ASSESSING BURNOUT AND RESILIENCY IN DOCTOR OF NURSING PRACTICE STUDENTS

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DOCTOR OF NURSING PRACTICE

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ABSTRACT

This project aims to further assess the issue of burnout among Doctor of Nursing Practice (DNP) students, a population that remains understudied in the context of burnout research. DNP students, who concurrently function as registered nurses, graduate students, and novice nurse practitioners (NPs), can face many challenges in their academic journey. The rigorous demands of didactic and clinical coursework have been shown to impact academic success and overall well-being. Existing literature highlights high levels of burnout among DNP students, which affect various aspects of their lives, including personal time, sleep, and relationships.

Resilience has been identified as a potential strategy to mitigate burnout, with more resilient individuals experiencing lower rates of burnout and an improved quality of life. By assessing the correlation between these factors, the aim is to shed light on the prevalence and causes of burnout symptoms in DNP students and explore the levels of resiliency within this population.

A quantitative descriptive survey was conducted to collect data on burnout and resiliency levels among DNP students. Thirty-one DNP students completed the survey. Burnout scores reflected moderate to high levels in second and third-year students, with first-year students experiencing the lowest rates of burnout. Resiliency scores were below the national average, with third-year students experiencing the lowest levels of resilience.

The cynicism component of burnout correlated negatively with resilience, while the professional efficacy component of burnout correlated positively with resilience. There was no correlation observed between the emotional exhaustion component of burnout and resilience. Furthermore, DNP students with resilience exposure experienced lower rates of cynicism and were found to be

more resilient than participants who had no resilience exposure. These findings strengthen the theory that utilizing resilience is useful in decreasing burnout severity.

The outcomes of this practice improvement project hold significant implications for the mental health and well-being of DNP students. Interventions can be developed by individuals and educational institutions to potentially prevent and reduce the likelihood of burnout. This project addresses an urgent need for research in this area and underscores the importance of prioritizing the mental health of health professionals in training.

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DEDICATION

This dissertation is dedicated to my parents, Omer and Fayroz Ahmad. I'm incredibly grateful to you both for your endless sacrifices, and unconditional love, that have enabled me to pursue my academic aspirations. Your encouragement and belief in my abilities have been a constant source of strength and inspiration, Thank you so much.

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LIST OF ABBREVIATIONS

AACN	American Association of Colleges of Nursing
CBT	Cognitive Behavioral Therapy
HPSA	Health Profession Shortage Areas
DNP	Doctor of Nursing Practice
NP	Nurse Practitioner
MD	Medical Doctor
MS	Medical Student
SRNA	Student Registered Nurse Anesthetist
CD-RISC	Connor Davidson Resiliency Scale
MBI-GS (S)	Maslach Burnout Inventory-General Survey for Students
MBI-EX	Maslach Burnout Inventory-Exhaustion Subscale
MBI-CY	Maslach Burnout Inventory-Cynicism Subscale
MBI-PE	Maslach Burnout Inventory-Professional Efficacy Subscale

CHAPTER 1: INTRODUCTION

Background and Significance

Primary care is a critical division of the United States healthcare system that improves health outcomes and reduces mortality across the lifespan (National Academies of Sciences, Engineering, and Medicine et al., 2021). Six in ten adult Americans are affected by at least one chronic disease (Davis, 2022). According to the U.S. Census Bureau's projections, by 2034, the population of older adults will surpass that of children under 18 for the first time (2018). The number of physicians choosing primary care careers remains insufficient to replace those leaving due to retirement or burnout (Xue et al., 2019).

Herbert Freudenberg first described burnout in 1974 as a state of mental and physical exhaustion caused by one's professional life (Freudenberg, 1974). A systematic review of 21 studies evaluating burnout in primary care providers suggests burnout rates may be as high as 60% (Abraham et al., 2019). Burnout tends to manifest before entering the workforce with the average rate of medical student (MS) burnout being 44.2% (Frajerman et al., 2019). This issue is especially concerning for rural areas with long-standing provider shortages (Association of American Medical Colleges, 2021). Over 74 million Americans live in Health Professional Shortage Areas (HPSA), characterized by a ratio of more than 3,500 patients per primary care provider (Health Resources and Services Administration, 2023).

The use of nurse practitioners (NPs) is one way to improve care delivery and address the growing patient demand. There are 385,000 licensed NPs in the United States and projections anticipate a 45% growth by 2032 (American Association of Nurse Practitioners, 2023). Between 2021 and 2022, a total of 41,021 students were enrolled in DNP programs, and during the same period, over 11,000 individuals completed DNP programs in the U.S. (American Association of

Colleges of Nursing, 2023). The literature examining burnout among NPs is also growing. A Medscape survey of 2,084 NPs in the U.S. found that 62% of NPs reported feelings of burnout, with 31% considering leaving healthcare (2022).

During a typical three-year academic program, DNP students must engage in time-intensive coursework and clinical learning experiences similar to MSs. Literature describing the prevalence of burnout among DNP students is marginal compared to Medical Doctors (MDs), MSs, and NPs. DNP students can experience poor mental health outcomes like MSs, given the parallel nature of their stressors. Increased independence, large workloads, and lack of support influence the capability of DNP students to complete their programs and fulfill academic goals (Alshael et. al., 2021 & Leslie et. al., 2021). In addition to increased stress, inappropriate coping strategies, such as substance abuse, can cause prolonged mental health problems that carry into future medical practice (Jordan et al., 2020). A study of over 500 student registered nurse anesthetists (SRNA) by Day and colleagues (2022), found 81.3% of SRNAs experienced medium to high burnout rates.

Academic burnout was found to negatively impact life satisfaction in MSs (Dyrbye et. al., 2017; Wang et al., 2022). Interventional studies show that promoting resilience, an important psychological resource, can be effective in mediating psychological distress like burnout (Galente et al., 2018). A longitudinal study conducted by Nelson (2018), evaluating 37 DNP students at a North Dakota School of Nursing were found to have a mean resiliency score lower than the general public, with the mean score being in the 25 to 50 percentile, signifying students displayed lower than average resiliency scores. More resilient MSs can recover from challenges while learning and gathering strength from the experience (Jordan et al., 2020). Therefore, resiliency among DNP students can likely be an important intervention to decrease burnout.

Resiliency can be built by strengthening social relationships, using stress-coping exercises, and creating achievable goals (Leslie et. al., 2021). This practice improvement project will extend the literature on burnout symptoms and resiliency levels among DNP students.

Problem Statement

Nurses, MSs, and healthcare providers remain at elevated risk for burnout, yet there is minimal data evaluating burnout in DNP students. DNP students are a unique population simultaneously fulfilling multiple roles as registered nurses, graduate students, and novice NPs, all while balancing personal obligations. Rigorous didactic and clinical courses impact academic success and health. Students in graduate nursing programs describe high levels of anxiety and stress affecting their sleep, relationships, and finances (Higgins & Hartgerink, 2022).

Resiliency is an effective strategy to combat burnout. More resilient students experience lower rates of burnout and have a better quality of life (Nituica et. al., 2021). The outcomes from this project are important for the mental health of DNP students and for the potential development of interventions by educational organizations to prevent and decrease the likelihood of burnout. Data from this project can be used to help understand reasons for the lack of resiliency and frequency of burnout symptoms in DNP students. With better understanding, training can be provided to help implement changes throughout DNP programs to support overall well-being. Therefore, I propose conducting a quantitative descriptive survey to assess the correlation between resiliency and burnout among DNP students.

Purpose

The purpose of this practice improvement project is to evaluate the prevalence of burnout symptoms and level of resiliency in DNP students across multiple Schools of Nursing to identify education and practice improvements and to evaluate factors that may impact these issues.

Objectives

1. Evaluate burnout symptoms among first, second and third-year DNP students, utilizing the Maslach Burnout Inventory-General Survey for Students (MBI-GS (S)) scale.
2. Evaluate resiliency levels among DNP students across academic programs, utilizing the Connor Davidson Resiliency Scale (CD-RISC), and its correlation to burnout.
3. Disseminate findings within surveyed Schools of Nursing to inform about areas for improvement related to promoting resiliency and preventing burnout.

CHAPTER 2: THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Chapter 2 includes a list of definitions with a description of the Transaction Model of Stress and Coping (Lazarus & Folkman, 1984), and review of literature on burnout and resiliency in DNP students. The definitions of burnout and resiliency are provided. The Transactional Model of Stress and Coping is used in this project to help explain how DNP students perceive and respond to stressors in relation to burnout and resiliency. The review of literature is divided into the following sections: (a) burnout among graduate healthcare professional students, (b) risk factors for burnout, (c) impact of burnout, (d) prevention of burnout, (e) resilience in graduate healthcare professional students and (f) learning resilience interventions.

Definitions

Burnout

Burnout was originally an occupational phenomenon conceived in the human services professions. The term was coined to describe the process of gradual exhaustion, cynicism, and loss of commitment that had been observed in those working in this context (Maslach & Jackson, 1981). Based on these observations, burnout was defined as a multidimensional syndrome comprising three symptoms, namely, exhaustion, cynicism, and reduced efficacy (Maslach et al. 1986). Christine Maslach (2006) described burnout as, "the evocative imagery of a flame being reduced to ashes resonates with people's own experience of psychological erosion over time. The initial "fire" of enthusiasm, dedication, and commitment to success has "burned out," leaving behind the smoldering embers of exhaustion, cynicism, and ineffectiveness" (p.37). Unlike acute stress reactions that develop in response to critical incidents, burnout is a cumulative reaction to ongoing stressors. Burnout is a common form of exhaustion that can affect people of all ages.

Resiliency

Resilience is the dynamic ability to effectively navigate and adapt to challenging life experiences. This adaptation primarily hinges on one's mental, emotional, and behavioral flexibility, all while responding to both external and internal pressures (*Resilience,* 2022). Another definition points to an individual's ability to respond to stress healthily, such that their goals are achieved with minimal psychological and physical distress (Lin et al., 2019; Jordan et al., 2020). The capacity to regulate emotions in stressful times is influenced by many factors, including one's environment, social support network, epigenetic changes, coping strategies, and therapeutic interventions (Hunter et al., 2018). Engaging in mindfulness and stress-coping training can cultivate adaptive behaviors that enhance resilience by fostering a problem-solving mindset. Conversely, when resilience is lacking, individuals may resort to maladaptive coping behaviors that lead to an unhealthy lifestyle (Wong et al., 2023).

Theoretical Framework

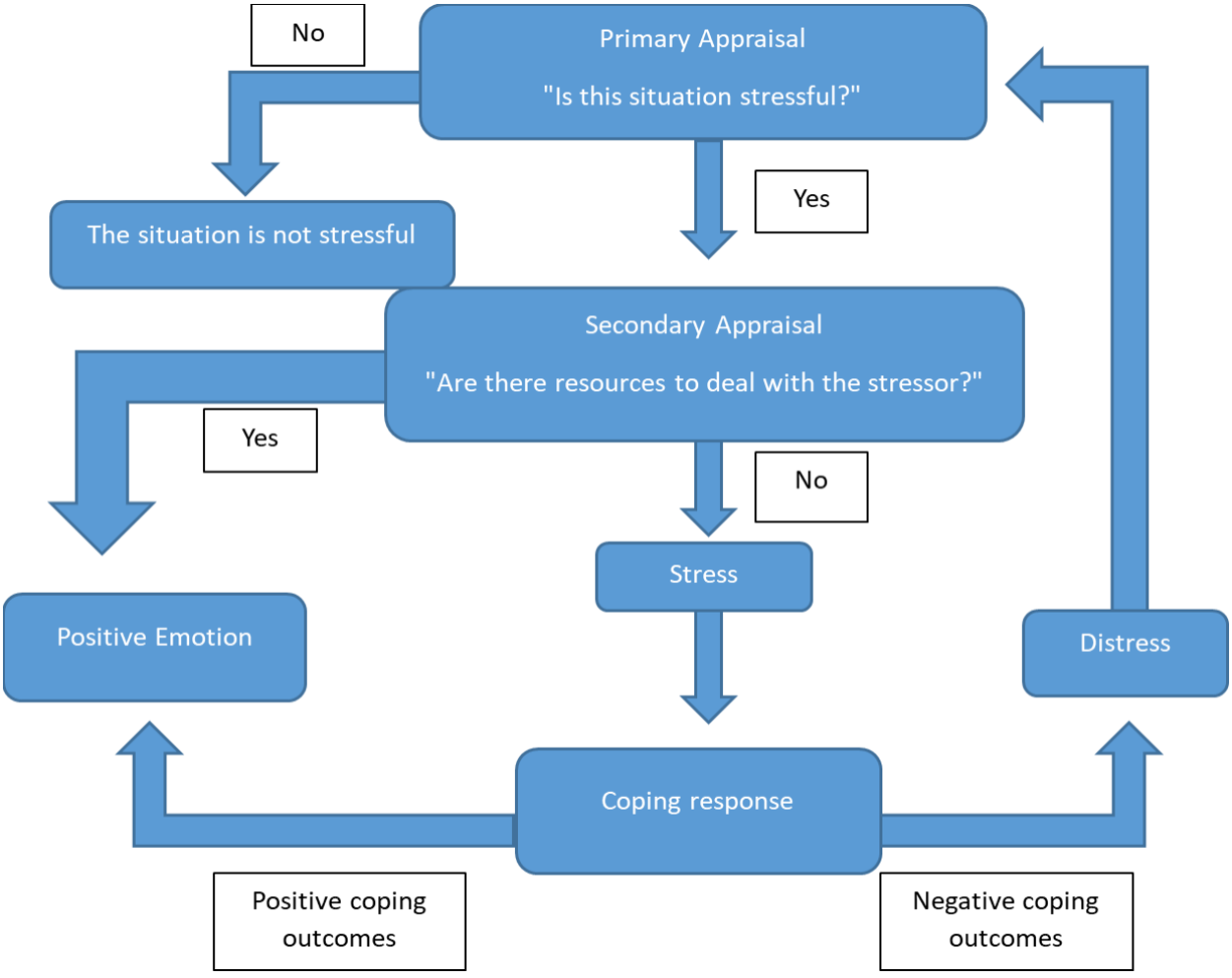
Transactional Model of Stress and Coping

The Transactional Model of Stress and Coping, created by Richard Lazarus and Susan Folkman, is a widely recognized theoretical framework that explains how individuals perceive and respond to stressors. The model proposes that stress is a result of the transaction between individuals and their environment, and that coping is a dynamic process that involves cognitive and behavioral efforts to manage stress (See Appendix H) (Lazarus & Folkman, 1984). There are five key components included within the model. The five key components within the model are the identification of a stressor, primary appraisal of the stressors' significance, secondary appraisal of one's resources to deal with the stressor, coping with the stressor and finally reappraisal of the stressor and the effectiveness of the coping strategies.

