Dissertations   UMSL Graduate Works

9-22-2020

The Relationship among Perfectionism, Perceived Stress, and Coping in Baccalaureate Nursing Students

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A Dissertation Submitted to The Graduate School at the University of Missouri-St. Louis
in partial fulfillment of the requirements for the degree
Doctor of Philosophy in Nursing

December 2020

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Abstract

Perfectionism in nursing students is an understudied problem that may affect student and workforce success. Perfectionism has been linked to increased stress and less effective coping styles, as well as depression, anxiety and other psychological alterations. However, it has rarely been studied in nursing students. Studying perfectionism in this population is important because it may increase the likelihood that new nurses will struggle with the stress of practice and it could be a significant factor in early career attrition. The purpose of this descriptive, correlational study was to gain a better understanding of the incidence of perfectionism in a nursing student population, both as a whole and by age group, as well as the relationship between perfectionism, perceived stress, and coping style. In a sample of 184 traditional BSN students from a public, urban University, 106 (57.6%) of the participants were classified as maladaptive perfectionists with a significant decrease in the incidence of maladaptive perfectionism from the younger to the older age groups ($X2 = 10.05$, $p=0.04$). There was a significant relationship between perfectionism and perceived stress and a positive correlation between perfectionism, perceived stress and the use of some dysfunctional coping practices such as denial, venting, self-blame and behavioral disengagement. These findings underscore the need for screening and intervention that could mitigate untoward academic and career effects. Implications for research, education, policy, and practice are offered.

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Dedication:

First and foremost, I would like to thank my committee: Dr. Alicia Hutchings, Dr. Umit Tokac, and Dr. Kamila White. Thank you for your support, guidance, and encouragement throughout this process. I have learned so much from each one of you. I truly could not have done this without you.

To my chair, Dr. Roxanne Vandermause, you knew I could do this before I did. Thank you for all that you have done to help me on this journey. Your passion for research is infectious and your kind and thoughtful leadership inspires me every day. You are a shining example of what it means to be a nurse, an educator, and a scholar and I could not have asked for a better role model.

Dr. Natalie Murphy and Dr. Shawne Manies, you two have been my constant support, my cheerleaders and my shoulders to cry on. I am grateful for your friendship every single day – you helped to make even the most trying parts of the journey a little lighter and more fun. And, to my wonderful colleagues in the UMSL College of Nursing. Thank you for always checking in and helping me push forward. I work with some of the most wonderful people and your encouragement and belief in me is valuable beyond words. I am truly blessed to have such an excellent group of co-workers.

To my husband, Kevin – your love and willingness to take on more than your share of our life responsibilities made all of the difference. Thank you for cheering me on, believing I could do it, and telling me it is ok not to say yes to everything so I could focus on this. You are a wonderful husband and I am so glad we found each other (I also promise, I am done with school). And to my daughters, Emily and Madelyn, thank you for understanding that sometimes mom had to write, for cheering me up with your beautiful smiles, and for being my inspiration to take on this challenge. I hope that it helps you to see that you can do absolutely anything you put your minds to.

Finally, to my parents, Lisa and Terry. You have been my constant support and ultimate cheering section for 41 years. Your faith in me has helped me to not only believe in myself, but to empower my daughters to believe they can do anything too. You taught me the value of education and showed me every day what it means to commit to something and stick with it. You are the absolute best parents any person could hope for and I love and appreciate you with all of my heart.

Chapter 1: Introduction

Nursing school is a stressful experience. Students must balance demanding classroom work with clinical activities and, in many cases, work and family. As stressful as the study of nursing is, the practice is equally so. The transition from school to practice constitutes a particularly high stress period as new nurses learn to apply all that they have learned during their time in school. There has been a significant amount research done on sources of stress and type of coping in nursing students and nurses, however, little has been done to identify the specific components that contribute to stress. This is important because understanding these components will help in the development of more effective interventions to potentially mitigate stressors than impact success in education and, later, in practice.

Perfectionism has been linked to an increase in perceived stress and use of less effective coping mechanisms in a number of groups. There has, however, been a paucity of research regarding perfectionism in nursing students. If nursing students high in perfectionistic tendencies experience higher than typical levels of stress while employing less effective coping strategies, it may lead to their inability to withstand the stress of school and eventually practice, compounding an already significant attrition rate for new nurses in the profession. Therefore, perfectionism in a nursing student population warrants further investigation. In this chapter, the background of the problem and an introduction to the study will be discussed.

Background

Nursing students experience a significant amount of stress during their education. The body response to short term stress is meant to aid the person in successfully surviving the event. When stress is experienced chronically, the impact on the body can

lead to significant physical problems such as high blood pressure, heart disease, and increased susceptibility to infectious diseases. Chronic stress can also lead to significant psychological symptoms such as depression, anxiety, and difficulty with focus and retention of information (McCance, Heuther, Brashers, & Rote, 2014; Tank & Wong, 2015).

Coping is the method by which a person attempts to manage a stressful situation. Adaptive coping mechanisms are seen as positive and involve those things that enable mitigation of the stress response such as problem solving, planning, and seeking social support. Maladaptive coping responses are viewed as negative and involve things that help the person to essentially avoid the stress including procrastination, use of substances, and blaming of others which can actually make the perception of stress more severe and increase the potentially negative impacts on health related to stress (McCance, Heuther, Brashers, & Rote, 2014). Lazarus and Folkman (1987), viewed coping in terms of being problem-focused or emotion-focused. Neither approach is inherently wrong as problem-focused coping tends to be used when the person feels they may be able to impact the outcome while emotion-focused coping is employed when the person does not feel that they can impact the outcome (Lazarus & Folkman, 1987). However, utilizing emotion-focused coping when, in fact, problem-focused coping might prove more useful can lead to increased, rather than decreased stress.

There have been many studies that have sought to better understand the sources of stress and coping in the nursing student population. Gibbons et al., (2009), found that issues related to teaching and learning, clinical placement and course structure, and the demanding and inflexible nature of nursing courses caused the most stress for students.

Goff (2011), discovered that deadlines, an overload of tasks to complete, competition with classmates, anxiety about exams, and perfectionistic tendencies were related to increased stress. Wolf, Stidham, and Ross (2014), found that lack of emotional support, seniority in the program, and low self-esteem, were all associated with higher perceived stress levels. This adds to the understanding of what increases the stress of nursing students, but does not add to the understanding of the role of coping in impacting the stress they experience.

There have been a number of studies exploring the coping styles and impact of coping on the stress of nursing students. Crary (2013) observed that problem-focused coping and lower perceived stress were associated with positive mood and fewer physical symptoms of stress while avoidant coping and higher perceived stress were associated with negative mood and greater physical symptoms. Similarly, Klainin-Yobas et al. (2014) found that higher levels of perceived stress were associated with poorer health and greater mental distress. In a study of emotional intelligence and coping, emotional intelligence was associated with well-being; the use of problem-focused coping increased competence and decreased perceived stress (Por, Barriball, Fizpatrick, & Roberts, 2011). This helps us to better understand the relationship between coping and stress in nursing students, but does not provide information regarding how we might intervene to decrease stress and improve coping.

Interventions to improve the ability of nurses to cope with the stress of the profession have also been studied. Hardiness, or the ability to endure difficult and stressful situations was examined by Henderson (2015) observing that a brief hardiness education program improved burn out and hardiness scores in nurses. Jameson (2013)

found that a hardiness education program did not significantly improve hardiness in a group of nursing students. The application of hardiness interventions for nurses to nursing students have, thus, provided limited information.

The impact of resilience training to improve coping in healthcare providers has also been examined. Resilience training did not improve burn-out, anxiety or depression scores in a study by Mealer et al. (2014). However, Sood et al. (2011) found an improvement in anxiety and perceived stress after a resilience program. Hardiness and resilience have been studied extensively as concepts that protect individuals from stress; however, there has been little research that reliably indicates success in altering performance on resilience or hardiness scales in any predictable way.

Studies on the impact of mindfulness training have been conducted with both nurses and nursing students. Spadaro & Hunker (2016) found that mindfulness training improved concentration and accuracy in nursing students. Van Der Riet et al. (2015) found that mindfulness training helped students with self-awareness, self-care, and focus. In a nursing population, mindfulness has been associated with improved self-compassion (Gauthier, Meyer, Grefe, & Gold, 2015). Sanko, McKay, & Rogers (2016), found no significant improvement in mindfulness in nursing students after training. Mindfulness appears to aid in skills that are important for both nurses and nursing students; however, there is limited indication that it impacts stress.

 Many other stress relief modalities have been studied in nurse and student populations. Chen, Fang, & Fang (2015) found that aromatherapy decreased the stress of a group of nurses. Music therapy was found to significantly decrease perceived stress, heart rate, cortisol, and blood pressure in nurses (Lai & Li, 2011). Hersch et al. (2016),

observed decreased stress in nurses after an online stress management program. Villani et al. (2013) also found decreased stress in response to an electronically delivered stress reduction program. These interventions, while promising for stress reduction, do not provide us with information about what causes some to experience stress at a higher level than others, nor do they help people learn to cope in a more problem-focused way. Furthermore, many of these studies were conducted with practicing nurses and therefore provide a limited understanding of their applicability to nursing student stress.

Problem

There have been many studies that have sought to better understand the sources of stress and coping styles in the nursing student population. However, the work that has been done with the nursing student population has been largely aimed at identifying the facets of nursing school that are stressful and the impact of coping on well-being. Better understanding the way that nursing students view themselves and the stress they experience is also an important part of helping them learn to cope because the appraisal of stressful situations can impact how a person chooses to cope with adversity in all similar situations.

Perfectionism is a concept describing high standards and is associated with high achievement and positive outcomes as well as self-criticism, focus on mistakes, and negative psychological outcomes (Hewitt& Flett, 1991; Rice & Lopez, 2004). Perfectionism has also been associated with higher perceived stress levels and a tendency to utilize less effective coping mechanisms (Ashby & Gnilka, 2017). The construct has been described in a variety of ways and there is still some disagreement regarding whether or not any amount of perfectionism is adaptive or healthy. However, there

appears to be agreement that there is a point at which perfectionism becomes unhealthy and impacts psychological wellbeing.

