic Data (n=93).....	40
Table 4.2. Cut-off scores for the ProQOL V Subscales	42
Table 4.3. ProQOL V Prevalence Scores of the Participants.....	42
Table 4.4. Hochberg’s Post-Hoc Analysis of Burnout and Clinical Type.....	44
Table 4.5. Pearson Correlation Co-Efficient for the ProQOL V Subscales	45
Table 4.6. Bivariate Correlation of Variables (n = 93).....	46
Table 4.7. Pearson Bivariate Correlation of Outcome and Predictor Variables (n = 93).....	47
Table 4.8. Standardized Coefficients (Beta) for Hierarchal Regression Analysis of Burnout ..	48
Table 4.9. Standardized Coefficients (Beta) for Hierarchal Regression Analysis of STS	49
Table 4.10. Standardized Coefficients (Beta) for Hierarchal Regression Analysis of CS	50

LIST OF FIGURES

Figure 2.1. Compassion Satisfaction and Compassion Fatigue Theoretical Model.....	11
Figure 2.2. PRISMA Flow Diagram of Professional Quality of Life (ProQOL) Studies	13
Figure 2.3. Conceptual Synthesis Map of Compassion Fatigue	25
Figure 3.1. G*Power Estimate	29
Figure 4.1. Burnout Error Bar Chart	44

LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
BN	Baccalaureate of Nursing
BO	Burnout
BPN	Baccalaureate of Psychiatric Nursing
CF	Compassion Fatigue
CFNU	Canadian Federation of Nurses Unions
CNA	Canadian Nurses Association
CS	Compassion Satisfaction
CSES	Core Self-Evaluations Scale
JBI	Joanna Briggs Institute
LEC	Life Events Checklist
STS	Secondary Traumatic Stress
ProQOL	Professional Quality of Life
PSS	Perceived Stress Scale
PTE	Prior Traumatic Experience
PTSD	Post-Traumatic Stress Disorder
SPSS	Statistical Package for the Social Science

CHAPTER 1: INTRODUCTION

This study investigated compassion satisfaction (CS) and compassion fatigue (CF) in pre-licensure students among nursing and psychiatric nursing programs at a Canadian university. Pre-licensure students are learners enrolled in a baccalaureate education program where upon completion, are eligible for licensing and registration under a health regulatory body. For example, on completion of a nursing education program, a graduate becomes eligible for professional licensure as a Registered Nurse (RN). CS refers to the level of reward a helper gains when carrying out ‘care’ or ‘help’ to others. In contrast, CF, comprised of secondary traumatic stress (STS) and burnout (BO), entails the negative aspects of work-related activities. Development of CF is highly concerning given that it is associated with “feelings of hopelessness and difficulties in dealing with work or in doing your job effectively” (Stamm, 2010, p. 17). This may impede provision of safe, competent, and ethical care that is in alignment with *Code of Ethics for Registered Nurses* (Canadian Nurses Association [CNA], 2017; Joinson, 1992).

Studies of nurses exposed to traumatic events revealed that a higher level of CS served as a protective factor against STS (Hinderer et al., 2014) and BO (Hooper et al., 2010). According to Michalec et al. (2013), limited attention has been paid to the vulnerabilities of nursing students to CF, the extent to which students may be suffering from BO, STS, and the associated mechanisms. Rudman and Gustavsson (2012) found that BO in undergraduate nursing students led to higher levels of intention-to-leave the nursing profession within one year upon workforce entry. A greater understanding is needed of the factors associated with CF in effort to prevent its formation and promote development of CS among nursing students prior to their entry into the workforce. Understanding what factors contribute to CF may assist nurse educators and researchers in formulating interventions and curricular planning strategies to support students and decrease the negative effects of caring for others.

Evolution of Compassion Fatigue

Interest in psychological traumatic injury has persisted for centuries (Lasiuk & Hegadoren, 2006) with the field of traumatology blossoming in the 1980s (Morrissette, 2004). Despite several decades of study, ongoing research is needed to understand how helping professionals manage the personal pain associated with helping others (Morrissette, 2004).

In 1995, Charles Figley, a scholar with expertise in psychotherapy and traumatic stress, noted the paucity of literature surrounding CF in psychotherapy professionals. Figley coined the term *secondary traumatic stress disorder* in his book, entitled *Compassion Fatigue: Coping with Secondary Traumatic Stress Disorder in Those Who Treat the Traumatized*. Within this work, he used the term *secondary traumatic stress disorder* synonymously with CF. Figley developed the 40-item *Compassion Fatigue Self-Test* and highlighted factors that contribute to STS in professionals who work with people from vulnerable groups, the experience of personal prior traumatic experiences (PTEs), empathic responses, and the recollection of events involving the traumatized person the professional was assisting (Figley, 1995; Morrissette, 2004).

In the late 1980s, Charles Figley and Beth Stamm, a now-retired professor with specialization in traumatic stress, STS, and cultural trauma, began collaborating. Their collaboration led to refinement of the *Compassion Fatigue Self-Test*, which they renamed the *Professional Quality of Life (ProQOL) Scale* (Stamm, 2010). The current ProQOL Scale (version 5) defines STS as “work-related, secondary exposure to people who have experienced extremely or traumatically stressful events” (Stamm, 2010, p. 13). This definition incorporated Figley’s (1995) original recognition that ‘there is a cost to care’.

Students in undergraduate Bachelor of Nursing (BN) and Bachelor of Psychiatric Nursing (BPN) programs are future professionals who will enter a workforce rife with violence and anxiety-provoking life-and-death experiences. According to the Canadian Federation of Nurses Unions, nurses experience three-times more violence than do police and correctional service officers combined, and 25% of nurses within Manitoba “consistently” experience post-traumatic stress disorder (PTSD) symptoms (Canadian Federation of Nurses Unions [CFNU], 2017, p. 25). Encountering stressful situations, which includes bullying from both colleagues and superiors, compromises the future of the nursing profession with newly-graduated nurses leaving practice to pursue other careers (Chachula et al., 2015). Little is known about the experience of undergraduate students within these contexts. More research is needed that explores the effects of these stressful situations in students entering nursing disciplines and determining the prevalence of CF in undergraduate BN and BPN programs in Canada.

Discussion of Terms

In 1995, Figley differentiated STS from PTSD and suggested that the terms ‘compassion fatigue’ and ‘compassion stress’ are appropriate to connote ‘the cost of caring’. A variety of related terms are discussed below to situate the current research study.

Compassion

Chinese Confucius scholar, Mencius, reflected that compassion is a balance between reason/rationality and desire/emotion that bears on moral development and ethical virtues (Wong, 2015). Provision of compassionate care is a core value of professional nursing practice as highlighted in the *Code of Ethics for Registered Nurses* (CNA, 2017). “Nurses engage in compassionate care through their speech and body language and through their efforts to understand and care about others’ health-care needs” (CNA, 2017, p. 8). Within Mencius’ Confucian philosophy, the purpose of compassion is to alleviate suffering (Nuyen, 2008). This aligns with the core values of nursing practice (CNA, 2017).

There is a visceral unity between acting with judgment and rationality that is connected with the bodily experience of emotion, which grips the body when acting with compassion in the presence of human suffering (Wong, 2015). This is also known as the ‘heart-mind’ or *xin* (Nuyen, 2008). Of note within Mencius’ Confucian philosophy, the growth and development of virtuous compassion is a ‘sprout’ which requires a significant level of nurturing fostered through socialization (Nuyen, 2008; Wong, 2015). In part, undergraduate pre-licensure health curricula, serve to socialize students into their roles as care providers as students learn to foster and cultivate compassion that reinforces Mencius’ notion of *xin*, thereby gaining “satisfaction in the heart” (Nivison, 1996, p. 46). According to the American Association of Colleges of Nursing (AACN) and the Canadian Association of Schools of Nursing (CASN), a core essential of professional nursing education is the provision of competent, safe, ethical, and compassionate care delivery provided by the student nurse that is learned in baccalaureate education (American Association of Colleges of Nursing [AACN], 2008; Canadian Association of Schools of Nursing [CASN], 2015).

Compassion Satisfaction (CS)

For the purposes of the study, CS is defined as the positive aspects and pleasure a care provider gains despite any feelings of exhaustion and hardship (Berger et al., 2015; Hooper et al., 2010; Stamm, 2002; Stamm, 2010). CS results from a transactional dynamic understood as the

positive effects or ‘payments’ one gains as a result of caregiving, despite the ‘cost’ of helping others (Stamm, 2002). This is akin to Lazarus and Folkman’s (1984) theory of stress, appraisal, and coping where stress results from perceived imbalances between demands of a situation and the availability of resources to cope. According to this theory, the perception of one’s ability to cope has more importance than a particular stressor. The transactional nature of CS is evident in studies of nursing students who reported that CS is greater than CF (Mason & Nel, 2012; Mathias & Wentzel, 2017).

Feeling in control of a situation or stressor promotes coping and the perception that one has the resources to manage emotional distress. Stamm (2002) noted that only a fraction of individuals exposed to traumatic stressors developed symptoms associated with PTSD where gains in delivering compassionate care outweighs losses. Among nurses, there is often a sense of accomplishment in providing care to others that results in gaining rewards known as CS (Hinderer et al., 2014). Thus, CS acts as a protective factor against CF, and specifically STS (Hegney et al., 2014; Hinderer et al., 2014).

Compassion Fatigue (CF)

In a concept analysis of CF in nurses, Coetzee and Klopper (2010) defined CF as “a state where the compassionate energy that is expended by nurses has surpassed their restorative processes” (p. 235). For the purposes of the study, CF occurs when a care provider experiences greater STS and BO, rather than satisfaction, from care provision (Wijdenes et al., 2019). It reflects the negative side of caring that diminishes the ability of a care provider to help others (Figley, 1995; Figley, 2002; Hooper et al., 2010; Joinson, 1992; Lombardo & Eyre, 2011; Morrissette, 2004; Stamm, 2002, Stamm, 2010).

Carla Joinson (1992) was one of the first nurses to discuss CF in the published literature and referred to CF as being “emotionally devastating” requiring awareness to recognize when it is occurring. Joinson also acknowledged that the “outside sources that cause it are unavoidable” and that ““caregivers’ personalities lead them towards it” (1992, p. 116). According to Figley (1995), CF is the emotional pain caused in some care providers when exposed to a suffering individual. Joinson (1992) alluded that nurses may place high expectations upon themselves to provide care at an idealistic level and, when combined with other tasks such as paper work, care planning, delegation, and crisis management, this can leave the care provider depleted. Boyle (2011) argued that nurses are particularly vulnerable to CF due to the formation of close inter-

personal relationships in which emotional boundaries between nurses and patients can become enmeshed during care provision. Witnessing the tragedies of patients' lives places nurses in a vulnerable position, given that they are responsible for providing care 24/7 and they cannot leave a patient during times where existential crises, bad news, or when a death has occurred (Boyle, 2011).

Ongoing discussion in the nursing literature regarding how CF applies to the nursing workforce has continued since Joinson's (1992) publication. Authors have argued that CF would more aptly be named 'compassion distress' due to elements within the health care environment and occupational stressors (Sinclair et al., 2017). Whereas Ledoux (2015) argued that CF is a variant of moral distress that arises due to the nurse's inability to provide a sufficient level of compassion due to an inability to relieve suffering. Over 30 years ago, Jameton (1984) stated that moral distress occurs when "one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action" (p. 6). These perspectives necessitate attending to both the coping resources and personality patterns of health care providers, as well as the environmental context in which nursing care provision occurs. Again, the transactional nature of CF and CS highlights a push-and-pull resulting in rewards or payments leading toward CS, or the depletion of coping resources that risk formation of CF as STS and/or BO.

Post-Traumatic Stress Disorder (PTSD)

PTSD is a mental disorder clinically defined by the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) (American Psychiatric Association [APA], 2013). PTSD occurs as a result of exposure to an event that directly threatens one's integrity such as physical, verbal, and sexual abuse, or harassment, known as a *Criterion A* event. To meet criteria for PTSD an individual must also experience one of the following symptom clusters: (a) intrusion symptoms such as recurrent, involuntary, and distressing memories of the traumatic event, dreams, or flashbacks; (b) heightened arousal including sleep disturbances and hyper-vigilance; (c) avoidance of distressing memories, thoughts, feelings or reminders of the event; and/or (d) negative thoughts, mood, or feelings (APA, 2013).

Secondary Traumatic Stress (STS)

For the purposes of the study, STS is defined as exposure of the care provider to the suffering of others who have or are experiencing stressful events (Boyle, 2011; Figley, 1995;

Morrisette, 2004; Stamm, 2002, Stamm, 2010). STS manifests in the care provider as feelings of fear, sleep difficulties, intrusive images, or avoiding reminders of traumatic experiences regarding the person for whom care was provided (Stamm, 2010). Figley (1995) acknowledged, “There is a cost to caring. Professionals who listen to clients’ stories of fear, pain, and suffering may feel similar fear, pain, and suffering because they care” (p. 1).

While PTSD arises due to primary trauma; STS arises due to empathetic hardship (Stamm, 2010). In consideration of pre-licensure health care students, approximately 40% of nursing students (Mathias & Wentzel, 2017) and midwifery students (Beaumont et al., 2016) are at risk of moderate levels of STS.

Burnout (BO)

BO first arose in the literature in 1974 in a publication by Herbert Freudenberger which popularized the term (Heinemann & Heinemann, 2017; Moneta, 2011). Freudenberger described BO as a psychological, behavioural, and physical state that ranged from feelings of exhaustion and fatigue, frustration and anger, to physical manifestations (i.e., gastrointestinal illness); he also noted that those who are committed to their work are at greatest risk of developing BO (Heinemann & Heinemann, 2017). A concept analysis of CF in nursing revealed similar findings that included decreased energy, exhaustion, loss of power, physical complaints, irritability, intent-to-quit, and provision of poor-quality care (Coetzee & Klopper, 2010; Peters, 2018).

Similarly, Maslach and colleagues defined burnout as “a state of exhaustion in which one is cynical about the value of one’s occupation and doubtful of one’s ability to perform” (Maslach et al., 1996, p. 20). Where the *Maslach Burnout Inventory* (MBI) focused on exhaustion, cynicism, and professional efficacy, the *Oldenburg Burnout Inventory* (OLBI) focused on exhaustion and disengagement from work. Due to theoretical and psychometric concerns regarding a lack of theoretical depth, use of the MBI has reduced over time (Halbesleben & Demerouti, 2005), giving rise to alternate tools to assess for burnout such the OLBI and ProQOL scales.

Within the current study, BO is defined as a component of CF where the care provider experiences decreased self-efficacy related to workload demands and increased perceived stress (Figley, 1995; Hegney et al., 2014; Morrisette, 2004; Rudman & Gustavsson, 2012; Stamm, 2010). Figley (1995) noted that BO has a gradual onset, which occurs as a result of STS, coupled with emotional exhaustion. Stamm (2010) characterized BO in care providers as

feelings of being overwhelmed, unhappy, disconnected, and disengaged which occurs with a gradual onset. Moreover, BO is comprised of “exhaustion, frustration, anger and depression” related to a lack of a supportive work environment and increased workload demands (Stamm, 2010, p. 12). Figley (2002) attested that practitioners may endure feelings of deep sorrow and must understand their own limitations in alleviating pain suffered by clients who require help. These descriptions informed the definition of burnout within this study. Interestingly, one study found that as many as 63% of nursing students may be at moderate-to-high risk for BO (Mason & Nel, 2012). Unfortunately, the factors that contribute to BO in nursing students are not well understood.

Research Objectives

The aims of this study were two-fold. Firstly, to shine a light on the issue of CF in pre-licensure students and determine the presence of CS, BO, and STS among undergraduate nursing and psychiatric nursing students enrolled full time at Brandon University. Only full-time students were eligible to participate given that the program is not intended for part-time student status with courses only being offered one time per year. Secondly, to investigate the association of these factors with intent-to-leave, and measures of self-efficacy, perceived stress, and PTEs. Exploring these phenomena may help nurse educators better understand the derivatives and associative factors of CS and CF, as well as how widespread is the issue of CF with the aim of supporting students while engaged in their undergraduate studies.

Research Questions

Four research questions (RQs) guided this study. They were:

RQ 1. What is the prevalence of the outcome variables of CS and CF (comprised of BO and STS) among nursing and psychiatric nursing students? As per findings from Mason and Nel (2012) in a sample of undergraduate nursing students at a South African university, it is anticipated that approximately 30% of the students from each group will present with high levels of STS and BO, and 60% will report high levels of CS.

RQ 2. Does the program type (nursing or psychiatric nursing) and year-in-program (year two, three, or four) have a significant effect on the presence of BO, STS, and CS? It is assumed that significant differences will be found within program-type and year.

RQ 3. What are the relationships between CS and the CF subscales of BO and STS? It is assumed that STS and BO will be positively correlated and inverse relationships will occur

between both CS and BO, as well as STS as per findings in the nursing literature showcasing the transactional nature of these indicators (Hegney et al., 2014; Hinderer et al., 2014).

RQ 4. What predictor variables (or factors) are associated with BO and STS that comprise CF, and CS? Select empirical referents noted in the nursing and allied health literature informed the selection of demographic data such as age, and prior diagnosis of mental illness.

Hypotheses

Several associations are anticipated between the predictor and outcome variables. As such, four hypotheses (H) were generated related to the factors of interest. They are:

H 1. There will be a positive association between level of self-efficacy, a dimension of personality and emotional stability (Judge, Bono, Thoresen, 2003), and CS.

H 2. There will be a positive association between perceived stress and STS.

H 3. There will be a positive association with PTEs and STS.

H 4. There will be a positive association between intention-to-leave and BO.

Relevance and Significance

It is imperative that research be conducted about effective ways to support the future nursing workforce. Babenko-Mould and Laschinger (2014) acknowledged that nursing student placements in the clinical practice environment are positively or negatively influenced by the well-being of the workforce, which may lead to stress and BO formation that influence students' career choice. The current study aims to develop a better understanding of the predominance of CF within undergraduate nursing student and psychiatric nursing populations prior to their entry into the workforce. Few studies have explored CF within undergraduate nursing and psychiatric nursing programs. In addition, understanding what factors contribute to CF may assist nurse educators and researchers in formulating interventions and curricular planning strategies to support students and decrease the negative effects of caring for others. These efforts can serve to increase the level of CS and reduce the burden of CF in students prior to their entry into the nursing and psychiatric nursing workforce.

CHAPTER 2: LITERATURE REVIEW

A review of the literature across four databases was conducted that included the Cumulative Index of Nursing and Allied Health Literature (CINAHL), PsycINFO, ERIC (Education Resources Information Center), as well as PubMed (included Medline). Key search terms included: compassion fatigue, occupational stress, burnout, secondary traumatic stress, and students from a variety of groups such as education, nursing and allied health disciplines including those attending community college and junior college. Search strings (available in Table 2.1) were developed in consultation with a research librarian for each database to capture essential terms. Factors identified in the literature were analysed for themes in accordance with Walker and Avant's (2011) concept analysis methodology to determine exposures of interest, or independent variables, as they related to the dependent variable of CF. CF is known as the emotional pain and exhaustion that occurs with a gradual onset that arises in some care providers when exposed to a suffering individual (Figley, 1995).

Background

Wilson (1963) developed a method of concept analysis that was later refined by Walker and Avant (2011) as a way to analyze and describe important concepts of interest across disciplines. This method was used to guide the literature review and to identify how the concept of CF is understood in undergraduate, health-related pre-licensure student populations, including defining attributes, antecedents, and consequences (Walker & Avant, 2011). According to Risjord (2009), theoretical concept analysis is dependent upon the context, or setting, and theory within which the concept analysis is performed. Risjord (2009) further argued that to strengthen both the epistemological foundation and ontological underpinning of the concept being analyzed, these specific conditions must be articulated. Hence, in this review, the concept of CF was analyzed within the context of undergraduate students in pre-licensure health disciplines within the framework of the Professional Quality of Life (ProQOL) Scale (Version 5) developed by Stamm (2010). In this review, pre-licensure students are learners enrolled in a baccalaureate education program where upon completion, they are eligible for licensing and registration with a professional regulatory body (e.g., nursing, midwifery, medicine, physical therapy, veterinary medicine, and other health sciences programs).

