ASSESSING BURNOUT AND RESILIENCY AMONG NURSE PRACTITIONERS

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DOCTOR OF NURSING PRACTICE

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ABSTRACT

The topic of burnout among medical doctors (MDs) has depicted a strong correlation to MD education and career with burnout, ultimately causing negative psychological and physical outcomes. Research has shown that resilience is a concept that has often been associated with MD ability to respond to stress and decrease burnout.

Beyond MDs, the population of nurse practitioners (NPs) has been minimally researched in relation to burnout. NPs are at heightened risk of burnout, comparable to MDs, in relation to rigorous education requirements, large workloads, long work hours, rising demands of documentation, and increased technological advances within health care.

The purpose of this practice improvement project (PIP) was to explore the prevalence of burnout and resiliency in correlation with demographic risk factors in practicing NPs who attended the NDNPA conference in fall 2020 in order to initiate education and practice recommendations. Survey questions regarding coping mechanisms, demographic risk factors, and validated tools for resilience and burnout were administered to practicing NPs during the virtual conference.

Forty-four NPs completed the survey. Scores reflected moderate to high levels of burnout within the sample. Resilience was mildly below the national average. Lower burnout among those working in team settings was found to be statistically significant. NPs working on productivity-based pay had the highest levels of resilience. Participants who utilized more coping mechanisms had higher resilience scores. Data did not find a significant relationship between burnout and resilience.

Study findings support the recommendation for larger, longitudinal research, perhaps more focused on burnout and organizational influence(s) to better understand the topic. The

findings from this study are supportive of recent literature regarding MDs, which suggests that resilience is not the sole answer to addressing burnout.

Other recommendations include NPs reviewing the newest research on burnout and the psychological impact certain specialties can entail. Healthcare organizations can consider increasing team-based work environments, as well as advising NPs to apply to team-based positions. Using multiple coping mechanisms is suggested to develop higher levels of resilience, as the concept of resilience likely remains a beneficial quality.

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DEDICATION

This dissertation is dedicated to my husband, Oliver.

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CHAPTER ONE. INTRODUCTION AND PROBLEM STATEMENT

Literature describing the prevalence of burnout among the medical student (MS) and medical doctor (MD) population has been progressively well researched and documented. A survey of 6,880 MDs conducted in the United States (U.S.) discovered burnout among MDs exceeded the general working population by 20.4%. Approximately 43.9% of MDs reported experiencing burnout (Shanafelt et al., 2017). Furthermore, burnout distresses more than MDs, and often occurs among resident MDs and MSs (Lall et al., 2019). A quantitative cross-sectional study including a sample of 808 MSs during schooling discovered MSs encounter substantial pressure for high achievement, financial debt, and psychosocial conflicts. A review of studies from 1990-2015 revealed the average sum of MS burnout to be 50% (Dyrbye & Shanafelt, 2016). High pressure and rigorous coursework during medical school leads to increased susceptibly and experience of burnout before entering the workforce as resident doctors and eventually MDs (Eley at al., 2016).

Beyond MDs, resident MDs, and MSs, the population of advanced practice providers (APP), more specifically, nurse practitioners (NP) and nurse practitioner students (NPS), has been minimally researched. NPs and NPSs are at heightened risk of burnout, comparable to MDs and MSs, in relation to rigorous educational requirements, large workloads, long work hours, increasing demands of documentation, and increased technological advances within the health care system (Corbridge & Melander, 2019; Waddimba et al., 2015; Wong & Olusanya, 2017). In one study conducted on NPSs and burnout, Nelson (2018) found that NPSs experienced a significant increase in burnout throughout their educational coursework, with the final year students experiencing the highest level of burnout. If NPSs are experiencing burnout, like MSs,

they, hypothetically, can enter the workforce as NPs with heightened vulnerability for increased burnout and poorer outcomes.

The research findings on burnout within MD, MS, and NPS populations, and the similarity of demanding coursework and challenging clinical experiences between MDs and NPs lead to the issue of burnout prevalence among NPs. According to the American Association of Nurse Practitioners (AANP) (2019), there are more than 270,000 NPs licensed within the U.S. providing healthcare. NPs made up approximately 25.2 percent of health care providers (HCP) in rural settings and 23.0 percent of HCP in non-rural practice from 2008-2016 (Barnes et al., 2018). The continuous increase of the integration of NPs across the nation has helped with the growing shortage of primary care MDs and has improved access to care while decreasing healthcare cost (Everett et al., 2009; Scheffler et al., 2008). With the number of NPs increasing and a large percentage of NPs working in rural primary care and beyond, in settings with expectations like that of MDs, risk for burnout is an underexplored, but definite possibility.

The concept of resilience has been associated with MD ability to adequately respond to stress with decreased psychological distress, including burnout, anxiety, and depression (Brennan & McGrady, 2015; Wong & Olusanya, 2017). Numerous researchers have produced evidence from studies that supports that there is a correlation between higher resiliency levels and decreased psychological stress and burnout among both MDs and MSs (Bacchi & Licinio, 2017; Eley et al., 2016; Thompson et al., 2016; Waddimba et al., 2015). Still, information regarding burnout and resiliency within the occupation of APPs and NPs is limited in today's literature. Researchers have recommended, based on a review of literature conducted on burnout and NPs from 2000-2016, that exploration on the psychological aspect of NPs needs to increase due to lack of discussion and information currently available on the topic (Hoff et al., 2019). The

purpose of this PIP was to explore the prevalence of burnout and resiliency in correlation with demographic risk factors in practicing NPs who attended the NDNPA conference in fall 2020 in order to initiate education and practice recommendations.

Project Significance

The outcomes from this project are important for the career of the NP and the potential development of health care organization interventions to prevent and decrease the likelihood of burnout. Data from this project can be used to understand risk factors for lack of resiliency skills and frequency of burnout. By understanding the relationship between the survey scores and outcomes, training can be provided, and changes can be recommended throughout NP education and work environment to support NP well-being, while decreasing burnout and associated negative consequences.

Project Purpose and Objectives

The purpose of this PIP was to explore the prevalence of burnout and resiliency in correlation with demographic risk factors in practicing NPs who attended the NDNPA conference in fall 2020 in order to initiate education and practice recommendations.

1. Obtain NP/PA burnout and resilience baseline scores at the North Dakota Nurse Practitioner Association's (NDNPA) Pharmacology conference in the fall of 2020 using the Maslach Burnout Inventory Human Services Survey (MBI-HSS) and Connor-Davidson Resilience Scale (CD-RISC).
2. Determine possible correlations regarding NP burnout risk factors after survey completion.

3. Develop recommendations based on findings from the completed surveys and the literature review to disseminate online through the NDNPA website by December of 2020.
4. Increase NP/PA awareness of burnout risk factors and factors leading to resilience by the end of survey.

CHAPTER TWO. LITERATURE REVIEW

Burnout Described

The subject of burnout in relation to health care has evolved with increased research on the topic leading to valuable evidence, resulting in potentially improved health care provider (HCP) well-being (Maslach et al., 2001). Initially, burnout had no orthodox definition, and was first defined by Freudenberger in 1974 as a state of fatigue in relation to poor professional relationships without reward (Poghosyan et al., 2009). In 2019, the World Health Organization (WHO) (2019) recognized burnout as an occupational phenomenon described as a condition resulting from prolonged workplace stress that has not been successfully managed. Over time, through examination regarding the complex theory of burnout, three core dimensions developed to describe the theory as follows: exhaustion, cynicism, and reduced professional efficacy (Maslach et al., 2016).

The theory of burnout is a continuum beginning with exhaustion, or feeling indifferent to patient care, and is the most frequently referenced and recognizable dimension of burnout (Maslach et al., 2001). Exhaustion reflects the stress of burnout; while exhaustion increases in severity, depersonalization and cynicism take place (Bridgeman et al., 2018). Cynicism or depersonalization relates to the negative attitude and overall detachment from others within the workplace. Lastly, reduced professional efficacy portrays the sense of incompetence or a loss of achievement within the HCP. Reduced professional efficacy refers to HCPs' lack of ability to understand the magnitude or effect of their care, leading to job dissatisfaction (Wong & Olusanya, 2017). The Maslach Burnout Inventory Human Services Survey (MBI-HSS), can be used for evaluating burnout among professional in human services, including HCPs. The MBI-HSS applies three scales measuring emotional exhaustion, depersonalization, and personal

accomplishment to evaluate an individual's overall level of burnout, which will be discussed in further detail within Chapter Three (Maslach & Jackson, 1981; Maslach et al., 2016).

Burnout Among Healthcare Professionals

Over the past decade, MD well-being has been universally recognized, with extensive discussion on the topic of burnout (Lall et al., 2019). In 2012, the American Medical Association (AMA) began to concentrate on decreasing burnout incidence and increasing professional satisfaction, and large health care systems have since followed suit to improve work environments (Shanafelt et al., 2017). Additionally, The National Academy of Medicine (NAM) created the Action Collaborative on Clinician Well-Being and Resilience in 2017, a network functioning to decrease clinician burnout.

From 2011 to 2014, the percentage of MDs experiencing symptom(s) of burnout increased from 45.5% to 54.4% (Lall et al., 2019; Shanafelt et al., 2012; Shanafelt et al., 2017). However, in 2017, burnout frequency among MDs decreased to 43.9%. The statistics speculate progress has been made and burnout among MDs is decreasing; nevertheless, burnout remains a statistically significant and extensive problem among MDs when compared to the general working population. Although there have been improvements and increased recognition of MD burnout, organizations within health care systems are inconsistent with efforts.