The process of perceived stress and coping can be applied to DNP students in relation to burnout and resiliency. When students experience a stressor from an event, situation, or demand perceived as challenging, they will experience a positive or negative appraisal. If there is a negative appraisal of the interaction, the student will attempt to cope and change the interaction from negative to positive. If the individual is unable to cope and change the interaction from negative to positive, negative appraisal occurs, leading to a stress response and an increased likelihood for burnout.

Figure 1

Adaptation of The Transactional Model of Stress and Coping



Literature Review

Search Strategy

An in-depth literature review was done utilizing the Cochrane Database of Systematic Reviews (Cochrane), Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO and PubMed. A systemic screening process was applied to the resulting articles to include relevant results. A Prisma flow diagram highlighting the screening process is provided in Appendix B. The use of keywords, "burnout AND nurse practitioner students AND resilience," resulted in no results while searching with Cochrane. Therefore, a different set of keywords, "burnout AND nurse practitioner students," along with changing the terms to "graduate students AND burnout" was then applied. However, the modified search yielded 2 relevant studies and 109 research articles. After screening the findings, 3 were considered relevant.

Furthermore, CINAHL PsycINFO and PubMed were also utilized for the search of evidence. The use of keywords, "nurse practitioner students AND burnout AND resilience," resulted in no results. The use of key words, "medical students AND burnout AND resilience," was searched instead. The search was limited to full-text, peer-review, and published within the last five years from 2017. Older articles were included only if they had essential information to add. Initially, CINAHL resulted in 130 articles, PsycINFO 56 and PubMed resulted in 13 articles. After screening the titles and abstracts, 6 articles were left from CINAHL, 2 articles were kept from PsycINFO and 4 articles were left from PubMed for the full-text review.

Additionally, research articles were acquired from other sources (i.e., hand searching and google scholar). Over 2,000 articles resulted when searching "nurse practitioner students, burnout, and resiliency." After limiting the results to review articles since 2017, 233 research articles from other sources were found and 16 were considered relevant.

Burnout Among Graduate Healthcare Students

Academic burnout refers to a multidimensional syndrome of exhaustion from studying, cynicism directed to one's study, and reduced efficacy concerning academic work (Madigan & Curran, 2020). Having to manage a personal life, occupational obligations, and the pressures from the highly competitive nature of medical practice contributes to higher burnout rates in graduate healthcare students compared to their same-age peers (Bullock et al., 2017). The literature shows that burnout among medical students is a significant issue, especially among working medical students (Erschens et al., 2018). Overload is crucial reason for academic burnout. The mounting pressure of school and the difficulty of educational materials create a perfect scenario for burnout to appear over time.

The evolution of student burnout is rooted in prolonged academic stress, a phenomenon exacerbated by the competitive environment prevalent in health profession schools. According to Kachel et al. (2020), escalating pressure, inadequate support, and a lack of comprehension regarding hierarchical structures in medical schools contribute to the development of cynicism in healthcare students. Cynicism, identified as a prominent symptom of academic burnout, is defined as a withdrawal from studying (Mirzaei-Alavijeh et al., 2022). Notably, the study by Kachel et al., (2020) noted that cynicism intensifies over the academic years of MSs, heightening the risk of dropping out.

Research consistently shows that the risk of graduate nursing students experiencing burnout increases as they progress through their education. A randomized control trial of over 500 student registered nurse anesthetists (SRNA) by Day and colleagues (2022), found an increase in levels of burnout from the first through the third years of training, with the highest levels of overall burnout in the last year of training for SRNA. These findings were mirrored by a

similar study by Nelson (2018) which found that DNP students experienced a significant increase in burnout throughout their educational coursework, with the final year students experiencing the highest level of burnout.

Many problems that arise with burnout are merely derivatives of harmful coping mechanisms and maladaptive behaviors in MSs (Abreu Alves et al., 2022). Students can resort to isolation, the use of drugs or alcohol, and withdrawal from their studies to cope with the challenges they face during their training. The study by Almutairi and colleagues (2022) also showed that burnout may lead to sleep deprivation, which can increase depression symptoms. Students often develop comorbid mental health conditions due to maladaptive coping behaviors and burnout. A cross-sectional study reported a strong association between burnout severity and suicidal ideation. The same study highlighted that more than one in ten MSs experienced thoughts of suicide during their training (Dyrbye et al., 2008).

Risk Factors for Burnout

DNP students are at risk of developing burnout before caring for their first patients as licensed professionals. Studies on MSs have found relationships between academic burnout and factors such as a student's gender, marital status, having children, and experiencing institutional mistreatment. There is currently no literary consensus on gender differences associated with burnout in MSs. However, studies such as Andrade et al. (2023) found that female graduate students were more likely to develop burnout, suffer from exhaustion, and have higher levels of stress than males. It is important to note the increased prevalence of academic burnout in females because 87.4% of all nurse practitioners are female (*Nurse Practitioner Demographics and Statistics [2023]: Number of Nurse Practitioners in the Us*, 2021).

Being single was also associated with higher burnout scores compared with students that are married (Andrade et al., 2023). It can be assumed that married students have more purposeful lives, better time management, and increased motivation to complete their education with greater social and financial support. The study by Njim et al. (2019) found that having kids, a chronic illness, life-changing crises, and having depressive symptoms increase academic burnout in MSs.

Suggestions might be made that there is an association between having children and experiencing additional stress, leading to greater rates of burnout. However, a meta-analysis of 25 studies by the American Psychiatric Association, found that being a parent protected medical students from burnout (Sous, 2017). The medical students with children may have more conflict at home but were found to be less cynical and more empathetic, with lower rates of depression and greater life satisfaction (Sous, 2017).

A study by Leupold, 2020, proved that perceived academic support is a critical factor that contributes to academic burnout. The academic support graduate students receive from their department, faculty, or university is essential to developing a sense of belonging in the educational environment. The lack of perceived organizational support can increase the risk of experiencing exhaustion and dissatisfaction with doctoral studies. Increased exhaustion and low levels of personal accomplishment led to academic burnout and consequences such as dropping out (Andrade et al., 2023). This can be explained by feelings of loneliness or not having emotional support to keep up with academic responsibilities.

The topic of self-efficacy is heavily discussed within the literature and is frequently tied to high rates of academic burnout. Self-efficacy refers to a student's confidence in their ability to handle the academic workload. A study by Safarzaie et al. (2017) found a correlation between

the way graduate students evaluated themselves on self-efficacy and how it heavily affected their levels of academic burnout. These results are supported by Su Hyun Lee & Jeon (2015) findings that self-efficacy accounts for 37% of academic burnout among the 446 MSs studied.

The study from Asirvatham et al. (2021) further elaborates on other factors that affect academic burnout. The researchers mention bad experiences with peers and academic overload can negatively affect burnout. These findings are supported by the first large-scale longitudinal study by Dyrbye et. al. (2021) documenting the association between mistreatment and perceptions of the learning environment in medical students on a national sample of 14,126 respondents. Of the students, 22.9% reported some form of mistreatment, and one in every 14 MSs regrets medicine as a career choice even before their residency begins. Many of these institutional factors are modifiable and academic programs can attempt to improve the learning environment to support student well-being.

Impact of Burnout

NPs and DNP students are at heightened risk of burnout, comparable to MDs and MSs. This elevated risk stems from factors like intense coursework, growing scope of practice, increased productivity expectations, and complex work-related decision making (Hoff et al., 2017 & Leslie et al., 2021). The effects of burnout can lead to negative consequences for patient care, practitioner health, and an increased strain on the healthcare system. Patients can be negatively impacted by practitioner burnout through medical errors and poor quality of care (West et al., 2018).

The health of MSs is negatively impacted by burnout through associated poor self-care practices, substance abuse, depression, and suicidal ideation (Bolatov et al., 2022). For example, MSs are more likely to succumb to substance abuse than people of similar demographics who are

not in medical school. Specifically, one study by the Mayo Clinic (2016) reported that nearly 33% of MSs reported the symptoms of alcohol abuse, compared with only 16% of their non-medical peers. Reports among MSs indicate an association with an increased risk of suicide, despite uncommon risk factors like financial concerns and job security in medicine. One in 16 practicing physicians, one in ten medical students, and one in four medical interns report some degree of suicidal ideation (Menon et al., 2020). A random meta-analysis of 42 studies involving 26,824 medical students showed a 37.23% prevalence rate of burnout symptoms (Almutairi, 2022).

The inability to adapt to the intense mental effort and many hours of study required for medical training can increase dropout risk, mental suffering, sleep difficulties, substance abuse, and health problems (Galdino et al., 2016). The side effects of burnout can quickly have an impact on the school and community at large. Some findings showed that 11% of MSs had serious thoughts of dropping out of medical school each year (Andrade et al., 2023). If students are experiencing high levels of cynicism and physical exhaustion, the learning environment suffers. Decreases in graduation and attendance rates are not attractive to potential MSs, making it even more challenging for schools and communities to yield successful providers.

The meta-analysis study from Salvagioni et al. (2017) shows that burnout can lead to an increased likelihood of heart disease, obesity, diabetes, hypertension, hyperlipidemia, and other conditions associated with poor metabolism. The study also found that prolonged burnout periods led to neuromuscular pain, such neck, shoulder, and back pain. Headaches and migraines were also seen as a constant consequence of burnout. The study by May et al. (2018) showed that academic burnout significantly correlated with greater systolic and diastolic blood pressure, making academic burnout a predecessor of pre-hypertension or early cardiovascular disease.

Poor sleep quality and sleep deprivation are critically linked to higher burnout scores in MSs (Grady & Roberts, 2017; Wolf & Rosenstock, 2016). MSs in general had lower sleep quality than what is deemed healthy and slept fewer hours than the average population, getting approximately 5.8 hours of sleep a night (Sundas et al., 2020). Healthy People 2030, which outlines the national health goals for the next decade, recommends adults receive at least 7 hours of sleep a night to promote health, and well-being (U.S. Department of Health and Human Services, 2020). Sleep is a restorative bodily function crucial for mental well-being, whereas deprivation of sleep makes the body more sensitive to emotional and stressful stimuli (Vandekerckhove & Wang, 2018). Sleep quality can affect burnout susceptibility, which can further escalate mental suffering.

Academic burnout has many consequences that range from physical, psychological, and social implications. The central theme observed in the literature is that students suffering from burnout can experience significant side effects that can hinder academic achievement and practitioner success. The effects of burnout have serious repercussions on patient safety, quality of care, professionalism, and patient satisfaction (Panagioti et al., 2018 & Dyrbye et al., 2010).

Prevention of Burnout

There is no single solution that acts as a quick fix for reducing burnout. Demographic characteristics, personality traits, temperament, and coping styles all play a role in the likelihood of an individual's academic burnout. Due to the number of factors involved in burnout risk and the differing perceptions towards stressors, individualized interventions are important. Many of the methods mentioned to cope with burnout include mindful self-care practices (Slatyer et al., 2017), healthy exercise habits (Dyrbye et al., 2017), and changes in organizational culture (National Academy of Medicine, 2019).

Strategies to improve a graduate student's level of academic burnout should include approaches to eliminate mistreatment, build peer support, and enhance students' self-efficacy. Many larger academic institutions offer services, such as professional counseling, that support student's well-being. However, many services available to graduate students are often underutilized due to perceived stigma. The belief that healthcare students and providers don't deal with mental illnesses makes it less likely for students to seek professional help. It is recommended that university programs stress the importance of healthy social networks, activities, and other coping mechanisms to improve the overall mental well-being and academic success of students (Bullock et al., 2017).

Resilience training serves as a protective mechanism against burnout and has been significantly correlated with less stress, better mental health, and improved quality of life (Dyrbye et. al., 2017). Dyrbye and colleagues (2017) found that incorporating mindfulness training into the formal curriculum of first-year medical school students didn't increase resiliency levels and suggested interventions be both individually and organizationally based. Slatyer et al. (2017) developed a mindful self-care and resiliency training program using mindfulness strategies like meditation with physical activity to reliably reduce burnout in nurses. The strategy was proven valid in another study showing physical exercise effectively reduces all three components of academic burnout. Aerobic exercise effectively reduces cynicism by 21%, inefficiency by 13.1%, and exhaustion by 31% (Rosales-Ricardo & Ferreira, 2022). Mindfulness exercises coupled with other strategies can help establish a better approach to coping with academic challenges.

The prevalence of burnout is high among MSs, and the detrimental impact it has on the mental health of these students underscores the importance of its occurrence and effects on DNP

students. This understanding is essential for supporting faculty and administration in enhancing the education of healthcare students with strategic curriculum planning. Workload and time pressures have consistently emerged as significant contributors to higher levels of exhaustion, thus leading to burnout. Perhaps during graduate school, DNP students could be provided with individual prevention training on how to work through various obstacles to help prevent academic burnout. Students should focus on time management to help prioritize sleep, exercise, and social interaction while working through graduate school. Administrators armed with this knowledge can prepare students to understand and recognize burnout and give students opportunities to decrease it.

Resilience and Graduate Healthcare Students

Academic resilience can be defined as "the heightened likelihood of success in school and other life accomplishments despite environmental adversities brought about by early traits, conditions, and experiences," (p.45) and is usually measured through questionnaires (Wang et al., 1994). Currently, resilience is popular in psychological and medical fields as a mediator between psychosocial health, health behavior, and health outcomes (Aburng et al., 2016 & Cheng et al., 2022). For instance, Berdida and Grande (2022) reported resilience had a significant mediating role between academic stress and quality of life in Filipino nursing students during the COVID-19 pandemic. Improvements in resilience during DNP school may foster a more dynamic workforce that can continue responding to long-lasting crises, such as the recent COVID-19 pandemic (Aburng et al., 2020). The evidence also demonstrates resilience was an important attribute to surviving and adapting to stressful environments, like graduate school, by optimizing personal ability and establishing a supportive system (Lorente et al., 2021; Young & Rushton, 2017; Ziarko et al., 2020).