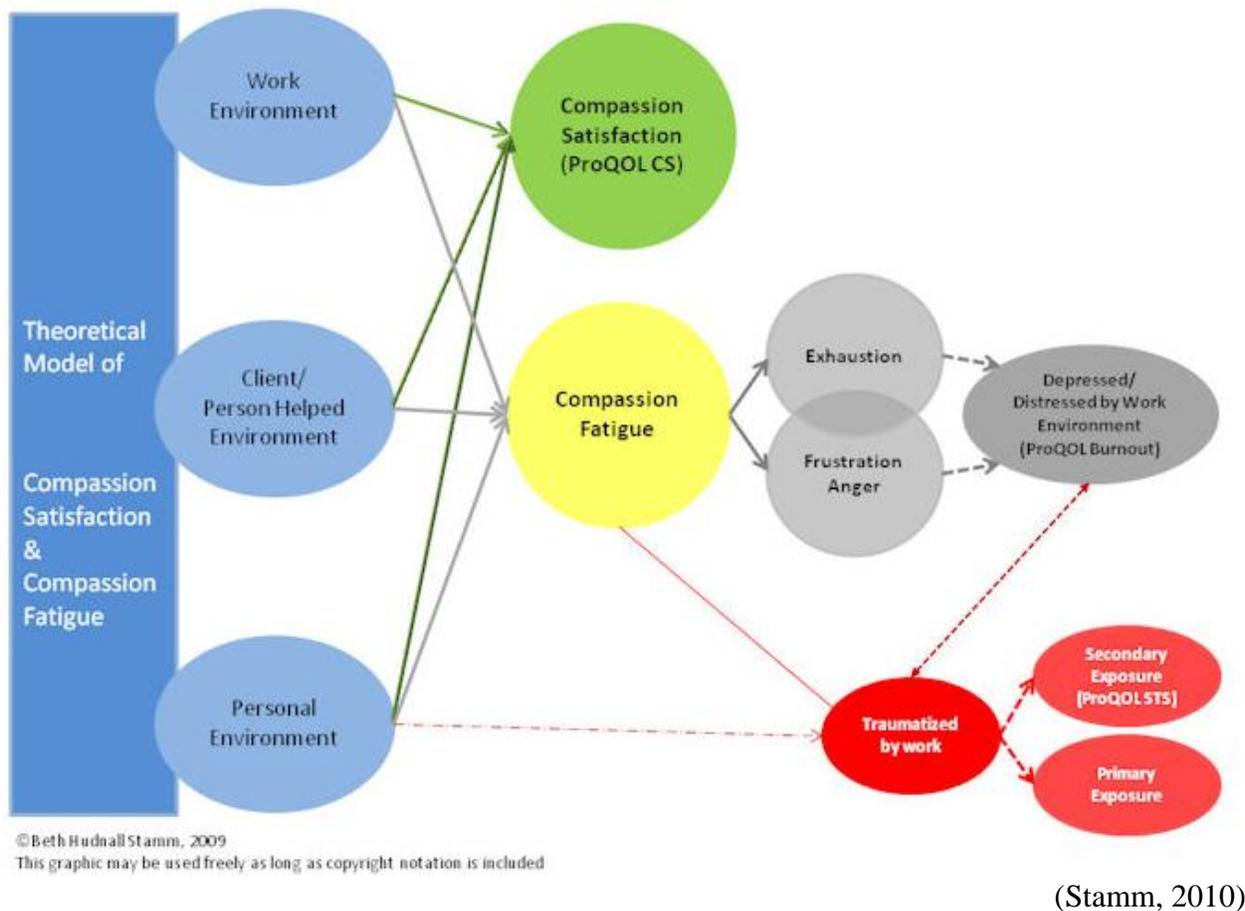
Table 2.1. Search strings

CINAHL (EBSCOhost)
(MM "Burnout, Professional" OR "Compassion Fatigue") AND (MM "Students, Nursing" OR "Students, Nurse Midwifery" OR "Students, Nursing, Associate" OR "Students, Nursing, Baccalaureate" OR "Students, Post-RN" OR "Students, Nursing, Diploma Programs" OR "Students, Nursing, Graduate" OR "Students, Nursing, Doctoral" OR "Students, Nursing, Masters" OR "Students, Nursing, Male" OR "Students, Allied Health" OR "Students, Athletic Training" OR "Students, Audiology" OR "Students, Dental Hygiene" OR "Students, Dietetics" OR "Students, Medical Technology" OR "Students, Occupational Therapy" OR "Students, Physical Therapy" OR "Students, Physician Assistant" OR "Students, Radiologic Technology" OR "Students, Respiratory Therapy" OR "Students, Social Work" OR "Students, Speech-Language Pathology" OR "Students, Chiropractic" OR "Students, Dental" OR "Students, Medical" OR "Students, Midwifery" OR "Students, Nursing" OR "Students, Nursing, Practical" OR "Students, Pharmacy" OR "Students, Podiatry")
PsycINFO (EBSCOhost)
(MM "College Students" OR MM "Community College Students" OR MM "Education Students" OR MM "Junior College Students" OR MM "Nursing Students" OR MM "ROTC Students") AND (MM "Occupational Stress" OR MM "Compassion Fatigue")
PubMed (includes Medline)
("students"[MeSH Terms] OR "students"[All Fields]) AND ("health occupations"[MeSH Terms] OR ("health"[All Fields] AND "occupations"[All Fields]) OR "health occupations"[All Fields])) AND (((("burnout, psychological"[MeSH Terms] OR ("burnout"[All Fields] AND "psychological"[All Fields]) OR "psychological burnout"[All Fields] OR "burnout"[All Fields]) AND professional[All Fields]) OR ("compassion fatigue"[MeSH Terms] OR ("compassion"[All Fields] AND "fatigue"[All Fields]) OR "compassion fatigue"[All Fields]))
ERIC (EBSCOhost)
(DE "College Students" OR DE "Community College Students" OR DE "Education Students" OR DE "Junior College Students" OR DE "Nursing Students" OR DE "ROTC Students" OR DE "Undergraduate Students" OR DE "Premedical Students") AND burnout

The ProQOL Scale is a 30-item measure developed from Stamm’s (2010) theoretical model of professional quality of life that is comprised of two dimensions, CS and CF; the latter includes BO and STS. The tool emanates from over 15 years of research that highlights CS (defined as the positive aspects one derives from helping work) and CF (related to the negative aspects of work within a helping profession such as nursing, social work, teaching, policing, firefighting, clergy, and others) (Stamm, 2010). Stamm’s theoretical model (Figure 2.1), captures three environmental domains that encompass: (a) the work environment, consisting of tasks and organizational structures; (b) the client environment in which the care provider delivers assistance or help to an individual, consisting of helper exposure(s) to primary and secondary

trauma; and (c) the personal environment of the helper, consisting of personal characteristics and experiences which may lead to compassion satisfaction or fatigue. The ProQOL Scale is a pre-eminent tool that has been used in more than 200 peer-reviewed papers (Stamm, 2010) reporting research involving registered nurses, psychiatric nurses, and students from different ‘helping’ professions. The tool offers an all-in-one measure of satisfaction, burnout, and secondary traumatic stress not fully captured by other singular tools (Bride et al., 2007).

Figure 2.1. Compassion Satisfaction and Compassion Fatigue Theoretical Model



Search Strategy

The comprehensive search explored the peer-reviewed literature published between January 1992-April 2020 and followed guidelines for a systematic review of the literature from the Joanna Briggs Institute (JBI), *Systematic Reviews of Etiology and Risk* (Moola et al., 2017). The date range is reflective of when CF first appeared in the nursing and allied health literature. The population of interest was undergraduate students in health-related disciplines. The outcome variables of interest were CF comprised of BO and STS. BO and STS are components of CF

where the care provider experiences decreased self-efficacy related to workload demands and increased perceived stress that arise during care provision to a person who is suffering (Boyle, 2011; Figley, 1995; Hegney et al., 2014; Morrisette, 2004; Rudman & Gustavsson, 2012; Stamm, 2002; Stamm, 2010).

Inclusion criteria

Peer-reviewed studies that utilized the ProQOL Scale with a population of undergraduate students published between January 1992 and April 2020 were reviewed. All original research published in the English language were included for review commencing with titles and abstracts of articles, followed by full article review.

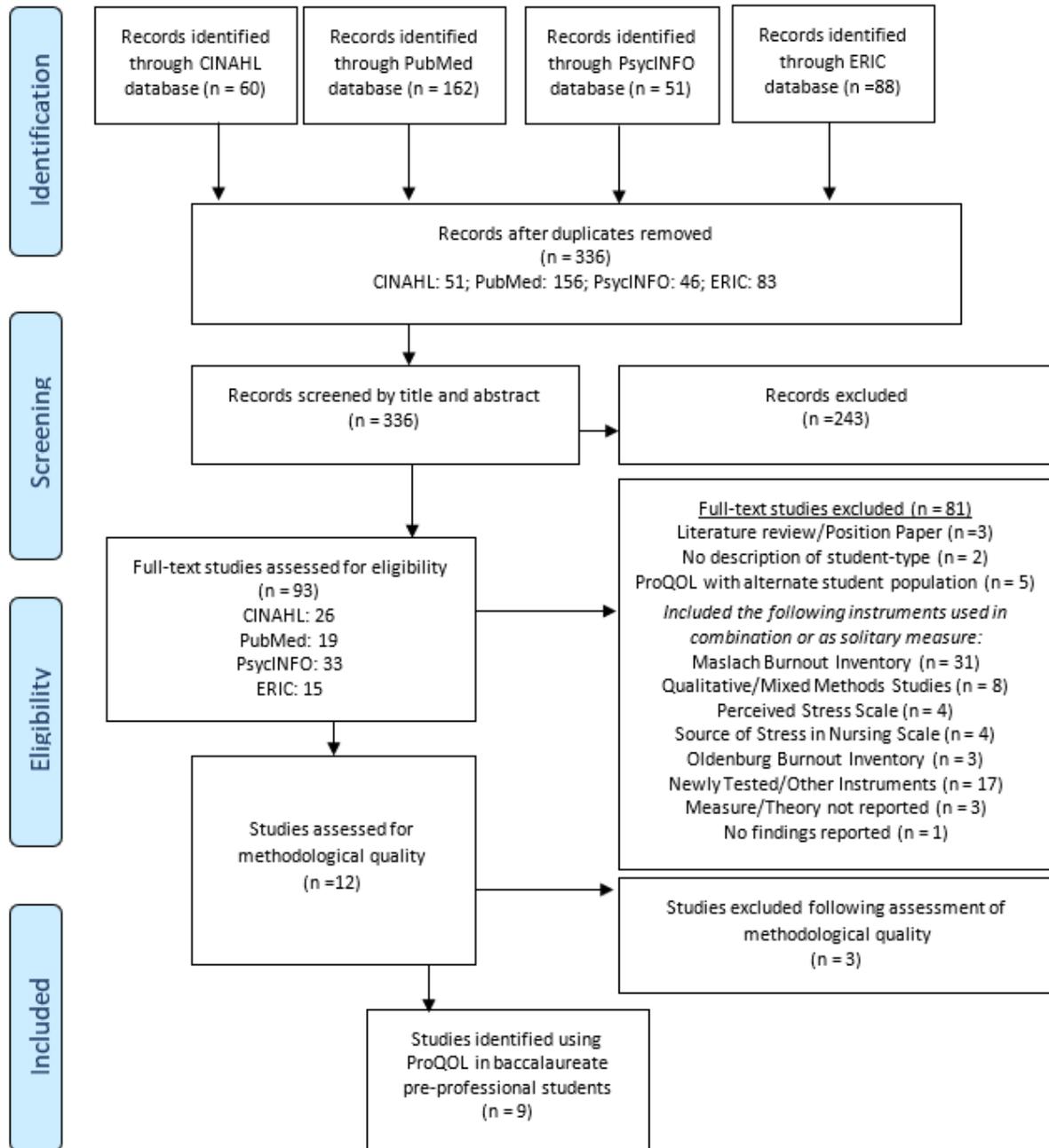
Exclusion Criteria

Studies were excluded if they involved graduate-students, did not describe the student population, or did not report primary research. Anecdotal articles and commentaries were also excluded. Theses and dissertations and non-peer-reviewed (i.e., grey literature) and literature reviews were also excluded; however, the reference lists of these works were reviewed for articles that met the inclusion criteria. Studies that received a methodological appraisal score $\leq 50\%$ as per the Joanna Briggs Institute (JBI, 2017) appraisal criteria were excluded from the theoretical concept analysis.

Search Results and Appraisal

The search results are presented in a *Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)* flow diagram adapted from Moher and colleagues (2009) in Figure 2.2. Articles that met the inclusion criteria ($n = 12$) were appraised for quality in accordance with the *Joanna Briggs Institute Reviewer's Manual*. JBI (2017) critical appraisal tools are available for a variety of studies (including cross-sectional and prevalence studies), which comprised the final literature sample for the theoretical concept analysis of CF. Refer to Tables 2.2, and 2.3 to view scoring of the appraised articles specific to undergraduate health disciplines from midwifery, veterinary medicine, medicine, radiotherapy, and nursing. There were three articles that did not meet appraisal score criteria. Findings from the final sample of nine studies are presented in Table 2.4. The lack of articles specific to students in pre-licensure undergraduate programs reveal a need for more research specific to nursing and psychiatric nursing.

Figure 2.2. PRISMA Flow Diagram of Professional Quality of Life (ProQOL) Studies



Results for peer reviewed studies with undergraduate, pre-licensure students January 1992-April 2020.

Table 2.2. Appraisal of cross-sectional studies (n = 10)

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	%
Beaumont et al. 2016	N	Y	N	Y	Y	N	Y	Y	63
Flinton et al. 2018	N	N	U	Y	N	N	Y	U	25
Kinker et al. 2018	Y	N	U	U	N	U	U	U	13
Lin & Lin. 2016	Y	Y	Y	Y	Y	Y	Y	Y	100
Lin, Lin & Lin. 2016	Y	N	U	U	Y	Y	N	Y	50
Lin, Chen & Lin. 2017	Y	Y	Y	Y	Y	Y	N	Y	88
*Mason. 2018	Y	N	Y	Y	N	U	Y	Y	63
McArthur et al. 2017	Y	Y	Y	Y	U	Y	Y	Y	88
*Michalec et al. 2013	Y	Y	Y	Y	N	N	Y	Y	75
*Rees et al. 2016	Y	Y	Y	Y	N	U	Y	Y	75

Notes: * Indicates specific to undergraduate nursing students. Criterion met - Y=Yes, N=No, U=Unclear.

Q1: Were the criteria for inclusion in the sample clearly defined?

Q2: Were the study subjects and the setting described in detail?

Q3: Was the exposure measured in a valid and reliable way?

Q4: Were objective, standard criteria used for measurement of the condition?

Q5: Were confounding factors identified?

Q6: Were strategies to deal with confounding factors stated?

Q7: Were the outcomes measured in a valid and reliable way?

Q8: Was appropriate statistical analysis used?

Table 2.3. Appraisal of prevalence studies (n = 2)

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	%
*Mason & Nel. 2012	Y	U	U	N	Y	Y	Y	Y	U	56
*Mathias & Wentzel. 2017	Y	Y	U	N	Y	Y	Y	Y	Y	88

Notes: * Indicates specific to undergraduate nursing students. Criterion met - Y=Yes, N=No, U=Unclear.

Q1: Was the sample frame appropriate to address the target population?

Q2: Were study participants sampled in an appropriate way?

Q3: Was the sample size adequate?

Q4: Were the study subjects and the setting described in detail?

Q5: Was the data analysis conducted with sufficient coverage of the identified sample?

Q6: Were valid methods used for the identification of the condition?

Q7: Was the condition measured in a standard, reliable way for all participants?

Q8: Was there appropriate statistical analysis?

Q9: Was the response rate adequate, and if not, was the low response rate managed appropriately?

The literature was replete with studies pertaining to CF in practicing professionals that included registered nurses, midwives, social workers, and physicians. However, few studies pertained to nursing students or psychiatric nurses. Literature related to psychiatric nurses may have been limited due to the limited existence of this professional group outside of western Canada, New Zealand, Australia, South Africa, and the United Kingdom. Globally, RNs and other health care workers are predominantly responsible for providing mental health services (Hewlett & Moran, 2014).

Five studies in the final review focused on CF among undergraduate nursing students. In South Africa, two prevalence studies were conducted (Mason & Nel, 2012; Mathias & Wentzel, 2017), however, analysis did not include any predictor or independent variables. Regression analysis conducted by Mason (2018) found that among South African nursing students having an optimistic attitude was predictive of CS, whereas those students with pessimistic attitudes were more likely to experience CF. Rees et al. (2016) conducted a study focusing on BO and psychological resilience among undergraduate nursing students from Australia and Canada. The authors found that variables such as mindfulness, adaptive coping, and personality factors such as self-efficacy and neuroticism as having significant influence on BO; however, they did not study STS. The fifth study conducted within the United States of America (Michalec et al., 2013) utilized a mixed-methods approach, however, the qualitative findings were limited to third- and fourth-year students. This is unfortunate given that the statistical analysis yielded significant differences in burnout between first- and second-year students. Interestingly, students in the qualitative study arm of the study reported that they believed experiencing burnout at some point in their nursing careers was inevitable.

Given the paucity of literature concerning the presence of CF in Canadian psychiatric nursing and nursing student populations, more research is needed to fully understand the level of secondary traumatic stress and burnout that comprise compassion fatigue within these populations. In light of the mandate for students to provide compassionate care within the nursing profession (CNA, 2017), a study that examines compassion satisfaction and fatigue is warranted.

Table 2.4. Studies of Compassion Fatigue in Undergraduate, Pre-Licensure Students

Author(s); Design	Education Context; Country; (n)	Main Results
Beaumont et al. (2016). Cross-Sectional Study	Student midwives England (n = 103)	Contributors to burnout included: High self-judgment; less compassionate toward others <i>Consequences:</i> Reduced mental well-being; reduced self-kindness
Lin CD & Lin BY. (2016). Cross-Sectional/Cohort Study	Medical students Taiwan (n = 94)	Contributors to burnout included: High psychological and physical demands; male gender; younger age <i>Consequences:</i> Increased intention-to-withdraw from educational program/leave profession
Lin et al. (2017). Cross-Sectional/Cohort Study	Medical students Taiwan (n = 127)	Contributors to burnout included: Male gender; younger age; poor self-esteem; and decreased sense of control
Mason (2018) Cross-Sectional Study	Nursing students South Africa (n = 150)	<i>Attributes & Consequences:</i> CF and burnout are closely related to pessimistic existential attitudes; optimism is predictive of CS
Mason & Nel (2012). Prevalence Study	Nursing students South Africa (n = 80)	-63.75% of total sample presented with moderate to high risk for burnout <i>Attributes:</i> High scores of burnout occurred during final year of program
Mathias & Wentzel (2017). Prevalence Study	Nursing students in 3 rd & 4 th years of study South Africa (n = 67)	-94% of sample presented with moderate risk for burnout -95.5% reported average levels of compassion satisfaction
McArthur et al. (2017). Cross-Sectional Survey/ Prevalence Study	Veterinary students Australia (n = 193)	-30% at high risk of burnout -24% at high risk of secondary traumatic stress -21% reported low compassion satisfaction -Secondary traumatic stress is positively correlated to burnout <i>Antecedents:</i> Decreased mindfulness/coping <i>Attributes:</i> Dysfunctional coping; self-stigma; feelings of fear, apprehension and discomfort witnessing negative experiences of others
Michalec et al. (2013). Cross-Sectional Study (with mixed method component)	Nursing students United States of America (n = 436)	-1st year students reported significantly lower levels of burnout compared to 2nd year students -3 rd year students reported significantly higher levels of emotional exhaustion compared to 1st years
Rees et al. (2016). Cross-Sectional Survey	Nursing students Australia & Canada (n = 415)	<i>Antecedents:</i> Maladaptive coping strategies; reduced mindfulness

Concept Analysis of Compassion Fatigue

A final sample of nine articles was analyzed for the concept analysis of CF in undergraduate, pre-licensure students. Empirical referents are “observable phenomena by which to determine the existence of the concept in particular clients” (Walker & Avant, 2011, p. 169). The identification of empirical referents for this analysis was guided by Stamm’s (2010) *Professional Quality of Life Theoretical Model*, Fawcett’s (1996) *Nursing Metaparadigm* concepts (nurse, environment, health, and person), and Lazarus and Folkman’s (1984) *Transactional Theory of Stress*. Factors that described the student’s lifeworld in context of CF and imbalances between stressors and coping ability also informed the analysis. Literature pertaining to RNs, veterinary medicine, midwifery, and medicine were included to contextualize findings specific to pre-licensure students.

Antecedents

Antecedents are events that occur prior to the concept occurring that offer perspective on the social context of the central concept under analysis (Walker & Avant, 2011). Three key antecedents in the literature were found related to compassion fatigue. They included: coping ability, self-efficacy, and type of clinical setting.

Coping Ability

Maladaptive coping strategies and decreased mindfulness placed learners at risk for burnout (Rees et al., 2016). In contrast, functional coping was associated with increased compassion satisfaction (McArthur et al., 2017). According to Mason and Nel (2012), nursing students should receive and access psychosocial supports while pursuing their undergraduate degree to develop positive coping strategies. In a small quasi-experimental, pre-post intervention study of 17 registered nurses, Hevezi (2016) demonstrated that meditation is an effective coping strategy to reduce BO and increase CS. These findings offer nurse educators and researchers a strategy that may serve to interrupt BO formation and increase CS among nursing students. However, more research is needed to determine what year within an undergraduate program would be most beneficial to integrate strategies such as meditation in effort to promote coping and reduce burnout. Conducting a study that determines which year in the program or clinical placement is most at-risk (if any) will allow the development and implementation of targeted interventions such as meditation as evaluated by Hevezi (2016).

Self-Efficacy

According to Bandura (1977), self-efficacy refers to an individual's belief in their ability to accomplish a goal or task in the face of adverse experience, threat, or obstacles. Among South African nursing students, high levels of optimism were predictive of CS and pessimistic attitudes predicted high levels of CF (Mason, 2018). Similarly, medical students who reported higher levels of self-esteem, general self-efficacy, internal locus of control, and emotional stability had statistically significant greater CS and lower BO (Lin et al., 2017). Although this study was conducted in Taiwan, the findings may be applicable to a variety of clinical practice environments with demanding working conditions. Researchers have argued that demanding working conditions coupled with numerous stressors may predispose students to BO (Lin et al., 2017; Mason & Nel, 2012). Therefore, effort may be required on behalf of students and their instructors to seek out meaningful experiences and learning opportunities to build self-efficacy, a sense of mastery, and increase students' adaptability to reduce BO formation. Rees and colleagues (2016) advocated for integration of curricular programming to embed development of mindfulness skills that may increase student self-efficacy and prevent BO.

Clinical Setting and Occupational Hazards

Development of CF may be associated with the nature of the clinical practice area. For example, studies of psychiatric settings reported the highest levels of STS among nurses (Berger et al., 2015), as well as high levels of STS and BO (Jacobowitz et al., 2015). These findings may be related to routine emotional and physical injury affiliated with verbal and physical assaults, as well as aggressive client behaviours in psychiatric care settings (Jacobowitz et al., 2015). Studies involving psychiatric nursing students were not found in the literature indicating a gap with regard to CF in this population. Other settings of concern for CF raised in the literature were nurses who worked in emergency departments (Hooper et al., 2010), pediatric care areas (Berger et al., 2015; Shen et al., 2015), and oncology settings where nurses worked for 11-20 years (Potter et al., 2010).

Workplace settings such as emergency departments put health care providers, including nurses, physicians, and emergency responders, at risk for PTSD and other stress responses (Alden et al., 2008; Manitoba Nurses Union [MNU], 2015). Research findings link the development of PTSD to direct physical violence, the perception of serious threat, and witnessing severe injury or death of patients (Alden et al., 2008). The view that PTSD is an occupational hazard for combat veterans (Collura & Lende, 2012), nurses, and professionals who

provide emergency services (Alden et al., 2008) requires more research. According to the Manitoba Nurses Union (2015), death of a pediatric patient due to abuse, providing care to patients who resemble close friends or family, as well as death or serious injury of a patient despite “extraordinary efforts” to save a life (p. 5) lead to the development of STS, BO, and PTSD. These stressors meet *Criterion A* for PTSD within the DSM-5 (APA, 2013) whereby an individual is exposed to death, threat of death, actual or threatened serious injury, or, actual or threatened sexual violence.

Defining Attributes

Defining attributes refer to the most frequently associated referents to the concept under analysis (Walker & Avant, 2011). Within the analysis of compassion fatigue, three major attributes arose that included: psychological stress, witnessing negative experiences of others, and depression.

Psychological Stress

Students who experienced psychological stress and distress are at risk of developing CF. A study of medical students in Taiwan found that students experiencing psychological stress coupled with physical demands are at risk of developing BO (Lin & Lin, 2016). In a study of veterinary students in Australia, students who experienced fear, uncertainty, and personal distress were more likely to experience BO and STS as measured by the ProQOL Scale as they attempted to regulate emotions and apprehensions such as anxiety (McArthur et al., 2017). Researchers have argued for the mobilization of students’ interpersonal social supports (Lin & Lin, 2016; Mason & Nel, 2012), as well as support from supervisory and managerial stakeholders to better support students in their roles as care providers (Laschinger & Read, 2016). A positive teaching approach that supports students (Harr & Moore, 2011) in addition to educating students about BO and CF may normalize the need to seek supports that are necessary to regulate emotions and lessen the development of CF (McArthur et al., 2017).

Other triggers for psychological stress included bullying, harassment, and workplace violence. In a cross-sectional survey of fourth-year nursing students conducted by Babenko-Mould and Laschinger (2014), student exposure to incivility by staff nurses in the clinical practice environment contributed significantly to burnout and emotional exhaustion ($r = 0.42$, $p \leq 0.05$). In another cross-sectional survey conducted in Australia ($n = 888$), nursing students who experienced bullying or harassment suffered negative feelings of anxiety, inadequacy,

anger, embarrassment, humiliation, depression, and fear (Budden et al., 2017). In a study of nurses from Pakistan (n = 216), patient perpetrated violence was significantly related to occupational stress ($r = 0.61, p < 0.01$), BO ($r = 0.63, p < 0.01$), and intent-to-leave the profession ($r = 0.59, p < 0.01$) (Laeque et al., 2018). Budden and colleagues (2017) pleaded that “educational institutions have a duty of care to protect students of the health professions from workplace violence during clinical placement” (p. 126). Mason (2018) argued that counseling supports can develop positive, optimistic attitudes to foster professional quality of life.

Findings from Budden et al.’s (2017) study suggest that nursing students’ response to bullying and harassment in the clinical setting are similar in nature to symptoms of PTSD (APA, 2013) and Stamm’s (2010) definitions of STS and BO within the ProQOL Scale. The theoretical congruence of these attributes suggests the value of the ProQOL Scale to explore bullying and harassment in relation to CF. Issues of incivility and BO require more attention in undergraduate nursing programs to promote workplace empowerment, professional development, decrease BO, and prevent the erosion of self-efficacy in new nurses entering the profession (Babenko-Mould & Laschinger, 2014; Laschinger et al., 2010).