The wellbeing of HCPs, including MDs and NPs, is of paramount importance in relation to the overall integrity of healthcare, affecting patients, staff, and health care organizations (Card, 2018). Burnout and job dissatisfaction among MDs in the U.S. exceed the rate of other occupations and are linked to decreased clinical hours, leading to the potential risk of increased physician shortage in the future. Medical doctor burnout is linked to severe implications including the association with higher rates of substance abuse, anxiety, depression, suicide, and

relationship issues (Lall et al., 2019). Additionally, within practice, MDs experiencing burnout are at an amplified threat of suboptimal patient care, including medical and patient safety errors. Literature describes burnout initially surfacing during medical school, due to the enhanced stressors. Medical students experience compromised psychological well-being and face the potential compromised outcomes including poor clinical competence, empathy, and interpersonal skills (Eley et al., 2016).

Risk Factors of Burnout

Beyond working in healthcare, being a female and working more hours per week are factors related to increased likelihood of burnout (Moss et al., 2016; Shanafelt et al., 2017). Female MDs are 1.6 times more likely to experience burnout than their male coworkers (Wiederhold et al., 2018). Approximately 88% of NPs in the U.S. are female (Kaiser Family Foundation [KFF], 2019). The relationship of female burnout and percentage of female NPs sparks the question of frequency of NP burnout. Female MDs more frequently encounter issues with the work-home life balance (Robertson et al., 2016). Additionally, female MD suicide rate exceeds the general population by 2.4 to 4 times (Moss et al., 2016).

Age wise, studies have conflicting results regarding age and risk of burnout; however, recent studies have found age under 55 years as an independent risk factor for MD burnout (Wong & Olusanya, 2017). Therefore, there is a negative effect on age, with younger MDs experiencing more burnout than older MDs, most likely related to less professional work experience and decreased time to develop coping strategies for work related stressors.

Burnout is specifically high for MDs in internal medicine, oncology, emergency, anesthesia, and primary and critical care (Lall et al., 2019; Wiederhold et al., 2018; Wong & Olusanya, 2017). For NPs, data is reduced, but acute care is likely associated with a higher level

of NP burnout (Corbridge & Malendar, 2019). Next, lack of control pertaining to work hours and scheduling is a strong predictor of burnout (Robertson et al., 2016). Geographically, MDs and NPs working in rural areas are at a more heightened risk for burnout due to factors including decreased resources and salary, heavier workloads or patient numbers, patients with multiple morbidities, and environmental isolation (Waddimba et al., 2015). Specifically, working in an underserved area creates more job strain leading to higher incidence of burnout. Roughly 66% of NPs are employed in communities with populations less than 250,000 (Owens, 2018).

NPs often care for acute and chronic critically sick patients with comorbidities and complex conditions (Kilpatrick et al., 2015). A systemic review concerning 488 adult and 821 neonate patients, found that NPs and MDs provided care resulting in equal health outcomes, quality, and patient satisfaction (Kilpatrick et al., 2015). Interestingly, multiple studies have found that approximately 45.5% of working NPs deliver care in rural areas, with 85% providing primary care (Chumbler et al., 2001; Everett et al., 2009; Grumbach et al., 2003). NPs working in rural areas continues to rise; from 2008 to 2016, NPs in rural settings increased from 17.6 percent to 25.2 percent (Barnes et al., 2018). Unfortunately, research on NPs in rural locations is limited; however, studies focusing on new NPs during role transition discovered NPs reported feelings of stress, anxiety, isolation, insufficiency, and being overwhelmed. The feelings described lead to NP thoughts of overall uselessness and ultimately job dissatisfaction. New NPs transitioning into rural practice are feasibly at increased risk of undesirable feelings and burnout (Owens, 2018).

With the use of technology within healthcare increasing, electronic medical records (EMRs) in health care organizations have been proposed as one of the main factors amplifying HCP burnout (Collier, 2017). Electronic medical records are associated with increased computer

utilization and decreased patient and family interaction time. The increased time spent on clerical tasks leads to increased provider dissatisfaction. A survey of 6,375 U.S. MDs completed in 2016, found 84.5% of MDs used EMRs and felt dissatisfied with time spent on clerical tasks (Shanafelt et al., 2016). The survey also found a correlation between professional burnout and EMR use. Collier (2017) conducted one study involving 370 primary care MDs and found that MDs experienced greater stress due to time pressures, with many MDs having to complete EMR documentation at home after clinic hours. Medical doctors also reported concerns for lower quality documentation, due to template based EMRs. The researchers also discovered MDs found issues with lack of continuity between different EMR systems, resulting in amplified stress. NPs are likely a vulnerable population in relation to EMR use and decreased patient time, because communication is historically the focus of successful nursing care (Corbridge & Malendar, 2019).

Impact of Burnout

The percentage of burnout is substantial, leading to increased risk of psychological and physical distress among HCPs (Moss et al., 2016; Wong & Olusanya, 2017). Burnout amplifies concern for possible compromised patient care, and higher psychological distress associated with depression, suicidal ideation, and attempted suicide among MDs when compared to other professions (Shanafelt et al., 2018; Waddimba et al., 2015). An estimated 400 MDs die annually by suicide, which is a rate more than twice of the general population (Brenner, 2018). Research shows that MD burnout is associated with increased risk of motor vehicle accidents. Moreover, burnout among MDs can lead to disruptive lifestyles, loss of professional competence, and potential alcohol dependence and/or substance abuse problems (West, Tan, & Shanafelt, 2012).

Burnout produces a dilemma related to patient care and healthcare cost due to an increase in turnover (Waddimba et al., 2015). Healthcare facilities lose approximately $50,000-1,000,000 in training and recruitment processes with the loss of one MD (Moss et al., 2016). Additionally, the estimated cost for recruiting and developing NPs after turnover is $250,000-300,000 (Gilliland, 2019). One survey completed in 2018, found that 7 out of 10 MDs would not recommend healthcare as a profession to others, increasing the risk for even less access to care in the future (The Doctors Company, 2018). A national survey found primary care NP turnover to be 12%, which is double that of primary care MDs (Hoff et al., 2019). Beyond financial loss, health care facilities ultimately lose valued health care workers, quality of care, staff morale, and productivity in the process of turnover related to burnout (Corbridge & Melander, 2019).

Patients cared by an HCP with symptoms of burnout, experience compromised quality of care and decreased adherence to treatment plans (Corbridge & Melander, 2019; Moss et al., 2016). Health care providers exhibiting burnout are more likely to make unnecessary referrals and order excessive patient tests. Increased referrals and patient testing can lead to poor patient care and added health care costs. Medical errors and malpractice suits have a positive correlation with burnout and lead to more distress, enhancing the cycle of distress and burnout.

Prevention of Burnout

When attempting to decrease burnout, there is most likely not a "one size fits all" resolution. Demographic characteristics, personality types, environmental stressors, genetics, and coping mechanisms all play a role in likelihood of individual professional burnout. Due to the number of factors involved in burnout risk, special attention needs to be given to individualized interventions. One study focused on the transition of ten new rural NPs into the workforce (Owens, 2018). The researcher discovered NPs greatly valued having a mentor as valuable

support during role transition. Healthcare institutions could use this information to support mentorship programs during role transition to increase satisfaction and decrease burnout.

Workload and time pressure have consistently been linked with higher levels of exhaustion, leading to burnout (Wiederhold et al., 2018). Perhaps, during graduate education, MDs and NPs could be provided with individual-prevention training on how to properly work through these obstacles to prevent burnout. Furthermore, health care institutions could attempt to decrease HCP workload and time pressures through scheduling and/or productivity interventions. Health care facilities can advocate against the impact of high patient volumes and intensity to increase HCP sense of control, autonomy, and overall value to increase well-being (Robertson et al., 2016). After all, HCP exhaustion leads to lack of control, resulting in burnout.

Researchers have found that health care facilities that routinely assess provider satisfaction, increase the likelihood of detecting those at risk for burnout, leading to decreased rates (Robertson et al., 2016). Protective factors of burnout include decreased workloads, increased resilience, familial support, working within large units, adequate relational needs, and increased satisfaction (Waddimba et al., 2015). Working within an institution that uses team-based care models is associated with improved patient outcomes and the possibility of decreased burnout (Corbridge & Melander, 2019). Efforts to combat burnout, especially for rural care providers, include community-building techniques to increase social relationships. Social interaction at work has consistently been linked to work group cohesion and higher job satisfaction (Wiederhold et al., 2018).

Increasing awareness also assists in decreasing the stigma associated with burnout, leading to more success of preventative programs. More specifically, efforts to decrease burnout can be targeted at new providers, due to the possibility of less professional experience and time

to cultivate strategies to combat occupational stress (Wong & Olusanya, 2017). As discussed previously, younger MDs have been found to have a higher likelihood of burnout. Interestingly, young physicians follow "idealistic" health care style, including more compassionate-empathetic approaches (Wiederhold et al., 2018). Unfortunately, this approach is conceivably what makes a "good physician". Therefore, health care can turn to therapeutic tools including coping strategies, social support, managing negative emotions, and relaxation techniques. Teaching MS and HCP self-awareness of their adaptive and maladaptive reactions to stress creates the opportunity to discover proper strategies to address and cope with stress effectively and can likely translate to NP practice as well (Eley et al., 2016). The strategy of mindfulness has become more popular as a tool for the prevention of burnout (Corbridge & Melander, 2019). By educating staff on resilience skills, workplaces could potentially reduce burnout in health care (Waddimba et al., 2015). Addressing burnout at both the organizational and system levels is necessary to combat the origin of the problem.