Building resilience has the potential to promote DNP student success by combating many negative effects related to professional expectations or traumatic experiences. In a cross-sectional survey involving 118 DNP students, revealed that despite having a history of traumatic childhood events, and balancing the demands of work and school, there was a moderate level of resiliency observed in the participants. This finding is reassuring since, many DNP students have symptoms of negative professional quality of life and presenteeism that could inhibit their job satisfaction and quality of care as a professional NP (Bouchard & Rainbow, 2021). Promoting DNP student's resiliency may improve their ability to thrive amidst academic and professional challenges.

More resilient students are equipped to find ways to utilize protective internal resources together with external resources to successfully cope with academic adversities. Increased self-efficacy, hope, social support, self-care and proper sleep are contributing factors to building resilience (Baluszek et al., 2023). The study by (Wang et al., 2022) shows that resilience is negatively correlated to academic burnout and positively associated with life satisfaction. Resilience is a tool that allows individuals to adjust to challenges, and adversities, overcome problems, and evaluate a challenge with a clear rationale.

Learning Resilience Interventions

The value of education cannot be understated. Education fosters independence, increases knowledge, strengthens the mind, and helps develop an individual's character. Academic achievement has great societal and economic benefits. Relative to students who might struggle in school, students who perform well typically have better health and well-being, are better remunerated, and contribute significantly more to the labor market through higher skills and

training (OECD, 2022). Supporting the mental health of students, as they progress through their education and transition into the workforce is vital for the future success of a nation.

According to the American Psychological Association, resilience can be learned, and it implies the inner strength, optimism, and flexibility of an individual (2018). Several medical programs have a curricular component that aims at developing the learners' resilience skills in North America. Curriculum strategies being implemented by medical schools include emphasis on self-care, mindful reflective learning, meditation, increasing self-efficacy practices, and resilience workshops (Gheihman et al., 2018; Lizotte-Waniewski & Young, 2023; Mugford et al., 2022). Many students participating in resilience interventions are surveyed on the effectiveness, and typically find the trainings favorable. For instance, MSs at a university in North Carolina participated in Active Resilience Training (ART), intending to increase the awareness of resilience as an essential skill in medical education (Mugford et al., 2022). The ART course consists of five modules; each module is presented over two weeks. Mugford and colleagues evaluated the durability of acquired skills from ART up to 18 months after completion of the program (2022). The findings revealed that, on average, 80.6% of students continued to utilize the skills they learned (Mugford et al., 2022).

Despite rallying to build resilience training, the techniques used to develop resilience in higher education are diffuse, and many different approaches exist. Nicklin, Meachon, and McNall (2019) address the interesting fact that conflict is required to promote resilience. Therefore, programs that seek to build resilience in graduate students must tread a fine balance between evoking and reflecting upon bad experiences while providing a safe learning environment. According to Lizotte-Waniewski & Young (2023), stress is not always bad. When optimal, stress can lead to better motivation and performance. Everyone has different stress

thresholds, and what may be motivating for one individual may be overwhelming for another. When overwhelmed with stress, performance is hindered, and burnout occurs. It is important for DNP students to use stress management techniques to build resilience and prevent burnout symptoms.

CHAPTER 3: METHODS

Overall Project Design

A quantitative descriptive survey was used to assess first, second, and third-year DNP students' symptoms of burnout and levels of resiliency. The project collected data electronically from a convenience sample of DNP students from two Schools of Nursing located in North Dakota during the fall semester of 2023. Research is consistently showing that the risk of graduate nursing students experiencing burnout increases as they progress through their education (Day et al., 2022; Nelson, 2018). Resilience has been shown to be a protective mechanism against burnout (Dyrbye et al., 2017). Quantitative numerical data was obtained using the validated MBI-GS (S) survey to evaluate burnout and the CD-RISC survey for levels of resiliency. Additional questions were developed by the co-investigator based on the literature review, along with previous work from Dr. Nelsons' (2018) dissertation titled *An Assessment of Psychological Distress and Resilience Among Nurse Practitioner Students*. Both sets of data were evaluated, along with the additional questions to find possible correlations within the DNP student population.

Implementation Plan

Logic Model

The evidence-based model guiding this project is the Logic Model. The Logic Model is a framework that illustrates the relationship between resources and planned interventions. Essentially, the model's primary function is to evaluate how a program is expected to work by explaining how each component is used to achieve predetermined goals. The Logic Model comprises three essential elements, inputs, activities, and outcomes. Each element plays a pivotal role in orchestrating the path towards the projects' success. (*Logic Model Tip Sheet*, 2011). By

adopting this model, the project is equipped with a clear step-by-step process to better understand the objectives documented within the first chapter. Figure 2 showcases the information concerning the projects available resources and planned interventions using the Logic Model.

Figure 2

Logic Model

Inputs	• Student Time • Assessment Tools • IT resources (Survey software and Statistical software)
Interventions	• Implementation of the MBI-GS (S) and CD-RISC tools to assess DNP student burnout and resilience.
Actions	• Assessment of burnout and resiliency of first second and third-year DNP students during fall 2023 semester • Examine risk factors and correlations for symptoms of burnout and level of resiliency.
Outputs	• Data examining DNP student well-being through burnout levels, resiliency levels and additional factors
Outcomes	• Short-term outcomes: o Correlations between burnout, resiliency, and risk factors o Increased Graduate DNP student awareness o Initial dissemination to stakeholders (participants and faculty at participating schools) • Long-term outcomes: o Faculty awareness for curriculum and program planning o Dissemination to body of literature o Increase NP and DNP student awareness o Potential further NP burnout research implications

Setting

DNP programs are offered in all 50 states with a total of 292 available programs to choose from within the United States (AACN, 2023). Students typically spend eight academic semesters during their program, including fall, spring, and summer semesters. DNP students participate in either an online, in-person or a combined didactic approach. Several students enrolled in these programs live in rural communities and commute to class each week. In just under three years, students will typically complete at least 80 academic credits, 1000 clinical hours, and a scholarly project. Following approval from North Dakota State University's International Review Board (IRB), the co-investigator of the study communicated via email with the directors of six different Schools of Nursing that offer DNP programs located in North Dakota, South Dakota, Minnesota, and Montana (See Appendix C). Two different Schools of Nursing offering DNP programs located in North Dakota agreed to send the survey to the DNP students enrolled within the programs.

Sample/Sample Size/Recruitment

According to the American Association of Colleges of Nursing (AACN) (2023) the number of students enrolled in DNP programs from 2021-2022 was 41,021. Following approval to distribute the survey, a convenience sample of first, second, and third-year DNP students from the two Schools of Nursing located in North Dakota were invited to participate in the study through email (See Appendix D). Emails were sent during the fall semester of 2023. The anticipated participation sample was estimated to be around 120. The potential sample size was estimated according to available DNP student admission rates posted online by the two Schools of Nursing. DNP students who opted out of mass email communications through the two Schools of Nursing, were excluded from the study.

Resources and Costs

Approval was granted from NDSU IRB to share the survey to willing participants. Invitations were sent to participants via institutional e-mail databases with a survey link or QR code to Qualtrics©, a secure survey software program (See Appendix D). Use of Qualtrics© was free for the co-investigator. The MBI-GS (S) and CD-RISC tools, demographics, other variables, and a voluntary drawing for gift cards were compiled and included in the Qualtrics© program (See Appendix E). The voluntary drawing was completed randomly via the Qualtrics© program. The MBI-GS (S) and CD-RISC validated tools were purchased by the co-investigator. Total cost for the use of validated tools was $275. Incentive was provided with ten gift cards totaling the cost of $200. The co-investigator collaborated with a statistician from the NDSU Statistics Department to analyze the results, free of cost.

Assessment Tools

Maslach Burnout Inventory – General Survey for Students

The Maslach Burnout Inventory (MBI) stands as a well-established and widely used tool for the assessment of burnout across various occupational contexts, with its utility extending to students as well (Maslach & Jackson, 1981). This project specifically applied the MBI-GS (S) which encompasses three dimensions designed to capture the nuance of academic burnout in student populations. These three dimensions include: one-emotional exhaustion (MBI-EX), which is defined as severe fatigue caused by study demands; two-cynicism (MBI-CY), which can be defined as the student's mental distance from his/her studies or excessively detached responses to other students at an academic setting; and three-reduced professional efficacy (MBI-PE), which can be defined as feelings of diminished competence and productivity, with a lowered sense of accomplishment (Shadid et al., 2020). To reflect burnout rates, the emotional

exhaustion subscale was measured using five questions scoring (low = 0-9; moderate = 10-14; high > 14), the cynicism subscale was measured using five questions scoring (low = 0-1; moderate = 2-6; high > 6), and the professional efficacy subscale was measured using six questions scoring (low > 27; moderate = 23-27; high < 23). The frequency for each item was scored on a seven-point Likert scale with ranges from 0 (Never) to 6 (Always). High scores on the MBI-EX subscale, MBI-CY subscale and low scores on MBI-PE subscale are indicative of high academic burnout. MBI-PE subscale scores are analyzed in reverse, so that lower scores indicate lower professional efficacy and thus correlate with a higher rate of burnout. The three-dimensional criteria represented by high scores for MBI-EX and MBI-CY and low scores for MBI-PE was used as the point of reference for the determination of high academic burnout in the sample responses.

Connor-Davidson Resilience Scale

The Connor-Davidson Resilience Scale (CD-RISC) is a psychological assessment tool used to measure an individual's level of resilience. The CD-RISC tool includes five factors to assess resiliency: one-notions of personal competence, high standards, and tenacity; two-trust in instincts, tolerance of negative affect, and the strengthening effects of stress; three-positive acceptance of change and secure relationships; four-control; five-spiritual influences. The self-rating CD-RISC tool is offered in three different forms: the 2-item, 10-item, and 25-item surveys. This project utilized the CD-RISC 25-item survey, which uses a five-point Likert scale, with 0 being "not true at all" to 4 being "true nearly all of the time" (Connor & Davidson, 2003). The total score ranges from 0-100, and higher numerical scores reflect a larger amount of resilience per subject.

Quartiles were also be used to describe four groups of equal numbers taken from the observed distribution of scores. The first quartile (Q1) described the score range for the lowest group (lowest 25% of the population), i.e. the least resilient. The second quartile (Q2) and third quartile (Q3) described the intermediate scores. The fourth quartile (Q4) described the highest score or most resilient, i.e. above 75% of the population. For the CD-RISC-25 in the U.S. general population (n = 577), the median resiliency score is 82, with Q1, Q2, Q3 and Q4 being 0-73, 74-82, 83-90, 91-100 (Connor and Davidson, 2003). For instance, a score of 55 would place a subject in the lowest 25% of the general population. While a score of 89 would fall in the 50-75% percentile, indicating a resilience level greater than 50% of the population but lower than the top 25% (Q4) who are the most resilient.

Demographics

Demographic questions were integrated into the survey based on emerging themes within the extensive literature relating to MSs, MDs, and NPs. Due to limited information regarding DNP risk factors, demographic questions were based primarily on MS and MD literature. Information was collected on age, sex, marital status, financial concern, amount of debt, and involvement of children to understand a general background of the participants. The inclusion of certain factors within the survey was informed by findings from the unpublished CD-RISC and MBI manuals, which highlight certain demographics as being more prone to burnout or lower rates of resilience. For instance, having children is positively associated with exhaustion and cynicism (Maslach & Jackson, 1986). While higher resilience is often seen in individuals with a history of mental health issues who have developed coping strategies (Davidson JRT, 2018). These factors are relevant given the known association between mental health issues like anxiety and depression on burnout prevalence seen in MS (see Appendix E for survey).

Ethical Considerations

This evidence-based project posed minimal risk to the subjects involved. Before involvement in the project, all participants were made aware of the purpose, procedures, and potential benefits, as outlined in the consent document (See Appendix E). All information was made confidential, and all results were reported as specific variable data. For example, data was reported as first, second- and third-year cohort data to fulfill the first objective of the project. A computer with internet access is a program requirement of DNP students, ensuring that all students who were invited to participate had an equal opportunity to complete the survey. After participants read the email, any willing DNP student gave implied consent when clicking on the link with a consent form embedded in the survey. Subjects may have found the survey questions upsetting or intrusive and could therefore, withdraw from the survey at any time without explanation or penalty. There was no known physical risk involved. The potential benefits for participants include increased awareness of burnout, resilience, and risk factors among DNP students. The surveying software was able to assign random identification numbers to surveys, so the investigators were unable to identify individual responses. Surveyors were offered the option to not disclose demographic information within the survey, if they felt the questions could identify them.

The portion of the survey addressing additional variables had questions addressing suicidal thoughts or actions. These inquiries are incorporated to help understand sensitive issues surrounding the mental health and well-being of DNP students. Resources for available mental health services were provided within the informed consent portion of the survey and immediately following questions about suicidality. Students were encouraged to seek out the resources if they were endorsing suicidal thoughts or other mental health conditions (see Appendix E for survey).

Timeline of Project Phases

The timeline for the creation and integration of the evidence-based project was as follows:

- May 2023- Approval to form a supervisory committee
- May 2023- August 2023 – Literature review and synthesis
- September 2023 – Proposal development
- October 2023 – IRB Approval
- November 2023 – Obtain voluntary DNP student participants and distribute surveys through institutional listserv email
- December 2023 – January 2024 – Compile assessment results
- March 2024 – Submit dissertation to committee and defend, share results and recommendations with participating Schools of Nursing
- April 2024 – Submit dissertation to nursing program chair and graduate school

Evaluation/Outcomes/Data Analysis

To address awareness of academic burnout and resiliency levels in DNP students, surveys were developed based on a literature review of the topic area and includes validated scales on burnout and resilience. The MBI-GS (S) and the CD-RISC scale were included in the survey. Targeting a large amount of DNP students to complete surveys on burnout and resiliency was essential. To accomplish this goal, partnership was established with administrators of DNP programs from two Schools of Nursing located in North Dakota to administer the surveys. The MBI-GS (S), CD-RISC, demographics, and other variables were compiled and administered via Qualtrics©, a secure survey tool. All participants who fully completed the survey were offered the chance to enter a drawing for one of ten, $20 gift cards to Amazon so that anyone from anywhere within the nation would be able to use the gift card.

Objective One: Evaluate the prevalence of burnout symptoms among first, second and third-year DNP students, utilizing the MBI-GS (S). Burnout is a form of exhaustion that can be measured using validated tools. DNP students completed the surveys via their own personal electronic devices (i.e., laptop, wireless phone, or tablet). The results from this project provide valuable insight into the prevalence of burnout in DNP students in two academic programs located in North Dakota.