While perfectionism has been studied in a variety of populations there has been little research examining perfectionism in nursing and nursing student populations specifically. In a study of perfectionism in nurses, investigators reported a significant relationship between maladaptive perfectionism and burn-out as well as an increased tendency to regularly use emotional coping techniques in all situations (Chang, 2012). This suggests that nurses high in maladaptive perfectionism may not cope with the stress of the profession effectively, leading to increased burn-out. If nursing students high in perfectionistic tendencies experience higher than typical levels of stress while employing less effective coping strategies, it may lead to their inability to withstand the stress of school and eventually practice, compounding an already significant attrition rate for new nurses in the profession.

Additionally, there appears to be an increase in the incidence of perfectionism in younger generations. Curran and Hill (2019) found that ratings on the multidimensional perfectionism scale have significantly increased from 1989 to 2016 among university students. This indicates that not only is perfectionism associated with stress and ineffective coping, it is also becoming more prevalent in younger generations, potentially elevating the incidence of perfectionism among current undergraduate nursing students.

Research Purpose and Questions

The purpose of this research is to gain a better understanding of the incidence of perfectionism in a nursing student population, both as a whole and by age group, as well as the relationship between perfectionism, perceived stress, and coping style. While

perfectionism has been studied in a variety of populations there has been little research on this construct in nursing students. It is important to investigate the relationship between perfectionism, perceived stress, and coping within the nursing student population to determine the impact perfectionism has on students' stress levels and coping mechanisms. This research may identify individual factors in the difficulties many new nurses have in the transition to practice. This research is guided by the following research questions:

1. What is the incidence of perfectionism in a group of baccalaureate nursing students?

2. Is there a difference in the incidence of perfectionism in a group of baccalaureate nursing students by age group?

3. What is the relationship between perfectionism, perceived stress and coping style in a group of baccalaureate nursing students?

Significance

Nursing school is a stressful experience as is nursing practice. Students who are high in perfectionistic tendencies may experience higher levels of stress than others. Those students may not only have a more difficult time coping with the stress of nursing education but also coping with the stress of the transition to practice putting career longevity at risk. Recently it was found that one in five newly graduated nurses leave their first job and/or the nursing profession within the first year (Edwards, Hawker, Carrier, and Rees, 2015; Robert Wood Johnson Foundation, 2014). Given the already significant issue with early career attrition in nursing, it is important to investigate a potential individual quality that may increase the risk of higher stress and ineffective

coping. Nursing students who display perfectionistic tendencies could be prone to increased stress and ineffective coping when entering the profession and is an area in need of further investigation. In the next chapter, a detailed discussion of the concept of perfectionism, as well as the relationship between perfectionism, perceived stress, and coping style will be provided.

Chapter 2: Review of the Literature

This chapter focuses on what is known about the impact of stress on the individual, what is known about stress and coping in nursing students and interventions that have been proposed to aid coping in both nurse and nursing student groups. A discussion of the conceptual model, the Transactional Theory of Stress and Coping, will be presented. Additionally, what is known about the concept of perfectionism and the relationship to stress and coping will be presented with a brief discussion of the implications for nursing students and the profession.

Stress, the Individual, and the Impact of Coping

Stress is a common occurrence in life. Stressors can be physical dangers from which the person needed to escape. However, stressors also manifest as psychological or emotional danger and the body responds to it in similar ways. Though the body's physiologic response to stress is meant to be short term, aiding the stressed individual in escaping a threat, when stress becomes chronic in nature, it can lead to a more frequent, almost chronic activation of the stress response leading not only to physical changes but also to psychological responses. The stress response, when activated frequently, can have deleterious effects on the body leading to both physical and psychological dysfunction.

The stress response is a hormonally mediated, two-pronged process controlled by the central nervous and endocrine systems. One component is the action of the sympathetic nervous system (SNS), sometimes referred to as the fight or flight response. Upon exposure to a stressor, the SNS stimulates the release of norepinephrine and epinephrine into the bloodstream. These substances, through action on various receptors,

increase the heart rate and force of contraction, constrict peripheral vessels to shunt blood from the stomach, skin, and urinary tract to the vital organs, and bring about changes in the bronchi, liver, and adipose tissue that aid in oxygenation and make glucose and fatty acids available to fuel the cells as they prepare to fight or run away (McCance, Heuther, Brashers, & Rote, 2014; Tank & Wong, 2015). In addition to the physical response, the release of norepinephrine promotes arousal, leading to many of the psychological symptoms associated with acute stress or fear such as anxiety, vigilance, and a hyper-alert state which, when present chronically, can take a toll on mental well-being (McCance, Heuther, Brashers, & Rote, 2014).

The secondary response to stress inducing stimuli is the hypothalamic, pituitary, adrenal (HPA) axis. Upon the sensation of stress, the hypothalamus releases substances that lead to the release of cortisol. Cortisol supports the increased needs of the cardiovascular system by increasing blood pressure and cardiac output. Cortisol also has a role in altering the metabolism of macronutrients in the body leading to loss of muscle mass and elevation of blood glucose levels and, when chronically present in larger than normal quantities, has an immunosuppressing effect on the body leading to an increased risk of infections and illness (McCance, Heuther, Brashers, & Rote, 2014).

The actions of both the SNS and HPA, when short lived, serve a purpose in the reaction to stress by aiding "escape" from the danger. However, when a person experiences stress chronically, the effects on the cardiovascular, endocrine, and immune systems can increase the risk for disease in nearly every body system. The effects of catecholamines and cortisol demand increased work from the heart, increased resistance in the blood vessels, elevated blood glucose levels, decreased immune system function,

and alteration in the utilization and normal storage of many nutrients in the body (Allen, Kennedy, Cryan, Dinan, & Clarke, 2014).

Coping is the method by which a person attempts to manage a stressful situation. Adaptive coping mechanisms are seen as positive and involve those things that enable mitigation of the stress response such as problem solving, planning, and seeking social support. Maladaptive coping responses are viewed as negative and involve things that help the person to essentially avoid the stress including procrastination, use of substances, and blaming of others which can make the perception of stress more severe and increase the potentially negative impacts on health related to stress (McCance, Heuther, Brashers, & Rote, 2014). The chronic nature of this exposure can lead to an increased risk for physical diseases such as cardiovascular disease, diabetes, and obesity. Chronic stress has also been linked to increased risk for depression, anxiety, and burn-out in nurses as well, which may have a negative impact on the well-being and career longevity of students and practicing nurses (McCance, Heuther, Brashers, & Rote, 2014). Nursing students experience a great deal of stress during their training, a level of stress that often persists as they enter the profession.

Stress and Coping in Nursing Students

There have been many studies that have sought to better understand the sources of stress and coping in the nursing student population. Gibbons et al., (2009), examined the sources of stress for nursing students and the impact on well-being. They found that issues related to teaching and learning caused the most stress followed by issues related to clinical placement and course structure, particularly the demanding and inflexible nature of nursing courses. Teaching and learning issues appeared to have the greatest

impact on well-being scores (Gibbons et al, 2009), suggesting that it is important for educators to receive training to ensure that they utilize the most effective teaching and learning strategies in both the classroom and clinical setting.

In an examination of stress, academic performance, and learned-resourcefulness, Goff (2011) found that the greatest sources of stress for the students surveyed included deadlines, an overload of tasks to complete, competition with classmates, anxiety about exams, and perfectionistic tendencies. The students were surveyed close to final exams which the author points out may have added to the overall perceived stress levels (Goff, 2011).

Predictors of stress for generic and accelerated nursing students were compared and found that lack of emotional support, seniority in the program, and low self-esteem, were all associated with higher perceived stress levels (Wolf, Stidham, & Ross, 2014). They also found that there was not a significant difference in the perceived stress levels between traditional and accelerated students suggesting that type of pre-licensure program does not provide consistent predictive information.

There have been a number of studies exploring the coping styles and impact of coping on the stress of nursing students. In an examination of the relationship between perceived stress, coping, and well-being, Crary (2013) found that problem-focused coping and lower perceived stress were associated with positive mood and fewer physical symptoms of stress while avoidant comping and higher perceived stress were associated with negative mood and greater physical symptoms. This was also related to the work of Klainin-Yobas et al. (2014) who found that higher levels of perceived stress were associated with poorer health and greater mental distress. Their analysis further revealed

that positive coping partially mediated the relationship between perceived stress and

physical/psychological health (Klainin-Yobas, 2014).

Emotional intelligence was explored in relation to stress and coping as well as

clinical performance in a group consisting of diploma, traditional and accelerated nursing

students (Por, Barriball, Fizpatrick, & Roberts, 2011). The authors discovered that

emotional intelligence was associated with well-being; the use of problem-focused

coping increased competence and decreased perceived stress. They found that students in

a traditional program had the highest level of perceived stress (Por, Barriball, Fizpatrick

& Roberts, 2011) suggesting there may be a difference in emotional intelligence between

more traditional aged students versus accelerated students who tend to be older and

frequently have already attained another Bachelor's degree prior to beginning their

nursing education.

The work that has been done with the nursing student populations is largely aimed

at understanding the sources of stress and coping styles of utilized by the population.

While it is helpful to understand the sources of stress for nursing students as well as how

they cope with that stress, more work is needed to examine ways to improve coping for

the various types of students in the nursing student population.

Interventions to Improve Coping in Nurses and Nursing Students

Interventions to improve the ability of nurses to cope with the stress of the

profession have been studied in an effort to manage stress and promote career longevity.

This is important because it provides an avenue for consideration in better preparing

students for the stress of professional nursing practice. The intervention types vary

widely and include hardiness and resilience training, mindfulness meditation, aromatherapy, music therapy, and electronically delivered stress management programs.

Hardiness is a concept originally developed by Kobasa (1979) to better explain why stress caused illness in some but not others. It includes three basic areas: the degree to which a person feels they have control over a situation (internal vs. external locus of control), the degree to which a person is committed to the goal, and the ability to see a stressful situation as a challenge rather than a threat. High degrees of hardiness allow the person to feel empowered as they tackle a stressful situation in an attempt to grow from the encounter (Henderson, 2015).

Henderson (2015), examined the impact of a one-hour hardiness education program on hardiness and burnout in a sample of 50 practicing nurses from an acute care pediatric medical-surgical unit. Instruction included assertiveness training, strategies to increase characteristics associated with hardiness, and ways to increase problem-focused coping. The authors found a statistically significant improvement in burn out and hardiness scores from pre-intervention to post-intervention (Henderson, 2015).