Resilience

Explanations of the concept of resilience emerged in the 1970s, in relation to observations, research, theory, and practice pertaining to children, youth, and families adapting to poor circumstances (Yilmaz, 2017). Resilience is described throughout the literature as a trait, process, or outcome, and has commonly been associated with the ability to move forward and not return, recover quickly from difficulties, bounce back, bend not break, and grow in the face of unfavorable life experiences (Southwick et al., 2014; Wong & Olusanya, 2017). Initially, resilience was believed to be an inherent trait, but with increased research, found to be a conventional personality characteristic. There are multiple descriptions of resilience in literature; however, there is not a consensus for one universal definition. Resilience likely exists on a

continuum; The American Psychological Association (APA) (2014) defines resilience as the process of adapting well in the face of adversity, trauma, tragedy, threats, or even a significant source of stress.

Despite the multitude of definitions proposed in literature and applied to resilience, for resilience to manifest, a traumatic event and the ability to recover or adapt to the event must occur. Individuals with more resilience have been associated with decreased likelihood of psychological distress. Different aspects including biological, psychological, social, and cultural factors, and their interactions ultimately determine how individuals respond to adverse experiences (Southwick et al., 2014). Resilience is perhaps a protective factor, and individuals have both innate personality characteristics and learned traits of resilience (Yilmaz, 2017).

Resilience and Health Care Providers

Within healthcare, lower levels of resilience have been associated with higher levels of burnout and depression, and there is an increasing amount of attention concerning resiliency skills among HCPs (Simpkin et al., 2018). Why some HCPs maintain and/or develop resilience while others burn out is potentially multifactorial in nature. Health care providers with skills of resilience are likely to also have the characters of self-determination, high persistence, and low harm avoidance.

Health care providers face the issue of unavoidable suffering including unhealable patients, life or death decisions, and adverse outcomes. Unavoidable suffering is unpreventable in health care, and skills of resilience can minimize harm to HCPs (Card, 2018). Avoidable suffering includes preventable circumstances, such as a hostile work environment, understaffing, lack of supplies or resources, and hazardous work conditions. Adverse workplace challenges are often the stimulation behind professional resilience. Health care providers experience clinical

issues, difficult patients, organizational problems, and outside organizational pressure. Unavoidable suffering, avoidable suffering, and adverse workplace challenges can cause devastating reactions, but can also lead to increased resilience and the ability to thrive within the HCP role (Robertson et al., 2016).

There are no immutable demographic factors that have been identified that are associated with resilience and HCP (Waddimba et al., 2006). Mayo Clinic (2017) suggests that participating in activities or hobbies, completing physical activity, consuming a healthy diet, controlling stress, and obtaining adequate sleep are modifiable factors that increase levels of resilience. Cultivating supportive relationships, experiencing a daily sense of accomplishment, learning from past experiences, maintaining hopefulness, and proactive traits also foster resilience (Mayo Clinic Staff, 2017).

A review of literature found that increased consumption of alcohol in male MDs was found to be associated with lower levels of resilience (Robertson et al., 2016). Next, the more hours HCPs work per week reflects lower resilience. Health care providers who have more control related to workload and supportive colleagues have increased resilience. High resilience has been strongly correlated with the ability or skill to tolerate uncertainty (Waddimba et al., 2006).

Research explains that female HCPs face increased stressful burden and emotional exhaustion due to their involved role in raising children when compared to male colleagues (Robertson et al., 2016). Overall, HCPs in the caregiver role were found to have lower resilience in a review of literature. Due to the increased distress, females could potentially have increased or decreased resilience, depending on personal factors and responses. Females frequently have less opportunities for recreational time, which can lead to more destructive coping mechanisms,

such as alcohol overuse. Higher resilience is associated with increased physical activity and leisure time, due to the shift of mental concentration from work to leisure.

Learning Resilience

Due to the multifactorial essence of resilience, finding a way to "teach" resilience is complex. A physician at Mayo Clinic designed a program called Stress Management and Resiliency Training (SMART): A Relaxation Response Resiliency Program (Mahoney, 2017). The program is a mindfulness-based intervention and works by helping individuals understand the connection between stress and physical and emotional problems, while learning techniques to relax, appreciate positive thoughts, and understand the importance of healthy diet, sleep, and exercise. The program is based around mind-body medicine, with three main priorities: awareness, attention, and attitude. The program has five principles: gratitude, compassion, acceptance, higher meaning, and forgiveness. Each day, individuals should apply one of the five principles to work through stressful situations. The program also teaches meditation to activate relaxation and cognitive strategies to enhance coping. The SMART program can be delivered in a single 90-minute session, per the program developer Dr. Amit Sood.

Currently, SMART is mandatory for all physicians, nurses, and students within the Mayo enterprise (Mahoney, 2017). The goal of SMART is to help HCP reframe stressful situations more efficiently and reconnect to the significance of their work. The program has been used in a randomized clinical trial at Mayo's Department of Radiology, which resulted in improved anxiety, stress, quality of life, and mindful attention.

Interventions and Recommendations for Prevention

Health care facilities that provide dependable environments for their HCPs promote resilience by enhancing the ability of employees to manage their uncertainty. Health care

providers can overcome stressors successfully by applying proper coping mechanisms, leading to growth and the ability to thrive from the experience or resiliency. Building resilience among HCPs can enhance HCP well-being and increase workforce retention and access to care. Health care providers with higher resilience have an inclined ability to adapt to change (Robertson et al., 2016).

Happier work environments also build and sustain resilience along with supportive professional relationships. More specifically, social support programs among work peers have been associated with higher well-being outcomes than employee assistance programs. Furthermore, positive relationships among peers increases quality of work life more intensely when compared to staff support, job control, income, and time restrains (Waddimba et al., 2016). Health care organizations can use information from the research discussed to foster social networks and gatherings where HCPs can interact and support one another. Health care facilities can train practitioners on beneficial ways to cope with stress to augment resilience.

Medical students who have less resilience are more likely to be depressed and burned out (Simpkin et al., 2018). Due to the high risk of compromised mental health and suicide rates, medical schools often provide training on emotional resilience (Robertson et al., 2016). Education on resilience is incorporated into medical schools and recognized as an important feature of health professionals. Integrating programs during medical school and advanced practice education that develop character and self-awareness skills could increase future HCP well-being and enhance resiliency, while combating burnout (Eley et al., 2016).

Beyond resilience, some research suggests that health care facilities can improve basic problems beyond the resilience education by refining workflow, communication, and EMR documentation to increase HCP well-being (Card, 2018). Burnout is the result of avoidable and

unavoidable suffering and fixing the issue independently with resilience training is potentially inadequate, due to the systems-oriented issues that exist in health care. The integration of resilience training, peer support gatherings, and stigma-free mental health awareness, along with system-focused efforts, offer a well-rounded approach to achieve optimal HCP well-being outcomes.

Theoretical Framework

The Transactional Model of Stress and Coping, created by Richard Lazarus and Susan Folkman, is a framework that assesses one's ability to overcome and cope with challenges or stressors (See Appendix D) (Lazarus & Folkman, 1984). Initially, there is contact between an individual and a prospective stressor, or their environment, which elicits a positive or negative appraisal. Depending on whether the individual perceives the interaction with a positive or negative appraisal dictates the stress response. There is no stress response if the individual identifies the interaction with a positive appraisal. If there is a negative appraisal of the interaction, the individual attempts 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 increased susceptibility and likelihood for burnout.

The process of perceived stress and coping can be applied to HCPs in relation to resilience and burnout. During the process of appraisal, individuals attempt to apply past experiences and learned coping mechanisms. Health care providers who can appraise stressful situations positively and apply coping mechanisms can decrease the likelihood of triggering a stress response, thus increasing resilience while decreasing burnout risk. Less resilient HCPs may not have learned successful coping mechanisms or have past experiences to draw skills from

during stressful situations. Due to decreased ability to cope successfully in past experiences, HCPs with less resilience, are likely to experience a negative cognitive appraisal of a situation. Overall, more resilient individuals can view problems or stressors in a larger perspective, and view stressors as a small threat. Individuals who are less resilient, are more likely to view the stressor as a larger, more extensive problem, resulting in burnout.

An example of the model described could occur when three HCPs who work at a clinic with an acute and overwhelming amount of patient appointments and new EMR requirements due to changes in management are observed. The first HCP, HCP A, views the changes as a threat, and believes the clinic is attempting to exploit their HCPs. The HCP A approaches the situation with a negative appraisal. Now, HCP A attempts to cope and change the situation to a positive appraisal. The HCP A has limited life experiences and minimal coping mechanisms, therefore begins to lose a sense of control, starts to feel increased exhaustion, and experiences burnout. The second HCP, HCP B, appraises the situation with negative appraisal, and again, attempts to cope and change the appraisal from negative to positive. Now HCP B uses coping mechanisms and perspective along with approaches the threat as an opportunity for change. The HCP B makes the initiative to meet with management to work towards a more beneficial schedule and obtain increased education on the new EMR system. Because of this approach, HCP B, finds a sense of fulfillment, self-worth, and increased resilience. The third provider, HCP C, has learned coping mechanisms, uses meditation and mindfulness, and has a positive outlook views the changes as positive. Now HCP C believes that the clinic is increasing in patients due to the high quality of accessible HCPs. The HCP C believes the EMR changes help the clinic and increase accuracy of charting. Then, HCP C appraises the situation as positive.

Due to the positive appraisal, HCP C has no stress response and can continue to work with no symptoms of burnout.

In the situations described, all HCPs experienced the same stressor, with various interpretations and responses. HCP A had a more difficult time applying coping mechanisms, due to lack of experiences and skills of resilience, and saw the change as a threat. The HCP A was not able to maintain a sense of positive perspective, which resulted ultimately in a state of burnout. The more resilient HCPs could appraise the situation from a positive perspective and use coping mechanisms and past experiences to prevent stress responses and burnout. The more resilient HCPs, HCP B and C, applied perspective, creativity, and learned skills to avoid a stress response. Furthermore, HCP B used coping skills to cultivate a method to change a negative appraisal to a positive appraisal. The Transactional Model of Stress and Coping supports the explanation that more resilient individuals are less likely to experience symptoms of burnout.