Witnessing Negative Experiences of Others

McArthur et al. (2017) found a significant positive correlation of BO and STS ($r = 0.64, p < 0.001$) in veterinary students who witnessed negative experiences and personal distress ($r = 0.34, p < 0.001$). Duarte and Pinto-Gouveia (2017) found significant correlations in their cross-sectional survey of 298 nurses in Portugal regarding empathy and CF formation. Nurses’ reports of empathic concern ($r = 0.2$) and survival guilt ($r = 0.38$) were significantly correlated with CF ($p < 0.01$). More specifically, nurses who witnessed others suffering and attributed their suffering to be caused by the nurse led to CF. In addition, nurses who falsely believed they could relieve the suffering of another person, led to CF (Duarte & Pinto-Gouveia, 2017).

Qualitative studies of student midwives and nurses revealed that witnessing negative experiences of others, including death, emotionally affected the undergraduate student participants. In the United Kingdom, Davies and Coldridge (2015) found that when a midwifery student identifies with the patient for whom they are providing care, the student is more vulnerable when traumatic situations arise. Within the study, the major theme labelled ‘the aftermath’ depicted student accounts of re-living the traumatic event, with rumination and worry

that they should have done more (Davies & Coldridge, 2015). In a similar qualitative study conducted among Australian student midwives, participants felt shock, inadequacy, helplessness, and questioned their career choice. For example, one student stated, “I didn’t sign up for death, I signed up for life here” when reflecting on witnessing others’ stress and trauma in the clinical environment (McKenna & Rolls, 2011, p. 78). Terry and Carroll (2008) reported nursing students’ feelings of guilt, having flashbacks of seeing a dead body, and not knowing how to portray a professional self when engaging with family members of the deceased patient. These findings align with Hooper and colleagues (2010) who stated that the cost of nurses witnessing others’ struggles can result in intrusive images, flashbacks, sadness, depression, anxiety, and survivor guilt. As levels of CS reduced in nurses, BO increased (Hegney et al., 2014) and suggests that nursing and psychiatric students may also be at risk.

Nurses who encounter abused children, end-of-life situations, and severely ill patients may develop CF (Berger et al., 2015). In a systematic review conducted by Beck (2011), STS was reported in a variety of nursing groups that included forensic nurses, emergency department nurses, oncology nurses, pediatric nurses, and hospice nurses, with no specific studies at that time that included psychiatric nurses. Beck (2011) found that most CF studies focus on BO rather than STS. There continues to be a need to understand witnessing the negative experiences of others in psychiatric care settings that includes licensed professionals and students.

Depression

Few studies have examined occupational role stress within undergraduate students, coping strategies, and depression in a single study. In an Australian study of undergraduate students, multiple regression analysis showed that an avoidance coping style and younger age were associated with depression and distress (Paspaliaris & Hicks, 2010). In a cross-sectional study of Australian RNs, Hegney and colleagues (2014) found that stress, anxiety, and depression were significantly correlated with CF measures: STS and stress ($r = 0.63, p < 0.01$); STS and anxiety ($r = 0.56, p < 0.01$); STS and depression ($r = 0.48, p < 0.01$); BO and stress ($r = 0.55, p < 0.01$), anxiety ($r = 0.37, p < 0.01$), depression ($r = 0.052, p < 0.01$). Furthermore, the authors found that younger and less experienced nurses had greater anxiety placing them at greater risk of developing CF (Hegney et al., 2014). These findings provide additional evidence in the claim that students (i.e., younger individuals) may be at higher risk for mental health issues when confronted by work-related stress.

Knight (2010) studied CF in social work students and instructors and found that students had a greater risk of STS than their instructor counterparts ($t(90) = -3.247, p \leq 0.002$). This was attributed to students being younger and less experienced in coping with stressors than their instructors. In a meta-analysis of age and BO, researchers found a significant inverse relationship between age and emotional exhaustion as a component of BO; however, the magnitude of the relationship was very small ($r = -0.46, p < 0.05$) and was mediated by other variables that included gender, marital status, professional experience, sense of personal accomplishment, and whether-or-not the survey was conducted in English (Gómez-Urquiza et al., 2017). This research suggests that younger individuals may rate more highly on depression and CF due to lower levels of maturity, less life experience, and difficulty navigating strenuous life circumstances as a student (Harr et al., 2014).

In context of nursing students, Budden et al.'s (2017) analysis which linked bullying to depression is of great concern in light of a statistically significant inverse relationship between younger aged participants and the likelihood of being bullied or harassed ($r = -0.06, p = 0.05$). According to Giorgi et al. (2016), workplace bullying in health care environments is a common issue in Italy and is considered to be part of the job. In their study of nurses ($n = 658$), those who were bullied reported higher burnout levels with poor physical ($r = 0.47, p < 0.01$ [2-tailed]) and poor mental health ($r = 0.38, p < 0.01$ [2-tailed]) (Giorgi et al., 2016). Interventions that support adaptive coping skills among undergraduate students includes access to counselling to improve mental health when confronted by occupational stressors (Hegney et al., 2014; Paspaliaris & Hicks, 2010). What remains unclear is whether-or-not depression is an attribute of CF or if depressive mood occurs as a consequence of CF related to BO and feelings of exhaustion (Bianchi et al., 2015).

Consequences

Consequences are a result of the concept occurring (Walker & Avant, 2011). Of serious concern within the literature regarding STS and BO is that students who experience decreased well-being, may withdraw from their program of study or leave the profession altogether following entry-to-practice when elements of CF were experienced.

Decreased Well-Being

The first consequence of CF is decreased well-being. In a longitudinal study of Spanish nursing students ($n = 218$ at time 1, and $n = 113$ at time 2), emotional exhaustion, which is a

component of BO, was significantly associated with decreased well-being ($r = 0.40, p < 0.001$) (Ríos-Risquez et al., 2018). The authors recommended implementing strategies that focus on improving well-being among university nursing students as a mechanism to improve emotional regulation skills (Ríos-Risquez et al., 2018).

In a study of midwifery students from the United Kingdom, Beaumont and colleagues (2016) reported a statistically significant inverse relationship between self-compassion and BO ($r = -0.312, p < 0.01$). Furthermore, students with high levels of self-judgement were less compassionate toward others ($r = -0.216, p < 0.05$) (Beaumont et al., 2016). Lower scores on measures of self-kindness ($r = -0.570, p < 0.01$) and reduced well-being ($r = -0.373, p < 0.01$) were also positively associated with BO ($r = 0.283, p < 0.01$) (Beaumont et al., 2016).

Depleted well-being could lead to a variety of other longer-term individual health issues such as depression and anxiety within students (McArthur et al., 2017). Tully (2004) reported other problem behaviours such as poor coping strategies, comfort eating, drinking, smoking or taking medications, taking out problems on others and/or trying to forget the source of distress in an Irish study of psychiatric nursing students. Tully's (2004) study was the only source found in the literature regarding the student psychiatric nurse population, however, the number of participants ($n = 35$) in the study was very small and therefore has limited generalizability.

A recent study of substance use in Jordanian nurses ($n = 282$) revealed that CF was significantly higher in those who used substances that included tobacco, sleeping pills, anti-depressants, and anti-anxiety medications (Jarrad et al., 2018). Within the study, variables associated with alcohol use and CF did not reach statistical significance, and marijuana usage was not included in the study. Surprisingly, ethical considerations were not discussed, nor was religion given that those of Muslim faith generally do not consume alcohol which may explain non-significance of the findings related to alcohol use. Using Watson's *Theory of Human Caring* (Watson, 1997), Lombardo and Eyre (2011) advocated that nurses be taught skills in self-assessment to gain insight into stressors that contribute to CF in effort to generate a recovery plan. This is consistent with Beaumont et al.'s (2016) argument that students need to develop compassion-for-self and self-care strategies to sustain CS to off-set self-inflicted suffering and exhaustion.

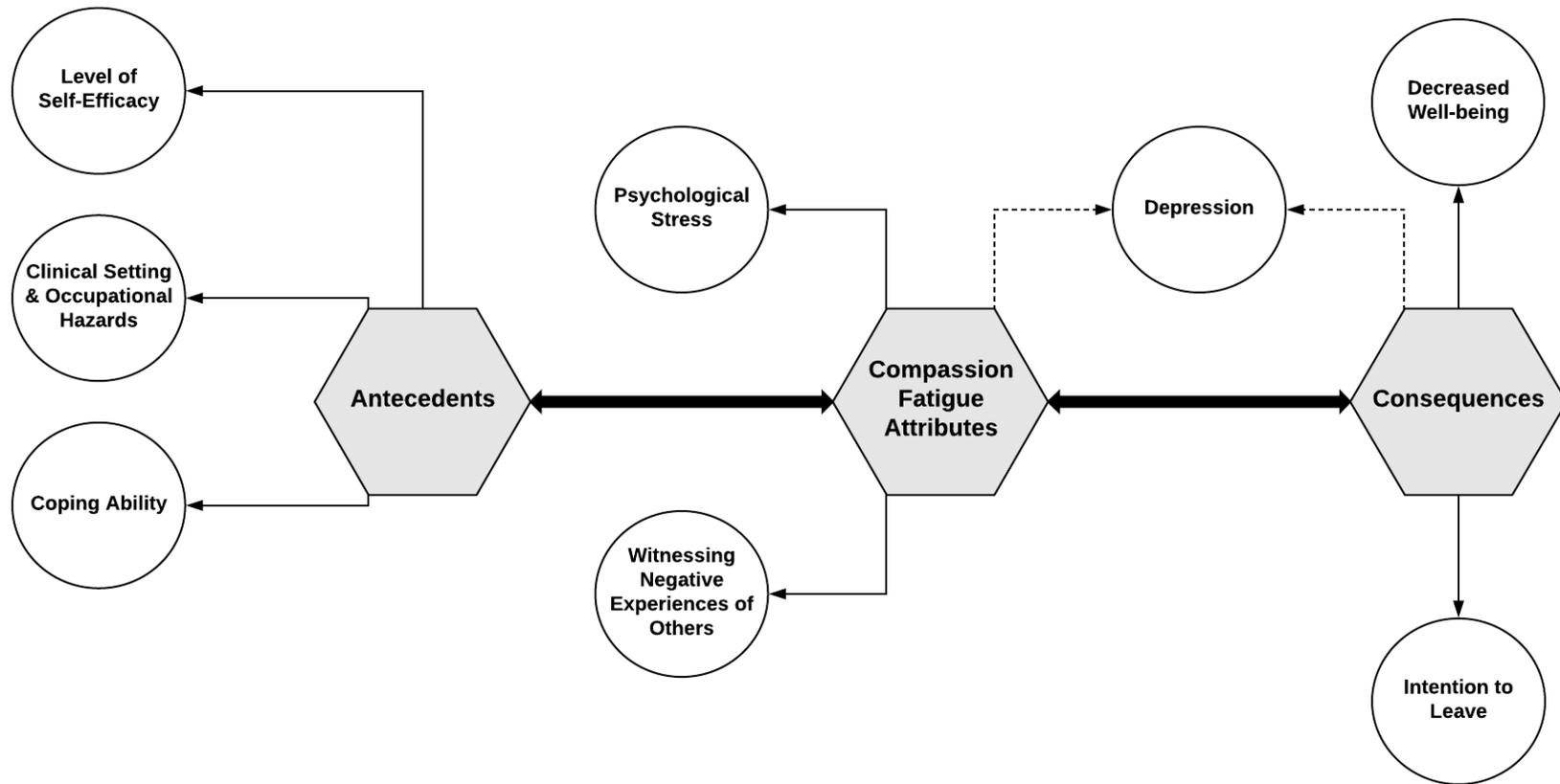
Program Withdrawal and Intention-to-Leave

The consequences of students who experience CF include withdrawing from their educational program (Hunt et al., 2012) or electing to leave their profession following graduation (Chachula et al., 2015; Lin & Lin, 2016; Rudman et al., 2014). In particular, Budden et al. (2017) found the experience of bullying or harassment led 12.9% of nursing students to consider leaving nursing. A study of university students ($n = 2,468$) conducted in Australia revealed burnout was strongly associated with students' intent-to-withdraw from their program ($r = 0.59$, $p < 0.001$), while only one-third of the students surveyed reported effort-reward imbalances (Williams et al., 2018). Of note, approximately 25% of the study sample was comprised of students from medicine/nursing/dentistry, education, and the biological/veterinary disciplines.

Upon completion of the undergraduate program and entry into the workforce, graduates may choose to leave their profession. In a longitudinal study of Swedish nursing students ($n = 1,702$) Rudman and Gustavsson (2012) found that students who reported exhaustion related to academic and clinical courses had poor health outcomes upon entry into the workforce and had intentions-to-leave the profession. The authors also reported that students experienced increasing levels of disengagement and exhaustion as they progressed through the curriculum: 29.7% in the first year, 36.9% in the second year, and 41% in the final third year (Rudman & Gustavsson, 2012). The authors recommended preventative measures that enhance the ability of students and new graduates to cope with stressful situations (Rudman & Gustavsson, 2012). These findings imply the need to understand these phenomena within Canadian nursing student populations who may be at high risk of developing compassion fatigue and their intention-to-withdraw from their program.

A conceptual synthesis map that summarized the findings is presented below in Figure 2.3. The map visually highlights antecedents, defining attributes, and consequences of compassion fatigue in an undergraduate student population.

Figure 2.3. Conceptual Synthesis Map of Compassion Fatigue



Discussion

Exploration of the CF literature revealed that more knowledge is needed to better understand this phenomenon in nursing and psychiatric nursing students. Findings from Coetzee and Klopper's (2010) concept analysis of CF in nurses revealed many similar empirical referents that included the desire-to-quit, diminished performance, and feeling emotionally overwhelmed. Peters' (2018) analysis of compassion fatigue in nursing also yielded similar attributes such as exhaustion, helplessness, and hopelessness that align with depression, and consequences that included desire to quit the profession, providing poor quality care, and increased work errors. Arguments presented by Coetzee and Klopper (2010), Peters (2018), and Bianchi et al. (2015) assert that descriptions of CF include depressed mood and depression which is captured in the proposed concept map.

Most troubling is the finding related to the number of nursing students who experienced bullying from staff nurses, clinical instructors, student peers, as well as patients and families, with the result that these learners were significantly more likely to leave the nursing program (Clarke et al., 2012; Hunt et al., 2012) and the nursing profession (Budden et al., 2017; Chachula et al., 2015; Laschinger et al., 2012;). These findings highlight the existence of a perpetual cycle of students and nurses working in stressful occupational settings where being threatened with physical harm and verbal abuse, oppression, social hierarchies, and power dynamics (Budden et al., 2017; Clark & Springer, 2010; Clarke et al., 2012; Laschinger et al., 2010) that jeopardize their health and well-being.

The inclusion of psychiatric nursing students in a study that explores CF is also warranted given the risk of STS noted in psychiatric nurse settings (Berger et al., 2015; Jacobowitz et al., 2015; Jarrad et al., 2018). There is a need to better understand how these factors may play a role in development of CF within psychiatric nursing and nursing student populations prior to their entry into the workforce. Tools that assess levels of undergraduate student BO and STS may assist faculty teaching in pre-licensure programs in developing avenues for improving the student learning experience, reduce student withdrawal from their education program, and/or intention-to-leave the profession following graduation. This includes a need for educators to teach positive student self-care practices within curricula that promote flourishing in both the nursing and psychiatric nursing professions.

Conclusion

A review of the literature revealed that CF within nursing and psychiatric nursing student populations is not commonly studied. The literature seldom reported studies with a focus on undergraduate psychiatric nursing students. Conducting a study which incorporates student intent-to-withdraw from their program of study should be considered given assertions in the published literature that has linked CF with this phenomenon. The ProQOL Scale (Stamm, 2010) may help to identify students who are at risk of CF. By identifying those at risk (if any), educators can utilize findings to inform undergraduate curricular planning in preparation for entry into the workforce. As articulated by Michalec et al. (2013), it is essential to determine if nursing students are affected by CF, what factors contribute to its formation, and understand how nurse educators can work toward preventing its deleterious impacts within student populations.

CHAPTER 3: METHOD & RESEARCH DESIGN

The study used a non-experimental design that employed a cross-sectional, anonymous online survey rooted in post-positivist underpinnings. Post-positivist ontology acknowledges that there is a single reality, however, reality is imperfectly understood due to the lack of absolute understanding of the world (Denzin & Lincoln, 2018). Within this paradigm, statistical approaches to measurement are utilized (Creswell & Plano-Clark, 2018; Denzin & Lincoln, 2018). The methodological approach within the post-positivist paradigm requires that interaction with participants is minimal and validity emanates from the research data (Denzin & Lincoln, 2018; Morse & Field, 1995). The survey was comprised of demographic questions and four validated measures. Levels of compassion satisfaction and compassion fatigue, comprised of burnout and STS, were explored in students enrolled in the undergraduate psychiatric and nursing programs within years two, three, and four at Brandon University. Of note, Brandon University is the only BPN education program in the province of Manitoba. The study will offer a ‘first-look’ into CF and CS phenomena in Canada at a single institution with both BN and BPN students.

Study Population

Following ethical approval of the study from the University of Saskatchewan and Brandon University Research Ethics Committee (Appendix A), every full-time student enrolled in the nursing and psychiatric nursing programs at Brandon University was invited to participate. At Brandon University, ethical and operational permissions at the Departmental level were not required. To meet inclusion criteria, potential participants had to be actively enrolled in their program and have internet access to complete and submit their responses online. Exclusion criteria included students on-leave from their program, students in the pre-nursing year given that the first year in both the nursing and psychiatric nursing programs is considered a general studies year, and those undertaking part-time study. Both the psychiatric nursing and nursing programs are intended for full-time enrollment as courses are only offered once per academic year.

Sampling Procedure

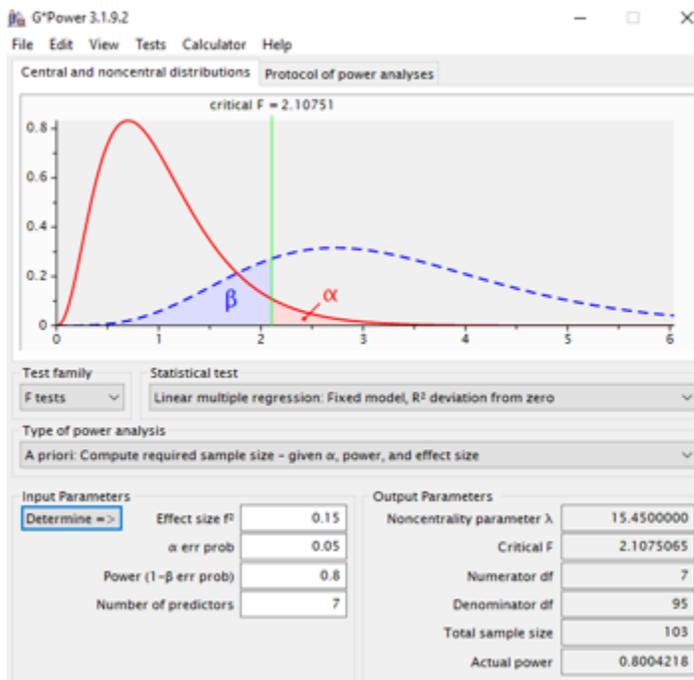
Sampling occurred using a convenience sample of enrolled students within the psychiatric nursing and nursing programs at Brandon University. An invitation to participate in the survey (Appendix B) was sent through the University’s learning management system (i.e.,

Moodle) from a third party (i.e., the student advisors and/or clinical placement directors within the nursing and psychiatric nursing programs). Third party recruitment reduced any sense of coercion to participate in the study. Interested participants clicked on the web link to access the consent protocol (Appendix C), and survey (Appendix D).

Sample Size

At the time of data collection, there were 144 students in the undergraduate nursing program and 71 psychiatric nursing students at the Brandon University campus. An additional 126 psychiatric nursing students were enrolled at the Brandon University Winnipeg campus for a total of 341 eligible students (T. Collyer & L. Irwin [Student Advisors], personal communication, March 11, 2020). G*Power (Faul et al., 2007) software was used to determine the estimated sample size needed for the most conservative statistical test anticipated such as linear multiple regression with seven predictor variables. The estimated sample size calculation was generated with alpha level at 0.05, effect size (f^2) set at medium or 0.15 (Cohen, 1988) and power at 0.8 to reduce the likelihood of a type II error (Polit & Beck, 2017). It was estimated that 103 participants were needed to obtain adequate statistical power to avoid a type II error (refer to Figure 3.1. G*Power estimate).

Figure 3.1. G*Power Estimate



Ethical Considerations

The survey was anonymous and made available through third parties. These measures afforded a high level of confidentiality and limited any sense of coercion as per the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (Government of Canada, 2014). This sampling procedure has been used effectively in a previous study conducted at Brandon University, which used an anonymous survey to collect data from currently-enrolled students when the investigator was also a faculty member within Brandon University teaching in the nursing program during the time of the study (Rohatinsky et al., 2017). The survey platform utilized was SurveyMonkey® made available to graduate students at no cost through the University of Saskatchewan (see Appendix E to view Budget). When SurveyMonkey® is accessed through the University of Saskatchewan, data is stored and hosted within Canada and are not subject to United States of America privacy laws (University of Saskatchewan Information and Communication Technologies [ICT] Services & Support, 2019) to ensure confidentiality of responses. The terms-of-use for creating and accessing a SurveyMonkey® account through the University of Saskatchewan, require that a research ethics certificate be obtained to comply with research that involves humans which was obtained.

All electronic files were stored in a password protected and/or encrypted file format. Any hard copies of the survey data collected are being stored in a locked filing cabinet in the investigator's locked, private office the University. Ethics was obtained to store research materials for a period of 25 years in the event that the primary investigator continues to collect and analyze additional data beyond the publication/dissemination of the immediate research study. Long-term, safe storage of data allows exploration and analysis of data and findings that permit comparative analysis and generation of best-practice guidelines that are founded upon ethically approved, research-derived data. After 25 years, original and duplicate primary research data will be destroyed. Any hardcopy data will be shredded and/or burned. Any encrypted electronic data saved to a Universal Serial Bus (USB) flashdrive and/or password protected computer will be deleted and destroyed in accordance with best-practice guidelines with the assistance of information technology specialists at time of disposal.

It was essential to make participants aware of the potential risks associated with participation in a study. The recruitment email, sent by a third party, contained background information on CS and CF to orientate potential participants about the nature of the study.

During the consent process, potential participants were informed that answering questions about CF may give rise to feelings of anxiety, apprehension, and sadness related to their role as students as they reflected on providing care for patients, clients, and their families. At the conclusion of the survey, contact information was provided for the student counselling services available for all Brandon University students. The link to the counselling website at the University was also provided (<https://www.brandonu.ca/personal-counselling/>) which allowed the student to immediately contact counsellors, if needed. The site also contained wellness information that included topics related to stress, anxiety, depression trauma, sexual assault, sleep, download instructions for the i.m.well app, as well as other topics that promote health and well-being endorsed by Brandon University. According to Pospos et al. (2018), web-based, mobile applications have been shown to mitigate stress, BO, depression, and suicidal ideation for students in professional programs.

There was also the possibility that the researcher would experience apprehension and emotional distress during the conduct of the study. If this occurred, the researcher planned to disengage from the research activities that may be contributing to emotional distress and resources available through the Brandon University Employee Assistance Plan.. Of note, these services were not accessed by the researcher during the study.