Extending the concept of hardiness to students, some work has been done. A hardiness education program completed with nursing students demonstrated a statistically significant improvement in perceived stress scores but did not experience a significant increase in overall hardiness scores (Jameson, 2013). The authors cited the "short" time frame for the intervention as a limitation. However, Henderson's (2015) study with practicing nurses was a 1-hour class, while the course in the Jameson (2013) study was a 5-week in-person course. Perhaps the students needed more time to incorporate the principles of the course or they should have studied the effects more longitudinally to see

if there were changes in hardiness scores after some time had passed. The application of

hardiness interventions for nurses to nursing students have, thus, provided limited

information.

Resilience or the ability to "bounce back" from adversity has been studied with a

variety of populations, particularly children who have experienced childhood trauma.

There have been a number of studies aimed at exploring the impact of resilience training

in nurses and other medical personnel. One study utilized an in-depth resilience-building

program with a sample of intensive care unit nurses and found that the training did

improve performance on a Post-traumatic Stress scale but that there was not a statistically

significant improvement in burnout, anxiety, or depression scores from pre-intervention

to 12 weeks post-intervention (Mealer et al., 2014). Furthermore, Sood et al. (2011),

examined the impact of a resilience training program on hospital physicians. The

program involved a 90-minute training session. Resilience, perceived stress, anxiety, and

quality of life were all measured at baseline and eight weeks post-intervention, with all

of the measures significantly better by the eight-week mark (Sood, 2011). Both of these

studies were small in sample size. While one study actually examined the impact of the

training on resilience scores, the other did not, making it difficult to compare the

findings.

Hardiness and resilience are both important concepts that help to better explain

why some people handle stress poorly while others seem to take it in stride. They appear

to be important personality traits for protection from adversity, however, there is

conflicting opinion regarding the ease with which we can develop either trait in those

who do not already possess these qualities. If hardiness and/or resilience could be taught,

they would certainly hold promise as ways to alter both stress appraisal and coping style. However, there has been little research that reliably indicates success in altering performance on resilience or hardiness scales in any predictable way.

Mindfulness training is an area of study that has included both practicing nurses and nursing students. Based on the work of Kabat-Zinn (2003), mindfulness meditation is aimed at learning to be truly present in the moment. Nurses and nursing students both have many simultaneous competing priorities therefore mindfulness is thought to help an individual focus more fully on one thing at a time (Spadaro & Hunker, 2016).

In the nursing student population, there have been conflicting findings on the impact of mindfulness. One study found significant improvement in stress after mindfulness training as well as improvement in concentration, accuracy and the ability to shift attention (Spadaro & Hunker, 2016). Another study did not show significant improvement in nursing student's overall mindfulness after a mindfulness education program (Sanko, Mckay, & Rogers, 2016). Lastly, a study exploring student feedback on a mindfulness training program revealed benefits in the areas of self-awareness, attending to proper self-care, focus during study sessions, and being in the moment when working with others. The students also voiced the importance of regularly practicing mindfulness activities to continue the improvements noted above (Van Der Riet et al., 2015).

A brief mindfulness meditation intervention was tested with a population of pediatric intensive care unit (ICU) nurses to explore the effect on stress, burnout, mindfulness, self-compassion and job satisfaction (Gauthier, Meyer, Grefe, & Gold, 2015). Mindfulness was positively correlated with self-compassion (Gauthier, Meyer, Grefe, & Gold, 2015). Mindfulness is a brief intervention that can be learned easily and

works to reduce stress if practiced frequently. However, it is also an intervention that takes personal commitment to master and does not alter the appraisal of stress.

There have also been a number of studies examining the impact of a variety of stress reduction techniques on the stress levels of nurses. The impact of aromatherapy on stress was explored in a population of practicing nurses. The authors found that wearing a small bottle of lavender essential oil around the neck decreased stress symptoms in the experimental group (Chen, Fang, & Fang, 2015). Lai & Li (2011) explored the impact of a brief music therapy intervention on the heart rate, blood pressure, and serum cortisol levels of a group of practicing nurses. The music therapy was found to significantly decrease perceived stress, heart rate, cortisol, and blood pressure (Lai & Li, 2011). Both of these therapies are relatively inexpensive and easy to execute. Both of these intervention types could be used for relaxation and stress relief during downtime or even prior to anticipated stress. However, neither intervention type works to help address the appraisal of stress nor do they help users learn to better cope with the stress they experience. Even so, both are approaches that have been studied a great deal and have known benefits of relaxation and enhanced mood.

Electronically delivered stress management programs were studied in groups of practicing nurses. One program was delivered via a website. The program was meant to help participants learn to assess, manage, and cope with their stress (Hersch et al., 2016). The authors found that there was a statistically significant decrease in stress levels for the intervention group compared with the control group but also showed that the program had a more significant impact on nurses with more years of experience than those with fewer, suggesting that the effect may not be as significant for those new nurses

transitioning to practice (Hersch et al., 2016). Villani et al. (2013) examined the impact of a stress inoculation training program delivered twice a week via mobile phone in a group of oncology nurses. Post-intervention, there was a statistically significant improvement in coping and anxiety scores (Villani et al., 2013). In this study, most of the nurses had a substantial amount of experience (mean=22 years) (Villani et al., 2016). Both of the studies discussed above appear skewed toward experienced nurses. More interventional work needs to be done with students and/or newly graduated nurses to see if similar results can be obtained or, if not, why the novice population is less significantly impacted by such interventions.

Understanding and managing the stress of nurses and students has garnered much attention recently. The work that has been done with the nursing student population has been largely aimed at identifying the "things" about nursing school that are stressful and the impact of coping on well-being and at finding interventions that help to manage stress. What is missing is a better understanding of the way that nursing students view themselves and the impact that might have on both the level of stress they experience and whether or not they employ appropriate coping mechanisms to handle it.

Background of Perfectionism

Perfectionism is an area that, though not directly linked to coping, hardiness, or resilience, could provide information useful to a discussion of stress in nursing. Perfectionism is a concept that describes a person with excessively high standards, a tendency toward self-criticism, and almost obsessive focus on any mistakes made (Kelly & Clark, 2017). Throughout the years, there have been a number of perspectives on

perfectionism and significant disagreement regarding whether or not any degree of perfectionism is considered healthy.

Hewitt & Flett (1991) were the first to discuss perfectionism as a multi-dimensional construct including domains involving the self, others, and socially prescribed types of perfectionism. Self-oriented perfectionism, describes a person with high standards and motivation toward achieving perfection and avoiding failure. Other-oriented perfectionism involves similar expectations but of other people. Lastly, socially prescribed perfectionism is the development of high standards for, and harsh evaluation of, oneself based on the belief that people in one's life expect perfection (Hewitt & Flett, 1991).

All three types of perfectionism have been found to be associated with self-esteem issues as well as psychological problems such as depression, anxiety, and even suicide. In the opinion of Hewitt and Flett (1991), no amount or type of perfectionism is considered healthy, though the socially constructed type of perfectionism appears to be the type with the highest risk of the development of psychological difficulties.

Rice and Lopez (2004) discuss perfectionism in terms of being either adaptive or maladaptive. Adaptive perfectionism has been associated with motivation, high achievement, and positive coping. Maladaptive perfectionism, on the other hand, is associated with not only excessive worry about performance but is also associated with depression, anxiety and other psychiatric problems (Rice & Lopez, 2004). Adaptive and maladaptive perfectionism are closely related to the concepts of perfectionistic strivings and perfectionistic concerns. Perfectionistic striving has routinely been associated with high expectations for the self, optimism, positivity and self-compassion while

perfectionistic concerns are associated with self-doubt, concern with other people's expectations, pessimism, poor self-compassion and negative thoughts (Smith, Saklofske, Yan, & Sherry, 2015).

There are two models that expand on the concept of adaptive and maladaptive perfectionism, the tripartite and 2x2 models. The tripartite model of perfectionism places participants in one of three categories: healthy perfectionism, with high ratings in perfectionistic strivings (the adaptive type of perfectionism) and low ratings in perfectionistic concerns (the maladaptive type of perfectionism), unhealthy perfectionism (rating low in perfectionistic strivings and high in perfectionistic concerns) and non-perfectionists (Rice & Ashby, 2007). In this model, healthy perfectionism is consistent with the more adaptive aspects of perfectionism and unhealthy perfectionism is consistent with the maladaptive aspects of perfectionism. (Rice & Ashby, 2007). The 2x2 model places people in one of four categories: non perfectionistic, with low ratings in both perfectionistic strivings and concerns, pure personal standards, with ratings high in perfectionistic strivings and low in perfectionistic concerns, pure evaluative concerns, with ratings low in perfectionistic strivings and high in perfectionistic concerns, and a mixed profile, with ratings high in both perfectionistic strivings and perfectionistic concerns (Smith et al., 2015). Placement in the mixed profile category is associated with adaptive perfectionism, where pure evaluative concerns are associated with maladaptive perfectionism.

These models of perfectionism identify different aspects to the construct. Not all aspects of perfectionism are associated with psychological distress; in fact, there may be a degree of perfectionism that is adaptive and leads to increased goal attainment and

positive outcomes. There is a point, however, at which perfectionism begins to cause psychological distress for people in all of these models. If nursing students who suffer from perfectionism fall into the more negative aspects, they may likely have difficulty coping with nursing school and also with the hectic and, often, imperfect world of healthcare.

Perfectionism in the Literature

The relationship between perfectionism, perceived stress, and coping was examined with a group of university students finding that, in maladaptive perfectionists, the use of emotion focused coping led to an increased level of perceived stress (Ashby & Gnilka, 2017). In a group of adults, high levels of perfectionism were related to negative affect, elevated perceived stress, avoidant coping and negative social interaction six months and three years later (Prud'homme et al., 2017). This suggests that perfectionism has an impact on a person in the long term as well as the short.

The effects of various aspects of perfectionism vary. Self-oriented perfectionism was found to be associated with positive thought processes when envisioning a negative outcome while socially prescribed perfectionism was associated with negative thought processes in the same situation (Stoeber & Diedenhofen, 2017). While both are considered maladaptive in the eyes of Hewitt & Flett (1991), self-oriented perfectionism has since been associated with more positive outcomes while socially prescribed perfectionism has been associated with the maladaptive outcomes of perfectionism (Stoeber & Diedenhofen, 2017). Understanding such nuances in the nature of perfectionism could be useful in working with individuals manifesting these characteristics.