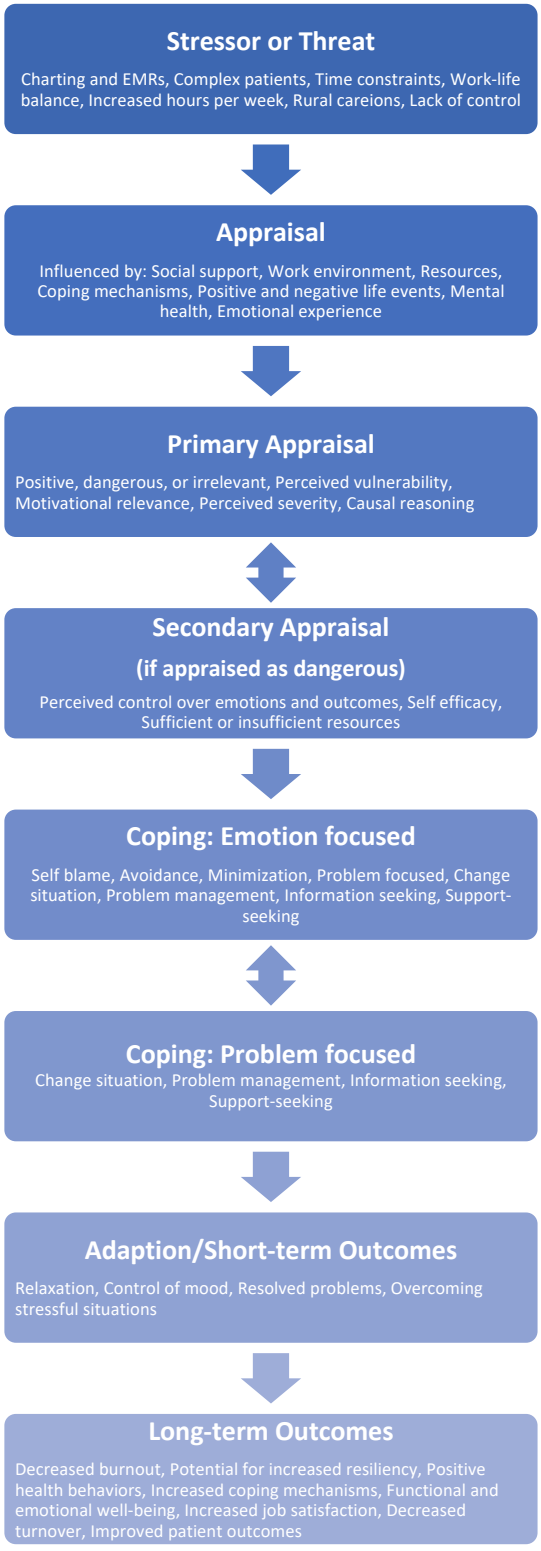

Figure 1. Adaption of the Transactional Model of Stress and Coping.

Project Framework

The Plan-Do-Study-Act (PDSA) cycle can be used to document and guide the implementation of a change. More specifically, the PDSA has been frequently applied to drive improvement processes in health care settings. The PDSA cycle offers the ability to monitor change on a small scale, enabling project stakeholders to understand the significance or likelihood of success, and decide if the recommended change has the potential to flourish. When integrating a practice improvement project, the PDSA cycle can be applied to measure progress and help define the overall practice improvement goal. The PDSA cycle was chosen to be applied within this practice improvement. As depicted below in *Figure 2*, the PDSA has four stages, plan, do, study, and act (Agency for Healthcare Research and Quality [AHRQ], 2015).

1. Plan – Defining the objectives of the practice improvement project, recruiting a team to meet objectives, creating a problem and purpose statement, performing a literature review on current knowledge base to understand and describe problem and potential causative factors contributing to problem (AHRQ, 2015).
2. Do – Implementing a plan to meet defined objectives and collecting data as the project evolves (AHRQ, 2015).
3. Study – Applying the objectives created in the "plan" stage to determine if objectives were successfully met, by analyzing and comparing the data obtained to discover data trends and summarize overall results (AHRQ, 2015).
4. Act – Disseminating results from project to be used for improvement and reflecting on overall project plan and outcomes to understand and share improvement ideas for future projects (AHRQ, 2015).

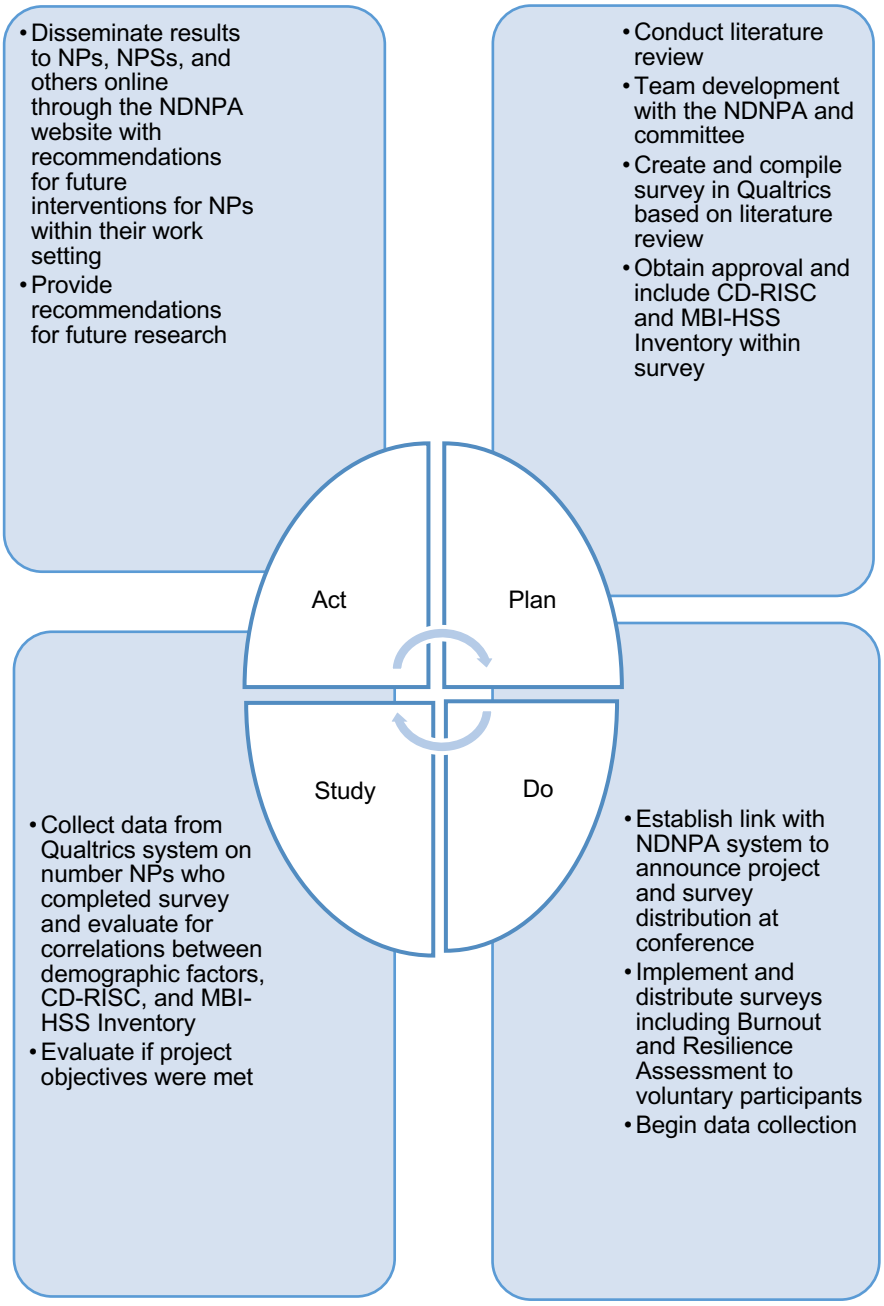

Figure 2. Plan-Do-Study-Act Model.

CHAPTER THREE. METHODS

Project Design

The practice improvement project used a descriptive mixed methods approach by electronically distributing surveys to a convenience sample of NPs and PAs whom attended the North Dakota Nurse Practitioners Association's (NDNPA) Pharmacology Conference virtually. However, no PAs who may have or may not have attended the conference filled out the survey, thus the remainder of this project does not address PAs. Quantitative numerical data was obtained using the validated MBI-SS and CD-RISC tools. Open ended questions were included within the survey to help understand demographic risk factors and coping mechanisms. Both sets of data were evaluated, and possible correlations observed to recognize whether variables could possibly be related. Descriptive research worked well within the project due to the necessity of comparing burnout, resiliency, and associated risk factors to better understand the topic within the NP population. Descriptive mixed method study findings provided the ability to delineate positive, negative, or no correlation within the topic and provide future ideas for improvement when applicable.

PDSA Cycle

Plan: The purpose of this PIP was to explore the prevalence of burnout and resiliency in correlation with demographic risk factors in practicing NPs who attended the NDNPA conference in fall 2020 in order to initiate education and practice recommendations. The NDNPA Pharmacology conference was virtual due to the COVID-19 pandemic.

To address understanding and awareness, surveys were developed based on a literature review of the topic area, and included validated scales on burnout and resilience, along with risk factors selected from the literature reviewed. The Maslach Burnout Inventory Human Services

Scale (MBI-HSS) and the Connor-Davidson Resilience (CD-RISC) scale were included in the survey. Targeting a large amount of practicing NPs to complete surveys on burnout and resiliency was essential. To accomplish this goal, partnership was established with the NDNPA Board of Directors to administer the survey during the 2020 Pharmacology conference to evaluate burnout. Surveys, including the MBI-HSS, CD-RISC, demographic risk factors, and subjects coping mechanisms were compiled and administered via Qualtrics©, a survey tool.