Objective Two: Evaluate baseline resiliency levels among DNP students across academic programs, utilizing the CD-RISC scale, and its correlation to burnout. According to the literature on resilience and MSs, more resilient students experience lower rates of burnout, and have a better quality of life (Dyrbye et al., 2017; Bouchard & Rainbow, 2021). This project examined if this relationship is consistent with DNP students.

Objective Three: Disseminate findings within surveyed Schools of Nursing to increase the understanding of the current state of DNP student mental health issues and inform about areas for improvement related to promoting resiliency and preventing burnout. Raising awareness about burnout symptoms observed in DNP students has the potential to foster the development of strategies to enhance resilience skills, and to mitigate burnout in future healthcare leaders.

The data was evaluated by the number of respondents and information obtained within the survey including MBI-GS (S), CD-RISC responses, demographic questions, and other variables for comparison. A statistician from NDSU Statistics Department was assigned to the co-investigator to collaborate and analyze statistics. The main outcome of this evidence-based project was to add to the growing literature and increase the awareness of burnout and resiliency among DNP students, to support resiliency and decrease burnout.

Data Management and Analysis

The discoveries made through the administered surveys was disseminated to the two Schools of Nursing via electronic presentation and email following defense of dissertation and committee feedback. All the data was gathered using Qualtrics© and downloaded onto the co-investigator's laptop. The co-investigator's laptop and computer was password protected. All data collected from the project was in a restricted access folder in a OneDrive account and access to the folder was only granted to those who worked directly on the project. Raw data was shared with the committee members and the NDSU statistician as needed. The analysis included descriptive statistics, frequencies, and tests of differences using the total score from all Likert items in the questionnaires. The statistician helped facilitate the correlation analysis between CD-RISC, and MBI-GS (S) subscale inventory. After completion of the data analysis and approval of dissertation, all the raw data was deleted from the co-investigator's laptop.

Conclusion

The methods section outlines the comprehensive approach taken to gather baseline data on burnout and resilience levels in DNP students. The MBI-GS (S) and the CD-RISC were chosen based on their established validity and relevance to academic burnout and resiliency. The objectives were guided by the Transactional Model of Stress of Coping by including survey questions regarding experiences and demographic information (see Appendix E for survey content). The results were evaluated from the perspective that each participant has different experiences and demographic factors that influence their coping, resiliency, and overall risk of burnout. Measures were in place to ensure patient confidentiality, informed consent and access to mental health resources.

CHAPTER 4: RESULTS

Survey dissemination was approved by two Schools of Nursing located in North Dakota that offer Doctor of Nursing Practice degrees. Surveys were distributed through the university DNP listserv email. The original sample size was 39. Of the 39 surveys, 31 were considered complete and analyzed in the following material. Surveys were considered incomplete if the MBI-GS (S) and CD-RISC tools were not completed. The demographic information of the participants is displayed in Table 1. Participants also provided their age, which was subsequently categorized into age ranges. This distribution is illustrated in Figure 3, where most participants, about 52%, fell within the 25–30-year-old age range, and 23% in the 31–35-year-old age range.

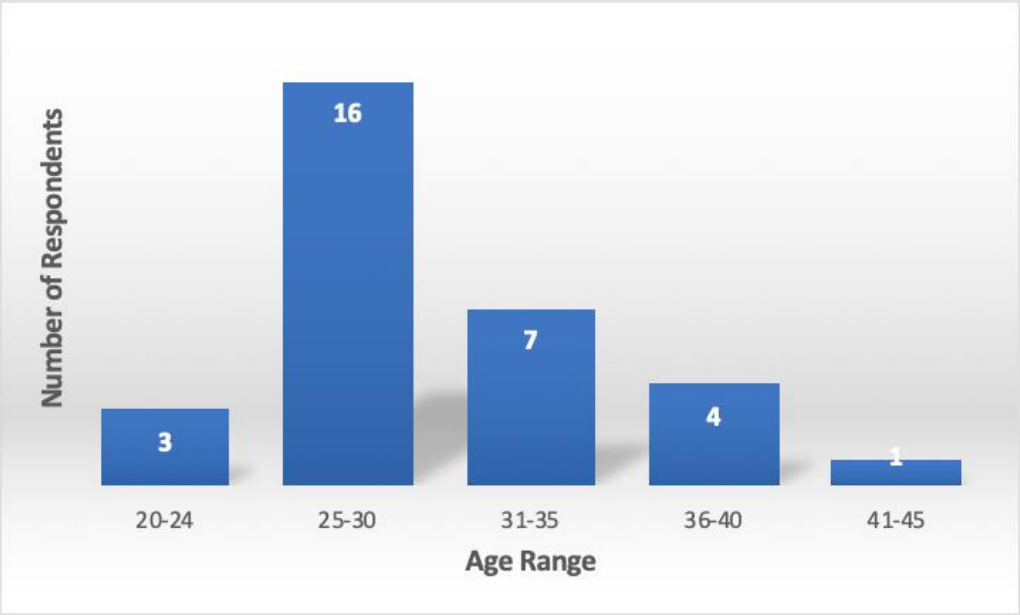
Table 1

Demographics

Gender	Frequency	Percent
Female	31	100%
Male	0	0%
Marital Status		
Married	23	74%
Partnered	3	10%
Never Married	5	16%
Ethnicity		
Caucasian	26	84%
Hispanic or Latino	1	3%
More than one race	1	3%
Prefer not to disclose	3	10%
Year in Program		
First	9	29%
Second	7	23%
Third	15	48%
Children		
Yes	13	42%
No	18	58%

Figure 3

Age Range of Participants



Objective One

The first objective of the project was to, "evaluate the prevalence of burnout symptoms among first, second, and third-year DNP students, utilizing the MBI-GS (S)." The specific findings of this objective are depicted in Table 2. Higher scores within the EX and CY subscales, as delineated by thresholds (low = 0-9; moderate = 10-14; high > 14 for EX, and low = 0-1; moderate = 2-6; high > 6 for CY) reflect the rate of burnout. Conversely, lower scores within the PE category, as indicated by the scores (low > 27; moderate = 23-27; high < 23) reflect higher burnout rates. Overall, the analysis reveals a high level of burnout among the sample, as evidenced by a mean score of 15.3 (*SD* = 6.1) on the MBI-EX. Emotional exhaustion is highlighted by Maslach, Jackson & Leiter (2010) as the cornerstone for predicting burnout. Table 3 also identifies comparative CD-RISC scores among the cohorts to showcase possible correlations.

Table 2

MBI Subscales for Separate Cohorts

	N	MBI-EX Mean (SD)	MBI-CY Mean (SD)	MBI-PE Mean (SD)
All Responses	31	15.3 (6.1)	10.9 (6.7)	26.4 (5.5)
First Year	9	13.8 (5.5)	5.8 (4)	29 (3.9)
Second Year	7	20 (4.6)	12.9 (4.8)	25.6 (5.7)
Third Year	15	14.1 (6.8)	13.2 (7.2)	25.2 (6)

Table 3

CD-RISC for Separate Cohorts

	N	Mean	SD
All Responses	31	74.4	12.2
First Year	9	77.6	14.4
Second Year	7	76	12.9
Third Year	15	71.9	10.8

The findings of the first objective evaluated the prevalence of burnout symptoms among first, second, and third-year DNP students, utilizing the MBI-GS (S) subscales. First-year students had the lowest level of burnout, as indicated by moderate levels of burnout with MBI-EX (*mean* = 13.8) and MBI-CY (*mean* = 5.8); with higher MBI-PE (*mean* = 29) reflecting low levels of burnout. Second and third-year students had similarly high to moderate levels of burnout as indicated by MBI-EX (*mean* = 20; *mean* = 14.1) and MBI-CY (*mean* = 12.9; *mean* = 13.2); with moderate MBI-PE (*mean* = 25.6; *mean* = 25.2). MBI-EX is the basis for predicting burnout according to Maslach & Jackson (2010), and exhaustion levels were highest in the second-year students.

There was 19% (*n* = 6) of students that fell within the category of experiencing high levels of burnout, with high MBI-EX, MBI-CY, and low MBI-PE. However, 48% (*n* = 15) of students experienced moderate to high levels of burnout with high MBI-EX, MBI-CY, and moderate MBI-PE. These findings are like Day and colleagues (2022) finding 20% (*n* = 105) of SRNA students reporting high burnout, and 61.3% (*n* = 325) reporting moderate burnout.

Feelings of exhaustion or cynicism would occur at least a few times a month or more to be consistent with high levels of burnout. Professional efficacy feelings would occur once a month or less to be consistent with high levels of burnout. First-year students reported feeling exhausted once a month or less, and felt cynical a few times a year or less, with feelings of professional efficacy being reported at least a few times a week. Second-year students reported feeling exhausted once a week compared to third-year students reporting feeling exhausted a few times a month. Second and third-year students both reported feeling cynical a few times a month or less, with feelings of professional efficacy being reported at least once a week.

CD-RISC scores range from 0-100, where higher scores indicate greater resilience per subject. The mean CD-RISC score for the entire sample was 74.4, falling below the average general U.S. population (*mean* = 80.7). The CD-RISC scores for the sample ranged from 44-96. This range of scores suggests a considerable variation with some subjects falling significantly below both the sample and general U.S. population averages. Moreover, the distribution of CD-RISC scores can be analyzed using median data and quartiles. For the CD-RISC-25 item, the U.S. general population (*n* = 577) median resiliency score is 82. The quartile ranges belonging to Q1, Q2, Q3 and Q4 are 0-73, 74-82, 83-90, 91-100 (Connor and Davidson, 2003). With regard to the quartiles, the median resiliency score for this sample was 77, indicating a resilience level less than 50% of the general population.

Objective Two

The findings of the second objective evaluated resiliency levels among DNP students across academic programs, utilizing the CD-RISC, and its correlation to burnout. The Pearson Correlation Coefficient (PCC) was used to gauge the linear correlation between all three MBI-GS (S) subscales, and CD-RISC scores. The PCC values comparing MBI-EX, MBI-CY, and MBI-PE with CD-RISC are provided in Table 4. Scatter plots with linear regression are included in Figure 4, 5, and 6 to illustrate the correlation.

The PCC analysis revealed no correlation between the MBI-EX and CD-RISC scores. This finding indicates that there was an elevated feeling of emotional exhaustion without regard to resiliency levels. There was a negative correlation observed between MBI-CY and CD-RISC scores. This finding indicates that when there is an increase in feelings of cynicism there is a decrease in resiliency levels. There was a significantly positive correlation with MBI-PE and CD-RISC scores. This finding indicates that when there is an increase in feelings of professional efficacy, there is also an increase in resiliency levels.

Table 4

Pairwise Comparison of MBI Subscales and CD-RISC

	MBI-EX	MBI-CY	MBI-PE	CD-RISC
MBI-EX		$r = 0.44644$ $p = 0.0118$	$r = -0.00083$ $p = 0.9965$	$r = 0.04353$ $p = 0.8161$
MBI-CY			$r = -0.51560$ $p = 0.0030$	$r = -0.32383$ $p = 0.0755$
MBI-PE				$r = 0.57509$ $p = 0.0007$
CD-RISC				