The nature of perfectionism, however, is not strictly dichotomous. In a comparison of adaptive and maladaptive perfectionism, Kim, Chen, Karlov and Kleitman (2015) found that both were associated with less than ideal mechanisms of coping and handling things that need to be completed. This suggests that even "adaptive" perfectionism may not be as healthy as originally thought. Richardson and Rice (2015) found that high levels of perfectionism are associated with a decreased likelihood of discussing daily stress during times when stress levels were high, even though discussing it may help to alleviate it.

While there has been a fair amount of research to better understand what perfectionism is and the components that are included, there have been only a few studies of perfectionism in nurses, nursing students and other healthcare professionals. Perfectionism was investigated with groups of physicians and nurses and was found to be positively associated with increased perceived stress, burn-out, and negative psychological symptoms (Craiovan, 2014). In a study of perfectionism with a group of nurses, a significant relationship between maladaptive perfectionism and burn-out was discovered. Additionally, the investigators found that the nurses high in maladaptive perfectionism reported using more emotion-focused coping (Chang, 2012). Meanwhile, Kelly and Clark (2017) found that, among a group of undergraduate nursing students, 29% of them scored in the elevated range on the socially prescribed perfectionism subscale of Multidimensional Perfectionism Scale. Generally, the socially prescribed perfectionism designation is thought to be the most deleterious to mental well-being as the person strives to reach the expectations that other people or groups place on them

(Kelly & Clark, 2017). These studies have added to knowledge about perfectionism that may be useful in nursing education.

While there is some variation in views of perfectionism, all of these perspectives paint a picture of perfectionism as a construct that can cause increased stress and long-term problems with affect, coping, and burn-out. Additionally, while it was originally believed that there was a "good" perfectionism and a "bad" perfectionism, at least one study discovered that even the adaptive type of perfectionism may be associated with less than ideal outcomes (Kim, Chen, Karlov & Kleitman, 2015). More investigation is needed with the nursing student population to determine whether the incidence of perfectionism is significant and to better understand the relationship between perfectionism, perceived stress, and coping mechanisms in a nursing student population. If nursing students have a high incidence of perfectionism it may have implications for not only their time in school but also for their eventual transition into the profession.

Conceptual Framework

The Transactional Theory of Stress and Coping will serve as the conceptual framework for this study. Lazarus and Folkman (1987) examined stress as a transaction between person and environment. It is this relationship between the person and the environment, that determines how a stressful encounter will be viewed and, to some extent, what mechanisms will be used to cope. The person's motivation and personality factors account for the difference in the way that two different people may handle the same environmental stressor (Lazarus & Folkman, 1987).

Cognitive appraisal or assigning meaning to a stressor is a key concept of the theory. The authors describe cognitive appraisal as a three-pronged process. In primary

appraisal, the person assesses what is at stake regarding the situation and decides if it is a

threat (anticipated harm), harm (something detrimental has already happened), or a

challenge (potential to gain or master something). Secondary appraisal addresses the

point at which a person determines if they can or cannot do anything to impact the

situation and how they can best cope with it. Lastly, there is reappraisal which is a

periodic reassessment of the situation to determine if there has been any change (Lazarus

& Folkman, 1987).

The theory also groups coping into two main categories, problem-focused and

emotion-focused. Problem-focused coping includes strategies like problem-solving,

seeking social support, and confronting the issue. Emotion-focused coping includes

strategies like avoidance, distancing, and accepting responsibility (Lazarus & Folkman,

1987). Neither type of coping is viewed as inherently right or wrong, but the authors

found that problem-focused coping is employed more frequently in situations that the

person felt they could potentially change. Meanwhile, emotion-focused coping is

typically employed when a person feels they have encountered a situation they cannot

change and are now trying to protect from potential harm (Lazarus & Folkman, 1987).

Therefore, the ability to employ problem or emotional focused coping in the right

situation is important in the mitigation of stress.

Thus, the theory helps to illustrate why there is significant variation in how

different people perceive stressful situations. Appraisal is the key to determining not

only how the person will perceive the experience but also how they are likely to approach

coping. The theory adequately explains the process of appraisal of a stressful situation

and the impact appraisal has on the choice of coping style. This theory is well suited to

studying stress in nursing students. Not only does it provide a framework for appraisal of a stressful situation, it also helps to account for differences in how people going through the same stressful experience react differently.

Nursing students have a great deal at stake when appraising the stress of nursing school. Their goal is to successfully complete nursing school and enter practice. Nursing school curricula are challenging so it is not a surprise that, from the perspective of cognitive appraisal, they may view nursing school as a threat. However, not all students view it as equally stressful and not all students cope in the same way. Better understanding about the way that nursing students view themselves and the stress they experience is an important part of helping them learn to cope because the appraisal of stressful situations can impact how a person chooses to cope with adversity in all similar situations. Perfectionism and its relationship to perceived stress and coping styles in nursing students is an area that is in need of further study.

Chapter 3: Methods

The purpose of this research was to gain a better understanding of the incidence of perfectionism in a nursing student population, both as a whole and by age group, as well as the relationship between perfectionism, perceived stress, and coping style. While perfectionism has been studied in a variety of populations there has been little research on this concept with nurses and nursing students. It is important to investigate the relationship between these concepts with a nursing student population to determine the impact perfectionism has on the nursing student's stress levels and coping mechanisms. This research identified potential difficulties many new nurses may have in the transition to practice. This research was guided by the following research questions:

1. What is the incidence of perfectionism in a group of baccalaureate nursing students?

2. Is there a difference in the incidence of perfectionism in a group of baccalaureate nursing students by age group?

3. What is the relationship between perfectionism, perceived stress and coping style in a group of baccalaureate nursing students?

Design and Methodology

This study investigated the relationship between perfectionism, perceived stress, and coping style in a nursing student population. A correlational design (Smith, 1983) was utilized for this study. Correlational research was used to examine the relationships between the variables of perfectionism, perceived stress and coping. It is a non-experimental approach and so the primary limitation is that cause and effect cannot be determined, however, this approach provided a better understanding of the strength and

direction of the relationships between perfectionism, perceived stress, and coping in nursing students (Smith, 1983). Since this research is designed to add to the understanding of relationships rather than test the impact of an intervention, it is an appropriate method to utilize for that purpose. Additionally, since this is still a relatively new area of research for this population, non-experimental methods can help add to the understanding of the relationships between variables.

The ultimate goal of this study was to determine if perfectionism is prevalent in a nursing student population, and whether its presence impacts perceived stress and coping style. If perfectionism is prevalent in a nursing student population and is related to increased perceived stress and use of less effective coping skills, then future interventions can be developed and implemented within the curriculum in order to help students learn to cope more effectively throughout the program and eventually in practice.

Setting

The setting for this study was the College of Nursing at the University of Missouri St. Louis (UMSL). This is a public, land-grant University in an urban setting. Students were recruited from the College of Nursing's traditional Bachelor of Science in Nursing (BSN) program. This is a program with four semesters of pre-requisite work followed by four semesters of clinical course work for which students apply competitively.

Sample

The target population for the study was students enrolled in the full time traditional BSN program at UMSL. Sample size was calculated using the population size, confidence interval, and margin of error for the study. With a 5% margin of error, a 95% confidence interval, and a population of approximately 260 students in the target

population, 156 participants were needed (Survey Monkey, 2019). After recruitment and

data collection concluded, completed surveys were obtained from 184 participants.

Exclusion Criteria

Exclusion criteria consisted of students pursuing part-time or accelerated

programs of study and students who were repeating a course within the program. The

experience of being a part-time and/or accelerated student is likely to pose different

challenges related to the pace of the program and other life obligations, making them

different from the full-time traditional cohort. Additionally, it is likely that students

repeating a course would have higher perceived stress due to the importance of

successfully completing the repeated course to avoid dismissal from the program.

Recruitment

Convenience sampling was used for this study. Recognizing the potential issue

that exists because I work in the college from which recruitment took place, a number of

safeguards were implemented to ensure that my involvement was non-coercive and that

willing participants remained anonymous to me. Fliers providing information about the

study, inclusion criteria, and times for data collection were posted throughout the college

and an announcement, produced by me, was distributed electronically by an office

assistant to the potential participants. Additionally, a short period of time was procured

in one course meeting for each cohort of eligible students. In each session, a research

assistant, trained by me and using a provided a script, offered potential participants

information about the study and invited them to attend one of a number of sessions for

data collection, described below.

Tools

Tools with acceptable reliability, meaning that they measure what they are meant to measure, will be administered. Typically, reliability is evidenced by a Cronbach's alpha of 0.8 or higher, which helps to increase the repeatability of findings (Curtis & Drennan, 2013). For this study, three scales to measure perfectionism, perceived stress, and coping mechanisms were used.

The Short Almost Perfect Scale

To measure participants in the variable of perfectionism, the short form of the Almost Perfect Scale (SAPS) was used. The Likert type scale consists of 8 items with a one to five ranking range, modified from a one to seven scale for consistency with other tools that will be administered. The scale includes two subscales – standards and discrepancy to evaluate whether the participant fits into one of three categories: adaptive perfectionist, maladaptive perfectionist, and non-perfectionist (Rice, Richardson, & Tueller, 2014).

A score above 17 (out of a possible 20) on the standards subscale is consistent with a "healthy perfectionism" correlated with conscientiousness and high academic achievement if scores on the discrepancy scale are below 10 (out of a possible 20). A score above 17 in the standards scale paired with a score above 10 on the discrepancy subscale is consistent with the "maladaptive" aspects of perfectionism including neuroticism, depression, and anxiety. Those with low scores in both standards and discrepancy are considered "non-perfectionists" (Rice, Richardson, & Tueller, 2014). The creators of the SAPS found that the reliability for the standards scale is $p=0.87$ and

p=0.84 for the discrepancy scale putting both measurements in the range of acceptable

reliability scores (Rice, Richardson, & Tueller, 2014).

The Perceived Stress Scale

To measure perceived stress, the 10 item Perceived Stress Scale (PSS-10) was

used. This scale consists of 10 items designed to measure a person's appraisal of the

stress in their life (Cohen, Kamarch & Mermelstein, 1983). This tool is a five point

Likert type scale modified from a zero to four range to a one to five range for tool

consistency. Potential scores range from a low of 10 to a high of 50. Scores below 23 are

consistent with low levels of perceived stress, scores from 24-36 are consistent with

moderate levels of perceives stress, while scores of 37-50 are consistent with high levels

of perceived stress (Cohen, Kamarch & Mermelstein, 1983).