Do: A connection was established with the NDNPA Board of Directors to grant access and support administration of surveys during the NDNPA Pharmacology conference in the fall of 2020. MBI-HSS and CD-RISC scales along with risk factors demographic questions were assembled into one survey. The survey was administered at the NDNPA Pharmacology conference over the course of seven days from September 17th, 2020 (one week prior to conference start date) to September 25th, 2020 to all voluntary consenting participants attending. Consent information was provided to each potential participant (see Appendix F) to inform the participant of the reason for the study, how to find out about the results, and incentives. All participants voluntarily took the survey to serve as his or her consent. The survey was distributed using Qualtrics© via NPs conference registration e-mails. All participants who fully completed the survey anytime during the days of the conference (ending at the conclusion of the last speaker) were entered into a drawing for one of ten, $10 gift cards to Amazon online so that anyone attending the conference from anywhere within the region would be able to use the gift card.

Study: The first objective was to obtain and assess NP/PA burnout and resilience baseline scores at the NDNPA Pharmacology conference in the fall of 2020 using the MBI-HSS and CD-RISC tools. NPs completed the survey via their own personal electronic devices (i.e.

laptop, wireless phone, or tablet). The data was evaluated by the number of respondents and information obtained within the survey itself including MBI-HSS and CD-RISC responses and demographic questions. The next objective, objective two, was to determine possible correlations regarding NP burnout risk factors after survey completion. The second objective was evaluated by analyzing the survey results and comparing data. The objectives were guided by the Transactional Model of Stress of Coping by including survey questions regarding experiences, demographic information, and time allocations. The validated tools also helped to better understand previous experiences in relation to perceptions at time of survey in a variety of areas (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.

Act: The information collected and discoveries that were made through the administered surveys will be disseminated to NPs and those interested online through the NDNPA website and Facebook page after defense of dissertation and committee feedback. Along with the results, recommendations for modifiable risk factors and future interventions for NPs and NPSs within their education and careers to support resiliency and decrease burnout based on study findings will be provided.

The "act" stage correlates with the third and fourth objectives of the project. The third objective was to develop recommendations based on findings from the NP surveys and the literature review to disseminate online through the NDNPA website by December of 2020. The third objective was evaluated by the NDNPA posting results and recommendations by December of 2020. However, this objective was adjusted to be disseminated online after formal defense and committee review, which occurred on January of 2021. The fourth objective was to increase

NP/PA awareness of burnout risk factors and factors leading to resiliency by the end of survey. There were no PA survey respondents; therefore, this objective did not ultimately address PAs. The fourth objective was evaluated by having the participants complete the survey, including MBI and CD-RISC scales, and questions specific to this objective (see Appendix E). As well, the results were posted online through the NDNPA website for all participants to have access to along with recommendations.

Setting

The practice improvement project was conducted during the NDNPA Pharmacology conference. The location of the conference alternates every year between two North Dakota urban cities. Due to the SARS-CoV-2 (COVID-19) pandemic the conference was virtual the year of the study. The NDNPA is an association that works to enhance healthcare in North Dakota led by NPs within the state. The NDNPA works to achieve goals by providing and supporting advocacy, guidance, and continued education of NPs. For 11 years, the NDNPA has hosted a pharmacology conference that provides presentations and information on pharmacology. The conference also provides the opportunity of networking and collaboration among NPs, NPSs, and physicians assistants (PAs). The NDNPA Pharmacology conference is a three-day event. The year of survey administration marked the twelfth annual Pharmacology conference.

The NDNPA Pharmacology conference was chosen for administration of surveys, due to the vast number of NPs in attendance. Attendance of the NDNPA Pharmacology conference is typically around 300 NPs, NPSs, and PAs. By implementing the survey during the conference, many NPs could be reached via surveys, within a small-time frame, leading to an economical and efficient data collection method. Beyond the number of NPs attending, the conference provided the opportunity to obtain information from a convenience sample of NPs from a variety

of backgrounds, with varying years of experience, and different areas or specialties of work from a variety of regions. For example, administering the survey at one clinical site would provide a very narrow view of burnout, resilience, and demographic factors. NPs within one setting likely have the similar experiences and a parallel work environment. Furthermore, the NPs surveyed during the conference had the potential to come from a variety of clinical settings and educational backgrounds and with different innate and learned skills of resilience, providing an interesting and more effective opportunity to dependably compare resilience and burnout.

Sample

A convenience sample of NPs who attended the NDNPA Pharmacology conference were invited to participate in the study. PAs were also invited who had registered for the conference; however, no PAs took the survey. Due to no PA respondents, PAs were not included in the sample distribution. There were 260 NPs, 44 NPSs, and 4 PAs in attendance of the virtual conference. A convenience sample was used due to the efficiency and prospect of detecting an association between burnout, resilience, and demographical risk factors. Unfortunately, a limitation of the convenience sample was the lack of geographical variances. Participants resided within the Midwest region, mostly ND, MN, and possibly South Dakota (SD). However, the sample provides a respectable starting point for exploration, and an increased understanding for stakeholders within the North Dakota urban (and possibly rural) healthcare settings. The sampling frame was attendees of the NDNPA conference. Inclusion criteria for participants included (1) At least 18 years of age, (2) a degree and certification as an advance practice registered nurse, (3) ability to read and write in English, (4) volunteered informed consent to participate.

Resources and Costs

Invitations were sent to NDNPA participants via participants' registration e-mails using Qualtrics©, a secure survey software program (See Appendix E). Use of Qualtrics© was free for the co-investigator. The co-investigator created the survey with the use of Qualtrics© at no cost. The MBI-HSS and CD-RISC validated tools, demographic information, and voluntary drawing for gift cards were compiled and included in the Qualtrics© program. The voluntary drawing was completed electronically and randomly via the Qualtrics© program. The MBI-SS and CD-RISC validated tools were purchased by the co-investigator. Total cost for the use of validated tools was $230. Incentive was provided through ten gift cards totaling the cost of $100. A statistician from NDSU Statistics Department was assigned to the co-investigator to collaborate and analyze statistics, free of cost. Approval was granted from the NDNPA Board of Directors to share the survey via e-mail at the conference.

Instruments

Maslach Burnout Inventory-Human Services Survey

The Maslach Burnout Inventory-Human Services Survey (MBI-HSS) is the most commonly used version of the MBI. The MBI-HSS is a validated and reliable scale that was created to measure burnout among professionals working in human services, including MDs and NPs (Maslach & Jackson, 1981; Maslach et al., 2016). The MBI-HSS is a 22-item survey that evaluates three subscales of burnout including emotional exhaustion, depersonalization, and low sense of personal accomplishment. The MBI-HSS has been found to have a high internal consistency with Cronbach's alpha coefficient with ratings of 0.90 for emotional exhaustion, 0.76 depersonalization, and 0.76 for personal accomplishment (Iwanicki & Schwab, 1981; Gold, 1984).

The MBI has highest reliability in the few week range (0.60-0.83) and scores lowest in the year range (0.54-0.60), pertaining to retest reliability. Responses are formatted in frequency and rated using a 7-point Likert rating scale. Scores range from never (0) to every day (6). Scores can be compiled and averaged within each subscale. Higher scores within the emotional exhaustion and depersonalization subscale reflects higher burnout. Lower scores within the personal accomplish subscale correlate with higher burnout.

Connor-Davidson Resilience Scale

The Connor-Davidson Resilience Scale (CD-RISC) is the most extensively used scale for calculating resilience. The scale is user friendly and can be understood by most 12-year-olds and has been applied in studies for children as young as 10 years old (Connor & Davidson, 2003). The CD-RISC is a self-rating scale and the subject responds to each statement regarding the previous month. The CD-RISC contains a 25-item survey that uses a 5-point Likert scale, with 0 being “not true at all” to 4 “true nearly all of the time”. Total scores range from 0-100, and higher numerical scores reflect a larger amount of resilience per subject.

Demographics

Demographic questions were integrated into the survey based on emerging themes within the extensive literature review. Themes were drawn from the literature relating to MSs, MDs, and NPs. Due to the small amount of information known about NPs and psychological distress, demographic questions were based primarily from MS and MD literature. Information was collected on age, sex, ethnicity, marital status, and primary caretaker to children to understand a general background of the participants. Likelihood of psychological distress is heightened by female sex, being a primary caretaker for children, and younger age (Moss et al., 2016; Shanafelt et al., 2017; Wong & Olusanya, 2017). Furthermore, information on the format of education,

extent of degree, years of experience, area of specialty, work setting, work environment, and hours worked per week were collected.

More experience and working within a team generally relate to lower burnout (Corbridge & Melander, 2019). Certain specialties are known for increased burnout, along with increased hours worked per week (Lall et al., 2019; Wiederhold et al., 2018). Questions related to extracurricular activities, alcohol consumption, and mental health conditions, along with coping mechanisms were examined due to the historical likelihood of these factors influencing burnout (Robertson et al., 2016) (See Appendix E for survey).

Congruence of the Project to the Organization's Strategic Plan/Goals

The PIP included collaboration with NDSU and the NDNPA. To begin with, the PIP aligned with NDSU's School of Nursing (SON) vision statement to ". . . positively impacting the health of society through excellence in nursing education, research, practice, and service" (NDSU College of Health Professions, 2017). The PIP had a prominent goal of impacting and improving the psychological health of advanced practice nurses through research. The PIP worked within the same geographical setting as NDSU, leading to valuable information applicable to NDSU's Doctor of Nursing Practice (DNP) program. The NDNPA's mission is to, ". . . promote quality healthcare in North Dakota by support, advocacy, leadership and continued education of nurse practitioners" (NDNPA, 2017). The PIP specifically worked to advocate and increase awareness for NPs within ND and MN. The PIP is one of the first, if not first, project to address burnout and resiliency within NPs in the ND and MN.