Figure 4

Linear Regression for MBI-EX Subscale vs. CD-RISC

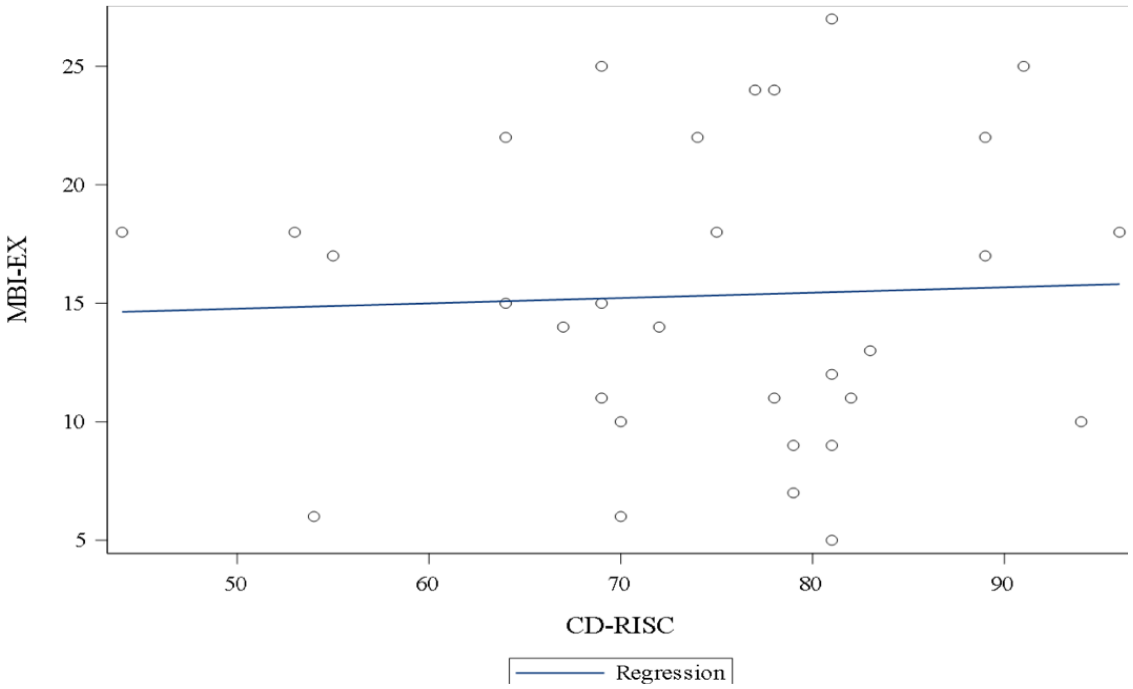


Figure 5

Linear Regression for MBI-CY Subscale vs. CD-RISC

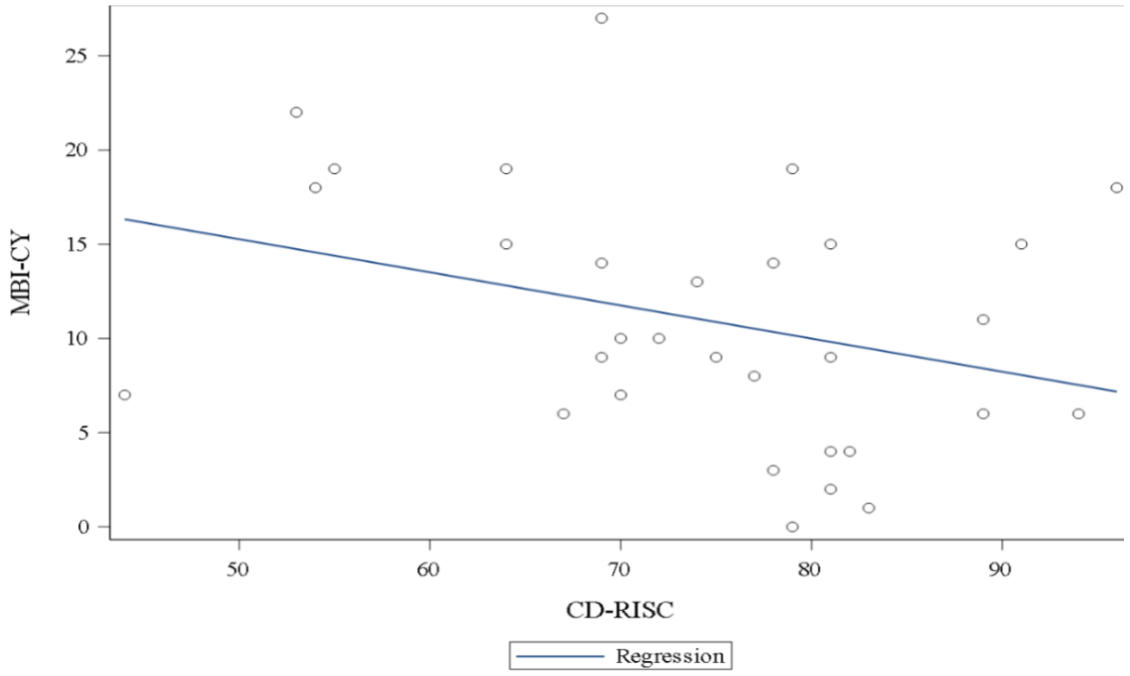
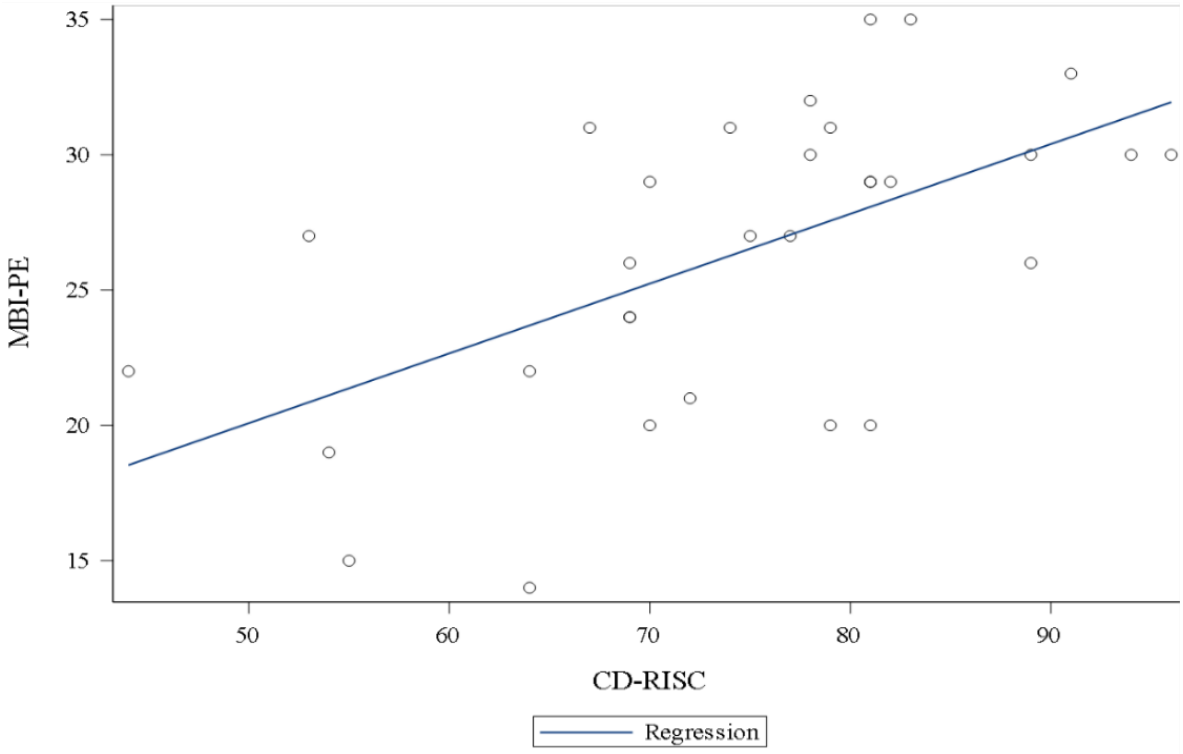


Figure 6

Linear Regression for MBI-PE Subscale vs. CD-RISC



Burnout and Resiliency Comparisons

The survey incorporates additional variables that correspond with common themes identified in the literature review. The following tables are utilized to showcase the participant responses by comparing MBI-GS (S) subscale scores, and CD-RISC scores. The tables include data regarding children, working hours, coping mechanisms, alcohol consumption, mental health, resilience exposure, and perceived sleep quality. The gender demographic consisted entirely of female participants, 100% (n = 31), providing no statistical comparison. Participants also primarily identified with the Caucasian demographic, 84% (n = 26), rendering further statistical analysis unnecessary. Additionally, there was a high prevalence of married participants, 74% (n = 23); therefore, formal statistical analysis was not significant in comparison to single subjects.

Having Children and Not Having Children

Regarding the MBI-GS (S) subscale data, participants with children experienced heightened emotional exhaustion yet demonstrated lower levels of cynicism, alongside having greater professional efficacy then compared with participants without children. Resiliency scores were also greater in participants with children compared to the participants without children. These results echo prior research suggesting that parenthood may act as a protective factor against burnout among medical students (Sous et. al., 2017). Refer to Table 5 for a comparison of MBI-GS (S) subscale and CD-RISC scores in the participants with and without children.

Table 5

MBI-Subscales and CD-RISC for Participants with and Without Children

	N	MBI-EX Mean (SD)	MBI-CY Mean (SD)	MBI-PE Mean (SD)	CD-RISC Mean (SD)
Children	13	16.7 (7.2)	8.6 (4.9)	28.4 (5.1)	75.7 (11)
No Children	18	14.3 (5.6)	12.7 (7.3)	24.9 (5.5)	73.1 (13.6)

Working Hours

All DNP students surveyed were working in some capacity during their academic program. It could be assumed that the greater number of hours worked a week would negatively impact feelings of burnout and levels of resiliency among the surveyed DNP students. Regarding the MBI-GS (S) subscale data, the participants who worked 25 or more hours a week, were more emotionally exhausted than participants who worked less a week. However, the cynicism scores were greatest in individuals who worked 12 hours or less a week, which was not an expected finding. Professional efficacy was also unexpectedly greatest in the individuals that worked 25 or more hours a week. Resiliency was significantly lower in the participants who worked 25 or

more hours a week. Refer to Table 6 for MBI-GS (S) subscale and CD-RISC score comparisons regarding working hours in the DNP sample.

Table 6

MBI-Subscales and CD-RISC for Working Hours

	N	MBI-EX Mean (SD)	MBI-CY Mean (SD)	MBI-PE Mean (SD)	CD-RISC Mean (SD)
Average hours worked/week					
1-12	14	15 (6.3)	12 (6.8)	26.6 (5.7)	75.2 (10.2)
13-24	8	14.5 (8.2)	9.9 (6.1)	25.4 (6.6)	77.4 (12.6)
25+	8	16.8 (4.8)	10.1 (7.4)	27 (4.4)	70.1 (15.7)

Sleep Experiences

intriguing patterns emerged regarding the interplay between sleep quality and various psychological parameters among participants. The participants who rated their sleep quality as "*poor*" had the highest level of emotional exhaustion but were similarly as cynical as the participants who rated their sleep quality as "*excellent/good*." Out of the six participants that rated their sleep quality as "*poor*," 50% (n = 3), were second-year students. Surprisingly, participants who rated their sleep quality as "*excellent/good*," had lower professional efficacy and resiliency then compared with participants who rated their sleep quality worse.

Surprisingly, the participants who selected, "*probably not/definitely not*," for feeling well-rested, had higher levels of emotional exhaustion and cynicism compared with individuals who felt more well rested. Professional efficacy scores were similar for all categories. Resiliency was unexpectedly greatest in the participants who selected, "*probably not/definitely not*," for their feelings towards being well-rested. The results related to sleep experiences are illustrated in Tables 7 and 8.

Table 7

MBI-Subscales and CD-RISC for Perceived Sleep Quality

	N	MBI-EX Mean (SD)	MBI-CY Mean (SD)	MBI-PE Mean (SD)	CD-RISC Mean (SD)
Excellent/Good	16	14.6 (5.8)	11.9 (6.3)	24.7 (6.2)	71.3 (14.5)
Average	9	13.7 (6.7)	8.7 (7.5)	28 (3.6)	78.4 (8.2)
Poor Terrible	6	19.8 (6.2)	11.8 (6.4)	28.5 (5.1)	77 (9.7)

Table 8

MBI-Subscales and CD-RISC for Attitudes Toward Feeling Well-Rested

	N	MBI-EX Mean (SD)	MBI-CY Mean (SD)	MBI-PE Mean (SD)	CD-RISC Mean (SD)
Probably yes/definitely yes	14	14.6 (6.4)	11.4 (6.2)	26.6 (5.7)	74.9 (14)
Might or might not	5	15.4 (7)	8.6 (4)	26.2 (5.1)	69 (14.4)
Probably not/definitely not	12	16.2 (6.4)	12.1 (8.2)	26.3 (5.9)	76.3 (9.2)

Coping Mechanisms

Dysfunction and burnout occur when coping mechanisms are unable to contain stressors. Participants were asked to identify the number of coping mechanisms they utilize when faced with stress. One might infer that the greater number of coping mechanisms would be associated with a decrease in burnout rates and greater levels of resilience. With regard to the MBI-GS (S) subscales, cynicism and feelings of professional efficacy were worse in the participants reporting a lower number of coping mechanisms, however they unexpectedly experienced lower rates of emotional exhaustion. These findings depict a complex relationship between coping strategies and emotional well-being. Participants reporting fewer coping mechanisms were less resilient compared to individuals with more coping mechanisms. Table 9 showcases the comparative data regarding coping mechanisms in the DNP sample.

Table 9

MBI-Subscales and CD-RISC for Number of Coping Mechanisms

	N	MBI-EX Mean (SD)	MBI-CY Mean (SD)	MBI-PE Mean (SD)	CD-RISC Mean (SD)
Number of Coping Mechanisms					
2	8	14.6 (5.4)	11.3 (6.4)	24.5 (5.8)	66 (11.9)
3	17	15.3 (6.7)	10.8 (7.2)	27.1 (5.5)	77.8 (12)
4-5	6	16.3 (7.3)	11.2 (6.5)	26.8 (5.6)	76.2 (9.3)

Alcohol Consumption

Participants who consumed alcohol had higher levels of overall burnout. The participants had greater emotional exhaustion, cynicism, and lower professional efficacy than compared with participants who did not consume alcohol. Furthermore, participants who reported they consume alcohol had lower levels of resiliency than the participants who did not consume alcohol. To explain this phenomenon, alcohol consumption could be viewed as a negative coping mechanism that doesn't support resilient behavior. Table 10 showcase the MBI-GS (S) subscale and CD-RISC scores comparing alcohol consumption in the DNP sample.

Table 10

MBI-Subscales and CD-RISC for Alcohol Consumption

	N	MBI-EX Mean (SD)	MBI-CY Mean (SD)	MBI-PE Mean (SD)	CD-RISC Mean (SD)
Alcohol	19	15.9 (7)	12.3 (6.7)	25.7 (5.4)	72.7 (14.2)
No Alcohol	12	14.4 (5.3)	8.9 (6.3)	27.4 (5.7)	77.2 (8.1)

Mental Health Diagnosis

Within the survey, participants were asked about any prior diagnoses of mental health conditions. Out of the seventeen participants who stated "*yes*," 94% (*n* = 16) had been diagnosed

with anxiety, either alone or alongside other mental health conditions. Additionally, participants were asked if they felt they had any untreated mental health condition. Of the fourteen participants who stated "*yes*," 64% (*n* = 9) felt they may be suffering from anxiety.

Participants diagnosed with a mental health condition were found to have less burnout severity on all three subscales. They were less emotionally exhausted, less cynical, and had greater professional efficacy compared to participants without a mental health diagnosis. The participants with a mental health diagnosis were also found to be more resilient than individuals who did not have a mental health diagnosis. Table 11 illustrates the MBI-GS (S) subscale data and CD-RISC scores comparing individuals with and without a mental health diagnosis.

Table 11

MBI-Subscales and CD-RISC for Mental Health Diagnosis

	N	MBI-EX Mean (SD)	MBI-CY Mean (SD)	MBI-PE Mean (SD)	CD-RISC Mean (SD)
Mental Health Diagnosis	17	14.4 (6.5)	9.6 (6.8)	26.9 (5.7)	76.7 (11.4)
No Diagnosis	14	16.4 (6.1)	12.6 (6.4)	25.8 (5.4)	71.7 (13.1)

Resilience Exposure

Resilience exposure was another measure that was analyzed within the sample. Among the sample, 35% (*n* = 11) of respondents reported receiving some form of resiliency training at either their workplace or educational institution. Examples of some of the write-in answers included "*in-class discussions*," "*professor resources*," or "*nurse residency training during orientation*."

There was no significant difference with the mean MBI-EX scores, or the mean MBI-PE scores when comparing participants with resilience exposure, and without resilience exposure. However, there was a significant difference noted with the MBI-CY scores comparing the

participants with and without resilience exposure. Participants with resilience exposure were significantly less cynical than the participants without resilience exposure. Furthermore, the mean CD-RISC scores were significantly greater in participants who had some form of resilience exposure, compared to participants without any resilience exposure. This further supports the previous findings indicating an overall negative correlation, within this sample, between increased feelings of cynicism, negatively impacting resilience scores ($p = 0.0755$; $r = -0.32383$).