In a systematic review of articles examining the psychometric properties of the

PSS-10, reliability levels ranged from p=0.78-0.91 (Lee, 2012). There are two other

forms of the Perceived Stress Scale, the original with 14 items (PSS-14) and a brief form

with only 4 items (PSS-4). The PSS-10 was chosen for this study in part for its brevity

but also because the reliability has consistently been found to be equal to or higher than

that of the 14 item scale (Lee, 2013).

Brief COPE

Coping was measured using the Brief COPE scale. This tool consists of 28 items

with 14 subscales that measure coping. Active coping, planning, and use of instrumental

support can be considered problem focused coping skills. Positive reframing, acceptance,

using emotional support, humor and turning to one's religion are all considered emotion

focused coping techniques. Self-distraction, denial, venting, substance use, behavioral

disengagement and self-blame can all be considered dysfunctional coping skills (Su et.al, 2015). Cronbach's alpha for the 14 subscales range from 0.5 to 0.9 (Carver, 1997).

The scale is a likert type scale which originally contained four choices, for consistency with the other tools, a fifth item choice "I've been doing this all of the time" was added. On each of the 14 subscales the possible scores range from two to ten. The higher the score on the subscales the more frequently that coping method is used (Brief-COPE, 2018).

Demographic Data

Demographic data was collected at the time of tool completion. Data included gender and age, grouped into the categories of under 23, 23-30 and over 30, to examine the incidence in perfectionism by age group allowing me to ascertain differences. Additionally, participants were asked about number of hours worked in a week (1-20, 21 – 40, and over 40) because working during a rigorous program could increase perceived stress. For that same reason, participants were asked if they were taking any additional classes outside of their nursing major classes (honors classes or classes toward a minor).

Data Analysis

Descriptive statistics were used to examine demographic data. The SAP subscales were calculated and examined to place participants in one of three categories, non-perfectionist, adaptive perfectionist, or maladaptive perfectionist. Participants were then grouped into three groups of under 23, 23-30 and over 30. Because the groups were uneven, they were weighted and a Chi-Square test was conducted to look for any difference in incidence of perfectionism.

The correlation between variables of perfectionism, perceived stress and coping was tested using Pearson's correlation coefficient. This is used to look at the relationship between variables. The variables must be at the interval or ratio level, be normally distributed, have a linear relationship, and be free from significant outliers (Kellar & Kelvin, 2013). The possible values for a correlation coefficient range from -1 to +1 with zero indicating no relationship and values closer to one indicating stronger correlation. Negative values represent a negative relationship between variables while positive values indicate a positive relationship. A small correlation is usually indicated with a value of +/- 0.29 or below, a medium correlation +/- 0.3-0.49, and a large correlation +/- 0.5-1.0 (Kellar & Kelvin, 2013).

Human Subjects

Prior to recruitment and data collection, University IRB approval was obtained. Informed consent was obtained at the start of the data collection sessions and kept in a locked drawer in the office of the Research Associate. No identifiable information was present on the surveys and completed surveys were kept in a locked drawer. Data was stored on a password protected computer.

Data Collection Procedure

Participants were recruited to attend data collection sessions via fliers and email sent by an office assistant within the College of Nursing. At the start of each session, the Research Associate provided participants with an overview of the study and what was expected as well as possible risks/benefits of participation. Those who wished to participate were provided with a consent form to complete. The consent forms were collected and stored by the Research Associate. After consent was obtained participants

were provided with the study tools and instructions on how to complete them were provided by the Research Associate via a script prepared by me. Ample time was allowed for completion of the tools. Refreshments were provided at all data collection sessions.

Chapter 4: Results

In this chapter, the results of the data analysis are presented. The demographic data is presented first, then the data analysis pertinent to each research questions is presented individually. The chapter concludes with an interpretation of the data analysis presented here.

Descriptive Statistics

Demographics

The age range of the sample was 19-49 years with a mean of 23.75 (SD 4.78) and was made up of 162 females (88%), 21 males (11.4%) and 1(0.5) respondent indicated they preferred not to answer. The amount of hours worked was grouped into none, 1-20, 21-40 and over 40. 104 (56.5%) participants were in the 1-20 category, while 53(28.8%) indicated they work 21-40 hours a week, 23 (12.5%) indicated they didn't work at all, and two (1.1) indicated that they worked over 40 hours a week with two (1.1%) participants preferring not to answer. Additionally, 18 (9.8%) participants indicated that they were taking a course outside their nursing major courses while 162 (88%) were not, with one (0.5%) participant preferring not to answer.

Perceived Stress and Coping Scores

The range of perceived stress scores was 15-46 with mean of 31.78 (SD 6.49). The perceived stress scores were grouped into low (23 or below), moderate (24-36) and high (37-50) perceived stress. Overall, 23 (12.5%) of respondents were in the low perceived stress category, 114 (62%) of respondents were in the moderate perceived stress category, and 47 (25.5%) were in the high perceived stress category. The Brief Cope is made up of 28 questions forming 14 subscales of two questions each. The

minimum possible score for each subscale is 2 indicating that the respondent hasn't been

doing that at all and the maximum score is 10 indicating that the respondent has been

doing that all of the time to cope. See table 1 for descriptive data for the 14 subscales.

Table 1

Brief Cope Descriptive Statistics

	N	Min	Max	Mean	SD
Distraction	182	2	10	7.29	1.81
Denial	182	2	10	3.18	1.81
Substance use	182	2	10	3.26	2.04
Self-blame	182	2	10	6.07	2.39
Disengagement	182	2	10	3.77	1.96
Venting	182	2	10	5.79	2.02
Active coping	182	3	10	7.30	1.67
Em. support	182	2	10	7.15	2.09
Inf. support	182	2	10	6.84	2.25
Pos. reframing	182	2	10	7.08	2.08
Planning	182	3	10	7.45	1.74
Acceptance	182	2	10	7.42	1.64
Humor	182	2	10	6.41	2.47
Religion	182	2	10	5.19	2.73

Research Question 1

What is the incidence of perfectionism in a group of baccalaureate nursing students?

Table 2 shows the incidence of non-perfectionism, adaptive perfectionism, and maladaptive perfectionism. Out of the 184 responses, 39 (21.2%) were classified as non-perfectionists, 39 (21.2%) were classified as adaptive perfectionists, and 106 (57.6%) were classified as maladaptive perfectionists.

Table 2

Incidence of Perfectionism

Perfectionism Category	Frequency	Percent
Non-Perfectionist	39	21.2
Adaptive Perfectionist	39	21.2
Maladaptive Perfectionist	106	57.6

Research Question 2

Is there a difference in the incidence of perfectionism in a group of baccalaureate nursing students by age group?

Participants were grouped into three age categories, under 23 (n = 106), 23-30 (n = 61), and over 30 (n = 17). Of the 106 participants identified as maladaptive perfectionists, 6.6% were in the over 30 group (n=7; 41.7% of this age group), 33% were in the 23-30 age group (n=35; 57.4% of the 23-20 age group) and 60.4% were under 23 (n= 64; 60.4% of the under 23 age group). Of the 39 participants identified as adaptive

perfectionists, 15.4% were over 30 (n=6; 35.3% of this age group), 25.6% were in the 23-30 group (n=10; 16.4% of this age group), and 59% were under 23 (n=23; 21.7% of this age group). Lastly, of the 39 participants identified as non-perfectionists, 10.3% were over 30 (n=4; 23.5% of this age group), 41% were between 23 and 30 (n=16; 26.2% of this age group), and 48.7% were under 23 (n=19; 17.9% of this age group).

Because the number of participants in each group was uneven, data were weighted in SPSS; a Chi-Square test was performed using the weighted age group and perfectionism groups. The Chi-Square value $X2$ (4, n=279 (weighted)) = 10.05, p=0.04. These findings indicate that there is a significant difference in perfectionism by age group, with those in the highest age group showing less maladaptive perfectionism than participants in the other two age groups. See figure 1 for the bar graph of perfectionism by age group.

Figure 1

Incidence of Perfectionism by Weighted Age Group
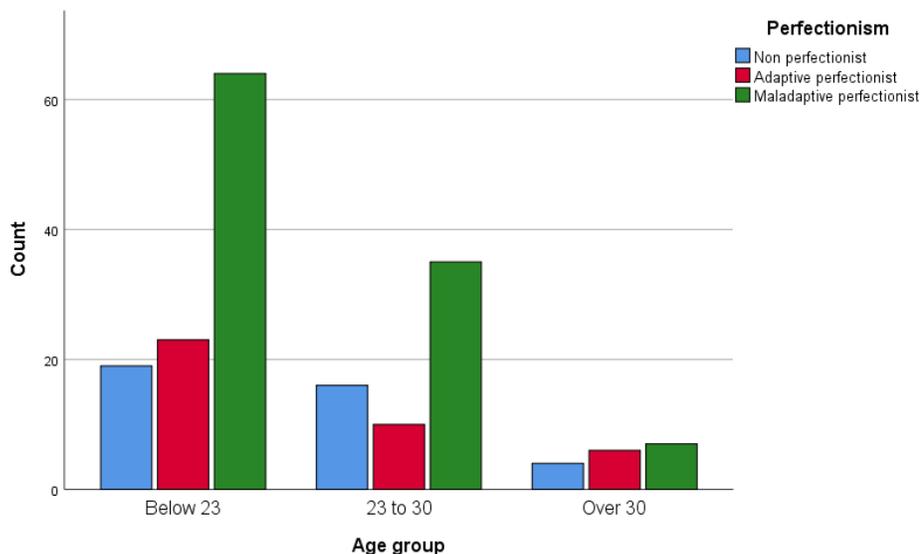
Research Question 3

What is the relationship between perfectionism, perceived stress and coping style in a group of baccalaureate nursing students?

To examine the relationship between perfectionism, perceived stress and coping style a Pearson's correlation was completed. The relationship between perfectionism and perceived stress was r = .350 (p<.01) indicating a moderate, positive relationship between the two variables.

The relationship between coping and perceived stress indicated that denial (r =.229; p<0.01), substance use (r = .165; p<0.05), and venting (r = .198; p<0.01) all had small, positive associations. Self-blame (r = .567, p< 0.01) and behavioral disengagement (r =.564; p<0.01) both had a strong positive association while the use of humor (r = .302; p<0.01) showed small/moderate, positive association with perceived stress score. Active coping (r = -.292; p<0.01), positive reframing (r = -.259; p<0.01), planning (r = -.164; p<0.05), acceptance (r = -.199; p<0.01) and religion (r = -.178; p<0.01) all had small, negative associations with perceived stress score. There was not a significant relationship with emotional or information support and perceived stress in this sample.