Protection of Human Subjects

The project posed minimal risk to subjects involved. A description of the survey was explained within the beginning of survey. Participants involved were NPs and PAs attending the

NDNPA Pharmacology conference. Participation in the project survey was voluntary to all subjects. Voluntary consent was obtained at the beginning of the survey. Subjects could withdraw from the project survey at any time without explanation or penalty. There was potential risk of participants feeling overwhelmed or psychologically distressed by the survey. There was no known physical risk involved. The potential benefits for participants included increased and awareness of burnout, resilience, and risk factors among NPs. Knowledge gained from this study could also potentially improve NPS educational support and NPs work environment. Potential benefit also included being awarded a gift card for completion. All NP conference attendees were invited to participate in the study, including women and minorities. No inclusion of children occurred. All participants were over the age of 18.

Institutional Review Board Approval

The Assessment of Burnout and Resiliency Among Nurse Practitioners survey developer completed Institutional Review Board (IRB) approval through North Dakota State University (NDSU) prior to beginning this study. The project was granted approval on April 16th, 2020 (See Appendix A).

Timeline of Project Phases

The timeline for the creation and integration of the practice improvement project was as follows:

- May 2019-August 2019 – Literature review and synthesis
- September 2019-November 2019 – Proposal development
- December 2019 – Approval of committee, creation of Qualtrics survey©
- April 2020 – IRB Approval

- September 2020 – Obtain NP voluntary participants at the Twelfth Annual NDNPA Pharmacology Conference and distribute surveys
- October-December 2020 – Compile assessment results
- January 2021 – Submit dissertation to committee and defend, share results and recommendations with NDNPA website
- February 2021-March 2021 – Present results to NPs enrolled in the DNP program and faculty and NDSU; Submit dissertation to nursing program chair and graduate school

CHAPTER FOUR. RESULTS

Surveys were obtained from NPs attending the NDNPA conference; original sample size was 54. There were no responses from PAs collected. Out of the 54 surveys, 44 were considered complete and analyzed in the following material. Surveys were considered incomplete if MBI-HSS and CD-RISC tools were not completed.

Table 1
Demographics

Sex	Frequency	Percent
Female	43	97.7
Male	1	2.3
Marital Status		
Divorced	3	6.8
Married	39	88.6
Never married	2	4.6
Degree Type		
Doctoral	17	38.6
Masters	25	56.8
Other	2	4.6
Setting		
Rural	15	34.1
Urban	27	61.4
Other	2	4.6
Care Type		
Individual	17	38.6
Team based	24	54.6
Other	3	6.8
Income		
Salary	22	50.0
Hourly	8	18.2
Productivity	6	13.6
Other	8	18.2
Care Type		
Primary	16	36.3
Specialty	28	63.6

Objective One

The first objective of the study was, “Obtain NP/PA burnout and resilience baseline scores at the NDNPA Pharmacology conference in the fall of 2020 using the MBI-HSS and CD-

RISC." The findings pertaining to this objective can be viewed in Table 2. Higher scores within the EE and DP categories reflect higher levels of burnout. Additionally, lower scores within PA reflect higher levels of burnout. Total scores range from 0-100, and higher numerical scores reflect a larger amount of resilience per subject. The average MBI-HSS score was 70.27 (See table 1). The mean CD-RISC scores for the sample was 79.86. Subscale data including personal accomplishment (PA), emotional exhaustion (EE), and depersonalization (DP) can also be viewed in Table 1.

Table 2
MBI-HSS, Subscales, and CD-RISC

	N	Mean	SD	Sum	Min	Max
MBI-HSS	44	70.27	13.99	3092	46	102
MBI-EE	44	23.57	12.45	1037	5	48
MBI-DP	44	6.18	5.06	272	0	21
MBI-PA	44	40.52	4.84	1783	31	48
CD- RISC	44	79.86	13.50	3514	34	100

Objective Two

The second objective was to, "Determine possible correlations regarding NP burnout risk factors after survey completion." The Pearson Correlation Coefficient (PCC) was used to measure linear correlation between numerous variables within the demographic factors chosen from the literature review. The mean data of the variables selected can be seen in Table 3. The PCC compared the EE, DP, PA, MBI-HSS, and CD-RISC scores to age, years of experience, number of children cared for, hours worked, and hours volunteered (See Table 4). None of the *p* values were less than 0.05. A correlation matrix was completed to observe for patterns. There were no strong patterns within the correlation matrix, with no true pattern to when scores would increase and/or decrease dependent on variables.

Table 3
PCC Variables

	n	Mean	SD	Sum	Min	Max
Age	44	44.96	9.98	1978	32	68
Years of Experience	44	12.93	7.65	569	3	34
Children	44	1.84	1.45	81	0	5
Hours Worked	42	37.88	15.29	1591	6	70
Hours Volunteered	40	3.98	4.79	159	0	20

Table 4
PCC

	Age	Years of Experience	Number of Children	Hours worked	Hours volunteered
MBI-HSS					
r Value	-0.22181	-0.16801	0.04359	0.13103	-0.06842
p Value	0.1479	0.2756	0.7788	0.4082	0.6748
EE					
r Value	-0.1548	-0.14537	-0.05172	0.12727	-0.03686
p Value	0.3157	0.3464	0.7388	0.4219	0.8214
DP					
r Value	-0.24997	-0.24723	0.13758	0.03629	-0.11111
p Value	0.1017	0.1057	0.3731	0.8195	0.4949
PA					
r Value	0.01830	0.14657	0.11509	0.01477	0.01413
p Value	0.9061	0.3424	0.4569	0.9260	0.9310
CD-RISC					
r Value	-0.16335	-0.03116	0.07631	0.09224	0.03106
p Value	0.2894	0.8408	0.6225	0.5612	0.8491

The demographic factor of marital status was almost always “married” (88.64%); therefore, formal statistical comparison to “unmarried” subjects was not valuable. Additionally,

sex was almost always female (97.73%), providing no real statistical significance to compare. Demographics can be seen in Table 1. No further analysis was done of these two demographic factors due to the small statistical comparison, and these two demographic factors making up a majority of the sample.

Next, type of degree or education was interpreted along with comparison to the MBI-HSS, EE, DP, PA, and CD-RISC scores. The mean CD-RISC score for doctoral prepared NPs (n=17) was 75.59, while the mean score for masters (n=25) prepared NPs was 83.04. A t-test was performed to understand if there was a significant difference between the groups, first evaluating for a relationship to the CD-RISC (p=0.08).

The mean in regard to MBI-HSS and education type was doctoral prepared NPs with a mean of 73.88 and masters prepared NPs with a mean of 69.16 (p=0.28). Higher scores within the EE and DP subscale reflect high burnout, while lower scores within the PA subscale correlate with higher burnout. Last, the mean score of the subscales EE, DP, and PA were calculated with t-tests. Emotional exhaustion mean was 28.44 for doctoral NPs, and 21.24 for masters prepared (p=0.07). Depersonalization mean for doctoral NPs was 7, and for masters NPs 5.95 (p=0.52). Personal accomplishment mean was 38.48 for doctoral NPs, and 41.92 for masters prepared NPs (n=0.02).

Individual (n=17) versus team-based (n=24) work approach were also analyzed. Mean CD-RISC score for individual approach was 75.35 and team-based was 82.46 (p=0.098). The MBI-HSS mean was 76.18 within individual approach and 67.08 for team-based (p=0.04). The EE, DP, and PA mean scores can be seen in Table 5. The table shows trends that team-based settings had decreased EE and DP, with an increased PA score. Individual settings had the opposite pattern in respect to mean scores.

Table 5
MBI-HSS Subscale Mean(s)

	EE Mean	DP Mean	PA Mean
Individual	28.94	7.706	39.5296
Team-based	20.50	5.7085	40.8752

The subsequent factor analyzed was the work settings, urban versus rural. The breakdown of these scores can be seen in Table 6 and 7. The *p* value for CD-RISC was 0.66 and 0.45 for MBI-HSS with t-test.

Table 6
CD-RISC Setting

	N	Mean	Sd	SE	Min	Max
Rural	14	81.14	17.20	4.60	34.0	100.0
Urban	24	79.04	11.90	2.43	46.0	100.0

Table 7
Setting MBI-HSS and Subscales

Rural	*n*	Mean	SD	SE	Min	Max
MBI-HSS	15	67.73	14.70	3.80	46.0	96.0
EE	15	22.50	1.53	0.39	0.67	4.67
DP	15	6.05	0.94	0.24	0	3.40
PA	15	39.12	0.49	0.13	3.88	5.75
Urban						
MBI-HSS	27	71.15	13.33	2.57	50.0	102.0
EE	27	23.76	1.27	0.24	0.56	5.33
DP	27	6.1	1.05	0.20	0	4.20
PA	27	41.28	0.64	0.12	3.88	6.00

The next aspect that was analyzed was history of or current mental health (MH) diagnosis. Total CD-RISC scores range from 0-100, with higher numerical scores reflecting a larger amount of resilience per subject. CD-RISC mean score for those without MH diagnosis (n=21) was 82.76 and 77.22 for those with MH diagnosis (n=23). A t-test was also performed for this demographic with p=0.17. The MBI-HSS mean score for those without MH diagnosis was 65.3 and 76.32 for those with MH diagnosis. A Satterthweaite version of t-test was used since the equality of the variances test suggested that the variances may be different. The p value was less than 0.05 being -0.0068. Equality of variances was completed with $pr > f$ 0.0498. Subscale mean scoring can be seen in Table 8.