Table 12

MBI-Subscales and CD-RISC for Resilience Exposure

	N	MBI-EX Mean (SD)	MBI-CY Mean (SD)	MBI-PE Mean (SD)	CD-RISC Mean (SD)
Resilience Exposure	11	15.5 (6.5)	8.9 (4.5)	26.2 (6.5)	79.6 (11.4)
No Resilience Exposure	20	15.3 (6.4)	12.1 (7.4)	26.5 (5)	68 (13.1)

Objective Three

The final objective of the project was to "disseminate findings within surveyed Schools of Nursing to inform about areas for improvement related to promoting resiliency and preventing burnout." On March 5th, 2024, all invited participants and faculty from the two Schools of Nursing were encouraged to attend a Zoom presentation, hosted by the co-investigator, to share findings and proposed recommendations. The recommendations gathered from the results and literature review highlighted the need for prioritizing time management skills, increasing peer support, and developing resiliency skills within this population. During the presentation, there was one live participant. The presentation was recorded and sent via email to the two Schools of Nursing to accommodate those unable to attend the live presentation. On March 25th, the co-investigator noted a total of seven views of the recorded presentation.

CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

Summary

Another long-term goal of the overall project was to contribute to the existing literature on burnout symptoms and resilience levels among the DNP student demographic. The initiative of the project sought to examine the frequency of burnout and the degree of resiliency among DNP students across two Schools of Nursing, utilizing the MBI-GS (S) and CD-RISC surveys. Additional questions were asked to examine factors influencing these phenomena, and to address any common themes among different variables.

The MBI-GS (S) tool was used to analyze academic burnout rates in DNP students. The MBI-GS (S) assesses three core aspects of burnout: exhaustion, cynicism, and a lack of professional efficacy. Higher scores within the MBI-EX and MBI-CY subscales reflect higher levels of burnout, and lower scores within the MBI-PE subscale reflect a higher level of burnout. Across the entire sample, there were notably high mean scores for the exhaustion and cynicism subscales indicating high levels of burnout, while the average professional efficacy indicated a moderate level of burnout. Consequently, these findings suggest a heightened probability of burnout across all MBI-GS (S) subscales, indicating a moderate to high likelihood of burnout within the sample.

Despite the overall increased feelings of exhaustion and cynicism, the moderate level of MBI-PE suggests that, on average, students maintained a positive outlook regarding their academic pursuits. This can be explained by the heightened prevalence of perfectionism as a commonly observed trait in high-achieving individuals like medical students (Eley et al., 2022). During a typical academic program, DNP students must engage in time-intensive coursework like MSs, which can cause extreme stress from organizational and self-imposed expectations.

Pursuing excellence and setting unrealistically high standards for flawless academic work can amplify the feelings of burnout. However, perfectionism can also cultivate a sense of confidence in students. Thus, while the surveyed students generally felt fatigued and stressed about their academic workload, they also showed increased confidence with many participants reporting a higher sense of professional efficacy.

The second objective evaluated resiliency levels among DNP students across two academic programs, utilizing the CD-RISC, and its correlation to burnout. The Pearson Correlation Coefficient (PCC) gauged the linear correlation between MBI-GS (S) subscales, and CD-RISC scores. The PCC analysis revealed a negative correlation between MBI-CY subscale and CD-RISC (r = -0.32383; p = 0.0755), meaning higher levels of cynicism showed lower levels of resiliency within the sample. There was a significantly positive correlation with MBI-PE subscale and CD-RISC (r = 0.57509; p = 0.0007), meaning greater feelings of professional efficacy showed greater levels of resiliency. There was no statistically significant correlation observed between the MBI-EX subscale and CD-RISC (r = 0.04354; p = 0.8161).

Discussion

It's important to acknowledge that the limited sample size constrains the ability to draw definitive comparisons to the broader DNP demographic. Burnout scores were lowest in first-year students, with moderate to high burnout in both second and third-year students, which somewhat correlates with research indicating that the risk of graduate nursing students experiencing burnout increases as they progress through their education (Day et al., 2022; Nelson, 2018). Kachel et al., (2020) noted that cynicism intensifies over the academic years. Within the sample, cynicism scores increased as DNP students progressed through a program, with the greatest levels of cynicism in third-year students. Cynicism and resilience were found to

be negatively correlated, (r = -0.32383; p = 0.0755), and third-year students were also found to have the lowest levels of resilience.

According to Dr. Davidson's unpublished CD-RISC manual, the CD-RISC scores appear to be influenced by two main factors; location where the data was obtained, and nature of the sample (Davidson JRT, 2018). This project utilized the CD-RISC 25-item scale, and there has not been any research conducted on medical students using the CD-RISC 25-item scale within the U.S. The mean and median CD-RISC scores for medical students and graduate nursing students, utilizing the CD-RISC 10-item or 2-item scales, were typically below the general U.S. population ranging from the 0-25% to the 50-75% percentiles (Clark et al., 2023; Drybye et al., 2010; Houpy et al., 2017).

Resiliency scores appeared to decrease as DNP students progressed through their academic program. First-year DNP students had a CD-RISC mean score of 77.6, slightly higher compared to second-year DNP students' CD-RISC mean score of 76. Third-year DNP students had the lowest CD-RISC mean score of 71.9. DNP students are likely to encounter more challenging coursework as they progress through a program, leading to cumulative stressors that can negatively impact resilience levels. Moreover, the distribution of CD-RISC scores can be analyzed using median data and quartiles. For the CD-RISC 25-item, the U.S. general population (n = 577), median resiliency score is 82. The CD-RISC quartiles of Q1, Q2, Q3 and Q4 are 0-73, 74-82, 83-90, 91-100 (Connor and Davidson, 2003). The median CD-RISC score for the DNP students was 77, placing them among the 25-50% percentile range. This implies that DNP students have a median resiliency score of less than 50% of the public. These findings are mirrored by Nelson (2018), who found the resiliency scores of a DNP student sample (n = 37) fell within the same range, indicating the sample was also less resilient than 50% of the public.

Individuals who are parents experienced distinct patterns in their emotional well-being compared to those without children. While parents reported higher levels of emotional exhaustion, they also exhibited lower levels of cynicism, alongside greater professional efficacy, and resilience scores. These intriguing findings align with prior research, such as the meta-analysis by Sous et al. (2017), which suggested that parenthood might serve as a protective factor against burnout in medical students. The elevated emotional exhaustion scores are unsurprising in parents, given the significant responsibilities associated with childcare. However, despite the exhaustion that accompanies child rearing, parents demonstrated lower levels of cynicism, suggesting that they maintain a more positive outlook and maintain trust in their ability to make a difference. Moreover, the heightened feelings of professional efficacy and resilience among parents may reflect a deeper sense of purpose and motivation in their academic pursuits. Parenthood often instills a strong sense of responsibility and dedication, which can translate into increased determination to succeed in academic and professional endeavors.

Burnout rates were unexpectedly mixed in the working demographic. Although participants that worked 25 or more hours a week were more emotionally exhausted, they also had lower cynicism and greater professional efficacy than the participants that worked less hours a week. However, resiliency levels were expectedly worse in the participants who worked 25 or more hours a week than those who worked less. These findings cannot be considered consistent with previous literature, indicating that burnout among medical students is a significant issue, especially among working medical students (Erschens et al., 2018).

When reviewing the correlations between burnout and sleep, the high level of emotional exhaustion among participants who rated their sleep quality as "*poor*" suggests that inadequate sleep might significantly impact emotional well-being. This aligns with existing research linking

the deprivation of sleep making the body more sensitive to emotional and stressful stimuli (Vandekerckhove & Wang, 2018). The negative association between doubts about feeling well-rested and higher levels of emotional exhaustion and cynicism indicates the importance of subjective perceptions of sleep quality in psychological well-being. Even if individuals objectively get enough sleep, if they doubt their feelings of being well-rested, it could still impact their emotional state. Participants unexpectedly reported less resiliency and lower professional efficacy when they rated their sleep quality as "*excellent/good*." Participants also unexpectedly reported the greatest levels of resiliency when they reported "*probably not/definitely not*" towards feeling well-rested. These findings Indicate resilience and sleep quality, or feelings of being well-rested, are unrelated.

Participants who reported consuming alcohol exhibited elevated levels of overall burnout compared to those who did not consume alcohol. Specifically, these individuals displayed heightened emotional exhaustion, increased cynicism, and diminished professional efficacy. Moreover, when considering the CD-RISC scores, participants who acknowledged alcohol consumption also reported lower levels of resiliency compared to their counterparts who did not engage in alcohol consumption. This observation suggests a noteworthy correlation between alcohol consumption with higher burnout rates and reduced resilience, highlighting the potential detrimental effects of alcohol as a coping mechanism.

It is plausible to interpret alcohol consumption as a maladaptive coping mechanism that fails to foster resilient behavior. This is further supported by Wong et al. (2023) finding that individuals may resort to maladaptive coping behaviors when resilience is lacking. Unlike positive coping strategies, which are anticipated to bolster resilience by promoting adaptive responses to stressors, alcohol consumption may exacerbate stress and diminish one's ability to

effectively cope with challenges. These findings support the adoption of constructive coping mechanisms that nurture resilience to face the challenges during healthcare studies.

The discovery that individuals with a mental health diagnosis had less burnout and greater resiliency than individuals without a mental health diagnosis was similar to the research conducted by the creators of the CD-RISC tool. Prior research highlighted a higher level of resilience seen in individuals with a history of mental health issues who have developed coping strategies (Davidson JRT, 2018). One explanation could be that these individuals with mental health diagnoses sought treatment and found it useful in decreasing burnout severity and increasing resiliency in the face of challenges that arise with medical studies. When assessing the responses for specific mental health conditions a staggering 94% reported suffering from anxiety either alone or alongside another mental health diagnosis. Additionally, 64% of the individuals who reported they were not diagnosed with a mental health condition felt they may be suffering from anxiety.

According to the Association for Behavioral and Cognitive Therapies (2023), findings suggest that cognitive behavioral therapy (CBT) and pharmacotherapy are equally effective in treating many disorders, including anxiety. However, CBT is shown to last longer, with research identifying that after discontinuing CBT or pharmacotherapy, the individuals that received CBT are less likely to experience a return of symptoms compared to those who receive medications (Association for Behavioral and Cognitive Therapies, 2023). Therapeutic approaches like CBT are mainly based on recognizing and promoting the tolerance of psychological distress, which can have a remarkable effect on improving an individuals' level of resilience (Mohammadi et al., 2022). One of the main focuses of CBT is promoting resilience (Dobson & Dobson, 2018). Of the 12 respondents who chose not to seek help with their suspected mental health condition, 83%

felt “they could manage on their own.” This is consistent with findings that MSs might opt-out of help-seeking behaviors due to perceived stigma, despite larger academic institutions offering services, such as professional counseling, to support student’s well-being (Bullock et al., 2017).

Recommendations

The findings indicate high to moderate levels of burnout within most of the DNP sample (67%), aligning with rates observed among other graduate nursing students. The three core aspects of exhaustion, cynicism and reduced professional efficacy are important in the ultimate burnout experience. Innovative research by Leiter and Maslach (2016) explores the multiple patterns of burnout on the burnout-engagement continuum. The research considers different profiles that are observed when individuals don’t identify as feeling completely burnt out (high in emotional exhaustion and cynicism; low in professional efficacy) or feeling completely engaged (low in emotional exhaustion and cynicism; high in professional efficacy). The profiles that fall between burnout and engagement, help explain the causes and consequences of burnout, thereby shedding light on the patterns observed within the sample (Maslach et al., 1996). The insights can then guide the development of interventions to prevent or reduce burnout.

Across the entire sample, there were notably high mean scores for the emotional exhaustion subscale consistent with an overextended profile. High mean scores for the cynicism subscale are consistent with a disengaged profile. Multilevel analyses have confirmed close links of exhaustion with workload, as well as between cynicism with teamwork and sense of community (Maslach et al., 2001). Thus, interventions should be aimed at enhancing individual time management skills, along with finding ways to build peer support among students. However, the moderate levels of professional efficacy indicate profile characterization that is confident and fulfilled.

Resilience has been discussed within the literature as a strategy to prevent and decrease the feelings of burnout. This project's results suggest a potential link or protective aspect between resilience and two of the three burnout subscales. Expectedly, increased feelings of cynicism were negatively correlated with resilience, and increased professional efficacy was positively correlated with resiliency levels. There was no correlation between emotional exhaustion and resilience levels. This finding is most likely attributable to students' exhaustion stemming from the unavoidable demands from coursework, extensive clinical commitments, and balancing personal life obligations.

While there are no exact practice recommendations to build resilience in DNP students specifically, there are many credible suggestions put forth by the American Psychological Association (APA) (2020), on ways to build resilience. The recommendations include building connections and prioritizing relationships, self-care, avoiding negative outlets, accepting change, moving toward goals, taking decisive actions, practicing gratitude, nurturing a positive view of oneself, keeping things in perspective, maintaining a hopeful outlook, and seeking help. While certain factors may contribute to making some individuals more resilient than others, resilience is not necessarily a personality trait that only some people possess. Instead, resilience encompasses behaviors, thoughts, and actions that anyone can learn and cultivate. Just like building a muscle, increasing resilience takes time and intentionality.

The most interesting revelation from this project was that individuals with a mental health diagnosis appeared to have less burnout and greater levels of resilience that those without a mental health diagnosis. This discovery highlights the potential benefit of seeking and receiving treatment from mental health issues during medical studies. Notably, a high percentage of respondents reported experiencing anxiety, with many undiagnosed individuals suspecting

they might also be suffering from it. To further explore this, future research could focus on evaluating and identifying the prevalence and severity of anxiety compared to resiliency levels using diagnostic tools among the DNP student population.

Other methods of DNP student recruitment can be utilized like the study by Day and colleagues (2022), where partnership was established with the American Academy of Nurse Anesthetists, to recruit a larger sample size. DNP students could be recruited through partnership with well-established organizations like the AACN or American Association of Nurse Practitioners (AANP). Interventional research could also be a possible topic for future studies. Investigators could evaluate the severity of anxiety at the onset of DNP programs and offer participation in resilience training with the hope to mitigate anxiety severity or the potential development of it later in the program. The co-investigator can then evaluate the effectiveness of the resilience intervention by comparing the severity of anxiety at the conclusion of the allotted study period.