Instruments and Research Variables

Four data collection tools were employed in the study in addition to demographic data that accounted for confounding variables. The tools included the ProQOL Scale (Version 5) (Stamm, 2010) to measure outcome variables that included CS and CF compromised of STS and BO; the Core Self-Evaluations Scale (CSES) that provided a measure of self-efficacy (Judge et al., 2003); the Perceived Stress Scale (PSS) to measure the level of stress within the last four weeks (Cohen et al., 1983); and a modified version of the Life Events Checklist (LEC) which assessed for the presence of past exposures to traumatic events (Weathers et al., 2018). Demographic variables included year in program, students' age, gender, prior mental health diagnosis of PTSD, depression, and/or anxiety, ethnicity, type of clinical placement, and type of undergraduate program that addresses previously unexplored variables in the published literature (Ledoux, 2015). Examples of tools that were considered, however not employed in the current study, included the following scales: *Violent Incident Form* (Arnetz, 1998), *Brief COPE* (Carver, 1997), *Negative Acts Questionnaire-Revised* (Einarsen et al., 2009), *Revised NEO Five Factor*

Inventory (Costa & McCrae, 1992), *Utrecht Work Engagement Scale for Students* (Schaufeli et al., 2002) and the *Stress in Nursing Students Scale* (Deary et al., 2003). The tools ultimately selected for the study offered parsimony, addressed the variables of interest, permitted theoretical analysis, and yielded data that lends to parametric statistical analysis.

The Professional Quality of Life Scale (ProQOL-Version 5)

The ProQOL tool is comprised of 30 items that are scored on a Likert scale ranging from 1 (never) to 5 (very often), with higher scores indicating higher levels on each subscale. The ProQOL Scale is comprised of three subscales with 10 items each that pertain to CS and CF comprised of burnout and secondary traumatic stress over the past four weeks. Reliability and validity of the tool have been demonstrated wherein the Cronbach's alpha for CS was 0.88, burnout was 0.75, STS 0.81, and an overall alpha of 0.88 was obtained (Stamm, 2010). According to Polit and Beck (2017), a coefficient alpha of ≥ 0.80 is highly desirable and a Cronbach's alpha score of ≥ 0.70 is adequate (Field, 2013). In addition, the ProQOL Scale has been used in more than 200 peer reviewed papers (Stamm, 2010) involving studies of RNs, registered psychiatric nurses, and students of social work, midwifery, medicine, veterinary medicine, and nursing. In the current study, clarity was provided to participants that the terms 'work' and 'job' related to their role as a student in their program when providing care to patients, clients, and their families.

The ProQOL Scale offers a research measure with adequate construct validity (Stamm, 2010). Polit and Beck (2017) refer to construct validity as "the degree to which evidence about a measure's scores in relation to other scores support the construct has been appropriately represented" (p. 315). For example, a study conducted by Beaumont et al. (2016) of student midwives revealed that high scores in self-compassion had a statistically significant positive relationship to CS ($r = 0.201, p < 0.05$) and conversely that high compassion-for-others revealed significantly lower scores in CF ($r = -0.225, p < 0.05$). Furthermore, a statistically significant inverse relationship was found between self-compassion and BO ($r = -0.312, p < 0.01$), which aligns with the transactional nature of the tool (Beaumont et al., 2016; Hegney et al., 2014; Stamm, 2002).

Despite the opportunity the ProQOL Scale offers researchers to understand CS and CF, the tool is not without criticism. In one study of nurses practicing in Australia, researchers portended that the ProQOL Scale should be comprised of 21-items due to mixed findings in an

analysis of the scale (Heritage et al., 2018). While the ProQOL tool met Cronbach alpha validity criteria in the study (BO $\alpha = .80$, STS $\alpha = .84$, and CS $\alpha = .90$) using classical test theory, mediocre results were found for the BO and STS subscales using Rasch modelling that led to re-development of the scale using 21-items (Heritage et al., 2018). Since no published studies have used the 21-item revised scale, nor has the 21-item scale ever been used in an undergraduate student population, adopting the revised scale in a study would require an extra layer of caution and interpretation when comparing findings to the published literature. Sinclair et al. (2017) argued that the ProQOL tool lacked validity, however, their analysis excluded review of articles that referred to STS and BO which are the key constructs that comprise CF. Additionally, an appraisal of articles regarding methodological quality was not conducted as part of their analysis (Sinclair et al., 2017).

Aside from the above studies, numerous studies have utilized the measure demonstrating construct validity and convergent validity that use correlation analysis and classical test theory to establish conceptual convergence (Polit & Beck, 2017) of CS, BO, and STS measured by the ProQOL Scale (Hegney et al., 2014; Hinderer et al., 2014; Lin, Chen, & Lin, 2017; Lin & Lin, 2016; McArthur et al., 2017). Most recently in a Canadian study of child protection workers, convergent and discriminant validity of the ProQOL Scale were established, as well as construct validity when assessed using bifactor modeling of the three subscales (Geoffrion et al., 2019). In addition, the authors found that a single summed score of ProQOL could be used given the unidimensionality of the measurement (Geoffrion et al., 2019). For the purposes of this dissertation study, evidence in the literature overwhelmingly support use of the tool which outweighs any proposed limitations of the measure. Ultimately, the ProQOL Scale offers researchers an avenue to explore care provider welfare and occupational-related stressors across numerous health settings, student groups, disciplines, and countries.

Core Self-Evaluations Scale (CSES)

The Core Self-Evaluations Scale (CSES) is a 12-item, self-report, Likert scale tool that yields continuous level data pertaining to self-efficacy (Judge et al., 2003). Each item is scored on a scale of 1 (strongly disagree) to 5 (strongly agree), with a total higher score being indicative of a person who is “well adjusted, positive, self-confident, efficacious, and believes in his or her own agency” (Judge et al., 2003, p. 304). Of the 12 items, six are reverse scored. Coefficient alpha reliability estimates reported by the tool creators were 0.84 (Judge et al., 2003, p. 316) with

test-retest reliability at 0.81 (Judge et al., 2003). These findings indicate the tool is valid and reliable.

Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) is a 14-item, self-report, Likert scale tool that also yields continuous level data (Cohen et al., 1983). Each item is scored on a scale of 0 (never) to 4 (very often) where a higher score indicates higher levels of perceived stress; seven of the 14 items are reverse scored. The PSS provides a single summed score that assesses “the degree to which respondents found their lives unpredictable, uncontrollable, and overloading” within the last four weeks, influenced by the experience of “daily hassles, major events, and changes in coping resources” (Cohen et al., 1983, p. 387). Coefficient alpha reliability revealed scores of 0.84 to 0.86 were reported indicating the instrument is also a valid and reliable tool for use in undergraduate student populations (Cohen et al., 1983).

Life Events Checklist (LEC-Version 5)

A modified version of the Life Events Checklist (LEC-version 5) will be utilized to collect nominal-level data regarding PTEs the participant has experienced. The LEC is comprised of a 17 item, six-point, self-report tool that serves as “a screening measure of severity of trauma exposure” (F. Weathers, personal communication, October 30, 2018). The tool asks the participant to report if the stressful event indicated has: happened to the respondent, if they were exposed to the event as part of their job, if they witnessed the event occur to someone else, they learned about it happening to a family member or friend, if they are not sure it fits, or if it does not apply to them. Items that the respondent reports ‘happened to them’, ‘witnessed it’, or ‘exposed to it as part of the job’ were dummy-coded to receive a score of 1. All other responses received a score of 0. The tool is scored by determining the sum of individual questions (Jacobowitz et al., 2015). The LEC has demonstrated convergent validity with “adequate psychometric properties” when dichotomized to assess potentially traumatic event exposure with adequate test re-test reliability (Gray et al., 2004, p. 336).

An item was added to the above LEC tool adapted from the Life Stressor Checklist-Revised (LSC-R) developed by Wolfe et al. (1997). The added item read as follows: ‘Bothered, bullied, or harassed (i.e., jokes, verbal remarks) by someone in the work or school setting (i.e., another student, member of the health care team, manager, patient, or a teacher).’ The LSC-R has demonstrated kappa scores ranging from a low score of 0.52 pertaining to physical abuse to

0.97 for miscarriage, with an average kappa of 0.70 indicating adequate validity (Norris & Hamblen, 2004). This added item will allow the participant to report if they have experienced any negative behaviours that constitute psychological stressors and offered the participant an opportunity to report occurrences of bullying and harassment, which have been noted in the nursing literature related to students (Budden et al., 2017; Clarke et al., 2012).

Participants were also asked to report their intention-to-leave their program of study on a Likert scale item ranging from 1 (strongly disagree) to 5 (strongly agree). The item read as follows: 'I think a lot about leaving the nursing/psychiatric program' (Cohen, 1998; Laschinger et al., 2012; Rudman et al., 2014). The item provided an estimate of undergraduate students' intentions of leaving their program. Laschinger et al. (2012) found that intention-to-leave was significantly correlated ($r = 0.49$, $p < 0.05$) with BO. Psychometric analysis of a similar question in a study by Rudman et al. (2014) revealed a Cronbach's alpha of 0.75 indicating adequate validity. Rudman et al. (2014) argued that according to the theory of planned behaviour, intention-to-leave may serve as a significant predictor of actually leaving the nursing profession within longitudinal studies. Similar findings were discovered by Williams et al. (2018) within the context of an effort-rewards imbalance model.

Demographic Data

Collection of demographic data yielded descriptive data about the sample important for exploring statistical associations (Polit & Beck, 2017) with the previously identified variables. Participants were asked to report their age on their last birthday, gender (male, female, neither male nor female), year in program (2, 3, or 4), type of education program (nursing or psychiatric nursing), and full or part-time student status. Students were also asked to report their ethnicity with options that included: Indigenous (First Nations, Inuit, and/or Métis), Caucasian, or descent from a visible minority (Asian, Hispanic, Black, and/or Indonesian). Other variables included: current clinical setting (long term care/palliative, medicine/surgery, rural/emergency, pediatrics, acute psychiatric rehabilitation, or community/out-patient placement), relationship status (married/partnered, separated/divorced, single, or widowed), parenthood (yes or no), and level of education (grade 12, college certificate/diploma, some post-secondary courses other than nursing and psychiatric nursing, or university degree).

Additional demographic variables were included in the study. Participants reported their average amount of hours of paid employment per week. If the student was not employed, the

value zero was entered. Participants also reported their average amount of sleep per night in a week and if they had a previous diagnosis of PTSD, anxiety, depression (yes or no). In a study conducted by Hunt et al. (2012), 60% of students who withdrew in their final year of college left due to working an average of 28 hours per week where BO played a role in their decision to leave their studies.

Data Analysis Plan

At the outset of the study, a data analysis plan was developed. This plan included using *Statistical Package for the Social Science*® (SPSS) for analysis of the variables. Scores were entered in keeping the guidelines for each of the tools to be adopted within the study, including how to treat missing values, reverse score items, and cut scores. Descriptive statistics and tests for normal distribution of the sample were conducted to allow for analysis of homogeneity and ensuring assumptions for parametric analysis were met for the subsequent statistical testing. The analysis plan included tests that allowed for comparisons to be made among the students according to their year in program and the type of student, namely psychiatric nursing student and nursing student, as well as correlation analysis to determine what variables have statistically significant associations within the dataset. The alpha level was set at 0.05, effect size set at medium or 0.4, and power at 0.8 to reduce the likelihood of a type II error, also known as a false-negative where the null hypothesis is accepted rather than rejected (Plichta-Kellar & Kelvin, 2013; Polit & Beck, 2017).

Cut Scores

Cut scores (*t*-scores) for CS, BO, and STS identified within the ProQOL manual were computed to allow reporting of low, medium, and high levels for each indicator using the 25th, 50th, and 75th percentile, respectively (Stamm, 2010). Use of cut scores allowed for reporting of descriptive statistics that indicated how many participants, according to year and program-type, presented with low, moderate, and high risk for BO, STS, and oppositely, the number of participants with low, moderate, and high levels of CS. Values are reported in table format and included the number of individuals (n), mean, standard deviation, and the percentage of individuals who reported the outcome variable of interest. More specifically, data is presented to highlight the number of respondents in the second, third, and fourth years of both the psychiatric and nursing programs in two separate tables as it relates to CS, BO, and STS.

Analysis of Variance

ProQOL data scores were assessed for differences within and between groups through use of factorial analysis of variance (ANOVA) testing. This analysis allowed the researcher to highlight what year of study within the nursing and/or psychiatric nursing program was associated with the greatest risk of student BO and STS, if any. The 2 x 3 ANOVA, also known as a two-way ANOVA (Plichta-Kellar & Kelvin, 2013), enabled exploration of full-time undergraduate students enrolled in the psychiatric nursing program and the nursing program, across each of the three years in the program known as the grouping variable or independent variables. Within the proposed ANOVA testing, the first factor was comprised of two levels (nursing or psychiatric nursing program). The second factor of interest was the year in the program (year two, three, or four). ANOVA testing would allow the researcher to determine if an interaction effect is present within a specific program-type and year within the curriculum. Results generated from this analysis could inform future research and targeted interventions for the most at-risk student group, if any.

Prior to proceeding with any ANOVA testing, assumptions of normal distribution and homogeneity of variance were conducted as per the Levene's test (Plichta-Kellar & Kelvin, 2013) and significant results were further explored with post-hoc tests. For example, Tukey's post-hoc test provides a conservative test for comparison of differences within the sample that does not elevate the risk of a type II error (Plichta-Kellar & Kelvin, 2013). Use of post-hoc Bonferroni testing could be selected which reduces the risk of a type I error if multiple comparisons are being made where alpha is divided by the number of comparisons to determine which group is statistically different (Plichta-Kellar & Kelvin, 2013). Alternative to Bonferroni testing, post-hoc analysis for unequal groups could use Hochberg's sequential method to maximize power and control for type I error (Field, 2013; Hochberg, 1988).

Correlation Analysis

Scores obtained on the CSES, PSS, adapted LEC, intention-to-leave, and continuous-level demographic data were analyzed using correlation analysis. The preferred method of analysis will be to utilize Pearson's r correlations should the data set meet assumptions of parametric testing. Alternatively, Spearman's non-parametric correlation coefficient analysis would be considered and Phi coefficients for comparison of binomial data (Plichta-Kellar & Kelvin, 2013). The results from the bivariate analysis would determine correlations that may

reveal a significant association and effect size, or magnitude, of the relationship under investigation (Plichta-Kellar & Kelvin, 2013; Polit & Beck, 2017).

Multiple Regression

Hierarchical multiple regression allowed the researcher to assess predictor variables for CF and CS within a sample of undergraduate BN and BPN students. In multiple regression analysis, the R^2 is reported to indicate the amount of variance accounted for in the model that predicts the dependent variables of BO, STS, and CS. In hierarchical multiple regression, each predictor variable was entered into the model, informed by theoretical findings published in the peer-reviewed literature (Polit & Beck, 2017). As each independent variable or predictor was entered into the model, the beta weight and level of significance was reported for each coefficient as the model was generated as a mechanism to predict the outcome variable of interest (Plichta-Kellar & Kelvin, 2013; Polit & Beck, 2017).

Discussion

A single cross-sectional survey is categorized at a ‘Level 2’ study within the evidence hierarchy pyramid (Polit & Beck, 2017). Cross-sectional surveys rank higher than a single qualitative in-depth study; thus, these types of studies do not produce a ‘high’ level of evidence given that they are largely exploratory in nature (Polit & Beck, 2017). In exploratory studies it is important to acknowledge the use of ANOVA and correlation analysis in determining the relationships between variables. The mantra “correlation does not prove causation” (Shadish et al., 2002, p. 7) is apt here given that these statistical tests are not causal in nature, but rather highlight associations. In addition, correlations do not rule out other confounding variables (Polit & Beck, 2017).

Conclusion

Given the risk for STS, BO, and PTEs in health care settings, the presence of CS, BO and STS within Canadian nursing and psychiatric nursing students is not known or understood. Hence, a cross-sectional study that utilizes the ProQOL Scale in addition to other validated tools will shed light on the scope of CS and CF among students from nursing and psychiatric nursing in effort to understand this phenomenon. Hierarchical regression analysis serves as an avenue to determine predictor variables that contribute to CS and CF comprised of BO and STS.

CHAPTER 4: RESULTS

A key aim of the study was to shine a light on the issue of CF comprised of BO and STS in pre-licensure undergraduate nursing and psychiatric nursing students. There were four core research questions (RQs) guided the study. Firstly, what is the prevalence of CS, BO, and STS (the outcome variables) among nursing and psychiatric nursing students? It was anticipated that approximately 30% of the students from each group will present with high levels of STS and burnout, and 60% will report high levels of compassion satisfaction (Mason & Nel, 2012). Secondly, does the program type (nursing or psychiatric nursing) and year in program (year two, three, or four) have a significant effect on the presence of BO? It was assumed that a significant difference will be found in the presence of burnout within program-type and year. Thirdly, what are the relationships between CS, BO, and STS? It is assumed that STS and BO will be positively correlated and inverse relationships will occur between both CS and BO, as well as STS as per findings in the nursing literature showcasing the transactional nature of these indicators (Hegney et al., 2014; Hinderer et al., 2014). Lastly, what predictor variables (or factors) are associated with BO, STS, and CS? Selection of the predictor variables was informed by empirical referents noted in the nursing and allied health literature such as age and prior diagnosis of mental illness.

Data was entered into SPSS version 26 and examined prior to analysis. Cases with missing data were explored and dependent variables were examined for homoscedasticity and normal distribution. Ninety-nine respondents accessed the survey, however, six were incomplete. The final sample size was 93/341 resulting in a response rate of 27.27% where a 30% online response rate is typical (Saldivar, 2012). The majority of respondents were female ($n = 89, 95.7\%$) with an average age of 24.6 years ($SD = 5.27$). Half of the respondents reported being single. There were 32 respondents (34.4%) from the BPN program and 61 (65.6%) from the BN program. Students in years two and three of their program were engaged in non-block clinical style with an alternating schedule of classes, labs, and clinical. In year four, all but four students were engaged in the final senior practicum structured in block clinical format with no other classes or coursework. See Table 4.1 to view the demographic data and characteristics of the sample. Reliability analyses were conducted as well as correlation analyses of the three ProQOL subscales prior to prevalence calculations and multiple hierarchal regression analyses.

Table 4.1. Demographic Data (n=93)

<p>Gender Identity Female: 89 (95.7%) Male: 4 (4.3%) Neither Male or Female: 0</p> <p>Age in Years Mean: 24.55 Standard Deviation: 5.274 Range: 20-47</p> <p>Program Type Psychiatric Nursing: 32 (34.4%) Nursing: 61 (65.6%)</p> <p>All 93 participants Enrolled Full time 100%</p> <p>Year in Program Year 2: 34 (36.6%) Year 3: 42 (45.2%) Year 4: 17 (18.3%)</p> <p>Ethnicity Caucasian: 72 (77%) Visible Minority: 16 (17.2%) Indigenous: 5 (5.4%)</p> <p>Parent Living with Children No: 86 (92.5%) Yes: 7 (7.5%)</p> <p>Relationship Status Single: 47 (50.5%) Married/Partnered: 46 (49.5%) Separated/Divorced/Widow: 0</p> <p>Clinical Model Block: 15 (16.1%) Non-Block: 74 (79.6%) Classes Only: 4 (4.3%)</p>	<p>Average Employment Hours during last 7 days Mean: 9.61 Median: 6.0 Standard Deviation: 11.97 Range: 0-48</p> <p>PTSD Diagnosis No: 90 (96.8%) Yes: 3 (3.2%)</p> <p>Anxiety Diagnosis No: 64 (68.8%) Yes: 29 (31.2%)</p> <p>Depression Diagnosis No: 76 (81.7%) Yes: 17 (18.3%)</p> <p>Education Level Grade 12: 42 (45.2%) College certificate/diploma: 17 (18.3%) Some post-secondary: 20 (21.5%) University degree: 14 (15.1%)</p> <p>Clinical Setting Long Term Care/Palliative: 10 (10.8%) Med-Surg: 58 (62.4%) ER/Rural: 8 (8.6%) Acute Psychiatric Unit: 3 (3.2%) Community/Out-patient: 9 (9.7%) Pediatrics: 1 (1.1%) No Clinical: 4 (4.3%)</p> <p>Average Hours of Sleep per night in last 7 days Mean: 6.48; Median: 7 Standard Deviation: 1.09 Range: 1-9</p>
--	---

Reliability

Within the data collected, satisfactory reliability was obtained for many of the adopted measurement scales. The Cronbach's alpha score was adequate for CS ($\alpha = 0.737$). The CF subscale for STS was reliable ($\alpha = 0.781$), however, mediocre reliability was found for BO ($\alpha = 0.671$). A Cronbach's alpha or coefficient alpha less than 0.70 indicates reduced internal consistency to reliably measure the instrument subscale (Polit & Beck, 2017). If the ProQOL Scale (Stamm, 2010) was not already an established scale, the researcher would consider removing item 29 "I am a very caring person" which would increase the subscale Cronbach's alpha to 0.714. Reliability scores were excellent for both the Core Self Evaluations Scale (CSES) ($\alpha = 0.883$) and the Perceived Stress Scale (PSS) ($\alpha = 0.883$). When the 'Intent-to-Leave Program' item was added to the CSES, the score retained excellent reliability ($\alpha = 0.811$).

RQ 1: Prevalence of Compassion Satisfaction and Fatigue

The prevalence scores for CS and CF variables within the sample were calculated based on the guidelines provided in the ProQOL manual (Stamm, 2010). The cut-off scores for the ProQOL subscales are presented in Table 4.2. Table 4.3 provides a summary of the prevalence scores for students enrolled in each the BN and BPN program, and by year. The findings revealed 31% reported low levels of CS, 27% had high levels of BO, and 28% had high levels of STS. Only 25% reported high levels of CS, much lower than the anticipated amount of 60%.

RQ 2: Program-Type and Year-in-Program Comparisons

ANOVA testing did not yield any significant differences between year-in-program and ProQOL outcome variables of BO ($F_{2,90} = 1.260$, $p = 0.289$), STS ($F_{2,90} = 0.323$, $p = 0.725$), and CS ($F_{2,90} = 0.571$, $p = 0.567$) with pooling of all students. To compare between program-type and year-in-program, the non-parametric Mann-Whitney U -test was used. This test was selected due to a small number of students in Year 4 of the BPN program ($n = 5$) and BN program ($n = 12$). These small subset groups arguably violated assumptions for factorial ANOVA testing to determine differences between year in the program and program type. No statistically significant differences were found in comparisons of the BN and BPN students within their year-in-program for CS in Year 2 ($U = 136$, $p = 0.837$), Year 3 ($U = 175.5$, $p = 0.902$) and Year 4 ($U = 30.5$, $p = 1.000$). No significant differences were found for BO in Year 2 ($U = 147.5$, $p = 0.864$), Year 3 ($U = 154$, $p = 0.483$), and Year 4 ($U = 33$, $p = 0.799$). STS results were also non-significant in Year 2 ($U = 151.5$, $p = 0.758$), Year 3 ($U = 160$, $p = 0.592$) and Year 4 ($U = 26$, $p = 0.721$).