Table 8
MH Diagnosis MBI-HSS Subscales

	EE Mean	DP Mean	PA Mean
No: MH	19.2	4.55	41.55
Yes: MH	28.68	8.05	39.59

Alcohol intake was considered, primarily comparing those who consume alcohol (n=27) to those who do not consume alcohol (n=17). CD-RISC mean scores for those who drink alcohol was 81.04 and for those do not consume alcohol was 78.0. MBI-HSS mean score was 70.42 for those who do consume alcohol and 72.13 for those who do not. MBI-HSS subscales can be seen in Table 9. T-test were performed with CD-RISC, MBI-HSS, and subscales with all p values greater than 0.05.

Table 9
MBI-HSS Subscales Alcohol

	EE Mean	DP Mean	PA Mean
Yes: Alcohol	23.62	6.39	40.42
No: Alcohol	25.06	6.38	40.69

Income was analyzed with the application of ANOVA to calculate *f* test to make a proper interpretation of the data. The *p* value(s) for CD-RISC, MBI-HSS, and subscales with income type were > 0.05, and that data was followed up with Duncan's Multiple Range Test (MRT). Duncan's MRT suggested that the means covered were not significantly different for all tools. For CD-RISC scores with Duncan's MRT were as followed: productivity (*M*=84.67), salary (*M*=80.05), hourly (*M*=79.38), other (*M*=76.25). The MBI-HSS means with income were found to be other (*M*=73.25), salary (*M*=71.27), hourly (*M*=69.25), and productivity (*M*=64.0).

The same testing was used for the category of coping mechanisms. Coping mechanisms were analyzed by number of coping mechanisms listed (1, 2, 3, 4, or 5). Due to only one subject listing 1 and 5 coping mechanisms, 1 and 2 were combined, as well as 4 and 5. The CD-RISC and coping mechanisms Duncan's MRT showed 3 coping mechanisms (*M*=82.35), 4-5 coping mechanisms (*M*=79.5), 1-2 coping mechanisms (*M*=77.33). Duncan's MRT for MBI-HSS was: 4-5 coping mechanisms (*M*=74.92), 1-2 coping mechanisms (*M*=70.67), 3 coping mechanisms (*M*=66.65).

Last, area of work was grouped into two categories: primary versus specialty. Primary (*n*=16) consisted of those who worked in family medicine or internal medicine. The specialty (*n*=28) sample consisted of all other areas listed as area of work. The primary group had a CD-RISC *M*=77.88, MBI-HSS *M*=69.06, EE *M*=24.03, DP *M*=5.9, and PA *M*=39.28. The specialty group had a CD-RISC *M*=81.0, MBI-HSS *M*=70.96, EE *M*=23.4, DP *M*=6.35, and PA *M*=41.28.

Objective Three

The third objective was to, "Develop recommendations based on findings from the completed surveys and the literature review to disseminate online through the NDNPA website

by December of 2020." Information from literature review was obtained by accessing scholarly via web databases to locate articles, findings, and current knowledge on the topics of burnout and resilience in HCPs. Recommendations were compiled and shared with the NDNPA website in summarized form reflected in the Executive Summary (Appendix G) with a link to the full results and discussion portions of the dissertation.

Objective Four

The fourth objective was, "Increase NP/PA awareness of burnout risk factors and factors leading to resilience by the end of survey." The fourth objective was accomplished by including four questions in pre- and post-survey format within the survey regarding knowledge on burnout and resilience. In between the pre- and post-survey, information on burnout and resilience was provided to participants. The questions can be viewed in Appendix E question 1. The decrease or increase in scores can be seen in Table 10. A negative score correlates with a decrease in knowledge pre versus post-test. A score of zero indicates no change. A positive score indicates there has been an increase in understanding.

Table 10
Pre/Post Survey

	-1	0	+1	+2	+3	+4
I feel I am aware of what burnout is	2.27%	77.27%	20.45%	0	0	0
I feel I am aware of risk factors that can lead to burnout	2.33%	58.14%	32.56%	6.98%	0	0
I feel I am aware of what resiliency is	2.27%	52.27%	36.36%	6.82%	2.27%	0
I feel I am aware of how I can be resilient in my practice	4.55%	38.64%	38.64%	15.91%	0	2.27%

CHAPTER FIVE. DISCUSSION AND RECOMMENDATIONS

Summary

The first finding, pertaining to Objective One and the MBI-HSS subscales, was that EE (*M*=23.57) and DP (*M*=6.18) were considered moderate, and PA (*M*=40.52) was considered low. Higher scores within the EE and DP categories reflect higher levels of burnout and lower scores within PA reflect burnout; therefore, this sample had higher likelihood of burnout within all MBI-HSS subscales indicating moderate to high likelihood of burnout within the sample.

Next, the resilience concerning factor, or the CD-RISC was *M*=79.86, falling slightly below the average individual in the US (*M*=80.7). The range for CD-RISC was 34-100, meaning there were some scores that fell significantly under the overall average.

Objective Two evaluated at a multitude of variables within the survey tools as well as the demographic factors. The first finding was that resilience scores were higher in master's prepared NPs and burnout scores were higher among doctoral prepared NPs. The next statistically significant finding was that resilience and burnout (p=0.04) were significantly lower among NPs working within a team versus individually. Resilience was minimally higher among rural NPs, and burnout was slightly higher among urban working NPs.

NPs without mental health diagnoses had higher levels of resilience. Resilience was minimally higher in those who consumed alcohol (*n*=27) versus those who did not (*n*=17). MBI-HSS subscales were extremely close in numerical results, with EE being somewhat higher in those who do not consume alcohol.

NPs working based on productivity had the highest levels of resilience, followed by salary, and last hourly or other. NPs who used 3-5 coping mechanisms had the highest levels of resilience versus those who used less than 2 coping mechanisms. Those working in specialty

areas (*n*=28) had higher levels of resilience versus those working in primary care (*n*=16). The MBI-HSS subscales for primary versus specialty NPs minimally different. Although NPs working in primary care had higher EE, those in specialty had higher DP, and lower PA.

Objective Four analyzed the pre and post-test, which was created to improve the participants understanding of burnout and resilience. The pre and post-test included in the survey indicated a mean improvement 40.6%.

Discussion

It should be noted that the study did not include any PA participants. PA(s) were originally included in the objectives due to the possibility of attendance at the NDNPA conference. Either no PAs attended the conference, or no PAs completed the survey; therefore, there was no correlation to be made for PAs. Furthermore, there was a possibility that students who attended the conference could have received the survey link via e-mail on the day of the conference in error and attempted the survey before realizing the context, leading to the incomplete surveys when unable to complete this information that was not applicable to those in current practice. Surveys were considered complete and used for analysis of data if the MBI-HSS and CD-RISC tools and demographic data were completed in entirety.

Reviewing the results, the finding of moderate to high burnout within the MBI-HSS subscales is consistent with the previous discoveries pertaining to MDs (Shanafelt et al., 2017). A recent study addressing advance practice registered nurses' (APRNs') health found that 33.3% (*n*=433) of respondents reported formerly experiencing burnout, with 26.3% currently experiencing burnout (Kapu et al., 2019).

With the COVID-19 pandemic, levels of burnout are likely worsening, related to health care professionals, such as NPs, working longer hours with less resources, and riskier conditions.

Specifically, those working on the frontlines have experienced some of the heaviest workloads, which may lead to inadequate coping and symptoms of burnout. One study in India, conducted a survey to understand the prevalence of burnout during COVID-19. The sample included nurses and physicians. The study found that half of the respondents had COVID-19 related burnout (52.9%) (Khasne, 2020). The study findings support the notion that COVID-19 could have affected the data results of participants within this study. Altogether, burnout is likely becoming a major occupational issue amidst the pandemic and a topic of further research.

Resilience mean scores of NPs being slightly below national average provides a baseline understanding of resilience among working across ND. Unfortunately, the resilience score does not provide a strong statistical significance for NPs, due to the limited research on this topic and inability to compare.

With the sample being primarily female, demographic factors such as sex, number of children, and caretaker, were not of adequate number to be compared or make correlations. Surprisingly, compared to the previous literature of MDs, age, years of experience, hours worked, and hours volunteered had no strong relationship(s) with burnout or resilience within the sample (Moss et al., 2016; Shanafelt et al., 2017; Wiederhold et al., 2018).

The discovery that doctoral NPs had lower resilience and more burnout within this study is quite interesting and an uncharted topic. Emotional Exhaustion and DP were relatively higher among doctoral prepared NPs. One explanation would be related to the possibility of increased involvement within the educational realm, as multiple doctoral participants worked within the clinical and educational setting. The sample did contain more master's prepared NPs, which could also have skewed the overall comparison between education type. Master's educated NPs could also have increased coping mechanisms in relation to their higher resiliency scores.

The most significant finding from this study was that burnout was lower in NPs working within a team versus individually. Team-working NPs also had higher levels of resilience and significantly lower levels of burnout, suggesting that those working within teams have better psychological health. Although this finding was statistically significant, it should be understood that there was no concrete definition of team-based working NPs provided within the survey. Working in a team-based setting is a very broad concept and can be interpreted as working within a team, collaborating, or even co-management.

The AANP (2020) defines team-based care as ". . .the provision of health services to individuals, families, and/or their communities by at least two health care providers who work collaboratively with patients and their caregivers – to the extent preferred by each patient – to accomplish shared goals within and across settings to achieve coordinated, high-quality care." Norful et al. (2018) conducted a ROL on models of care and the concept of co-management. The ROL found that nurse-practitioner-physician co-management has three elements which are effective communication, mutual respect and trust, and clinical alignment/shared philosophy of care. Further, collaborative practice, another model of care, "is a process involving mutually beneficial active participation between autonomous individuals whose relationships are governed by negotiated shared norms and visions" according to American College of Obstetricians and Gynecologists (2016).