Upon reflection, the Transactional Model of Stress and Coping was effective in helping explain how DNP students perceive and respond to stressors in relation to burnout and resiliency scores when comparing multiple variables. The logic model was also effective in guiding the project's success to understand the objectives and planned outcomes. However, the project would have benefitted from modifications to recruit a larger sample size. The co-investigator should have aimed to establish stronger relationships with directors from different DNP Schools of Nursing. Initiating earlier contact with the directors of various Schools of Nursing could have potentially helped with recruitment.

As DNP students prepare to transition into the role of an advanced practice provider, they should be adequately equipped to prioritize their own well-being alongside that of their future

patients. Given that more than half of the sample exhibits low resiliency scores and increased rates of burnout, integrating resilience training into the curriculum could prove to be highly beneficial.

Dissemination

The discoveries made from this dissertation were discussed and shared by the co-investigator via Zoom, on March 5th, 2024. Invitations were extended to all pertinent stakeholders, including faculty at both institutions. Findings from the project were shared along with proposed recommendations for future research and practice. These recommendations were formed from the results, information presented in the literature review, and scholarly articles with current knowledge on burnout and resiliency. The Zoom presentation was recorded and sent via email to the two Schools of Nursing to accommodate those unable to attend the live presentation. There was one live participant during the presentation, and seven views of the recorded presentation. The results of this project were also presented to the dissertation committee during final defense, with three DNP student observers. After completion and committee approval, the dissertation was published and available to view on ProQuest Dissertation.

Strengths and Limitations

The results of this project should be interpreted cautiously as limitations exist. The sample is small; therefore, it may not be generalized to DNP students in general. The sample was not largely diverse, and the results can't reflect individuals from different regions or demographics. For the second objective, evaluation was hoped to be across multiple Schools of Nursing. However, all invited participants were enrolled into two Schools of Nursing located in North Dakota. Many of the DNP administrator either opted out of disseminating the survey or no

response was received from co-investigators' email (See Appendix C). Incomplete surveys were also a limitation of the project. Eight surveys were not included in the results because the MBI-GS (S) and CD-RISC were not fully complete, thereby reducing the overall understanding of burnout and resiliency in the DNP student population. Unfortunately, there is a shortage of previous research on the topic of burnout among DNP students making descriptive analysis and comparative inferences difficult. There is the possibility that this project will provide future investigators the ability to improve their project design.

Some limitations were observed when reviewing the questions that addressed additional variables within the survey. The results pertaining to the format of the DNP program were mixed even though there were only two Schools of Nursing that agreed to disseminate the survey. For instance, it might have been interesting to observe burnout and resiliency levels comparing DNP students enrolled in online compared to in-person formats. An alternative approach could have been to ask participants to identify the school they attended, allowing the co-investigator to later review the universities webpage for format descriptions.

The survey would've benefitted from more careful consideration to ensure relevance of questions to individual respondents. It seemed that participants who indicated they didn't have a mental health condition were still directed to questions about treatment options, and similarly, those who felt they didn't have an untreated mental health condition were prompted to specify their perceived condition. This could have been frustrating for participants, as they were forced to navigate through irrelevant questions. It would have been more logical to block follow-up questions related to mental health for those who indicated they had no such condition. Although most questions were mandatory, those following the mental health questions were not. This

might have caused confusion for participants, leading some to simply type "not applicable" within the description box, instead of proceeding to the next question.

Questions pertaining to average hours slept a night over the last three months were also improperly distributed (See Appendix E for survey content). The co-investigator had written out overlapping time options, skewing any true statistical analysis. Instead, hours could have been separated by 4 or less hours, 5 hours, 6 hours, 7 hours, and 8 or more hours.

Participants were offered incentive upon completion of the survey. They had the opportunity to enter a drawing for a chance to win one of ten $20 gift cards to Amazon. To maintain confidentiality, participants were redirected to a separate survey embedded in Qualtrics© to enter a personal email. 29 of the 31 participants submitted email addresses for a chance to win. Once the survey was closed, all emails were gathered and entered in an online generator to select ten random emails. The co-investigator purchased and sent ten electronic gift cards valuing $20 to the randomly selected emails.

Application to DNP Role

There is growing popularity in psychological and medical fields about the topic of burnout and resiliency. Health care students who are more resilient have historically been associated with decreased likelihood of psychological distress according to the creators of the CD-RISC tool (Davidson JRT, 2018). This is evident since participants exposed to resilience training were significantly less cynical and had greater levels of resilience than compared with the participants without resilience exposure. This is further supported by the findings that increased feelings of cynicism negatively impact resilience scores. These findings help strengthen previous statements regarding the effectiveness of resilience exposure with decreased burnout when considering the cynicism subscale.

Increasing awareness among DNP students, faculty and NPs regarding mental health and resiliency skills are likely needed. Strategies can be learned to cope with the hardships that come with healthcare studies and future practice. Interventions to increase resiliency has the potential to support the mental health of DNP students by decreasing burnout during their academic programs and into their future practice.

Conclusion

The purpose of this practice improvement project was to investigate the prevalence of burnout rates and resiliency levels in DNP students to initiate education and practice recommendations. Burnout is high among MSs, and the detrimental impact it has on the mental health of these students underscores the importance of its occurrence and effects on DNP students. Resilience was found to be a protective psychological mechanism that can be utilized to mitigate burnout.

The project involved the development and implementation of a survey, data analysis, and recommendations for practice improvements. Burnout creates concern for compromised quality of life, and negative physical and psychological outcomes for DNP students. Although there were limitations, the findings from this project are meaningful to extending the literature on understanding burnout and the role that resilience could play in DNP students. The project met its main objectives and delivers recommendations for future research on the topic. Suggestions like changes within education institutions, and individual resilience practices, can potentially mitigate the burden of burnout and increase the well-being of future healthcare leaders.

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APPENDIX A: IRB APPROVAL

NDSU NORTH DAKOTA STATE UNIVERSITY

11/03/2023

Dr. Carrie Ann Nelson
Nursing

Re: IRB Determination of Exempt Human Subjects Research:
Protocol #IRB0004947, "ASSESSING BURNOUT AND RESILIENCY IN DOCTOR OF NURSING PRACTICE STUDENTS"

NDSU Co-investigator(s) and research team:

- Carrie Ann Nelson
- Mary Omer Habib

Approval Date: 11/03/2023
Expiration Date: 11/02/2024
Study site(s): The project will be conducted through NDSU along with partnership from various administrators of DNP programs from multiple Schools of Nursing within the midwestern region, listed above, to administer the survey to willing first, second and third-year DNP students.
Funding Source:
The above referenced human subjects research project has been determined exempt (category 1,2) in accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, *Protection of Human Subjects*).

Please also note the following:

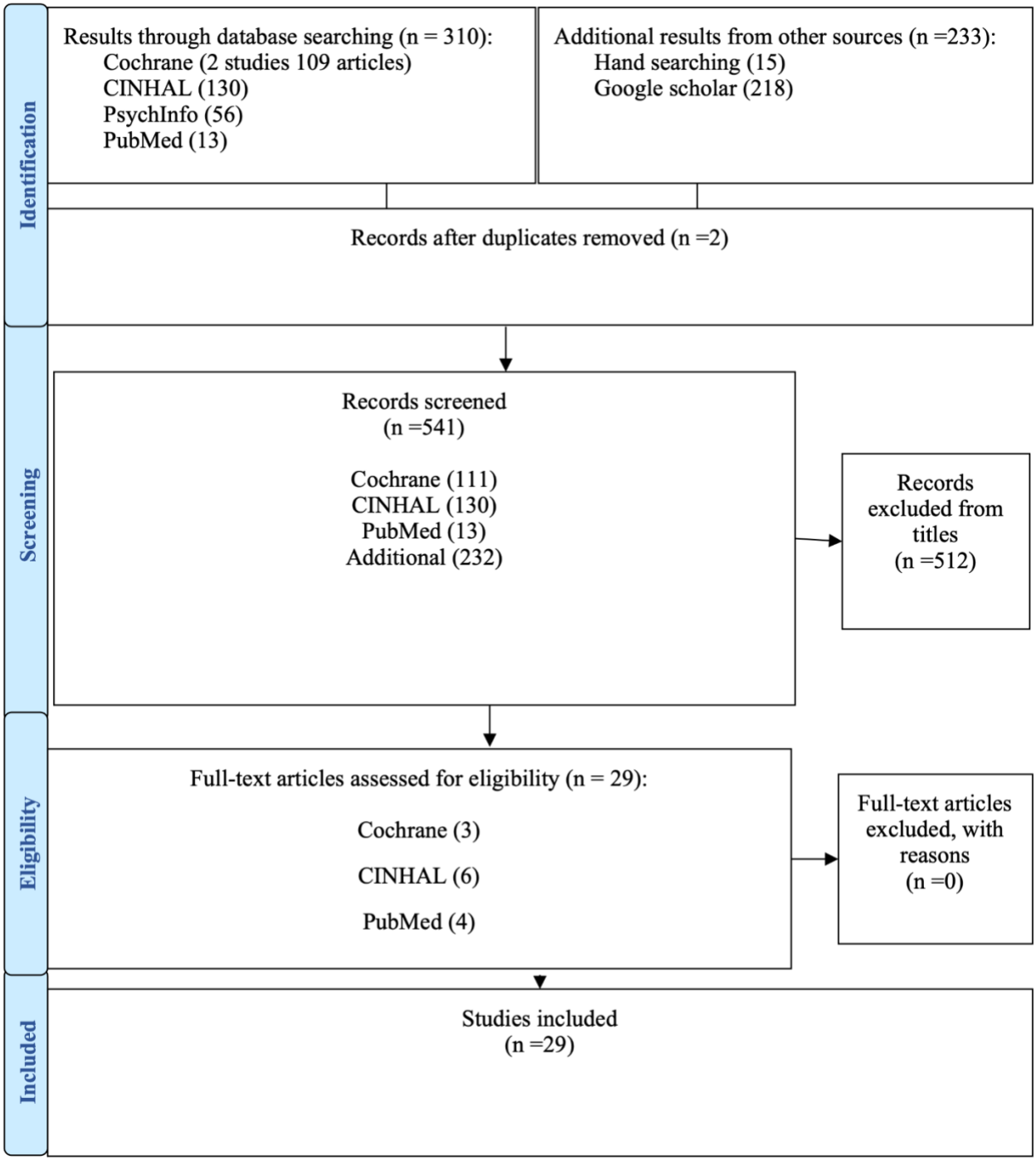
- The study must be conducted as described in the approved protocol.
- Changes to this protocol must be approved prior to initiating, unless the changes are necessary to eliminate an immediate hazard to subjects.
- Promptly report adverse events, unanticipated problems involving risks to subjects or others, or protocol deviations related to this project.

Thank you for your cooperation with NDSU IRB procedures. Best wishes for a successful study.

NDSU has an approved FederalWide Assurance with the Department of Health and Human Services: FWA00002439.

RESEARCH INTEGRITY AND COMPLIANCE
NDSU Dept 4000 | PO Box 6050 | Fargo ND 58108-6050 | ndsu.research@ndsu.edu
Shipping Address: Research 1, 1735 NDSU Research Park Drive, Fargo ND 58102

APPENDIX B: PRISMA FLOW DIAGRAM



APPENDIX C: DNP DIRECTORS EMAIL

To whom it may concern,

I hope this message finds you well. My name is Mary Habib, and I am currently a 3rd-year Doctor of Nursing Practice (DNP) student. I am writing to seek your valuable assistance in completing my dissertation research.

The focus of my dissertation is to assess burnout and resiliency among DNP students, and I believe that your DNP listserv services would be instrumental in helping me gather the necessary data for my study. I plan to use well-established tools, namely the Maslach Burnout Inventory - General Survey (MBI-GS(S)) and the Connor-Davidson Resilience Scale (CD-RISC), to comprehensively explore these crucial aspects of DNP student well-being.

Your support in disseminating the survey to DNP students within your program via the listserv would be immensely appreciated. By tapping into the collective knowledge and experiences of DNP students across various programs, I aim to obtain a comprehensive understanding of the factors contributing to burnout and the protective mechanisms of resiliency within our student community.

To maintain the highest ethical standards and ensure participant confidentiality, I have implemented strict data privacy and protection measures in the survey design. Additionally, I have included an informed consent section within the survey to secure participants' voluntary and informed participation.

Should you require any additional information or clarification regarding my research, survey methodology, or ethical considerations, please do not hesitate to reach out to me at mary.habib@ndsu.edu or call me at (218)-***-**** or reach out to my advisor at carrie.nelson@ndsu.edu or call her at (701)-***-****.

I understand the demands on your time and greatly appreciate your consideration of my request. Your support in facilitating the dissemination of this survey to DNP students within your program would significantly contribute to the success of my research project.

Thank you for your time, and I look forward to your positive response.

Warm regards,

Mary Habib DNP-Student

APPENDIX D: SURVEY INVITATION

Hello Everyone,

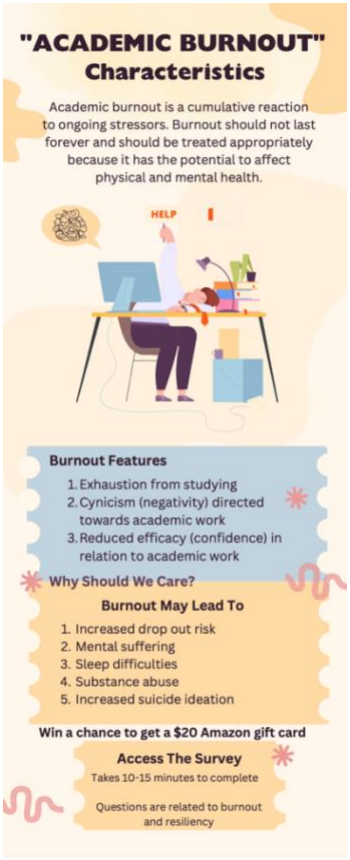
My name is Mary Habib and I am a third year NDSU DNP student working on my dissertation affiliated with NDSU. For my dissertation, I am trying to recruit DNP students to evaluate the prevalence and impact of burnout and resiliency to raise awareness surrounding mental health issues among graduate healthcare students. Below is information regarding my project about what burnout is and why it is important. If you are interested in participating in this study, please access the link below. Each eligible participant who fills out the survey will be entered for a chance to win one of ten **$20 Amazon gift cards**.

Here is a link or QR code to access the survey: https://ndstate.co1.qualtrics.com/jfe/form/SV_dmd3242aLmo21wy

I will host a Zoom meeting on March 5th at 2:00 pm to go over project findings and provide insight on the topic area.