Table 4.2. Cut-off scores for the ProQOL V Subscales

Variable	Bottom Quartile: Low Score	Mean: Moderate Score	Top Quartile: High Score
Compassion Satisfaction	<44	44-57	>57
Burnout	<43	43-56	>56
Secondary Traumatic Stress	<42	42-56	>56

Low, Moderate, and high T-Scores pre-determined as per the ProQOL manual developed by Stamm (2010)

Table 4.3. ProQOL V Prevalence Scores of the Participants

Subscale	Level	Nursing Students			Psychiatric Nursing Students			Total N=93
		2 nd Years n=19	3 rd Years n=30	4 th Years n=12	2 nd Years n=15	3 rd Years n=12	4 th Years n=5	
Compassion Satisfaction	High	4 (21.1%)	9 (30.0%)	2 (16.7%)	3 (20.0%)	4 (33.3%)	1 (20.0%)	23 (24.7%)
	Moderate	8 (42.1%)	12 (40.0%)	7 (58.3%)	8 (53.3%)	4 (33.3%)	2 (40.0%)	41 (44.1%)
	Low	7 (36.8%)	9 (30.0%)	3 (25.0%)	4 (26.7%)	4 (33.3%)	2 (40.0%)	29 (31.2%)
		Mean: 38.58 SD: 4.43	Mean: 39.33 SD: 4.35	Mean: 38.33 SD: 2.71	Mean: 38.93 SD: 3.81	Mean: 39.75 SD: 5.07	Mean: 38.20 SD: 3.83	Mean: 38.98 SD: 4.10 Range: 31-49
Compassion Fatigue - Burnout Subscale	High	5 (26.3%)	5 (16.7%)	4 (33.3%)	5 (33.3%)	4 (33.3%)	2 (40.0%)	25 (26.9%)
	Moderate	12 (63.2%)	19 (63.3%)	5 (41.7%)	7 (46.7%)	5 (41.7%)	0 (0.0%)	48 (51.6%)
	Low	2 (10.5%)	6 (20.0%)	3 (25.0%)	3 (20.0%)	3 (25.0%)	3 (60.0%)	20 (21.5%)
		Mean: 27.68 SD: 4.15	Mean: 25.83 SD: 3.65	Mean: 25.92 SD: 3.78	Mean: 27.33 SD: 5.60	Mean: 27.42 SD: 5.09	Mean: 25.00 SD: 6.00	Mean: 26.62 SD: 4.42 Range: 16-37
Compassion Fatigue - Secondary Traumatic Stress Subscale	High	5 (26.3%)	8 (26.7%)	4 (33.3%)	3 (20.0%)	4 (33.3%)	2 (40.0%)	26 (28.0%)
	Moderate	10 (52.6%)	15 (50.0%)	5 (41.7%)	9 (60.0%)	7 (58.3%)	3 (60.0%)	43 (46.2%)
	Low	4 (21.1%)	7 (23.3%)	3 (25.0%)	3 (20.0%)	1 (8.3%)	0 (0.0%)	24 (25.8%)
		Mean: 22.74 SD: 4.90	Mean: 23.20 SD: 5.97	Mean: 23.67 SD: 5.42	Mean: 22.33 SD: 5.41	Mean: 23.83 SD: 6.13	Mean: 23.80 SD: 4.55	Mean: 23.14 SD: 5.44 Range: 12-36

Gender Comparisons

Very few male respondents participated in the study ($n = 4$) that limit any type of meaningful analysis. Non-significant results were found in comparing male and female students on the outcome variables. CS scores in female students (Mean rank = 47.40) did not differ significantly from male students (Mean rank = 38.00, $U = 142$, $p = .516$). Burnout scores in female students (Mean rank = 47.16) did not differ significantly from male students (Mean rank = 43.38, $U = 163.5$, $p = 0.791$). STS scores in female students (Mean rank = 48.13) did not differ significantly from male students (Mean rank = 21.75, $U = 77$, $p = 0.055$). Since the mean differences approached statistical significance, parametric independent t-test was conducted but no significant results were found ($t(91) = 1.963$, $p = 0.053$). Despite levels of STS not reaching statistical significance, the trend toward statistical significance may have implications for male undergraduate students, however, caution is needed due to limited male participation.

Clinical Type Comparisons

The six broad categories of clinical placements were re-conceptualized and collapsed into three separate groups. This created larger group sizes to increase the power of the analysis. All in-patient units were clustered under one label named 'Inpatient' that included med-surg, pediatrics, acute psychiatry areas ($n = 62$). The second cluster was re-labelled 'Episodic' ($n = 17$) to reflect students in out-patient settings, and rural/emergency settings. The third cluster was comprised of students in long-term care (LTC)-palliative settings ($n = 10$). Students who were not in clinical ($n = 4$) were excluded from analysis. Levene's statistic was not significant ($p > 0.05$) indicating limited variance among the re-clustered groups, therefore homogeneity of the sample was met.

Subsequently, a one-way ANOVA test with alpha set at 0.05 was completed for each of the dependent variables with Hochberg's post-hoc analysis due to the unequal group sizes (Field, 2013; Hochberg, 1988). The findings for burnout revealed a significant difference ($F_{2, 86} = 3.695$, $MSE = 18.48$, $p = 0.029$, 95% CI = 0.32-8.66) between the LTC-Palliative ($M = 29.9$, $SD = 4.89$) and Episodic care ($M = 25.41$, $SD = 4.99$) clinical placement areas. These findings showcase that students in the LTC-Palliative setting had significantly higher levels of BO. See Figure 4.1 to view the Error Bar Chart and Table 4.4 to view Hochberg's post-hoc analysis. No statistically significant findings occurred for STS ($F_{2, 86} = 0.752$, $p = 0.474$) and CS ($F_{2, 86} = 0.957$, $p = 0.388$) per clinical type.

Figure 4.1. Burnout Error Bar Chart

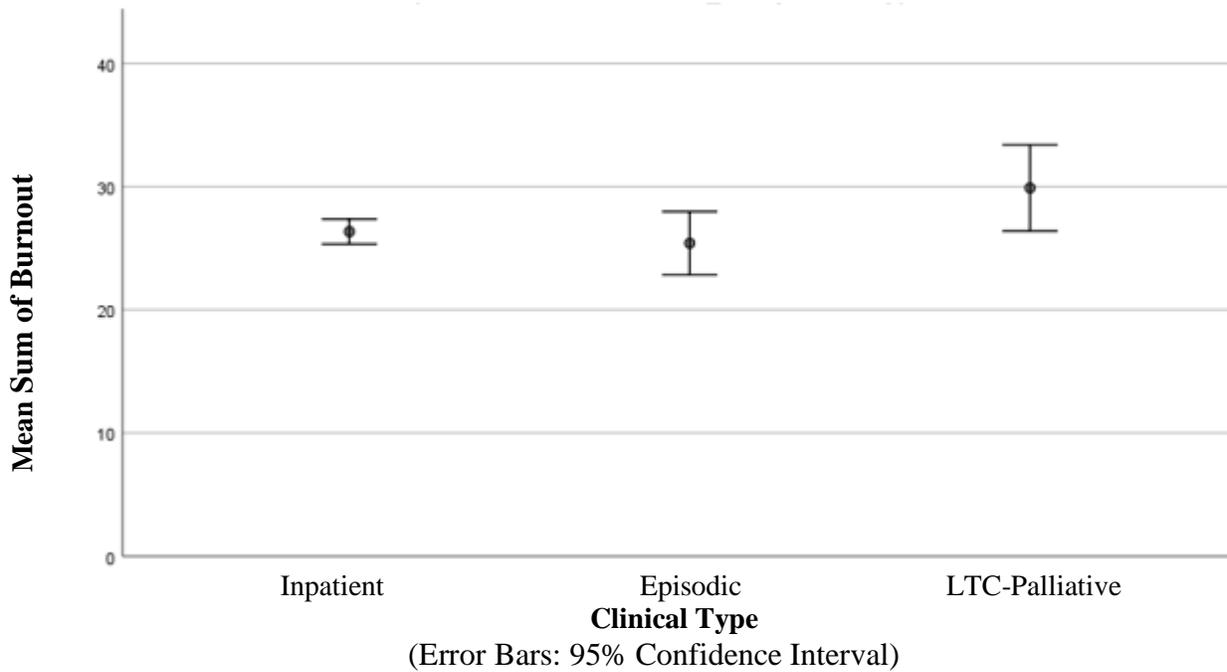


Table 4.4. Hochberg’s Post-Hoc Analysis of Burnout and Clinical Type

Burnout Multiple Comparisons (n = 89)

Clinical Type	Clinical Type	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Inpatient (n = 62)	Episodic	.943	1.177	.808	-1.92	3.81
	LTC- Palliative	-3.545	1.465	.052	-7.11	.02
Episodic (n = 17)	Inpatient	-.943	1.177	.808	-3.81	1.92
	LTC- Palliative	-4.488*	1.713	.031	-8.66	-.32
LTC-Palliative (n = 10)	Inpatient	3.545	1.465	.052	-.02	7.11
	Episodic	4.488*	1.713	.031	.32	8.66

*. The mean difference is significant at the 0.05 level.

RQ 3: Bivariate Correlation of Outcome Variables

As anticipated, CS was inversely correlated with the CF subscales of BO ($r = -0.475$, $p < 0.001$) and STS ($r = -0.164$, $p = 0.117$). The inverse relationship between CS and STS did not reach statistical significance. The CF subscale measures of BO and STS were significantly positively correlated ($r = 0.555$, $p < 0.001$). A summary of these relationships is presented in Table 4.5 below.

Table 4.5. Pearson Correlation Co-Efficient for the ProQOL V Subscales

Subscale:	Compassion Satisfaction	Compassion Fatigue (CF): Secondary Traumatic Stress	Burnout
Compassion Satisfaction	-	-0.164	-0.475‡
CF: Secondary Traumatic Stress	-0.164	-	0.555‡
CF: Burnout	-0.475‡	0.555‡	-

Note: ‡ $p \leq 0.001$ level (2-tailed).

Bivariate Correlation of Variables

To view a complete correlation matrix of the variables, refer to Table 4.6. Analysis of variables within the dataset allowed for comparisons between independent variables with outcome variables (Table 4.7). Four key hypotheses regarding the variable relationships were subsequently found in the data. Firstly, there was a significant positive correlation between CS and the Core Self-Evaluations Scale (CSES), a measure of self-efficacy, $r(91) = 0.370$, $p < 0.001$. Secondly, there was a significant positive correlation between STS and perceived stress measured by the Perceived Stress Scale (PSS) $r(91) = 0.455$, $p < 0.001$. Thirdly, a significant positive correlation occurred between STS and PTEs measured by the Life Events Checklist (LEC) $r(91) = 0.259$, $p < 0.05$. Lastly, there was a significant positive correlation between BO and the intent-to-leave variable $r(91) = 0.522$, $p < 0.001$.

Other comparisons of note within the analysis were a self-reported prior diagnosis of anxiety, being partnered, and work hours did not reveal significant results with the outcome variables in the data set. Moderate significant relationships occurred between STS and perceived stress ($r = 0.455$, $p \leq 0.001$), CSES ($r = -0.459$, $p \leq 0.001$), and intent-to-leave ($r = 0.356$, $p \leq 0.001$). Strong relationships were present for BO and perceived stress ($r = .738$, $p \leq 0.001$) and CSES ($r = -.744$, $p \leq 0.001$). These correlations highlight the magnitude and direction of the relationships adding construct validity of the outcome variables and assessing for predictor variables in regression analysis.

Table 4.6. Bivariate Correlation of Variables (n = 93)

Variable:	STS	CS	BO	PSS	CSES	LEC	PTSD	Depression	Anxiety	Age	Sleep	Hours Worked	Intent to Leave
STS	-												
CS	-.164	-											
BO	.555‡	-.475‡	-										
PSS	.455‡	-.284**	.738‡	-									
CSES	-.459‡	.370‡	-.744‡	-.810‡	-								
LEC	.259*	.123	.084	.165	-.109	-							
PTSD	.187	-.074	-.012	.214*	-.126	.137	-						
Depression	.183	-.113	.243*	.381‡	-.359‡	.208*	φ.386‡	-					
Anxiety	.094	-.093	.179	.277**	-.199	.024	φ.271*	φ.462‡	-				
Age	-.221*	.133	-.299**	-.233*	.304**	.201	-.077	.057	.040	-			
Sleep	-.218*	-.135	-.251*	-.440‡	.398‡	-.041	.087	-.237*	-.183	-.006	-		
Hours Worked	-.012	.031	-.075	-.085	.150	.080	-.045	-.174	.001	.149	.093	-	
Intent to Leave	.356‡	-.403‡	.522‡	.482‡	-.537‡	.003	.172	.155	-.023	-.200	-.111	-.055	-

*p<0.05; **p≤0.01; ‡p≤0.001 (two-tailed testing); φ Phi Cross-tabs coefficient of dichotomous variables with Fisher's Exact Test

Comparisons among the independent variables provides insight into student characteristics within the sample. Only three students reported a prior diagnosis of PTSD. Those who reported being diagnosed with depression were significantly associated with PTSD ($\phi = .386, p \leq 0.001$), and were more likely to report an anxiety diagnosis ($\phi = .462, p \leq 0.001$), less sleep ($r = -.237, p < 0.05$) and more PTEs measured by the LEC ($r = .208, p < 0.05$). Students with high levels of perceived stress were more likely to have a prior diagnosis of depression ($r = .381, p \leq 0.001$), anxiety ($r = .277, p \leq 0.01$) and PTSD ($r = .214, p < 0.05$), and had lower self-efficacy scores as measured by the CSES ($r = -.810, p \leq 0.001$). Students with high levels of perceived stress were also younger ($r = -.233, p < 0.05$), slept less ($r = -.440, p \leq 0.001$), and had greater intention-to-leave their education program ($r = .482, p \leq 0.001$). In contrast, students who reported high levels of self-efficacy had less perceived stress ($r = -.810, p \leq 0.001$), were less likely to have a prior diagnosis of depression ($r = -.359, p \leq 0.001$), were older ($r = .304, p \leq 0.01$), slept more ($r = .398, p \leq 0.001$), and had less intent-to-leave ($r = -.537, p \leq 0.001$).

Table 4.7. Pearson Bivariate Correlation of Outcome and Predictor Variables (n = 93)

Variable:	Compassion Fatigue		
	Compassion Satisfaction	Secondary Traumatic Stress	Burnout
PSS	-.284**	.455‡	.738‡
CSES	.370‡	-.459‡	-.744‡
LEC	.123	.259*	.084
Depression	-.113	.183	.243*
Anxiety	-.093	.094	.179
Married/Partnered	.042	-.189	-.003
Age	.133	-.221*	-.299**
Sleep Hours	-.135	-.218*	-.251*
Work Hours	.031	-.012	-.075
Intent to Leave	-.403‡	.356‡	.522‡

* $p < 0.05$; ** $p \leq 0.01$; ‡ $p \leq 0.001$

RQ 4: Hierarchal Multiple Regression of Dependent Variables

With a final sample size of 93 participants, G*Power version 3.1.9.2 (2017) was used to re-calculate how many predictors could be inputted into a model to maintain a type II error at or above 0.80 with α set to 0.05 and subsequent effect sizes. According to Field (2013), an effect size of 0.10 is considered small, 0.30 is medium, and 0.50 showcases a large effect. The G*Power calculation found that five predictors, rather than the original goal of seven, could be

employed with a total sample size of 93 participants. Following analysis of bivariate correlations, data was analyzed using hierarchal multiple regression analysis (blockwise entry method in SPSS) of BO, STS, and CS. In accordance with the G*Power calculation five key variables with a maximum of six were selected for entry into each model to limit a type II error. Multivariate regression analysis allowed for exploration of categorical and continuous variables in explaining and predicting the phenomenon of interest (Plichta-Kellar & Kelvin, 2013). Homoscedasticity assumptions of the BO raw data for hierarchal multiple regression of the dependent variables were met. Variables were entered into the model informed by theory and hypothesis testing regarding the ProQOL Scale (Stamm, 2010). In addition, variables known from prior research published in peer-review literature were entered first, with new variables entered sequentially in accordance with hierarchal multiple regression (Field, 2013).

Burnout Regression Model

Theoretical and known factors related to BO from the published literature were entered into Model 1, 2, and 3 for hierarchal regression analysis (Table 4.8). Factors included age (Hegney et al., 2014), sleep hours (Stamm, 2010), depression (Harr et al., 2014), intent-to-leave the education program, perceived stress (Lin & Lin, 2016; Rudman et al., 2014), and core self-evaluation (Lin et al., 2017). Model 1 and 2 findings indicated that the younger the student, the higher the BO level. The same principle occurred for sleep, in that lower amounts of sleep were predictive of burnout. A student who reported being diagnosed with depression also carried predictive capacity for burnout. Model 3 allowed the researcher to test if perceived stress, core self-evaluation, and intent-to-leave made a difference in predicting BO, over-and-above the previously entered variables in Models 1 and 2. The findings revealed perceived stress and core self-evaluation were significant contributors adding explanatory power of the model.

Table 4.8. Standardized Coefficients (Beta) for Hierarchal Regression Analysis of Burnout

Variables	Model 1	Model 2	Model 3
Age	-.299**	-.313**	-.062
Sleep Hours		-.202*	.083
Depression		.213*	-.045
Perceived Stress Scale			.418‡
Core Self-Evaluations Scale			-.368**
Intent to Leave Education Program			.126
R ² Change	0.09	0.11	0.44
R ²	0.090	0.196	0.635

*p<0.05, **p≤0.01, ‡p≤0.001

Model 3 Effect Size calculated in G*Power = 1.7397, Power = 1.000

The final model predicting burnout included age, sleep hours, depression, perceived stress, core self-evaluation, and intent-to-leave the education program. As predictors were entered into the three models, the R² Change value increased sequentially. The model explained 63.5% of the variance in scores ($F_{6, 86} = 24.911, p \leq 0.001$) fully powered with a very large effect size of 1.74. Within the third model, core self-evaluation ($\beta = -0.368, p \leq 0.01$) and perceived stress ($\beta = 0.418, p \leq 0.001$) were significantly predictive of burnout. Greater levels of student self-efficacy measured by the Core Self-Evaluations Scale, was inversely related to burnout; whereas, perceived stress was significantly, related to greater levels of burnout as part of CF.

Secondary Traumatic Stress Regression Model

Raw STS outcome scores were assessed for normal distribution as per the Kolmogorov-Smirnov ($p = .002$) and Shapiro-Wilk ($p = .040$) tests. These statistically significant findings ($p < 0.05$) revealed that the outcome variable was non-normally distributed. Following log 10 transformation of the STS dependent variable, the assumptions for regression analysis testing were met (Kolmogorov-Smirnov, $p = .200$; Shapiro-Wilk, $p = .423$). Subsequently, known factors of STS discussed in the nursing and allied health literature as well as theoretical variables of interest were entered into three models (Table 4.9). The predictors included age (Knight, 2010), average amount of sleep per night in a week (Stamm, 2010), prior traumatic life events measured by the Life Events Checklist (Jacobowitz et al., 2015; Stamm, 2010), followed by perceived stress (Harr et al., 2014; Paspaliaris & Hicks, 2010), intent-to-leave (Coetzee & Klopper, 2010; Lin & Lin, 2016; Peters, 2018; Rudman & Gustavsson, 2012), and core self-evaluation (Lin et al., 2017; Mason, 2018).

Table 4.9. Standardized Coefficients (Beta) for Hierarchal Regression Analysis of STS

Variables	Model 1	Model 2	Model 3
Age	-.234*	-.294**	-.162
Sleep Hours		-.215*	-.069
LEC		.294**	.232*
Perceived Stress Scale			.129
Core Self-Evaluations Scale			-.178
Intent to Leave Education Program			.175
R ² Change	0.06	0.13	0.13
R ²	0.055	0.189	0.320

* $p < 0.05$, ** $p \leq 0.01$

Model 3 Effect Size calculated in G*Power = 0.4706, Power = 0.999

As values were entered, the R² Change value increased from Model 1 and 2 and did not further increase from Model 2 to Model 3. This indicated that inclusion of the new predictors

did not greatly contribute to explaining the overall variance. The final model explained 32% of the variance for STS ($F_{6, 86} = 6.756, p \leq 0.001$), powered at 99% with a moderate-to-large effect size of 0.47. The significant predictor of STS within Model 3 was prior traumatizing events ($\beta = 0.232, p < 0.05$). All other variables were not unique, significant predictors of the STS subscale. These findings contribute to factors of relevance to CF, which is comprised of both BO and STS.

Compassion Satisfaction Regression Model

Assessment of the normal distribution for the CS outcome variable revealed significant findings as per the Kolmogorov-Smirnov ($p = .023$) and Shapiro-Wilk ($p = .039$) tests indicating non-normal distribution. Following log 10 transformation of the CS dependent variable, assumptions for normal distribution were met (Kolmogorov-Smirnov, $p = .191$; Shapiro-Wilk, $p = .199$). Subsequently, factors of interest informed by the published literature for CS were entered into Model 1, 2, and 3 for hierarchal multiple regression analysis (Table 4.10). Predictors included age (Hegney et al., 2014), average amount of hours of sleep per night in one week (Stamm, 2010), core self-evaluation (Mason, 2018), perceived stress, and intent-to-leave the education program (Coetzee & Klopper, 2010; Harr et al., 2014; Paspaliaris & Hicks, 2010; Peters, 2018; Rudman & Gustavsson, 2012; Rudman et al., 2014). As the five predictive variables were entered into each model, the R^2 Change value increased from Model 1 and 2, and subsequently decreased in Model 3 as perceived stress and intent-to-leave were added.

Table 4.10. Standardized Coefficients (Beta) for Hierarchal Regression Analysis of CS

Variables	Model 1	Model 2	Model 3
Age	.120	-.037	-.043
Sleep Hours		-.332**	-.305**
Core Self-Evaluations Scale		.509‡	.339*
Perceived Stress Scale			-.026
Intent to Leave Education Program			-.261*
R^2 Change	0.014	0.210	0.049
R^2	0.014	0.225	0.273

* $p < 0.05$, ** $p \leq 0.01$, ‡ $p \leq 0.001$

Model 3 Effect Size calculated in G*Power = 0.3755, Power = 0.998

The final model explained 27% of the variance for CS ($F_{5, 87} = 6.546, p \leq 0.001$), powered at 99.8% with a moderate effect size of 0.376. Age and levels of perceived stress were not significant predictors of CS. Hours of sleep were inversely associated with CS ($\beta = -0.305, p \leq 0.01$). Students with greater self-efficacy measured by the CSES was a significant predictor of

CS ($\beta = -0.339$, $p < 0.05$); in addition, those who reported less intent-to-leave was predictive of CS ($\beta = -0.261$, $p < 0.05$).

Conclusion

Analysis of the prevalence scores for CS and CF comprised of BO, and STS revealed that undergraduate nursing and psychiatric nursing students are at risk of developing CF and low levels of CS. The findings demonstrate the need for educators to embed intervening strategies that support students' self-efficacy during times of distress. There were no significant differences between CS and CF outcome variables across the year-in-program and program-type, however nearly one-third reported low levels of CS, over one-quarter reported BO, and 28% reported high levels of STS. Students in long-term care/palliative care rotations reported significantly higher levels of BO in comparison to students placed in-patient units such as medical-surgical areas and episodic care areas that include out-patient and emergency department settings. Regression analysis revealed that low self-efficacy and high perceived stress were predictive of BO and an increased amount of PTEs were predictive of STS. Students with high levels of self-efficacy, less sleep, and less intent-to-leave were predictive of having CS. These findings offer new perspectives and opportunities for further research in understanding CS and CF in pre-licensure nursing and psychiatric nursing students who are expected to uphold professional values and engage in helping work within their education program.

CHAPTER 5: DISCUSSION AND IMPLICATIONS

This study explored CS and CF comprised of BO and STS using the ProQOL Scale (Stamm, 2010) in a sample of undergraduate nursing and psychiatric nursing students enrolled full time at a university located in western Canada. The aims of the study were two-fold. Firstly, to determine the presence of CS, BO, and STS among BN and BPN students. Secondly, to investigate the association of these factors with intent-to-leave, and measures of self-efficacy, perceived stress, and prior exposures to PTEs through correlation and regression analysis testing. At the present time, this is the only study that has explored CS and CF within a sample of Canadian undergraduate nursing and psychiatric nursing students. Discussion related to the four major research questions (RQs) guiding the study is presented below. In addition, three curricular strategies that address the study findings are discussed.