Each group of perfectionism was isolated to examine the relationship between stress and coping by perfectionism type. The maladaptive perfectionism group (n=106) showed a small, positive association with the use of denial (r=.206, p<0.05), venting (r=.231; p<0.05) and the use of humor (r=.243; p<0.05). There was a moderate positive association with the use of self-blame (r=.478, p<0.01) and a large positive association with behavioral disengagement (r=.548, p<0.01). There was a small negative association

between perceived stress and the use of active coping (r=-.231; p<0.05) and religion (r=-.199; p<0.05) and a moderate negative association with the use of positive reframing (r=-.349; p<0.01).

The adaptive perfectionist group had a moderate positive association with substance use (r=.444; p<0.01) and self-blame (r=.322; p<0.01) and perceived stress. There was a large positive association with behavioral disengagement (r=.504; p<0.01) and perceived stress. And, lastly, there was a moderate positive association with behavioral disengagement (r=.42; p<0.01) and self-blame (r=.547; p<0.01) and perceived stress in the non-perfectionist group. See table 3 for the data on coping by perfectionism group.

Table 3

Coping Style by Perfectionism Group

Coping Style	N	Pearson's Correlation	Significance
Distraction			
Non-Perfectionists	39	0.179	p 0.275
Adaptive Perfectionists	39	0.259	p 0.111
Maladaptive Perfectionists	106	0.014	p 0.885
Denial			
Non-Perfectionists	39	0.074	p 0.653
Adaptive Perfectionists	39	0.284	p 0.080
Maladaptive Perfectionists	106	**0.206**	**p <0.05**
Substance use			
Non-Perfectionists	39	0.109	p 0.508
Adaptive Perfectionists	39	**0.444**	**p <0.01**
Maladaptive Perfectionists	106	0.089	p 0.362
Self-blame			
Non-Perfectionists	39	**0.547**	**p <0.01**
Adaptive Perfectionists	39	**0.322**	**p <0.01**
Maladaptive Perfectionists	106	**0.478**	**p <0.01**
Behavioral disengagement			

Non-Perfectionists	39	**0.420**	**p <0.01**
Adaptive Perfectionists	39	**0.504**	**p <0.01**
Maladaptive Perfectionists	106	**0.548**	**p <0.01**

Venting
Non-Perfectionists	39	0.285	p 0.079
Adaptive Perfectionists	39	-0.004	p 0.981
Maladaptive Perfectionists	106	**0.205**	**p <0.05**

Active coping
Non-Perfectionists	39	-0.233	p 0.153
Adaptive Perfectionists	39	-0.219	p 0.181
Maladaptive Perfectionists	106	**-0.231**	**p <0.05**

Emotional support
Non-Perfectionists	39	-0.134	p 0.417
Adaptive Perfectionists	39	-0.204	p 0.214
Maladaptive Perfectionists	106	-0.037	p 0.710

Informational support
Non-Perfectionists	39	0.008	p 0.963
Adaptive Perfectionists	39	0.189	0.250
Maladaptive Perfectionists	106	-0.091	0.351

Positive reframing
Non-Perfectionists	39	0.070	p 0.675
Adaptive Perfectionists	39	-0.009	p 0.993
Maladaptive Perfectionists	106	**-0.349**	**p <0.01**

Planning
Non-Perfectionists	39	-0.04	p 0.808
Adaptive Perfectionists	39	-0.093	p 0.574
Maladaptive Perfectionists	106	-0.139	p 0.154

Acceptance
Non-Perfectionists	39	0.132	p 0.424
Adaptive Perfectionists	39	-0.178	p 0.279
Maladaptive Perfectionists	106	-0.166	p 0.090

Humor
Non-Perfectionists	39	0.200	p 0.221
Adaptive Perfectionists	39	0.154	p 0.349
Maladaptive Perfectionists	106	**0.234**	**p <0.05**

Religion
Non-Perfectionists	39	-0.076	p 0.646
Adaptive Perfectionists	39	-0.165	p 0.316
Maladaptive Perfectionists	106	**-0.199**	**p <0.05**

The relationship between coping and all groups of perfectionism (maladaptive, adaptive and non-perfectionists) indicated that self-blame (r = .347; p<0.01) is moderately, positively associated with perfectionism. Behavioral disengagement (r =.152; p<0.05) and venting (r = .179; p<0.05) both had small, positive associations with perfectionism. There was no significant correlation with the other dysfunctional coping skills of substance use, denial, or distraction. Additionally, there were no significant correlations between perfectionism and active coping, planning, positive reframing, acceptance, emotional support, informational support, humor or religion. Table 4 provides complete correlation results between perfectionism, perceived stress and the 14 coping subscales of the brief COPE for the entire sample (n=184).

Table 4

Correlations Among Perfectionism, Perceived Stress and Coping-all participants

	N	Pearson's Correlation	Significance
Perceived Stress			
Perceived stress	184	1	
Perfectionism	184	**0.350**	**p <0.01**
Distraction			
Perceived stress	184	0.081	p 0.27
Perfectionism	184	-0.023	p 0.75
Denial			
Perceived stress	184	**0.229**	p <0.01
Perfectionism	184	0.026	p 0.75
Substance use			
Perceived stress	184	**0.165**	**p<0.05**
Perfectionism	184	0.016	p 0.83
Self-blame			
Perceived stress	184	**0.567**	**p <0.01**
Perfectionism	184	**0.347**	**p <0.01**

Behavioral disengagement			
Perceived stress	184	**0.564**	**p <0.01**
Perfectionism	184	**0.152**	**p <0.05**
Venting			
Perceived stress	184	**0.198**	**p<0.01**
Perfectionism	184	**0.179**	**p<0.05**
Active coping			
Perceived stress	184	**-0.292**	**p <0.01**
Perfectionism	184	-0.022	p 0.77
Emotional support			
Perceived stress	184	-0.018	p 0.80
Perfectionism	184	0.080	p 0.28
Informational support			
Perceived stress	184	-0.034	p 0.64
Perfectionism	184	0.045	p 0.55
Positive reframing			
Perceived stress	184	**-0.259**	**p <0.01**
Perfectionism	184	-0.042	p 0.57
Planning			
Perceived stress	184	**-0.164**	**p <0.05**
Perfectionism	184	0.038	p 0.61
Acceptance			
Perceived stress	184	**-0.199**	**p <0.01**
Perfectionism	184	-0.100	p 0.18
Humor			
Perceived stress	184	**0.302**	**p <0.01**
Perfectionism	184	0.111	p 0.14
Religion			
Perceived stress	184	-0.178	p <0.01
Perfectionism	184	-0.022	p 0.76

Discussion

Adaptive and Maladaptive Perfectionism

The short form of the Almost Perfect Scale (SAPs), which was used in this study, has two subscales. The first is standards, and the questions such as "I have a strong need to strive for excellence" and "I expect the best from myself" (Rice, Richardson, & Tueller, 2014) are associated with adaptive perfectionism and describe a person who has high standards and does their best to achieve them. The discrepancy subscale helps to differentiate between adaptive and maladaptive perfectionists, with questions like "Doing my best never seems to be enough" and "I am hardly ever satisfied with my performance" (Rice, Richardson, & Tueller, 2014) with maladaptive perfectionists having both high standards scores, but also high discrepancy scores. The questions of the discrepancy subscale show a picture of a person with unattainably high expectations and an inability to meet their expectations of their own performance.

In this sample, 57.6% (n=106) were in the maladaptive perfectionist category, with 21.2% (n=39) in the adaptive perfectionist category. While adaptive perfectionism has been associated with high levels of motivation, high achievement, and the use of positive coping skills in stress, maladaptive perfectionism is associated with, not only excessive worry about performance but also, depression, anxiety and, in nursing populations, burn out (Chang, 2012; Rice & Lopez, 2004).

Application to the Theoretical Framework

The theoretical framework for this study was Lazarus and Folkman's Transactional Theory of Stress and Coping. According to this theory, the appraisal of a stressful situation is what drives how one chooses to cope with it. When one feels they

can impact the outcome, they will likely choose more problem-focused strategies while they are likely to use more emotion focused strategies if they feel they cannot impact the outcome (Lazarus & Folkman, 1987). The results of this study suggest that maladaptive perfectionists appraise stressful situations that could lead to a judgment that they are not "perfect" as threatening, employing dysfunctional coping strategies like self-blame and disengagement. These strategies only serve to increase perceived stress when, in fact, a more active approach might help to better reduce their stress level.

Demographics of the Sample

The sample was predominantly female (n=162) with only 11.4% (n=21) of the sample being male. In 2018, 13% of nursing students were male so this is actually fairly close to the national trend (NLN, 2018). The mean age of the respondents was 23.75 (SD4.78), but when the respondents were placed into age groups of under 30, between 23 and 30 and over 30, the majority of students (n=106) were in the under 23 category. This is fairly typical for a pre-licensure traditional BSN program as well. According to the National League of Nursing 2018, biennial survey of schools of nursing, 77% of students in BSN programs were under 25 (NLN, 2018).

From this sample, 56.5% (n=104) of the respondents indicated that they worked 1-20 hours a week, while 28.8% (n=53) worked 21-40 hours a week, 12.5% (n=23) did not work at all and only 1.1% (n=2) worked over 40 hours a week. Additionally, 9.8% of respondents indicated that they were taking at least one other course in addition to their nursing course load. Both working and taking other classes could potentially increase stress in students though there was no significant relationship between number of hours worked (p=0.373; r=-0.066) or extra classes (p=0.757; r=-0.023) and perceived stress.

Perfectionism, Stress and Coping

Over half (n=106, 57.6%) of the sample identified into the maladaptive perfectionist category. This finding suggests that this type of perfectionism could be a significant trait for BSN students. The incidence of perfectionism did appear to be impacted by age with those in the older age group experiencing less maladaptive perfectionism than the other two age groups, suggesting that perhaps the tendency toward perfectionism has either become more prevalent in more recent years, or that as one ages, perfectionism wanes.

In this sample, perfectionism and perceived stress displayed a moderate positive association (r = .350) indicating that as perfectionism trends toward the maladaptive classification, perceived stress also goes up. This suggests that many students are experiencing a higher level of stress secondary to their maladaptive perfectionist tendencies.