Zoom link: https://ndsu.zoom.us/j/94906581998?pwd=T0tZVzdXbUFTZ0hVa0YxcE45OG1wdz09

If you have any questions or having trouble accessing these links, please reach out to: mary.habib@ndsu.edu



APPENDIX E: SURVEY WITH INFORMED CONSENT

NDSU North Dakota State University

School of Nursing
1919 N University Dr, Fargo, ND 58102 NDSU Dept. 2670
PO Box 6050
Fargo, ND 58108-6050
701.231.7395

Assessing Burnout and Resilience in Doctor of Nursing Practice Students

Dear Graduate Student,

My name is Mary Habib, I am a Graduate Student in the Doctor of Nursing program at North Dakota State University, and I am conducting a research project to understand burnout among nurse practitioner students and resiliency as a protective factor. It is my hope that with this research, I will learn more about how to prevent and decrease burnout among nurse practitioner students.

Because you are currently enrolled as a nurse practitioner student, you are invited to take part in this research project. Your participation is entirely your choice, and you may change your mind or quit participating at any time, with no penalty to you. By filling out this survey, you are giving your consent to participate in this study and attesting that you are at least 18 years of age.

No identifying information will be gathered. Data will be gathered using Qualtrics and downloaded onto the coinvestigator's password protected laptop. By taking part in this research, you may benefit by understanding more regarding academic burnout and resiliency. However, you may not get any benefit from being in this study. Benefits to others are likely to include increased knowledge on burnout, resiliency, protective factors, and future changes to decrease burnout and improve nurse practitioner student well-being.

It is not possible to identify all potential risks in research procedures, but we have taken reasonable safeguards to minimize any known risks. These known risks include emotional or psychological distress related to the questions asked during the survey. Due to the anonymous nature of the survey, we will not know about suicidal intent and will not be able to directly provide help. If you are thinking about ending your life, or have any other mental health concerns, we encourage you to seek help. Call 1-800-273-8255 to reach the National Suicide Prevention Lifeline, available 24 hours a day, or email them at https://suicidepreventionlifeline.org.

This survey should take 10 to 15 minutes to complete. It is entirely electronic, anonymous, and will be returned to the data collection team immediately. You will be entered to a drawing for one of ten $20 Amazon gift cards upon completion of survey.

This study is confidential. No identifying information will be asked of you, and individual responses will be kept private. The information gathered will be combined, and this combined data may be present and/or published. However, you will not be identifiable in these materials.

If you have any questions about this project, please contact Mary Habib at (218)-***-**** or mary.habib@ndsu.edu, or contact my advisor, Carrie Nelson at (701)-***-**** or carrie.nelson@ndus.edu.

You have rights as a research participant. If you have questions about your rights or complaints about this research, you may talk to the researcher or contact the NDSU Human Research Protection Program at 701.231.8995, toll-free at 1-855-800-6717, by email at ndsu.irb@ndsu.edu, or by mail at: NDSU HRPP Office, NDSU Dept. 4000, P.O. Box 6050, Fargo, ND 58108-6050.

Thank you for taking part in this research. If you wish to receive a copy of the results, please contact me at mary.habib@ndsu.edu

Please click below to complete the survey.

Thank you for your time,
Mary Habib, DNP-S
Carrie Nelson, DNP, FNP-C

Q1. What is your current age?

Q2. What was your assigned sex at birth?
Male
Female
Prefer not to disclose

Q3. What is your ethnicity?
Hispanic or Latino
Caucasian
Black or African American
Asian
American Indian/Native Alaskan
Native Hawaiian/Pacific Islander
More than one race
Unknown
Prefer not to disclose

Q4. Current marital status?
Married
Widowed
Divorced
Separated
Partnered
Never married

Q5. How many children are you the primary caregiver for?
0
1
2
3
4
5 or more

Q6. What is your current year in DNP school?
One
Two
Three

Q7. What was your total annual personal income before taxes?
0-10,000
10,001-20,000
20,001-30,000
30,001-40,000
40,001-50,000
50,001-60,000
60,001-70,000
70,000+

Q8. What was your total annual household income before taxes?
Less than 20,000
20,001-30,000
30,001-40,000
40,001-50,000
50,001-60,000
60,001-70,000
70,001-80,000
80,001-90,000
90,001-100,000
100,000+

Q9. What was your total amount of household debt in U.S. dollars?
(Please include student loans, mortgage, credit card, auto or any other personal debt)

Q10. How do you anticipate you will pay for your graduate schooling and living expenses?
I have taken out loans
I will take out loans
I will pay without taking out any loans

Q11. What is the total amount of loans you anticipate taking out to pay for tuition and other expenses during nurse practitioner school?
Less than 10,000
10,000-20,000
20,001-30,000
30,001-40,000
40,001-50,000
50,000+

Q12. On average, over the past three months, how many hours per week have you been working in a paid position?
0
1-8
9-16
17-24
25-32
33-40
40+

Q13. On average, over the past three months, how many hours a night have you been sleeping?
Less than 4
4-6
6-8
8-10
More than 10 hours a night

Q14. Do you feel you get enough sleep on a regular basis?
Yes, I feel well-rested
No, I often feel sleep deprived
I'm not sure

Q15. How would you rate your overall quality of sleep?
Excellent
Good
Fair
Poor
Very poor

Q16. What type of work have you been doing over the past three years?
Hospital Nurse
Clinic Nurse
Graduate Assistant
Other (please describe position)

Q17. How much alcohol do you consume a week?
(One standard drink is a 12-ounce beer, a 5- oune glass of wine, or a 1.5 ounce shot of liquor).

Average number of drinks per week: (fill out number)
I do not consume alcohol.

Q18. **Have you ever been diagnosed with a mental health condition? If so, please specify**
(select all that apply)
Depression
Anxiety
Suicidal thoughts or suicide attempts
Other (please describe)
I have not been diagnosed with a mental health condition.

Q19. What are your main coping mechanisms? (select all that apply)
Exercise
Family and friends
Medication
Meditation
Sleep
Therapy
Other (please describe)

Q20. What type of treatment did you receive, or are you currently receiving, for your mental health condition(s)? Please specify
Medication (please list)
Therapy (please describe)
Self-help group (please describe)
Other (please describe)
I chose not to treat my condition

Q21. If you chose not to treat your mental health condition, why did you choose not to?
I felt I could manage the condition on my own
Lack of personal time to see my provider
Long waiting period to see a provider
Fear of what others might think
Fear that my peers or faculty members might think differently of me if they found out I had a mental health condition
Other (please describe)

Q22. Do you currently feel you have an untreated mental health condition or likely had a mental health condition in the past, but did not seek medical help to have your condition evaluated?
Yes
No
Unsure

Q23. What type of mental health condition do you feel you've had in the past or currently have? Select all that apply.
Depression
Anxiety
Suicidal thoughts or suicide attempts
Other (please describe)

Q24. Why did you choose not to see a health care provider for evaluation and treatment of this potential mental health condition?
Fear of what others might think
Felt like you could manage the condition on your own
Lack of time
Fear of having restrictions placed on your license
Lack of funds to pay for treatment
Other (please describe)

Maslach Burnout Inventory: General Survey for Students
Recognized as the leading measure of burnout, the Maslach Burnout Inventory™ (MBI) is validated by the extensive research that has been conducted in the more than 35 years since its initial publication.

MBI-General Survey for Students MBI-GS (S): The MBI-GS (S) was designed for use with adult students in college and university.

I feel emotionally drained by my studies.

In my opinion, I am a good student.

I doubt the significance of my studies.

Connor Davidson Resilience Scale 25

Resiliency is most described as a trait that helps with the ability to recover quickly from difficult events or circumstances.
Health care students who are more resilient have historically been associated with decreased likelihood of psychological distress. Resiliency is a "protective" factor in relation to burnout. Resiliency is multifactorial, and partially inherent (you are born with it). There has been research that supports the following as ways to maintain/increase your resilience: participating in hobbies, exercise, consuming a healthy diet, maintaining decreased stress, learning from past experiences, cultivating supportive relationships, and getting adequate sleep.

APPENDIX F: MASLACH BURNOUT INVENTORY AGREEMENT

Hi, mary habib

Thank you for shopping with Mind Garden!

ORDER DETAILS - PAYMENT COMPLETE

Order: AEQANUGPR
Completed on: 09/24/2023 21:29:22
Payment: PayPal USA, Canada

Product	Unit price	Quantity	Total price
Mind Garden Application Forms - Remote Online Use Application Form -	$0.00	1	$0.00
Maslach Burnout Inventory™ (MBI) - License to Administer - Translation : English (default)	$1.75	100	$175.00
		Shipping	$0.00
		Total Tax	$0.00
		Total	**$175.00**

APPENDIX G: CONNOR-DAVIDSON SURVEY AGREEMENT

Dear Mary:

Thank you for your interest in the Connor-Davidson Resilience Scale (CD-RISC). I am pleased to grant permission for use of the English CD-RISC-25 in the activity you have described under the following terms of agreement:

1. You agree not to provide the scale to a third party without permission. If other colleagues are involved with your use of the scale, their use is restricted to the activity described, and the signatory of this agreement is responsible for ensuring that all other parties adhere to the terms of this agreement.

2. You may use the CD-RISC in written form, by telephone, or in **secure electronic format whereby the scale is protected from copying, downloading, alteration, repeated use, unauthorized distribution or search engine indexing. In all use of the CD-RISC, including electronic versions, the full copyright and terms of use statement must appear with the scale. The scale should neither be distributed as an email attachment, nor appear on social media, nor in any form where it is accessible to the public and should be removed from electronic and other sites once the activity or project has been completed. The RISC can only be made accessible in electronic form after subjects have logged in through a link, password or unique personal identifier.**

3. Further information on the CD-RISC can be found at the www.cd-risc.com website. The scale's content may not be modified. We can provide translations on request, but extra charges may apply for more than four languages.

4. Three approved forms of the RISC exist: 25,10 and 2 item scales. No other variants of the RISC may be used.

5. A fee of $100 is payable to Becky Williams, 936 Ridgeway Avenue, Signal Mountain, TN 37377, USA, either by PayPal (www.paypal.com, account risc.beckywilliams@gmail.com) or cheque. Money orders are not accepted. For PayPal, payment can be made to risc.beckywilliams@gmail.com.**The scale will be sent after the signed agreement has been returned.**

6. Please kindly complete and return this form via email to risc.beckywilliams@gmail.com.

7. In any publication or report resulting from use of the CD-RISC, you do not publish or partially reproduce items of the CD-RISC without first securing permission from the authors.

If you agree to the terms of this agreement, please email a signed copy to the above email address. Upon receipt of the signed agreement, an electronic copy of the scale will be sent. For questions regarding use of the CD-RISC, please contact Becky Williams at risc.beckywilliams@gmail.com.

Sincerely yours,

Becky Williams

[redacted] Mary Habib 8-21-2023

Signature (printed) Date

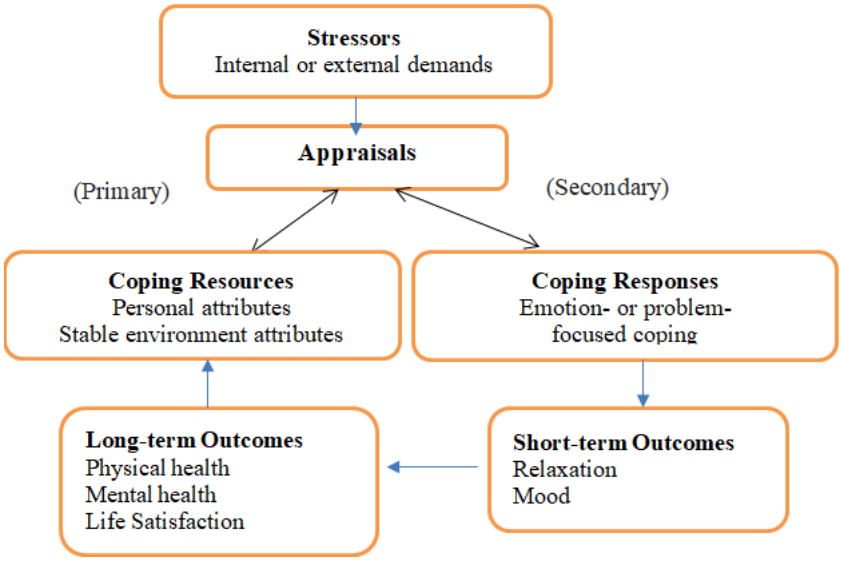
Doctor of Nursing Practice Student

Title

North Dakota State University

Organization

APPENDIX H: TRANSACTIONAL MODEL OF STRESS AND COPING



(Lazarus & Folkman, 1984)

APPENDIX I: EXECUTIVE SUMMARY

This dissertation explores the prevalence of burnout and levels of resilience among DNP students, within the Midwest. Burnout is a significant concern in graduate nursing education, and resilience is considered a protective factor against it. The project employed a quantitative descriptive survey methodology, collecting data during the fall semester of 2023. The Maslach Burnout Inventory-General Survey for Students (MBI-GS) and the Connor-Davidson Resilience Scale (CD-RISC) were utilized to assess burnout and resilience levels, respectively.

A convenience sample of DNP students from two Schools of Nursing within North Dakota participated in the project. Surveys were distributed electronically, and responses were analyzed using statistical methods. Findings revealed high levels of burnout among the sample, particularly in emotional exhaustion and cynicism, while professional efficacy showed a moderate level of burnout. Resilience levels were generally lower than the average US population, with a decrease in resilience observed as students progressed through their academic program.

Factors such as workload, coping mechanisms, and mental health diagnoses were explored in relation to burnout and resilience. Surprisingly, individuals with mental health diagnoses exhibited lower burnout and higher resilience levels compared to those without diagnoses, suggesting the potential benefits of seeking and receiving treatment during medical studies.

Recommendations include integrating resilience training into DNP curricula and promoting help-seeking behaviors among students. Future research should focus on larger, more diverse samples and explore interventions to mitigate burnout and enhance resilience in DNP students.

The dissemination of findings occurred through a Zoom presentation to relevant stakeholders and later published on ProQuest Dissertation. Strengths of the project include its focus on an understudied population and its contribution to the growing literature on burnout and resilience in healthcare education. Limitations include the small sample size and lack of diversity, as well as incomplete surveys and challenges in survey dissemination across multiple institutions. Despite these limitations, this project provides valuable insights into the experiences of DNP students and suggests avenues for future research and practice.