RQ 1: Prevalence of Compassion Satisfaction and Fatigue

Within the sample of respondents, 31% of students reported low levels of CS, 27% reported high levels burnout, and 28% reported high levels of STS. High levels of CF and low levels of CS were not present in midwifery students (Beaumont et al., 2016) or radiology therapy students (Flinton et al., 2018) leading the researcher to hypothesize that 60% of respondents would report high levels of CS. In actuality, the prevalence findings in the study were akin to those of McArthur et al. (2017), who reported that among Australian veterinary students, 21% reported low CS, 30% reported high BO, and 24% reported high STS. Mason and Nel (2012) also found that only 21% of South African nursing students reported low levels of CS, with high levels burnout reported at 30% and STS at 24%. These findings indicate that veterinary medicine, nursing and psychiatric nursing students are at greater risk of CF than other pre-licensure student groups warranting intervention within BN and BPN undergraduate programming.

Higher levels of CF measured by BO and STS in nursing and psychiatric nursing students could be related to the nature of providing care within the student role. Pre-licensure health students are confronted by numerous stressors that include being expected to uphold professional values and behaviours while engaged in their studies. BN and BPN students are responsible for caring for their assigned patient/client for the duration of an eight or 12-hour shift. The responsibility of providing care for prolonged periods of time and being unable to leave a patient

during times of existential crises, bad news, death, pain, or suffering with a terminal illness has been attributed to traumatic stress in nurses (Boyle, 2011) and BO in nursing students (Ayaz-Alkaya et al., 2018). The combination of clinical learning in addition to classroom theory and laboratory learning also places numerous demands on nursing students that contribute to exhaustion and BO (Tomaschewski-Barlem et al., 2014). Rella et al. (2009) argued that nursing education places a significant burden of psycho-social stress on students. As such, students ought to engage in stress management techniques while enrolled early in their undergraduate studies to not only recognize, but learn how to navigate stress and fatigue effectively as part of their curricular programming.

RQ 2: Program-Type and Year-in-Program

There were no significant differences found between the CS and CF outcome variables across the year-in-program and program type. Studies of nursing students indicated that differences between the year-in-program may exist. In a study conducted by Michalec et al. (2013), the researchers reported that nursing students in their first year had significantly lower levels of burnout compared to those in their second year. Similar findings were inferred by Mason and Nel (2012) in South African nursing students. In contrast, Rudman and Gustavsson (2012) found that Swedish nursing students reported sequential increases in BO levels as they progressed in their program, decreased levels of preparedness to entry the workforce, and higher intentions-to-leave the nursing profession within one year of entering professional practice. The lack of differences between program-type and year-in-program within the current study may have been due to similar curricular structures and teaching styles to meet the professional entry-level requirements between the two programs being delivered at the same university institution. Longitudinal cohort studies may shed further light on student differences between year-in-program and/or internal self-efficacy characteristics of students as they progress through their programs. Despite no significant differences in the outcome variables when comparing year-in-program and program type, the high prevalence scores for STS and BO and low levels of CS warrant curricular intervention within each program.

RQ 3: Variable Relationships

A variety of relationships were analyzed in the data set using Pearson's r correlation for variables that met parametric assumptions and Phi coefficients for comparison of binomial data. Comparisons of means were conducted using ANOVA and Mann-Whitney U -tests. A number of

hypotheses formed at the outset of the study regarding relationships among the variables were realized on analysis. Discussion of the dependent variables followed by the independent variables is presented below.

Dependent Variable Relationships

Inverse relationships of CS with CF measures of STS and BO were consistent with the published literature in undergraduate pre-licensure students (Flinton et al., 2018; Mason & Nel, 2012). Although the inverse relationship of CS and STS was not statistically significant in the current study; these findings were akin to those by McArthur and colleagues (2017). Furthermore, the direction of the relationships among the dependent variables is consistent with the transactional nature of stress and coping (Lazarus & Folkman, 1984) and Stamm's theoretical model of CS and CF (Stamm, 2010). Cronbach's alpha scores achieved in the study were satisfactory with CS and STS achieving scores greater than 0.70. The BO alpha was 0.67, however, this is higher than the BO alpha of 0.48 achieved by Michalec et al. (2013) in their study of American nursing students. The findings for the current study highlight internal consistency and construct validity with appropriateness of the ProQOL Scale when employed with undergraduate nursing and psychiatric nursing students. Further use of the ProQOL Scale with future studies will continue to build on retest reliability of the measure.

Demographics, Clinical Settings and Dependent Variables

Gender comparisons in the study did not yield statistical significance for the dependent variables of CS and CF comprised of BO and STS. Caution is warranted in comparing results of the current study to the literature as only four males, or 4% of the total number of participants, responded within the current study. According to the Canadian Institute for Health Information, this falls below the current Canadian national average of 9% of men in nursing and 19% of men in psychiatric nursing (Canadian Institute for Health Information [CIHI], 2020). Studies of medical students suggested that males are at greater risk of burnout than are their female counterparts (Lin & Lin, 2016; Lin et al. (2017). In one study, female nursing students showed higher stress levels related to feeling a lack of competence and delivering bad news (Valero-Chillerón, et al., 2019). More research is needed with adequate power to make gender, CF, and CS comparisons among Canadian BN and BPN students.

Students placed in long-term care/palliative care settings had statistically significant higher levels of burnout as opposed to episodic care areas and acute in-patient units. According

to Potter et al. (2010) nurses who work in home health settings and oncology clinics were at greater risk of CF. Berger et al. (2015) reported that feelings of exhaustion and hardship with subsequent CF were present in nurses involved in end-of-life situations. Moreover, long-term care settings breed the ‘perfect storm’ of clients who have numerous comorbidities, complex and demanding care needs, and often poor patient-to-nurse staff ratios combined with the rising tide of horizontal/lateral and vertical workplace violence (Littlejohn, 2012). Students in this type of clinical environment must also contend with the additional challenge of meeting course and clinical objectives, which may be an additional source of strain and exhaustion giving rise to BO.

RQ 4: Predictor and Dependent Variables

Analysis of predictor variables for BO and STS showcased factors of relevance to the development of CF and CS within the ProQOL theoretical model (Stamm, 2010). As subcomponents of CF, the significant beta weights within Model 3 for the BO and STS regression analyses were the PSS and CSES within the BO regression analysis, and the LEC within the STS regression analysis. Interestingly, intent-to-leave was not a significant predictor within the CF subscales of STS and BO within the current study, however, this variable was useful in predicting CS. Additional variables that predicted CS were hours of sleep and CSES. These findings assist in understanding what contributing factors were predictive of CS and CF within a sample of Canadian BN and BPN students.

Burnout

BO is one component of CF within the ProQOL Scale that was analyzed using regression analysis. The finding that high levels of perceived stress and low self-efficacy were predictive of BO were consistent with those found by Mason (2018) in that CF is closely related to nursing students with pessimistic attitudes. This negative or pessimistic perspective is reflective of those who scored lower on the core self-evaluation measure. These findings support the hypothesis that negative affectivity or neuroticism are significant predictors of BO (Flinton et al., 2018; Škodová et al., 2013). These findings support that creating a positive teaching and learning environment that fosters openness, creativity, efficiency, organization and overall positive psychology toward learning new skills may play a role decreasing CF. Among university students with Type D Personality (prone to negative emotion or a pessimistic affect), Williams and Wingate (2012) found that social support and emotion-focused coping can decrease perceived stress. Student peers, educators in the university and clinical settings, in addition to

clinical nurse leaders and managers can play a significant role in providing interpersonal supports for students to decrease CF development. For example, a student should be provided access to debriefing supports offered within the clinical setting given their direct role in care provision as a member of the health care team should a distressing incident occur.

In a study of nurses and nursing students, Garrosa et al. (2008) found that significant predictors of BO included job stressors such as workload, experience with pain and death, conflict interactions, younger age, and role ambiguity. These findings suggest that students are at risk of CF during their placements in long-term care settings prior to entry into the workforce as fully-fledged professionals. Given that long-term care, death and dying, and caring for the elderly are embedded into all undergraduate curricula, targeting and timing curricular interventions within courses that occur alongside long-term care and palliative care settings for a greater impact are warranted to diffuse stress, exhaustion, and BO. For example, embedding stress management techniques within curricula prior to or during a long-term care/palliative placement offers a focused approach to assist students in meeting the challenges and demands specific to this type of clinical environment.

Within the current study, being married/partnered or single, having a prior diagnosis of anxiety, and work hours were not significantly associated with CS or CF. These findings are in contradiction to anecdotal reports of faculty concerns for students managing a prior mental health diagnosis and perceptions of student exhaustion while engaged in work and school. Dasan et al. (2015) found that being single was associated with burnout where being married offers some protective effect. Whereas, in the current study, being married/partnered was not a significant factor. McArthur et al. (2017) found, in part, that female veterinary students who had paid employment in a veterinary clinic unrelated to a school placement had higher amounts of CS. In contrast, Harr et al. (2014) in their study of master and bachelor of social work students found that the number of hours employed and BO were statistically significant. These conflicting findings imply that it may depend on the type of work the student is engaged in, and if that work contributes to a protective effect in garnering CS or resultant CF due to exhaustion and BO. Pre-licensure students should be informed of the risk and presence of CF within caring disciplines during their undergraduate studies. Raising awareness may serve as a useful tool for students to self-monitor for the presence of CF and engage in activities that foster CS.

Secondary Traumatic Stress

STS is the second component of CF measured within the ProQOL Scale that was analyzed using regression analysis. As indicated by the STS hierarchical regression model, having a higher number of PTEs was predictive of STS. This finding is further supported by Stamm's (2010) theoretical model of CS and CF that incorporated primary traumatic exposures as playing a role in development of STS. In a study of nursing students, researchers found that the more adverse childhood experiences (ACEs) female students had experienced, the higher the levels of BO and depression when compared to men (McKee-Lopez et al., 2019). These findings imply that students entering the nursing and psychiatric nursing profession with numerous PTEs may be at significant risk to STS. These students may require additional counseling supports during their education to develop positive coping strategies prior to entering the workforce as registered practitioners. Students should be encouraged to mobilize personal coping supports and access counseling services available at the university and/or through private counseling services often covered by student union dues or under other health plans. The findings revealed that this predictor was significant within the CS regression model.

Compassion Satisfaction

Despite having less sleep, students with high levels of self-efficacy reported less intent-to-leave and higher levels of CS. These findings could be indicative that students with lower amounts of sleep may have high levels of engagement in their studies as nursing and psychiatric nursing students, that when combined with high levels of commitment to their program of study, yield CS. Of note, the current study did not explore *quality* of sleep in conjunction with *quantity* of sleep highlighting an area of future study. Salmela-Aro et al. (2009) found that undergraduate students with high levels of optimism had high levels of work engagement with low levels of BO up to 17 years post-graduation. According to Garrosa et al. (2008), students with a hardy personality who felt they had a greater sense of control and commitment were inversely associated with BO. These findings support that high levels of self-efficacy protect students from BO and potentiate CS formation. Of note, positive sleep hygiene practices improve academic performance and neurocognitive performance indicating that educators should discuss the importance of sleep for academic success (Abdulghani et al., 2012; Gilbert & Weaver, 2010). More research is needed to explore the link between sleep and compassion satisfaction.

Fostering Student Self-Care in Pre-Licensure Programs

The current study findings highlight that 31% of students reported low levels of CS, 27% reported high levels burnout, and 28% reported high levels of STS. In addition, students who had low levels of self-efficacy and high levels of perceived stress were predictive of BO and an increased amount of PTEs was predictive of STS. Whereas, students with high levels of self-efficacy were predictive of CS. Teaching and advocating that students be engaged in positive coping and self-care practices to sustain student well-being while enrolled in nursing and psychiatric nursing programs are warranted for a long-lasting career. This study adds to a growing call for undergraduate pre-licensure programs to integrate measures that bolster students' coping and self-efficacy during times of distress. Curricular strategies that include a four-week mindfulness course, coping and crisis peer-debriefing workshops, and incorporating emotional intelligence development throughout pre-licensure curricula are discussed.

Mindfulness

Development of mindfulness skills may serve to protect students against CF and promote the protective effects of CS (Clarkson et al., 2019). A four-week course that addresses weekly learning objectives centred on mindfulness can be integrated early within pre-licensure programming. Ouliaris (2019) promoted mindfulness meditation and reflective writing as two methods that can be integrated into curricula to increase student capacity for self-awareness. Chung et al. (2018) recommended four components of a mindfulness-based curriculum that involved: (1) One weekly 60-minute classroom session every week for four weeks; (2) Prerequisite reading assignments to accompany the classroom sessions with topics such as foundational wellness and mindfulness concepts, stress, burnout, and healthy practices; (3) Individual meditation practice and journal assignments; and (4) Developing a personalized wellness plan. This strategy can be integrated into block-style theory courses that run over a four-to-six-week period. Rees et al. (2016) advocated that students are taught mindfulness skills to prevent burnout, especially for students with high levels of neuroticism and maladaptive coping. Adoption of the above measures within curricula may serve to promote student well-being and CS during their undergraduate studies and as licensed practitioners following graduation.

Coping and Crisis Peer-Debriefing

Davies and Coldridge (2015) advocated that students should be trained in how to cope with traumatic situations. Coping and crisis peer-debriefing workshops can be integrated into curricula aligned with entry into clinical practice within their program. A student-drafted personal wellness plan assignment (Chung et al., 2018) embedded as part of a theory or clinical course may assist students in mobilizing their own coping supports during times of real and perceived crisis. In addition to integrating positive coping practices within undergraduate programming, other training programs may serve to support students. For example, crisis peer-debriefing education may serve as a benefit for students if a classmate is not comfortable seeking assistance from an instructor or if immediate counseling is not available. Grief training may also serve pre-licensure health students when efforts to save a life are unsuccessful or when providing care to clients faced by life threatening circumstances (Siktrom et al., 2019). Use of self-reflection exercises, group discussion, simulation, role-play, and communication skills can assist in building student capacity, affective coping skills, and when communicating ‘bad news’ in the clinical setting.

Emotional Intelligence

Interventions that foster emotional intelligence (Goleman & Boyatzis, 2017), civility, and positive student coping resources prior to their entry into the workforce are warranted. Nurturing emotional intelligence in students can serve to reduce stressors, mitigate workplace bullying, unfriendliness, and hazing within nursing (Littlejohn, 2012). Nurse educators and managers play a significant role in creating and leading environments that promote teamwork, positive working relationships, and positive working conditions (Hunsaker et al., 2015). Positive faculty role-modeling and curricula that fosters a culture centered on civility (Clark, 2017) that addresses bullying and workplace violence are advisable.

Adopting emotional intelligence competencies requires managers and educators in clinical and classroom settings to embrace trauma-informed practices that support clinical staff and students while engaged in caring work during times of traumatic stress (i.e., severe patient suffering or death of a patient). These efforts serve to promote provider resiliency, emotional regulation, and encouragement that enables flourishing. Creating a positive teaching and learning environment that fosters openness, creativity, efficiency, organization, a sense of accomplishment, and overall positive psychology may play a role decreasing CF within student

populations prior to their entry into the workforce. The *PERMA Model* (Seligman, 2011) comprised of Positive emotion, Engagement, Relationships, Meaning, and Accomplishments provides educators an avenue to incorporate aspects of positive psychology within preparational curricula (Slavin et al., 2012). Integrating emotional intelligence development as part of an ‘emotional curriculum’ (van Zyl & Noonan, 2018) could serve as a proactive approach in developing student resilience, coping, self-management, social intelligence, leadership, and emotional self-awareness as learners and entry-level practitioners.

Limitations

Four key limitations are noted within the study that includes use of convenience sampling, limited generalizability, self-report screening tools, and timing of the survey. Participants were recruited from a convenience sample of currently enrolled full-time students at a single university. The small sample size, non-randomness and homogeneity of the sample introduces sampling bias that limits generalization of findings (Shadish et al., 2002). Despite careful selection of validated measurement tools, use of self-report screening tools and questionnaires introduce bias (Polit & Beck, 2017). The participant is expected to report their responses according to the survey tool honestly. However, if responses are inaccurately reported, the reliability of the measures decrease and measurement error occurs (Shadish et al., 2002). Many of the tools adopted within the study serve as screening tools. The ProQOL Scale is noted to function as a conservative screening tool with working professionals (Sinclair et al., 2017; Stamm, 2010). The use of cut scores that delineate scores from the sample as being low, moderate, and high introduces the possibility of ‘false positives’ being identified within the sample. While student nurses may not be considered ‘professionals’, it is important to note that students are socialized into the professional role of the nurse with expectations to adhere to values and competencies expected of registered, practicing nurses identified within the *Code of Ethics* (CNA, 2017). Similarly, “*The Life Events Checklist* is only intended to be a screening measure to evaluate exposure to possible Criterion A events.... It is very challenging to measure total trauma load” (F. Weathers, personal communication, October 30, 2018). Therefore, the function of the tools to serve as screening tools must be noted as a limitation. The survey was administered during the months of February and March 2020 prior to the novel coronavirus pandemic and subsequent closure of university settings. Although undergraduate programming was not affected at the time of survey, a confounding factor such as seasonal affective disorder

which can occur during the dark, winter months may influence scores on the self-report measures.

Areas of Future Research

Five areas of future research are highlighted. Firstly, use of the ProQOL Scale (Stamm, 2010) within longitudinal studies poses a significant area of future research. Not only will longitudinal studies serve to assess different cohorts that enter and progress through each program, longitudinal research can assess students beyond graduation and in their first years as practicing professionals. Furthermore, future analyses can serve to build on re-test reliability of the ProQOL measure currently lacking in the literature. Secondly, conducting a multi-site study would add generalizability of study findings. Thirdly, a study that explores sleep quality and quantity is warranted given that sleep and CS formation is not well understood. Fourth, male and gender non-conforming students should be encouraged to participate in nursing research. The current study only had four male participants and none who identified as 'neither male nor female'. More research is needed with adequate power to make gender comparisons among Canadian BN and BPN students in regard to the ProQOL measure. Lastly, quasi-experimental research designs using the ProQOL measure may be of value to nurse educators. Adopting the ProQOL measure in an experimental research protocol would allow educators to test the effectiveness of interventional curricular and teaching strategies designed to support student coping and self-efficacy.

Dissemination Strategies

There are diverse options available to disseminate the findings of the research study which include journal publications, conferences, and non-traditional methods. Publication within nursing and psychiatric nursing journals is a primary mechanism for dissemination. Journals that will be considered for publication include the *International Journal for Nursing Education Scholarship*, the *Journal of Nursing Education*, *Nurse Education Today*, *Journal of Psychiatric and Mental Health Nursing*, *Advances in Health Sciences Education*, *Journal of Further and Higher Education*, as well as *Work and Stress*. Research findings could be disseminated at conferences nationally, internationally, and locally that include Western and Northern Region Canadian Association of Schools of Nursing (WNRCSN), Canadian Association of Schools of Nursing (CASN), Canadian Nurses Association (CNA), International Council of Nurses (ICN), and Sigma Theta Tau International (STTI). Presentation of findings to

faculty, curricular committees, and students is warranted to generate a plan-of-action to address CF within nursing and psychiatric nursing students. Non-traditional methods for dissemination include web-blogs, You Tube videos, Twitter, and meetings with nursing regulatory and advocacy groups such as the College of Registered Nurses/Registered Psychiatric Nurses of Manitoba, Manitoba Nurses Union, and Association of Regulated Nurses of Manitoba regarding the study findings.

Conclusion

This study shines a light on the issue of CF in pre-licensure undergraduate nursing and psychiatric nursing students. To date, this is the only study that has explored CF and CS within undergraduate nursing and psychiatric nursing students in Canada. Within the study, 31% of students reported low levels of CS, 27% had high levels of BO, and 28% had high levels of STS. Students in long-term care/palliative care rotations reported significantly higher levels of BO in comparison to students placed on in-patient units such as medical-surgical areas and episodic care areas that included out-patient and emergency department settings. Regression analysis revealed that students with low self-efficacy and high perceived stress were predictive of BO. Students with increased exposures to PTEs were predictive of STS. Students with high levels of self-efficacy, less sleep, and commitment to their program with less intent-to-leave were predictive of having CS. Findings of the study assist educators, clinicians, and policy makers to better understand at-risk students and their associated clinical settings, as well as predictors of CS and CF in undergraduate nursing and psychiatric nursing students prior to entering the workforce as newly-licensed professionals. Curricular strategies that bolster students' resilience, coping, and self-efficacy during times of stress, distress, and feelings of exhaustion are warranted prior to entry into the workforce.