In the maladaptive perfectionists (n=106), perceived stress was significantly associated positively with the use of denial, self-blame, behavioral disengagement, and venting, to cope indicating that as perceived stress goes up, the use of these dysfunctional coping skills also goes up. In this group, humor displayed a positive association with perceived stress indicating that a coping mechanism typically seen as a positive coping mechanism actually increases stress for them. Perceived stress was also significantly negatively associated with the use of active coping, positive reframing, and the use of religion indicating that, as the use of these coping skills is increased, perceived stress is decreased in the maladaptive perfectionist.

There was no significant association with the other maladaptive coping mechanisms of distraction or substance use, nor was there a significant relationship with emotional or informational support, planning or acceptance. The use of active coping skills, positive reframing and religion appear to lessen perceived stress in maladaptive perfectionists and encouraging increased use of these may be of benefit to these students. The lack of association with the other, more positive, coping skills suggests these may be techniques maladaptive perfectionists need to develop.

For the adaptive (n=39) and non-perfectionist (n=39) groups, there was a significant, positive association with self-blame and behavioral disengagement suggesting that, as use of these coping mechanisms increases, perceived stress also goes up. There was also a positive association between substance use in adaptive perfectionists only. There was no significant association in either group with active coping, emotional or informational support, positive reframing, planning, acceptance, humor or religion. Given that the maladaptive perfectionists also had positive correlations between these two coping mechanisms and perceived stress, it may suggest that certain dysfunctional coping mechanisms are common in nursing students regardless of the perfectionism designation and that all nursing students might benefit from learning about more effective ways with which to cope with stress.

Limitations

One limitation of this study was the use of a single site for data collection. Only one university was used and so the findings may be different in other university settings. However, given that little work has been done examining perfectionism and coping in a nursing student population, results of this study add to knowledge of characteristics for

this group. Furthermore, it may provide information that is useful to other similar nursing programs.

The sampling procedure was self-selection which decreases the generalizability of the findings. While participation was open to all BSN students pursuing the traditional course of study who were not repeating a course, some students who have particularly important personal experiences may have been missed.

Additionally, the measurements were all survey-type tools which are entirely based on self-report. It is possible that the participants may have chosen to report in the way that they believe I was hoping they would respond based on what they believe the study is attempting to discover. Additionally, they may have chosen to answer more positively than is truthful for fear they may be judged in some way. To decrease the risk of this, clear instructions were provided and all participants were reassured that there are no right or wrong answers, nor is anything disclosed subject to any punitive action. The participants were also informed that the results did not have any identifying information included so that there was no way to tie responses to any particular participant.

The sample was comprised of 11.4% (n=21) males which limits the ability to determine if there is a difference in perfectionism by gender. However, it should be noted that, in the nursing profession, this is a fairly normal gender distribution. Data collection also took place in the weeks leading up to the COVID-19 pandemic hitting the area. The concern and uncertainty surrounding the virus could have potentially led to higher perceived stress levels than one would find in a different circumstance.

Lastly, I work in the college where the study was conducted, posing a potential conflict. This was mitigated by ensuring that communication with potential participants

was done via channels separate from my involvement. Data collection sessions were

facilitated by a research assistant in a further effort to decrease potential conflicts related

to the participants association with me.

Chapter 5: Implications

The purpose of this study was to determine the incidence of perfectionism in a group of traditional BSN students both as a whole and by age group. Additionally, this research sought to examine the relationship between perfectionism, perceived stress, and coping style. While perfectionism has been studied in some populations, there is little research on perfectionism specifically in a nursing student population. In this chapter, I will discuss the potential implications of my findings for nursing education and practice as well as potential directions for policy and future research.

Implications for Nursing Education

Over half the sample (57.6%; n=106) identified as maladaptive perfectionists. In the study conducted by Rice and Lapsley (2001), who surveyed 204 university students, 30.9% (n=63) fit into the maladaptive perfectionism category. This suggests that nursing students may experience a higher level of maladaptive perfectionism than the general university student population. This is important because the nursing curriculum is challenging and nursing students may require support to complete their education and transition smoothly to practice.

In this study, maladaptive perfectionism had a positive correlation with elevated perceived stress and using the coping styles of self-blame, behavioral disengagement, and venting. All three of these coping styles are also correlated with increased perceived stress, suggesting that students with maladaptive perfectionism have higher levels of stress and often choose less healthy coping mechanisms with which to handle it. Maladaptive perfectionism was also significantly negatively associated with active coping, positive reframing and religion suggesting that as maladaptive perfectionists use

these coping skills, their stress levels go down. Perhaps even more importantly, the lack

of significant association between maladaptive perfectionism and all of the other, more

positive coping mechanisms indicates that these students may need to develop skill in

using them.

This is important information for nurse educators to understand. Nursing school

is a stressful time for mostly every student, however, the maladaptive perfectionist is

likely to perceive it as more stressful and to use coping mechanisms that likely to simply

add to their perceived stress level. If this applies to slightly more than half the students in

a program, it will equate to at least half of a class feeling greater stress than necessary and

may lead to some students dropping out of the program or failing courses. This is a

significant number of students at potential risk.

Nurse educators should consider creating learning experiences that do not add to

the overall stress level of students. Goff (2011) found that an overload of tasks is one

thing that elevates stress in nursing students while Gibbons (2009) discovered that the

inflexibility of nursing programs and issues with teaching were a significant source of

stress. With that in mind, faculty members should ensure that assignments have a

purpose and work with faculty members teaching other courses in the same semester to

ensure that the workload as a whole is not such that it adds to the stress students are

already likely to experience. Additionally, faculty should work to ensure the use of

evidence-based teaching modalities that best support student learning.

Knowing that students who are maladaptive perfectionists often use more

dysfunctional coping skills, those who develop nursing curricula should consider

including courses on stress management including positive coping strategies and

choosing the best coping strategy for a given situation including setting small achievable goals, challenging the need to be perfect, self-care, relaxation and mindfulness meditation (Wimberley, Mintz & Suh, 2016). Helping these students learn to manage stress and develop healthier coping skills could potentially help their progression through nursing school, as well as the transition to practice and their careers beyond.

It may also behoove nurse educators to perform some basic screening of students related to perfectionism, stress and coping style as they are admitted to programs. This should not serve as a deterrent to students entering the program but rather help them to be more aware of the challenges and, potentially, allow them to be able to learn more helpful ways to handle their stress.   This will also allow faculty and staff to be able to make early referrals to services such as academic coaching, stress management resources and counseling before it has a chance to become a substantial problem.

Implications for Nursing Practice

Nursing students who are maladaptive perfectionists will likely become nurses who have elevated stress levels and utilize less effective coping mechanisms. The transition to practice is a particularly stressful time for new nurses and is likely to be even harder for the perfectionist. This is important information for those in nursing practice to understand and should be considered in planning orientations and transitions for new nurses.

Many organizations have orientation periods for new nurses. This usually includes classes on equipment, monitoring, and other things related to working for that particular organization. New nurses work with a more experienced nurse for anywhere from 6-16 weeks before being allowed to be "on their own". However, with shortages of

nursing staff, this orientation process is often cut short, thrusting new nurses into full independent practice sooner than is ideal. This is something that increases stress for any new nurse, but for the perfectionist, it is likely to lead to excessive stress as they strive to do their best work in spite of not being truly prepared to do so.

As challenging as it may be to do so, organizations need to commit to allowing for an appropriate amount of time for orientation of the newly graduated nurse. The length of time should depend on, not only the acuity level of the unit but also, the individual nurse and their unique needs.

Some organizations also utilize residency programs in which all the newly graduated nurses hired at that time go through enriching classes and seminars for a year after hire. This helps the new nurse build a network of others who are going through the same thing as well as allowing for dedicated time to learn more about different departments, share stories of patient situations and debrief them, and learn more about the practice of nursing.

These programs have helped to improve early career retention and would be a good place to add in not only seminars on self-care, but also stress management. The correlation of maladaptive perfectionism with the use of self-blame and behavioral disengagement as coping skills may lead to the new nurse being extremely critical of him or herself, blaming themselves for any perceived error or imperfection in their practice and pulling away from chances to express and process that experience. This practice is likely to add to the stress they are experiencing, not alleviate it. Teaching new nurses to manage that stress with more effective coping skills and develop a more realistic view of

their performance could help to make this time period more manageable and enhance retention.

It is just as important for those in nursing practice to understand what perfectionism is and the impact it may have on new nurses entering practice. Maladaptive perfectionism can lead to anxiety, depression and burn out in nurses (Chang, 2012) and the increased stress experienced can lead to physical and mental health issues in the long run (McCance, Heuther, Brashers, & Rote, 2014; Tank & Wong, 2015). Helping develop a nursing workforce that is skilled at care of patients, but also in care of themselves is an investment in retention and better patient outcomes.

Implications for Policy

As important as it is to allow for adequate time for orientation of new nurses, there should be consideration of developing policy regarding safe nurse to patient rations with a special set of numbers for the newly graduated nurse through the first year of practice. This interim period between the end of orientation and the end of the first year of work with a lessened patient load would allow them to really develop their skills and processes without the burden of the workload an experienced nurse would have. While this may be costly up front, the lessened stress is likely to lead to better retention of early career nurses, which will save money in the long run not in addition to reducing the significant shortage of nurses in the US.

Implications for Future Research

To enhance the generalizability of this research, a future study should be conducted with students from more than one institution. This study was conducted with students from one, public, urban university. Future work should include students from

both public and private schools and schools in rural and suburban settings as well for a better idea of whether this is a problem for nursing students regardless of setting or if it is only an issue for students in this type of setting.

Since there is relatively little research around perfectionism and early career nurses, in the future a longitudinal study following students from nursing school through the first year of employment would help to add to our understanding of the impact perfectionism has on the transition to the practice setting. Perfectionism is associated with increased stress, depression and anxiety as well as burn-out. Continuing to study newly graduated nurses as they transition will help to better understand the long-term impact of perfectionism on the practicing nurse.

Lastly, more work is needed in the area of interventions to help mitigate the effect of perfectionism on nursing students. This study adds to what is known about perfectionism in nursing students and the relationship between perfectionism, perceived stress, and coping in this population. However, it does not address what might be done to help students manage this more effectively. In the future, research needs to be conducted on stress management education and the development of more positive coping skills.