REFERENCES

- Abdulghani, H. M., Alrowais, N. A., Bin-Saad, N. S., Al-Subaie, N. M., Haji, A. M. A., & Alhaqwi, A. I. (2012). Sleep disorder among medical students: Relationship to their academic performance. *Medical Teacher, 34 Suppl 1*, S37–S41. <https://doi-org.cyber.usask.ca/10.3109/0142159X.2012.656749>
- Alden, L. E., Regambal, M. J., & Laposa, J. M. (2008). The effects of direct versus witnessed threat on emergency department healthcare workers: Implications for PTSD criterion A. *Journal of Anxiety Disorders, 22*, 1337–1346. doi: 10.1016/j.janxdis.2008.01.013
- American Association of Colleges of Nursing [AACN]. (2008). *The essentials of baccalaureate education for professional nursing practice*. Washington, DC: <https://www.aacnnursing.org/Portals/42/Publications/BaccEssentials08.pdf>
- American Psychiatric Association [APA]. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: APA. <http://www.psych.org/dsm5>
- Arnetz, J. E. (1998) The Violent Incident Form (VIF): A practical instrument for the registration of violent incidents in the health care workplace. *Work & Stress, 12*(1), 17–28. doi: 10.1080/02678379808256846
- Ayaz-Alkaya, S., Yaman-Sözbir, S., & Bayrak-Kahraman, B. (2018). The effect of nursing internship program on burnout and professional commitment. *Nurse Education Today, 68*, 19–22. <https://doi.org/10.1016/j.nedt.2018.05.020>
- Babenko-Mould, Y., & Laschinger, H. K. (2014). Effects of incivility in clinical practice settings on nursing student burnout. *International Journal of Nursing Education Scholarship, 11*(1), 145–154. doi: 10.1515/ijnes-2014-0023
- Bandura, A. (1977). Self-efficacy: Towards a unifying theory of behavioural change. *Psychological Review, 84*(2), 191–215. doi:10.1037/0033-295X.84.2.191
- Beaumont, E., Durkin, M., Hollins-Martin, C.J., & Carson, J. (2016). Compassion for others, self-compassion, quality of life and mental well-being measures and their association with compassion fatigue and burnout in student midwives: A quantitative survey. *Midwifery, 34*, 239–244. <http://dx.doi.org/10.1016/j.midw.2015.11.002>

- Beck, C. T. (2011). Secondary traumatic stress in nurses: A systematic review. *Archives of Psychiatric Nursing*, 25(1), 1-10. doi:10.1016/j.apnu.2010.05.005
- Berger, J., Polivka, B., Smoot, E.A., & Owens, H. (2015). Compassion fatigue in pediatric nurses. *Journal of Pediatric Nursing*, 30(6), E11–E17.
<https://doi.org/10.1016/j.pedn.2015.02.005>
- Bianchi, R., Schonfeld, I. S., & Laurent, E. (2015). Burnout-depression overlap: A review. *Clinical Psychology Review*, 36, 28–41. <http://dx.doi.org/10.1016/j.cpr.2015.01.004>
- Boyle, D. A. (2011). Countering compassion fatigue: A requisite nursing agenda. *The Online Journal of Issues in Nursing*, 16(1), 1–1. doi: 10.3912/OJIN.Vol16No01Man02
- Bride, B. E., Radey, M., & Figley, C. R. (2007). Measuring compassion fatigue. *Clinical Social Work Journal*, 35, 155–163. <http://doi.org/10.1007/s10615-007-0091-7>
- Budden, L. M., Birks, M., Cant, R., Bagley, T., & Park, T. (2017). Australian nursing students' experience of bullying and/or harassment during clinical placement. *Collegian*, 24, 125–133. <http://dx.doi.org/10.1016/j.colegn.2015.11.004>
- Canadian Association of Schools of Nursing [CASN]. (2015). *National nursing education framework: Final report*. Ottawa, ON: <https://www.casn.ca/wp-content/uploads/2014/12/Framwork-FINAL-SB-Nov-30-20151.pdf>
- Canadian Federation of Nurses Unions [CFNU]. (2017). *Enough is enough: Putting a stop to violence in the health care sector – a discussion paper*. Ottawa, ON: https://nursesunions.ca/wp-content/uploads/2017/05/CFNU_Enough-is-Enough_June1_FINALlow.pdf
- Canadian Institute for Health Information [CIHI]. (2020). *Health workforce in Canada, 2019 — quick stats*. Ottawa, ON: <https://www.cihi.ca/en/nursing-in-canada-2019>
- Canadian Nurses Association [CNA]. (2017). *Code of ethics for registered nurses*. Ottawa, ON: www.cna-aiic.ca
- Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, 4(1), 92–100.
- Chachula, K., Myrick, F., & Yonge, O. (2015). Letting go: How newly graduated registered nurses in Western Canada decide to exit the nursing profession. *Nurse Education Today*, 35, 912–918. doi: 10.1016/j.nedt.2015.02.024

- Chung, A. S., Felber, R., Han, E., Mathew, T., Rebillot, K., & Likourezos, A. (2018). Targeted mindfulness curriculum for medical students during their emergency medicine clerkship experience. *Western Journal of Emergency Medicine*, *19*(4), 762–766. doi: 10.5811/westjem.2018.4.37018.
- Clark, C. (2017). *Creating and sustaining civility in nursing education* (2nd ed.). Indianapolis, IN: Sigma Theta Tau International Honor Society of Nursing.
- Clark, C. M., & Springer, P. J. (2010). Academic nurse leaders' role in fostering a culture of civility in nursing education. *Journal of Nursing Education*, *49*(6), 319–325. doi: 10.3928/01484834-20100224-01
- Clarke, C. M., Kane, D. J., Rajacich, D. L., & Lafreniere, K. D. (2012). Bullying in undergraduate clinical nursing education. *Journal of Nursing Education*, *51*(5), 269–276. doi:10.3928/01484834-20120409-01
- Clarkson, M., Heads, G., Hodgson, D., & Probst, H. (2019). Does the intervention of mindfulness reduce levels of burnout and compassion fatigue and increase resilience in pre-registration students? A pilot study. *Radiography*, *25*, 4–9. <https://doi.org/10.1016/j.radi.2018.08.003>
- Coetsee, S. K., & Klopper, H. C. (2010). Compassion fatigue within nursing practice: A concept analysis. *Nursing and Health Sciences*, *12*, 235–243. doi: 10.1111/j.1442-2018.2010.00526.x
- Cohen, A. (1998). An examination of the relationship between work commitment and work outcomes among hospital nurses. *Scandinavian Journal of Management*, *14*(1-2) 1–17. [https://doi.org/10.1016/S0956-5221\(97\)00033-X](https://doi.org/10.1016/S0956-5221(97)00033-X)
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, *24*(4), 385–396. <http://www.jstor.org/stable/2136404>
- Collura, G. L., & Lende D. H. (2012). Post-traumatic stress disorder and neuroanthropology: Stopping PTSD before it begins. *Annals of Anthropological Practice*, *36*, 131–148. doi:10.1111/j.2153-9588.2012.01096.x

- Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory and NEO Five-Factor Inventory: Professional Manual*. Odessa, FL: Psychological Assessment Resources, Inc.
- Creswell, J. W., & Plano-Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Thousand Oaks, CA: SAGE Publications.
- Dasan S., Gohil, P., Cornelius, V, & Taylor, C. (2015). Prevalence, causes and consequences of compassion satisfaction and compassion fatigue in emergency care: A mixed-methods study of UK NHS consultants. *Emergency Medicine Journal*, *32*, 588–594. doi: 10.1136/emmermed-2014-203671
- Davies, S., & Coldridge, L. (2015). ‘No man’s land’: An exploration of the traumatic experiences of student midwives in practice. *Midwifery*, *31*, 858–864. <http://dx.doi.org/10.1016/j.midw.2015.05.001>
- Deary, I. J., Watson, R., & Hogston, R. (2003). A longitudinal cohort study of burnout and attrition in nursing students. *Journal of Advanced Nursing*, *43*(1), 71–81.
- Denzin, N. K., & Lincoln, Y. S. (2018). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. K. Denzin and Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (5th ed.). Thousand Oaks, CA: SAGE Publications.
- Duarte, J., & Pinto-Gouveia, J. (2017). Empathy and feelings of guilt experienced by nurses: A cross-sectional study of their role in burnout and compassion fatigue symptoms. *Applied Nursing Research*, *35*, 42–47. <http://dx.doi.org/10.1016/j.apnr.2017.02.006>
- Einarsen, S., Hoel, H., & Notelaers, G. (2009). Measuring exposure to bullying and harassment at work: Validity, factor structure and psychometric properties of the Negative Acts Questionnaire-Revised. *Work & Stress*, *23*(1), 24–44. doi: 10.1080/02678370902815673
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*, 175–191. https://www.psychologie.hhu.de/fileadmin/redaktion/Fakultaeten/Mathematisch-Naturwissenschaftliche_Fakultaet/Psychologie/AAP/gpower/GPower3-BRM-Paper.pdf
- Fawcett, J. (1996). On the requirements for a metaparadigm: An invitation to dialogue. *Nursing Science Quarterly*, *9*(3), 94–97.
- Field, A. *Discovering statistics using IBM SPSS statistics* (4th ed.). Thousand Oaks, CA: Sage Publications.

- Figley, C. (1995). Compassion fatigue as secondary traumatic stress: An overview. In C. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 1–20). New York, NY: Brunner- Mazel.
- Figley, C. (2002). Introduction. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 1–14). New York, NY: Routledge.
- Flinton, D., Cherry, P., Thorne, R., Mannion, L., O’Sullivan, C., & Khine, R. (2018). Compassion satisfaction and fatigue: An investigation into levels being reported by radiotherapy students. *Journal of Radiotherapy in Practice*, *17*, 364-367. doi: 10.1017/S1460396918000274
- G*Power. (2017). *Version 3.1.9.2*. <http://www.gpower.hhu.de/>
- Geoffrion, S., Lamothe, J., Morizot, J., & Giguère, C. É. (2019). Construct validity of the Professional Quality of Life (ProQoL) Scale in a sample of child protection workers. *Journal of Traumatic Stress*, *32*, 566–576. doi: 10.1002/jts.22410
- Gilbert, S. P., & Weaver, C. C. (2010). Sleep quality and academic performance in university students: A wake-up call for college psychologists. *Journal of College Student Psychotherapy*, *24*, 295–306. doi: 10.1080/87568225.2010.509245
- Giorgi, G., Mancuso, S., Fiz-Perez, F., Castiello D’Antonio, A., Mucci, N., Cupelli, V., & Arcangeli, G. (2016). Bullying among nurses and its relationship with burnout and organizational climate. *International Journal of Nursing Practice*, *22*, 160–168. doi:10.1111/ijn.12376
- Goleman, D., & Boyatzis, R. (2017, February 6). Emotional intelligence has 12 elements. Which do you need to work on? *Harvard Business Review*, *84*(2), 1-5. <https://hbr.org/2017/02/emotional-intelligence-has-12-elements-which-do-you-need-to-work-on>
- Gómez-Urquiza, J. L., Vargas, C., De la Fuente, E. I., Fernández -Castillo, R., & Cañadas-De la Fuente, G. A. (2017). Age as a risk factor for burnout syndrome in nursing professionals: A meta-analytic study. *Research in Nursing & Health*, *40*, 99–110. doi: 10.1002/nur.21774
- Government of Canada. (2014). *Tri-council policy statement: Ethical conduct for research involving humans*. Ottawa, ON: http://www.pre.ethics.gc.ca/pdf/eng/tcps2-2014/TCPS_2_FINAL_Web.pdf

- Garrosa, E., Moreno-Jiménez, B., Liang, Y., & González, J. L. (2008). The relationship between socio-demographic variables, job stressors, burnout, and hardy personality in nurses: An exploratory study. *International Journal of Nursing Studies*, *45*, 418–427.
doi:10.1016/j.ijnurstu.2006.09.003
- Gray, M. J., Litz, B. T., Hsu, J. L., & Lombardo, T. W. (2004). Psychometric properties of the Life Events Checklist. *Assessment*, *11*(4), 330–341. doi: 10.1177/1073191104269954
- Halbesleben, J. R. B., & Demerouti, E. (2005). The construct validity of an alternative measure of burnout: Investigating the English translation of the Oldenburg Burnout Inventory. *Work & Stress*, *19*(3), 208–220.
- Harr, C., Brice, T. S., Riley, K., & Moore, B. (2014). The impact of compassion fatigue and compassion satisfaction on social work students. *Journal of the Society for Social Work and Research*, *5*(2), 233–251. doi: 10.1086/676518
- Harr, C., & Moore, B. (2011). Compassion fatigue among social work students in field placements. *Journal of Teaching in Social Work*, *31*(3), 350–363.
<https://doi.org/10.1080/08841233.2011.580262>
- Hegney, D.G., Craigie, M., Hemsworth, D., Osseiran-Moisson, R., Aoun, S., Francis, K., & Drury, V. (2014). Compassion satisfaction, compassion fatigue, anxiety, depression and stress in registered nurses in Australia: Study 1 results. *Journal of Nursing Management*, *22*(4), 506–518. doi: 10.1111/jonm.12160
- Heinemann, L. V., & Heinemann, T. (2017). Burnout research: Emergence and scientific investigation of a contested diagnosis. *Sage Open*, *7*(1), 1–12. doi: 10.1177/2158244017697154
- Heritage, B., Rees, C. S., & Hegney, D. G. (2018). The ProQOL-21: A revised version of the Professional Quality of Life (ProQOL) scale based on Rasch analysis. *PLoS ONE*, *13*(2), 1–20. [Article ID: e0193478]. <https://doi.org/10.1371/journal.pone.0193478>
- Hevezi, J. A. (2016). Evaluation of a meditation intervention to reduce the effects of stressors associated with compassion fatigue among nurses. *Journal of Holistic Nursing*, *34*(4), 343–350. doi: 10.1177/0898010115615981
- Hewlett, E., & Moran, V. (2014). *Making mental health count: The social and economic costs of neglecting mental health care*. Paris, France: Organisation for Economic Co-operation

- and Development [OECD] Health Policy Studies: OECD Publishing.
<https://doi.org/10.1787/9789264208445-en>
- Hinderer, K. A., VonRueden, K. T., Friedmann, E., McQuillan, K. A., Gilmore, R., Kramer, B., & Murray, M. (2014). Burnout, compassion fatigue, compassion satisfaction, and secondary traumatic stress in trauma nurses. *Journal of Trauma Nursing*, *21*(4), 160–169. doi: 10.1097/JTN.0000000000000055
- Hochberg, Y. (1988). A sharper Bonferroni procedure for multiple tests of significance. *Biometrika*, *75*, 800–802. <http://www.jstor.org/stable/2336325>
- Hooper, C., Craig, J., Janvrin, D. R., Wetsel, M. A., & Reimals, E. (2010). Compassion satisfaction, burnout and compassion fatigue among emergency nurses compared with nurses in other selected inpatient specialties. *Journal of Emergency Nursing*, *36*(5), 420–427. doi: 10.1016/j.jen.2009.11.027
- Hunsaker, S., Chen, H-C., Maughan, D., & Heaston, S. (2015). Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *Journal of Nursing Scholarship*, *47*(2), 186–194.
- Hunt, P. R., Boyd, V. S., Gast, L. K., Mitchell, A., & Wilson, W. (2012). Why some students leave college during their senior year. *Journal of College Student Development*, *53*(5), 737–742. <https://doi.org/10.1353/csd.2012.0068>
- Jacobowitz, W., Moran, C., Best, C., & Mensah, L. (2015). Post-traumatic stress, trauma-informed care, and compassion fatigue in psychiatric hospital staff: A correlational study. *Issues in Mental Health Nursing*, *36*(11), 890–899. doi: 0.3109/01612840.2015.1055020
- Jameton, A. (1984). *Nursing practice: The ethical issues*. Englewood Cliffs, NJ: Prentice-Hall.
- Jarrad, R., Hammad, S., Shawashi, T., & Mahmoud, N. (2018). Compassion fatigue and substance use among nurses. *Annals of General Psychiatry*, *17*(Article 13), 1–8. <https://doi.org/10.1186/s12991-018-0183-5>
- Joanna Briggs Institute [JBI]. (2017). *Critical appraisal tools*. https://joannabriggs.org/ebp/critical_appraisal_tools
- Joinson, C. (1992). Coping with compassion fatigue. *Nursing*, *22*(4), 116–121. PMID: 1570090
- Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). The core self-evaluations scale: Development of a measure. *Personnel psychology*, *56*(2), 303–331.

- Kinker, B., Arfken, C., & Morreale, M. (2018). Secondary traumatic stress in medical students. *Academic Psychiatry, 42*, 181–182. doi: 10.1007/s40596-017-0767-4
- Knight, C. (2010). Indirect trauma in the field practicum: Secondary traumatic stress, vicarious trauma, and compassion fatigue among social work students and their field instructors. *The Journal of Baccalaureate Social Work, 15*(1), 31–52.
- Laeque, S. H., Bilal, A., Babar, S., Khan, Z., & Rahman, S. U. (2018). How patient-perpetrated workplace violence leads to turnover intention among nurses: The mediating mechanism of occupational stress and burnout, *Journal of Aggression, Maltreatment & Trauma, 27*(1), 96–118. doi: 10.1080/10926771.2017.1410751
- Laschinger, H. K., Grau, A. L., Finegan, J., & Wilk, P. (2010). New graduate nurses' experiences of bullying and burnout in hospital settings. *Journal of Advanced Nursing, 66*(12), 2732–2742. doi: 10.1111/j.1365-2648.2010.05420.x
- Laschinger, H. K., Grau, A. L., Finegan, J., & Wilk, P. (2012). Predictors of new graduate nurses' workplace well-being: Testing the job demands resources model. *Health Care Management Review, 37*(2) 175–186. Doi: 10.1097/HMR.0b013e31822aa456
- Laschinger, H. K., & Read, E. A. (2016). The effect of authentic leadership, person-job fit, and civility norms on new graduate nurses' experiences of coworker incivility and burnout. *The Journal of Nursing Administration, 46*(11), 574–580. doi: 10.1097/NNA.0000000000000407
- Lasiuk, G. C., & Hegadoren, K. M. (2006). Posttraumatic stress disorder part I: Historical development of the concept. *Perspectives in Psychiatric Care, 42*(1), 13–20. <https://doi.org/10.1111/j.1744-6163.2006.00045.x>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer Publishing Company.
- Ledoux, K. (2015). Understanding compassion fatigue: Understanding compassion. *Journal of Advanced Nursing, 71*(9), 2041–2050. doi: 10.1111/jan.12686
- Lin, C. C., Lin, B. Y-J., & Lin, C. D. (2016). Influence of clerk's personality on their burnout in the clinical workplace: A longitudinal observation. *BMC Medical Education, 16*(30), 1–8. doi: 10.1186/s12909-016-0553-0

- Lin, C. D., & Lin, B. Y-J. (2016). Training demands on clerk burnout: Determining whether achievement goal motivation orientations matter. *BMC Medical Education*, *16*(214), 1–8. doi: 10.1186/s12909-016-0742-x
- Lin, Y. K, Chen D-Y, & Lin, B. Y-J. (2017). Determinants and effects of medical students' core self-evaluation tendencies on clinical competence and workplace well-being in clerkship. *PLoS ONE*, *12*(11), 1–12. <https://doi.org/10.1371/journal.pone.0188651>
- Littlejohn, P. (2012). The missing link: Using emotional intelligence to reduce workplace stress and workplace violence in our nursing and other health care professions. *Journal of Professional Nursing*, *28*(6), 360–368. <https://doi.org/10.1016/j.profnurs.2012.04.006>
- Lombardo, B., & Eyre, C. (2011). Compassion fatigue: A nurse's primer. *The Online Journal of Issues in Nursing*, *16*(1), 1–1. doi: 10.3912/OJIN.Vol16No01Man03.
- Manitoba Nurses Union [MNU]. (2015). *Post-traumatic stress disorder (PTSD) in the nursing profession: Helping Manitoba's wounded healers*. Winnipeg, MB: http://tools.hhr-rhs.ca/index.php?option=com_mtree&task=att_download&link_id=12021&cf_id=68&language=en
- Maslach, C., Jackson, S.E., Leiter, M.P., & Schaufeli, W.B. (1996). *Maslach burnout inventory* (3rd ed.). Mountain View, CA: CPP, Inc.
- Mason, H. D. (2018). The relationship between existential attitudes and professional quality of life among nursing students. *Journal of Psychology in Africa*, *28*(3), 233–236, <https://doi.org/10.1080/14330237.2018.1435049>
- Mason, H. D., & Nel, J. A. (2012) Compassion fatigue, burnout and compassion satisfaction: Prevalence among nursing students, *Journal of Psychology in Africa*, *22*(3), 451–455. <https://doi.org/10.1080/14330237.2012.10820554>
- Mathias, C. T., & Wentzel, D. L. (2017). Descriptive study of burnout, compassion fatigue and compassion satisfaction in undergraduate nursing students at a tertiary education institution in KwaZulu-Natal. *Curationis*, *40*(1), 1–6. <https://doi.org/10.4102/curationis.v40i1.1784>
- McArthur, M. L., Andrews, J. R., Brand, C., & Hazel, S. J. (2017). The prevalence of compassion fatigue among veterinary students in Australia and the associated psychological factors. *Journal of Veterinary Medical Education*, *4*(1), 9–21. doi: 10.3138/jvme.0116-016R3

- McKee-Lopez, G., Robbins, L., Provencio-Vasquez, E., & Olvera, H. (2019). The relationship of childhood adversity on burnout and depression among BSN students. *Journal of Professional Nursing, 35*(2), 112–119. <https://doi.org/10.1016/j.profnurs.2018.09.008>
- McKenna, L., & Rolls, C. (2011). Undergraduate midwifery students' first experiences with stillbirth and neonatal death. *Contemporary Nurse, 38*(1-2), 76–83.
- Michalec, B., Diefenbeck, C., & Mahoney, M. (2013). The calm before the storm? Burnout and compassion fatigue among undergraduate nursing students. *Nurse Education Today, 33*, 314–320. <http://dx.doi.org/10.1016/j.nedt.2013.01.026>
- Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA statement. *PLoS Medicine, 6*(7): e1000097. doi:10.1371/journal.pmed1000097
- Moneta, G. B. (2011). Need for achievement, burnout, and intention to leave: Testing an occupational model in educational settings. *Personality and Individual Differences, 50*(2), 274–278. doi: 10.1016/j.paid.2010.10.002
- Moola, S., Munn, Z., Tufanaru, C., Aromataris, E., Sears, K., Sfetcu, R., Currie, M., Qureshi, R., Mattis, P., Lisy, K., & Mu, P. F. (2017). Systematic reviews of etiology and risk. In E. Aromataris & Z. Munn (Eds.), *Joanna Briggs Institute reviewer's manual*. <https://reviewersmanual.joannabriggs.org/>
- Morrisette, P. J. (2004). *The pain of helping: Psychological injury of helping professionals*. New York, NY: Brunner-Routledge.
- Morse, J. M., & Field, P. A. (1995). Principles of data analysis. In *Qualitative research methods for health professionals* (2nd ed.). (pp. 125–149). Thousand Oaks, CA: SAGE Publications.
- Nivison, D. S. (1996). *The ways of Confucianism: Investigations in Chinese philosophy*. Peru, IL: Carus Publishing Company.
- Norris, F. H., & Hamblen, J. L. (2004). Standardized self-report measures of civilian trauma and PTSD. In J. P. Wilson, T. M. Keane, & T. Martin (Eds.), *Assessing psychological trauma and PTSD* (pp. 63–102). New York, NY: Guilford Press.
- Nuyen, A. T. (2008). Is Mencius a motivational internalist? In V. Shen & K. Shun (Eds.), *Confucian ethics is retrospect and prospect* (pp. 79–92). Washington, DC: The Council for Research in Values and Philosophy.

- Ouliaris C. (2019). The importance of self-awareness: Musings of a medical student. *Australasian Psychiatry*, 27(3), 267–269. doi: 10.1177/1039856219839479
- Paspaliaris, T., & Hicks, R. E. (2010). Coping strategies employed by university students in handling their occupational role stress. In R. E. Hicks (Ed.), *Personality and individual differences: Current directions* (pp. 225–233). Bowen Hills, QLD: Australian Academic Press.
- Peters, E. (2018). Compassion fatigue in nursing: A concept analysis. *Nursing Forum*, 53, 466–480. doi: 10.1111/nuf.12274
- Plichta-Kellar, S., & Kelvin, E. A. (2013). *Munro's statistical methods for health care research* (6th ed.). Philadelphia, PA: Wolters Kluwer | Lippincott, Williams & Wilkins.
- Polit, D., & Beck, C. (2017). *Nursing research: Generating and assessing evidence for nursing practice* (10th ed.). Philadelphia, PA: Wolters Kluwer | Lippincott, Williams & Wilkins.
- Pospos, S., Young, I., Downs, N., Iglewicz, A., Depp, C., Chen, J. Y., Newton, I., Lee, K., Light, G. A., & Zisook, S. (2018). Web-based tools and mobile applications to mitigate burnout, depression, and suicidality among healthcare students and professionals: A systematic review. *Academic Psychiatry*, 42, 109–120. <https://doi.org/10.1007/s40596-017-0868-0>
- Potter, P., Deshields, T., Divanbeigi, J., Berger, J., Cipriano, D., Norris, L., & Olsen, S. (2010). Compassion fatigue and burnout: Prevalence among oncology nurses. *Clinical Journal of Oncology Nursing*, 14(5), E56–E62. doi: 10.1188/10.CJON.E56-E62
- Rella, S., Winwood, P. C., & Lushington, K. (2009). When does nursing burnout begin? An investigation of the fatigue experience of Australian nursing students. *Journal of Nursing Management*, 17(7), 886–897.
- Rees, C. S., Heritage, B., Osseiran-Moisson, R., Chamberlain, D., Cusack, L., Anderson, J., Terry, V., Rogers, C., Hemsworth, D., Cross, W., & Hegney, D. G. (2016). Can we predict burnout among student nurses? An exploration of the ICWR-1 model of individual psychological resilience. *Frontiers in Psychology*, 7: 1072, 1–11. doi: 10.3389/fpsyg.2016.01072
- Risjord, M. (2009). Rethinking concept analysis. *Journal of Advanced Nursing*, 65(3), 684–691. doi: 10.1111/j.1365-2648.2008.04903.x
- Ríos-Risquez, M. I., García-Izquierdo, M., de los Ángeles Sabuco-Tebar, E., Carrillo-Garcia, C., & Solano-Ruiz, C. (2018). Connections between academic burnout, resilience, and

- psychological well-being in nursing students: A longitudinal study. *Journal of Advanced Nursing*, 74, 2777–2784. doi: 10.1111/jan.13794
- Rohatinsky, N., Chachula, K., Compton, R. M., Sedgwick, M., Press, M., & Lane, B. (2017). Nursing student preference for block vs nonblock clinical models. *Journal of Nursing Education*, 56(3), 152–157. doi:10.3928/01484834-20170222-06
- Rudman, A., & Gustavsson, J. P. (2012). Burnout during nursing education predicts lower occupational preparedness and future clinical performance: A longitudinal study. *International Journal of Nursing Studies*, 49, 988–1001. <http://dx.doi.org/10.1016/j.ijnurstu.2012.03.010>
- Rudman, A., Gustavsson, P., & Hultell, D. (2014). A prospective study of nurses' intentions to leave the profession during their first five years of practice in Sweden. *International Journal of Nursing Studies*, 51, 612–624. <http://dx.doi.org/10.1016/j.ijnurstu.2013.09.012>
- Saldivar, M. G. (2012, June 5). *A primer on survey response rate*. Learning Systems Institute – Florida State University. https://mgsaldivar.weebly.com/uploads/8/5/1/8/8518205/saldivar_primer_on_survey_response.pdf
- Salmela-Aro, K., Tolvanen, A., & Nurmi, J-E. (2009). Achievement strategies during university studies predict early career burnout and engagement. *Journal of Vocational Behavior*, 75, 162–172. doi: 10.1016/j.jvb.2009.03.009
- Schaufeli, W. B., Martínez, I. M., Marques-Pinto, A., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of Cross-Cultural Psychology*, 33(5), 464–481.
- Seligman, M. E. (2011). *Flourish: A visionary new understanding of happiness and well-being*. New York, NY: Free Press.
- Shadish W., Cook, T., & Campbell, D. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Belmont, CA: Wadsworth Cengage Learning.
- Shen, J., Yu, H., Zhang, Y., & Jiang, A. (2015). Professional quality of life: A cross-sectional survey among Chinese clinical nurses. *Nursing & Health Sciences*, 17(4), 507–515. doi: 10.1111/nhs.12228

- Sikstrom, L., Saikaly, R., Ferguson, G., Mosher, P. J., & Bonato, S. (2019). Being there: A scoping review of grief support training in medical education. *PLoS ONE*, *14*(11), 1–16 [Article ID: 0224325]. <https://doi.org/10.1371/journal.pone.0224325>
- Sinclair, S., Raffin-Bouchal, S., Venturato, L., Mijovic-Kondejewski, J., & Smith-MacDonald, L. (2017). Compassion fatigue: A meta-narrative review of the healthcare literature. *International Journal of Nursing Studies*, *69*, 9–24. <http://dx.doi.org/10.1016/j.ijnurstu.2017.01.003>
- Škodová, Z., Lajciakova, P., & Banovcinova, L. (2013). Burnout syndrome among health care students: The role of Type D personality. *Nurse Education Today*, *33*(11), 1311–1315. doi: 10.1016/j.nedt.2013.02.023.
- Slavin, S. J., Schindler, D., Chibnall, J. T., Fendell, G., & Shoss, M. (2012). PERMA: A model for institutional leadership and culture change. *Academic Medicine*, *87*(11), 1481. doi: 10.1097/ACM.0b013e31826c525a
- Stamm, B. H. (2002). Measuring compassion satisfaction as well as fatigue: Developmental history of the compassion satisfaction and fatigue test. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 107–122). New York, NY: Routledge.
- Stamm, B. H. (2010). *The concise ProQOL manual* (2nd ed.). Pocatello, ID: ProQOL.org. Available from http://www.proqol.org/uploads/ProQOL_Concise_2ndEd_12-2010.pdf
- Terry, L. M., & Carroll, J. (2008). Dealing with death: First encounters for first-year nursing students. *British Journal of Nursing*, *17*(12), 760–765.
- Tomaschewski-Barlem, J.G., Lunardi, V. L., Lunardi, G. L., Devos-Barlem, E. L., da Silveira, R. S., & Silveira Vidal, D. A. (2014). Burnout syndrome among undergraduate nursing students at a public university. *Revista Latino-Americana de Enfermagem*, *22*(6), 934–941. doi: 10.1590/0104-1169.3254.2498
- Tully, A. (2004). Stress, sources of stress and ways of coping among psychiatric nursing students. *Journal of Psychiatric and Mental Health Nursing*, *11*(1), 43–47.
- University of Saskatchewan Information and Communication Technologies Services & Support. (2019). *SurveyMonkey FAQs*. Saskatoon, SK: ICT. Retrieved from <https://www.usask.ca/ict/services/research-technologies/survey-monkey/faq.php#5>
- Valero-Chillerón, M. J., González-Chordá, V. M., López-Peña, N., Cervera-Gasch, Á., Suárez-Alcázar, M. P., & Mena-Tudela, D. (2019). Burnout syndrome in nursing students: An

- observational study. *Nurse Education Today*, 76, 38-43.
<https://doi.org/10.1016/j.nedt.2019.01.014>
- van Zyl, A. B., & Noonan, I. (2018). The Trojan War inside nursing: An exploration of compassion, emotional labour, coping and reflection. *British Journal of Nursing*, 27(20), 1192–1196. doi: 10.12968/bjon.2018.27.20.1192
- Walker, L. O., & Avant, K. C. (2011). *Strategies for theory construction in nursing* (5th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Watson, J. (1997). The theory of human caring: Retrospective and prospective. *Nursing Science Quarterly*, 10(1), 49–52.
- Weathers, F. W., Blake, D. D., Schnurr, P. P., Kaloupek, D. G., Marx, B. P., & Keane, T. M. (2018). *The life events checklist for DSM-5 (LEC-5) – Standard*.
https://www.ptsd.va.gov/professional/assessment/te-measures/life_events_checklist.asp#obtain
- Weisberg, J. (1994). Measuring workers' burnout and intention to leave. *International Journal of Manpower*, 15(1), 4–14.
- Wijdenes, K. L., Badger, T. A., & Sheppard, K. G. (2019). Assessing compassion fatigue risk among nurses in a large urban trauma center. *The Journal of Nursing Administration*, 49(1), 19–23. doi: 10.1097/NNA.0000000000000702
- Williams, C. J., Dziurawiec, S., & Heritage, B. (2018). More pain than gain: Effort-reward imbalance, burnout, and withdrawal intentions within a university student population. *Journal of Educational Psychology*, 110(3), 378–394.
<http://dx.doi.org/10.1037/edu0000212>
- Williams, L., & Wingate, A. (2012). Type D personality, physical symptoms and subjective stress: The mediating effects of coping and social support. *Psychology and Health*, 27(9), 1075–1085. <http://dx.doi.org/10.1080/08870446.2012.667098>
- Wilson J. (1963). *Thinking with concepts*. Cambridge, UK: Cambridge University Press.
- Wolfe, J., Kimerling, R., Brown, P., Chrestman, K., & Levin, K. (1997). *The Life Stressor Checklist– Revised (LSC-R)* [Measurement instrument]. Retrieved from <https://www.ptsd.va.gov/professional/assessment/te-measures/lsc-r.asp>

Wong, D. B. (2015). Growing virtue: The theory and science of developing compassion from a Mencian perspective. In B. Bruya (Ed), *The philosophical challenge from China* (pp. 23–58). Cambridge, MA: The MIT Press.

APPENDIX A: ETHICAL APPROVALS



Behavioural Research Ethics Board (Beh-REB) 23-Apr-2019

Certificate of Approval

Application ID: 1072

Principal Investigator: Noelle Rohatinsky

Department: College of Nursing

Locations Where Research

Activities are Conducted: Brandon University, Canada

Student(s): Kathryn Chachula

Funder(s):

Sponsor:

Title: Compassion Fatigue in Undergraduate Psychiatric Nursing and Nursing Students

Approved On:

Expiry Date:

Approval Of: Appendix A: Recruitment Letter

Appendix B: Consent Protocol

Appendix C: Survey

Appendix D: Core Certificate

Acknowledgment Of:

Review Type: Delegated Review

CERTIFICATION

The University of Saskatchewan Behavioural Research Ethics Board (Beh-REB) is constituted and operates in accordance with the current version of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2 2014). The University of Saskatchewan Behavioural Research Ethics Board has reviewed the above-named project. The proposal was found to be acceptable on ethical grounds. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to this project, and for ensuring that the authorized project is carried out according to the conditions outlined in the original protocol submitted for ethics review. This Certificate of Approval is valid for the above time period provided there is no change in experimental protocol or consent process or documents.

Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Research Ethics Board consideration in advance of its implementation.

ONGOING REVIEW REQUIREMENTS

In order to receive annual renewal, a status report must be submitted to the REB Chair for Board consideration within one month prior to the current expiry date each year the project remains open, and upon project completion. Please refer to the following website for further instructions: <https://vpresearch.usask.ca/researchers/forms.php>.

Digitally Approved by Vivian Ramsden, Vice Chair
Behavioural Research Ethics Board
University of Saskatchewan

Brandon University Research Ethics Committee (BUREC)

Ethics Certificate for Research Involving Human Participants

The Brandon University Research Ethics Committee (BUREC) has reviewed and approved this ethics proposal in accordance with the current *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2-2014)*, the *Brandon University Policy on Research Involving Humans*, and the *Brandon University Research Ethics Committee (BUREC) Policies and Procedures*.

This approval is subject to the following conditions:

1. Approval is granted only for the research and purposes as described in the ethics application.
2. Ethics Certification is valid for up to five (5) years from the date approved, pending receipt of Annual Progress Reports. As per *BUREC Policies and Procedures*, Section 6.0, "At a minimum, continuing ethics research review shall consist of an Annual Report for multi-year projects and a Final Report at the end of all projects... Failure to fulfill the continuing research ethics review requirements is considered an act of non-compliance and may result in the suspension of active ethics certification; refusal to review and approve any new research ethics submission, and/or others as outlined in Section 10.0".
3. Any changes made to the protocol must be reported to the BUREC prior to implementation. See *BUREC Policies and Procedures* for more detail.
4. Any deviations to the research or adverse events must be submitted to the BUREC as soon as possible.

As per *BUREC Policies and Procedures*, Section 10.0, "Brandon University requires that all faculty members, staff, and students adhere to the *BUREC Policies and Procedures*. The University considers non-compliance and the inappropriate treatment of human participants to be a serious offence, subject to penalties, including, but not limited to, formal written documentation including permanently in one's personnel file, suspension of ethics certification, withdrawal of privileges to conduct research involving humans, and/or disciplinary action."

Principal Investigator:	Ms. Kathryn Chachula, University of Saskatchewan
Title of Project:	Compassion Fatigue in Undergraduate Psychiatric Nursing and Nursing Students
Co-Investigators:	n/a
Faculty Supervisor: (if applicable)	Dr. Noelle Rohatinsky, University of Saskatchewan Dr. Gerri Lasiuk, University of Saskatchewan
Research Ethics File #:	22466
Date of Approval:	April 25, 2019
Ethics Expiry Date:	April 25, 2024
Authorizing Signature:	 <hr style="width: 40%; margin: 0 auto;"/>
	Mr. Christopher Hurst Chair, Brandon University Research Ethics Committee (BUREC)

APPENDIX B: RECRUITMENT LETTER

The following information will be presented in the body of the email sent to all nursing and psychiatric nursing students enrolled at Brandon University on the Brandon campus.

Dear student,

We are seeking participation from undergraduate students from the Psychiatric Nursing and Nursing Programs at Brandon University to complete a survey research study. Completion of the survey will take approximately 20-40 minutes. We are investigating the level of compassion satisfaction and compassion fatigue (comprised of burnout and secondary traumatic stress) you may experience in your role as an undergraduate psychiatric nursing or nursing student at Brandon University.

The study is being conducted by Kathryn Chachula in the Department of Nursing, Dr. Philip Goernert in the Department of Psychology at Brandon University, and researchers from the University of Saskatchewan. The goal of the study is to inform undergraduate curricula and determine if targeted intervention strategies are needed that support undergraduate students during their studies.

Your decision to participate is entirely your own. You can withdraw at any time without explanation and you can refuse to answer any question without penalty. Your participation or withdrawal will in no way affect your grades or standing in your program. All of the information you provide will remain anonymous. If you have questions about the study, please contact Kathryn Chachula at 204-571-8580 or email at chachulak@brandonu.ca.

To participate in the study and review the risks and benefits of the study, please click on the link below.

We would like to thank you for your interest in participating in research that can serve to improve your learning experience at Brandon University.

Sincerely,
Kathryn Chachula RN, PhD(c)
Assistant Professor, Department of Nursing

APPENDIX C: CONSENT & CONFIDENTIALITY

The following information will comprise the 'title page' on the SurveyMonkey® site:

INFORMED CONSENT

Welcome to the Compassion Fatigue Study. Thank you in advance for completing this survey. Only students in the Bachelor of Nursing program and the Bachelor of Science in Psychiatric Nursing program at Brandon University are eligible to participate in this study. The research team needs your participation so that we can understand your experience of compassion satisfaction and compassion fatigue. Please read below for details about the study and your rights as a participant.

THE STUDY

You are invited to participate in the Compassion Fatigue Study. The results of the study will be used to inform undergraduate curricula in the nursing and psychiatric nursing programs at Brandon University. Ultimately, the goal of the research is to identify strategies to reduce stress and burnout associated with compassion fatigue.

RESEARCH TEAM

This study is led by principal investigator Kathryn Chachula RN, PhD(c), Assistant Professor, Faculty of Health Studies, Brandon University.

The research team includes:

Dr. Noelle Rohatinsky (University of Saskatchewan)
Dr. Gerri Lasiuk (University of Saskatchewan)
Dr. Phillip Goernert (Brandon University)
Dr. Valerie Macdonald Dickinson (University of Saskatchewan)
Dr. Carol Bullin (University of Saskatchewan)
Dr. Don Leidl (University of Saskatchewan)

If you have any questions regarding the study, please contact Kathryn Chachula at chachulak@brandonu.ca or 204-571-8580.

YOUR ROLE

1. The survey may take you up to 40 minutes to complete.
2. Confidentiality: Participation in the survey is anonymous to ensure no part of your responses can be traced back to the research team.
3. Data Security: To ensure all data is secure, it will be stored on a password-protected computer in the locked office of the primary investigator.
4. Risk: Due to the anonymous nature of this survey study there is limited risk associated with participation. However, the research team acknowledges that you may experience emotional challenges in responding to the survey that assesses the level of joy you receive (or not) from providing help and assistance to others related to your role as a student in the clinical practice environment. All students are encouraged to access counseling services available to all Brandon University students available through Student Services as per the following website: <https://www.brandonu.ca/personal-counselling/>. The site contains wellness information on topics related to stress, anxiety, depression, trauma, sexual assault, and sleep. Students are also encouraged to download and access the i.m.well app endorsed by Brandon University which is available for free download to a device of your choosing.
5. Potential Benefits: This study will showcase the experiences and perspectives of undergraduate nursing and psychiatric nursing students with the aim of improving professional supports, informing undergraduate curricula, and the development of targeted intervention strategies that support undergraduate students.
6. Your participation in the study is completely voluntary. Although the research team hopes you will complete the survey in its entirety, you may stop at any point and there is no penalty.
7. Due to the anonymous nature of this study, it is not possible to withdraw your data after the online survey has been submitted.
8. Study participants will not be compensated for their time, but you may benefit professionally from the research findings that will deepen the understanding of Compassion Fatigue within nursing and psychiatric nursing students.
9. Data collected within this survey is housed on a Canadian server. Although the research team has taken reasonable prevention measures, any data sent electronically or stored online may be legally accessed by domestic federal or provincial authorities.
10. Consenting to participate in this study does not waive any rights you have to legal recourse in the event of research-related harm.

If you have any ethical concerns or questions about the study, please contact the Brandon University Research Ethics Committee (BUREC) at: burec@brandonu.ca or 204-727-9712.

You may also contact the University of Saskatchewan Research Ethics Board at ethics.office@usask.ca or call toll-free toll free 1-888-966-2975.

By completing and submitting the questionnaire, **YOUR FREE AND INFORMED CONSENT IS IMPLIED** and indicates that you understand the above conditions of participation in this study.

APPENDIX D: SURVEY INSTRUMENTS

Demographic Data

1) My gender identity is:

- Female.
- Male.
- Neither male nor female.

2) Please report your numerical age by entering numerical values below (i.e. 21).

I am _____ years old.

3) Please specify your type of undergraduate education program:

- Psychiatric Nursing.
- Nursing.

4) I am enrolled in the program:

- Full time.
- Part time.

5) I am currently in the following year of my program

- Year 2.
- Year 3.
- Year 4.

6) My ethnicity closely relates to the following heritage:

- Indigenous (i.e. First Nations, Inuit, and/or Métis).
- Caucasian.
- Visible minority (i.e. Black, Asian, Hispanic, and/or Indonesian).

7) My most current clinical placement within the education program is:

- Long term care or Palliative setting.
- Medicine or Surgery.
- Emergency or Rural/Emergency placement.
- Acute Psychiatric Unit.
- Community or Out-patient setting.
- Pediatrics.

8) My relationship status is:

- Single (not married or partnered).
- Married/Partnered.
- Separated/Divorced.
- Widowed.

9) I am a parent living with children:

- No.
- Yes.

10) The highest level of education I have achieved is:

- Grade 12.
- College certificate or diploma.
- Some post-secondary courses other than nursing/psychiatric nursing.
- University degree.

11) My current employment status is:

- Not working during the school term.
- Casual hours.
- Part time.
- Full time.

12) Within the last four weeks, please report the average amount of hours worked per week using numerical values below. If you are not working, enter 0.

I work on average _____ hours per week.

13) Please report the average amount of sleep per night in a week (ie. 7)

I sleep on average _____ hours per night.

14) I have been diagnosed in the past with Post-Traumatic Stress Disorder by a Physician or Nurse Practitioner:

- No.
- Yes.

15) I have been diagnosed in the past with depression by a Physician or Nurse Practitioner:

- No.
- Yes.

16) I have been diagnosed in the past with anxiety by a Physician or Nurse Practitioner:

- No.
- Yes.

17) Within the past four weeks, I am currently enrolled in the following type of clinical rotation:

- Non-Block clinical*: attending clinical 1-2 days per week with co-occurring classes/labs (usually over the 10-12-week term).
- Block clinical*: attending *clinical only* with *no other co-occurring courses* (in clinical setting for a 2-13-week block period of time).
- I am in classes only.

Professional Quality of Life (Version 5)

When you help people, you have direct contact with their lives. As you may have found, your compassion for those you help as a student in the nursing or psychiatric nursing program can affect you in positive and negative ways. Below are some questions about your experiences, both positive and negative, as a student nurse or student psychiatric nurse.

Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the last 30 days.

Event	Never	Rarely	Sometimes	Often	Very Often
1. I am happy.					
2. I am preoccupied with more than one person I help.					
3. I get satisfaction from being able to help people.					
4. I feel connected to others.					
5. I jump or am startled by unexpected sounds.					
6. I feel invigorated after working with those I help.					
7. I find it difficult to separate my personal life from my life as a helper.					
8. I am not as productive in clinical because I am losing sleep over traumatic experiences of a person I am helping or helped.					
9. I think that I might have been affected by the traumatic stress of those I help.					
10. I feel trapped in my role as a student nurse					
11. Because of my role as a student, I have felt "on edge" about various things.					
12. I like my role as a helper.					
13. I feel depressed because of the traumatic experiences of the people I help.					
14. I feel as though I am experiencing the trauma of someone I have helped.					
15. I have beliefs that sustain me.					
16. I am pleased with how I am able to keep up with techniques and protocols when helping others.					
17. I am the person I always wanted to be.					
18. My role as a student makes me feel satisfied.					

19. I feel worn out because of my role as a student.					
20. I have happy thoughts and feelings about those I help and how I could help them.					
21. I feel overwhelmed because my workload seems endless.					
22. I believe I can make a difference through my role as a student.					
23. I avoid certain activities or situations because they remind me of frightening experiences of the people I help.					
24. I am proud of what I can do to help.					
25. As a result of my helping, I have intrusive, frightening thoughts.					
26. I feel “bogged down” by the system.					
27. I have thoughts that I am a “success” as a helper.					
28. I can’t recall important parts of my work as a student when working with trauma victims.					
29. I am a very caring person.					
30. I am happy that I chose to do this work.					

Core Self-Evaluations Scale

Instructions: Below are several statements about you with which you may agree or disagree. Using the response scale below, indicate your agreement or disagreement with each item.

Event	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I am confident I get the success I deserve in life.					
2. Sometimes I feel depressed.					
3. When I try, I generally succeed.					
4. Sometimes when I fail, I feel worthless.					
5. I complete tasks successfully.					
6. Sometimes, I do not feel in control of my work as a student.					
7. Overall, I am satisfied with myself.					
8. I am filled with doubts about my competence.					
9. I determine what will happen in my life.					
10. I do not feel in control of my success in my career.					
11. I am capable of coping with most of my problems.					
12. There are times when things look pretty bleak and hopeless to me.					
13. I think a lot about leaving the nursing/psychiatric nursing program					

Perceived Stress Scale

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 how often you felt or thought a certain way.

Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

Event	Never	Almost Never	Sometimes	Fairly Often	Very Often
1. How often have you been upset because of something that happened unexpectedly?					
2. How often have you felt that you were unable to control the important things in your life?					
3. How often have you felt nervous and "stressed"?					
4. How often have you dealt successfully with irritating life hassles?					
5. How often have you felt that you were effectively coping with important changes that were occurring in your life?					
6. How often have you felt confident about your ability to handle your personal problems?					
7. How often have you felt that things were going your way?					
8. How often have you found that you could not cope with all the things that you had to do?					
9. How often have you been able to control irritations in your life?					
10. How often have you felt that you were on top of things?					
11. How often have you been angered because of things that happened that were outside of your control?					
12. How often have you found yourself thinking about things that you have to accomplish?					
13. How often have you been able to control the way you spend your time?					
14. How often have you felt difficulties were piling up so high that you could not overcome them?					

Life Events Check List (Version 5 – Standard)

Instructions: Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that:

- (a) it happened to you personally;
- (b) you witnessed it happen to someone else;
- (c) you were exposed to it in clinical as part of your student role;
- (d) you learned about it happening to a close family member or close friend
- (e) you're not sure if it fits; or
- (f) it does not apply to you.

Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

Event	Happened to Me	Witnessed It	Part of my Student Role	Happened to a Family Member	Not Sure	Does Not Apply
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)						
2. Fire or explosion						
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)						
4. Serious accident at work, home, or during recreational activity						
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)						
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)						
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)						
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)						
9. Other unwanted or uncomfortable sexual experience						
10. Combat or exposure to a war-zone (in the military or as a civilian)						

11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)						
12. Life-threatening illness or injury						
13. Severe human suffering						
14. Witnessed a sudden violent death (for example, homicide, suicide)						
15. Witnessed a sudden accidental death						
16. Serious injury, harm, or death you caused to someone else						
17. Bothered, bullied, or harassed (ie. jokes, verbal remarks) by someone in the work or school setting (ie. another student, member of the health care team, manager, patient, or a teacher)						
18. Any other very stressful event or experience						

APPENDIX E: BUDGET

Budget summary reported in Canadian dollars

Expense	Cost
Conference Proceedings (registration, travel, and hotel fees)	\$2000.00
SurveyMonkey® (available through the University of Saskatchewan)	0.00
SPSS site license (provided by Brandon University)	0.00
	Total: \$2000.00