References

Allen, A. P., Kennedy, P. J., Cryan, J.F., Dinan, T. G., & Clarke, G. (2014). Biological
and psychological markers of stress in humans: Focus on the trier social stress
test. *Neuroscience and Biobehavioral Reviews, 38*(2014), 94-124.

Ashby, J. S. & Gnilka, P. B. (2017). Multidimensional perfectionism and perceived
stress: Group differences and test of a coping mediation model. *Personality and
Individual Differences, 119(*2017), 106-111.

Brief COPE. (2018). Retrieved from: https://novopsych.com.au/assessments/brief-cope/

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.

Chang, Y. (2012). The relationship between maladaptive perfectionism with burnout:
Testing mediating effect of emotion-focused coping. *Personality and Individual
Differences, 53(*2012), 635-639.

Chen, M.C., Fang, S.H., & Fang, L. (2015). The effects of aromatherapy in relieving
symptoms related to job stress among nurses. *International Journal of Nursing
Practice, 21*, 87-93.

Cohen, S., Kamarck, T., and Mermelstein, R. (1983). A global measure of perceived
stress. *Journal of Health and Social Behavior*, 24, 386-396.

Craiovan, P. M. (2014). Correlation between perfectionism, stress, psychopathological
symptoms and burnout in the medical field. *Social and Behavioral Sciences
127*(2014), 529-533.

Crary, P. (2013). Beliefs, behaviors, and health of undergraduate nursing students.
*Holistic Nursing Practice, 27(*2), 74-88.

Curran, T. & Hill, A. P. (2019). Perfectionism is increasing over time: A meta-analysis

    of birth cohort differences from 1989-2016. *Psychological Bulletin, 145(*4), 410-

    429.

Curtis, E. A. & Drennan, J. (2013). *Quantitative Health Research: Issues and Methods.*

    Berkshire England: McGraw-Hill.

Edwards, D., Hawker, C., Carrier, J., & Rees, C. (2015). A systematic review of the

    effectiveness of strategies and interventions to improve the transition from student

    to newly qualified nurse. *International Journal of Nursing Studies, 52,* 1254-

    1268.

Gauthier, T., Meyer, R.M.L., Grefe, D., & Gold, J.I. (2014). An on-the-job mindfulness-

    based   intervention for pediatric ICU nurses: A pilot. *Journal of Pediatric*

    Nursing, 30, 402-409.

Gibbons, C., Dempster, M., & Moutray, M. (2009). Surveying nursing students on their

    sources of stress: A validation study. *Nurse Education Today, 29(*2009), 867-872.

Goff, A. (2011). Stressors, academic performance, and learned resourcefulness in

    baccalaureate   nursing students. *International Journal of Nursing Education*

    Scholarship, *8(*1), 1-20.

Henderson, J. (2015). The effect of hardiness education on hardiness and burnout on

    registered nurses. *Nursing Economics, 33*(4), 204-209.

Hersch, R.K., Cook, R.F., Dietz, D.K., Kaplan, S., Hughes, D., Friesen, M.A., & Vezina,

    M. (2016). Reducing nurses' stress: A randomized controlled trial of a web-based

    stress management program for nurses. *Applied Nursing Research, 32*, 18-25.

Hewitt, P. L. & Flett, G. L. (1991). Perfectionism in the self and social contexts:

Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60(*3*)*, 456-470.

Jameson, P. R. (2014). The effects of a hardiness educational intervention on hardiness and perceived stress of junior baccalaureate nursing students. *Nurse Education Today, 34(*2014), 603-607.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice, 10(*2), 144-156.

Kellar, S. P. & Kelvin, E. A. (2013). *Munro's Statistical Methods for Healthcare Research* (6th ed.). Philadelphia, PA: Lippincott, Williams, & Wilkins.

Kelly, J. & Clark, H. (2017). Perfectionism among nursing students. *International Journal of Nursing and Clinical Practice, 4(*237), 1-6.

Kim, L. E., Chen, L., McCann, C., Karlov, L., & Kleitman, S. (2015). Evidence for three factors of perfectionism: Perfectionsitic strivings, order, and perfectionistic concerns. *Personality and Individual Differerences 84(*2015), 16-22.

Klainin-Yobas, P., Keawkerd, O., Pumpuang, W., Thunyadee, C., Thanoi, W. & He, H. (2014). The mediating effects of coping on the stress and health relationships among nursing students: A structural equation modeling approach. *Journal of Advanced Nursing,* 70(6), 1287-1298.

Kobasa, S. (1979). Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality and Social Psychology, 37(*1), 1-11.

Lai, H.L., & Li, Y.M. (2011). The effect of music on biochemical markers and self-
    perceived stress among first-line nurses: a randomized controlled crossover trial.
    *Journal of Advanced Nursing, 67(*11), 2414-2424.

Lazarus, R. S. & Folkman, S. (1987). Transactional theory and research on emotions and
    coping. *European Journal of Personality, 1*, 141-169.

Lee, E. H. (2012). Review of the psychometric evidence of the perceived stress scale,
    *Asian Nursing Research, 6(*4), 121-127.

McCance, K.L., Huether, S.E., Brashers, V.L., & Rote, N.S. (2014). Pathophysiology:
    The Biologic Basis for Disease in Adults and Children (6th ed.). Mosby Elsevier:
    Maryland Heights, Missouri.

Mealer, M., Conrad, D., Evans, J., Jooste, K., Solyntjes, J., Rothbaum, B., & Moss, M.
    (2014). Feasibility and acceptability of a resilience training program for intensive
    care unit nurses. *American Journal of Critical Care, 23*(6), e97-e105.

National League for Nursing (2018). Biennial survey of schools of nursing, academic

    year 2017-2018. Retrieved from: http://www.nln.org/newsroom/nursing-education-
    statistics

Por, J., Barriball, J., Fitzpatrick, J., & Roberts, J. (2011). Emotional intelligence: It's
    relationship to stress, coping, well-being and professional performance in nursing
    students. *Nurse Education Today, 31(*2011), 855-860.

Prud'homme, J., Dunkley, D. M., Bernier, E., Berg, J., Ghelerter, A., & Starrs, C. J. (2017). Specific perfectionism components predicting daily stress, coping, and negative affect six months and three years later. *Personality and Individual Differences, 111*, 134-138.

Rice, K. G., & Ashby, J. S. (2007). An efficient method for classifying perfectionists. *Journal of Counseling Psychology, 54*(1), 72-85.

Rice, K.G. & Lapsley, D. (2001). Perfectionism, coping, and emotional adjustment. *Journal of College Student Development, 42*, 157-168.

Rice, K. G. & Lopez, F. G. (2004). Maladaptive perfectionism, adult attachment, and self- esteem in college students. *Journal of College Counseling, 7(*2), 118-128.

Richardson, C. M. & Rice, K. G. (2015). Self-critical perfectionism, daily stress, and disclosure of daily emotional events. *Journal of Counseling Psychology, 62(*4), 1-9.

Robert Wood Johnson Foundation (RWJF). (2014). Nearly one in five new nurses leaves first job within a year, according to survey of newly-licensed registered nurses. Retrieved from: http://www.rwjf.org/en/library/articles-and-news/2014/09/nearly-one-in-five-new-nurses-leave-first-job-within-a-year--acc.html on January 27th, 2017.

Sanko, J., Mckay, M., & Rogers, S. (2016). Exploring the impact of mindfulness meditation training in pre-licensure and post graduate nurses. *Nurse Education Today, 45*, 142-147.

Smith, J. K. (1983). Quantitative versus qualitative research: An attempt to clarify the

issue. *Educational Researcher, 12(*3), 6-13.

Smith, M. M, Saklofske, D. H., Yan, G., & Sherry, S. B. (2015). Perfectionistic strivings

and perfectionistic concerns interact to predict negative emotionality: Support for

the tripartite model of perfectionism in Canadian and Chinese university students.

Personality and Individual Differences, 81, 141-147.

Sood, A., Prasad, K., Schroeder, D., & Varkey, P. (2011). Stress management and

resilience training among department of medicine faculty: A pilot randomized

clinical trial. *Journal of General Internal Medicine, 26(*8), 858-861.

Spadaro, K. C. & Hunker, D. F. (2016). Exploring the effects of an online asynchronous

mindfulness meditation intervention with nursing students on stress, mood, and

cognition: A descriptive study. *Nurse Education Today, 39(*2016). 163-169.

Stoeber, J. & Diedenhofen, B. (2017). Multidimensional perfectionism and counterfactual

thinking: Some think upward, others downward. *Personality and Individual*

Differences,   119, 118-121

Su, X. Y., Lau, J. T., Mak, W. W., Choi, K. C., Feng, T. J., Chen, X., Liu, C. L., Liu, J.,

Liu, D., Chen, L., Song, J. M., Zhang, Y., Zhao, G. L., Zhu, Z. P., & Cheng, J. Q.

(2015). A preliminary validation of the Brief COPE instrument for assessing

coping strategies among people living with HIV in China. Infectious diseases of

poverty, 4, 41. https://doi.org/10.1186/s40249-015-0074-9

Survey Monkey. (2019). Sample size calculator. Retrieved from:

> https://www.surveymonkey.com/mp/sample-size-calculator/ on June 10th, 2019.

Tank, A.W. & Wong, L. (2015). Peripheral and central effects of circulating

> catecholamines. *Comprehensive Physiology, 5(*1), 1-15.

Van Der Riet, P., Rossiter, R., Kirby, D., Dluzewska, T., & Harmon, C. (2015). Piloting a

> stress   management and mindfulness program for undergraduate nursing
>
> students: Student feedback and lessons learned. *Nurse Education Today,*
>
> *35(*2015), 44-49.

Villani, D., Grassi, A., Cognetta, C, Toniolo, D., Cipresso, P., & Riva, G. (2013). Self-

> help stress management training through mobile phones: An experience with
>
> oncology nurses. *Psychological Services, 10*(3), 315-322.

Wimberley, T.E., Mintz, L.B. & Suh, H. (2016) Perfectionism and mindfulness:

> Effectiveness of a bibliotherapy intervention. *Mindfulness* **7,** 433–444.
>
> https://doi.org/10.1007/s12671-015-0460-1

Wolf, L., Stidham, A. W., & Ross, R. (2015). Predictors of stress and coping strategies

> of US   accelerated vs. generic baccalaureate students: An embedded mixed
>
> methods study. *Nurse Education Today, 35(*2015), 201-205.