Altogether, the definition interpreted by participants might have resembled working within a group of two or more, thus lending to the understanding of working in a "team-based" care setting; however, given that the definition was not provided in the survey, the participants' perceptions cannot be proven as truly working in a team model versus working with a

collaboration or co-management approach and is an area for improvement within future studies on the topic.

NPs who worked in rural settings had higher levels of resilience as well as lower levels of burnout. The previous evidence supports the concept of higher resilience among rural NPs, likely related to the mechanisms utilized and obstacles overcome working in a more autonomous setting. The finding of lower burnout in the rural NP is surprising, due to the decreased resources in isolated rural setting(s) and overall increased need for independent practice (Owens, 2018; Waddimba et al., 2015). Unfortunately, the sample included more urban working NPs (n=27) versus rural (n=15), leading to a decreased ability to confidently compare the two groups. NPs with a MH diagnosis had lower levels of resilience, which goes against the concept that resilience is often stronger in those who overcome more obstacles throughout their lifetime (Robertson et al., 2016; Southwick et al., 2014; Wong & Olusanya, 2017).

Those who consumed alcohol had higher levels of resilience and lower levels of burnout, likely meaning that leisurely alcohol consumption is an effective coping mechanism for NPs, though number of drinks was not clear nor duration or frequency. The data could not be differentiated for the number of drinks consumed per a specific time frame; therefore, it is unknown if it is a beneficial or inadequate coping mechanisms. There is no literature on alcohol recommendations for HCPs; the Centers for Disease Control and Prevention (CDC) (2020) recommends drinking alcohol in moderation, and advocates for two drinks or a less in a day for men or one drink or less in a day for women. NPs working on productivity had the highest levels of resilience, which could possibly be related to the increased challenge of working based off of performance and personal mechanisms utilized to accomplish work related goals.

Those who reported using more coping mechanisms had increased resilience, which is supportive of the overall concept and strategies that are utilized to build resilience. The NPs working in primary care (internal medicine or family medicine) had the highest levels of EE, which, unfortunately, seems appropriate related to the broad scope, responsibilities, and intensity of primary care. In fact, primary care turnover rate is 12% for NPs and PAs, which is double that of MDs (Nursing Solutions, Inc., 2016). NPs working in specialties had more concerning scores in DP and PA. There is no evidence of any explainable factor related to this finding, warranting further research.

Recommendations

While the concept of resilience has commonly been discussed in literature as a strategy to prevent burnout, the findings of this study could potentially suggest that there is not a strong connection or protective factor between the concept of resilience and level of burnout. Predictably, this study found that burnout is present among NPs, but there was not a consistent projecting relationship with resilience. One could argue that MDs, NPs, and PAs most likely have a fair amount of resilience proven by completing rigorous coursework, clinicals, and board certifications. Perhaps, one of the most pertinent recommendations for practice regarding burnout are the changes that are necessary on an organizational and national level for HCPs, rather than individual changes.

Although the study results did not indicate a large association between resilience and burnout, resilience still remains an important quality to be discussed, based off of previous research and findings. While there are no exact practice recommendations for resilience for NPs specifically, there are many credible suggestions and ideas put forth by various organizations that can be applied. For instance, the American Psychological Association (APA) (2014), has put

forward information on ways to build resilience that Stanford Medicine endorses. The recommendations include making connections and fostering good relationships, avoiding seeing crises as unsurmountable problems, accepting that change is part of living, moving toward goals, taking decisive actions, looking for self-discovery opportunities, nurturing a positive view of oneself, keeping things in perspective, maintaining a hopeful outlook, taking care of yourself, and pursuing additional ways that strengthen your resilience. These are all strategies that can be applied individually to enhance resilience and mitigate burnout in some fashion.

Further, the American Medical Association (AMA) (2020) has a STEPS Forward series, that provides MDs with practice recommendations related to burnout and well-being. The AMA provided "6 Tips to Protect Against Burnout." The tips include identifying and prioritizing values and comparing them to how you spend your time, thinking about your practice from a different perspective and writing down an individual mission statement, identifying meaning outside of work, finding support and guidance in outside groups (professional help if necessary), thinking about the "bigger picture" when deciding how to spend free time, and trying to schedule (and keep) time to enjoy yourself. Although NPs and other APPs can and should use this as a resource, it would be a positive change and accommodating intervention for a national NP organization to follow suit, with recommendations tailored to NPs.

One national survey that reviewed NP and PA turnover indicated that only half of the healthcare facilities had formal employee retention plans in place, with 90% of them viewing retention as crucial (Nursing Solutions, Inc., 2016). With the increased number of working NPs and PAs, as well as the expansion of role independence on a policy level, there is great need for further understanding and the push to minimize burnout and prioritize retention by organizations.

By doing this, organizations also decrease cost(s), as the estimated cost for recruiting and developing NPs after turnover is $250,000-300,000 (Gilliland, 2019).

Healthcare organizations must increase their interest in selecting and screening NP and PA candidates' level of burnout, and understand the applicant's needs as a provider versus what the institution offers. On the other hand, NP and PA applicants must advocate for themselves and their values, review the latest research, and take into consideration the overall psychological impact certain jobs can entail. Organizations can increase overall job satisfaction through promoting upskilling, role expansion, and independence to increase the general sense of accomplishment for APPs (Hoff et al., 2019). Further, time constraints, pace of work, and compensation are areas that influence job satisfaction; therefore, must also be considered by organizations in regard to burnout. By improving job satisfaction, healthcare organizations will likely increase provider work performance as well.

Although this study did not indicate a strong correlation between caretaker responsibilities and burnout, it was limited in both variation and sample size, and did not assess work-life balance in depth. A recent study published in 2019, explored burnout and job stressors in advanced practice providers (APPs) (Klein et al., 2019). The term APPs can refer to both NPs and PAs. A large sample of 1,216 APPs completed the survey. The main findings included that job stressors directly contribute to burnout and higher levels of work-family balance contributed to decreased levels of stress experienced by APPs. The study suggested that organizational leaders need to work to improve work-family balance to decrease burnout, which aligns with previously discussed findings among MDs, and supports the need for healthcare organizations to address schedule demands and other conflicts that influence work-family balance.

Theoretical Framework and Model

The theoretical framework, the Transactional Model of Stress and Coping, worked effectively within the project. Though the study findings differ from the model's explanation that more resilient individuals are less likely to experience symptoms of burnout, the framework helped to understand how individuals experience and perceive stress in context of coping mechanisms. The framework helped to support the study's recommendations that in theory resilience could potentially improve burnout, as proven by other studies in the past. Further, the framework guided the objectives, survey questions regarding past experiences, collection of demographic information, and time allocations within the study. The model helped the co-investigator understand previous experiences in relation to perception at time of survey response. Last, the results were able to be evaluated from the perspective that each survey participant had different experiences and demographic factors that influenced their coping, resiliency, and overall risk of burnout.

The PDSA Model was a successful model to use within the study. The model provided a clear outline and indication for each step within the overall study process. The PDSA allowed the ability to review the interventions within each phase of the project to help understand the overall process as well as areas that would benefit from current change or future recommendations.

Impact on Nurse Practitioner Role

Though NP literature on burnout is marginal compared to that of MDs, reviewing literature and evidence can be helpful for NP job negotiation and strategies to alleviate burnout. Healthcare facilities, and NPs can apply the evidence founded in this study, particularly the findings that those who worked within team-based settings had lower burnout, to guide them in creating more team-based models or applying to team-based positions. Healthcare facilities could

benefit by reviewing data such as this, and other research discussed, and conducting their own assessment(s) of their employee's job satisfaction, burnout, and coping mechanisms.

While this study did not provide a strong understanding pertaining to a direct relationship between burnout and resilience, there was evidence that NP resilience in the sample was slightly below national average. Further, NPs who utilized more coping mechanisms had higher resilience, which offers the potential hypothesis of better psychological outcomes. Therefore, the recommendation of using multiple coping mechanisms (i.e., exercise, family and friends, meditation, sleep, therapy) is supported by the evidence within this study. There are no exact suggestions on the most effective coping mechanisms, and likely, success of each coping mechanism varies person to person, making it important to find coping mechanisms that suit each individual best. Organizations could also use this evidence to implement resilience building opportunities, and even offering coping mechanisms within the workplace (i.e., areas to relax or meditate, staff to debrief and discuss stressors with, exercise equipment or gym(s)).

However, these recommendations are not strongly supported by a large a cross-sectional survey on resilience, with 5,445 MD respondents, which suggests that resilience is not the answer to addressing burnout (West et al., 2020). The research discovered that 29% of MDs with the highest level of resilience still experienced burnout. The study found that MDs did not have a deficit of resilience, and although maintaining and improving resilience is important, it is more likely that improvements in the clinical care environment are needed to decrease burnout and increase well-being. Altogether, the findings suggest that resilience training should not be the priority in prevention of burnout.

The most extensive information found through literature review on the topic of burnout among NPs and PAs, was a review of literature (ROL) that evaluated literature from 2000-2016

and identified 32 articles on the topic (Hoff et al., 2019). The ROL suggested that literature on NP and PAs has been more focused on job satisfaction than burnout or other psychological outcomes. Another study published in 2019, assessed APRN's health and well-being (Kapu et al., 2019). The study found that APRN's experience burnout and suggested further career development, the use of self-care, increased organizational promotion of health, and leadership support. Both of these studies noted that further research is warranted to further understand and improve well-being.

Reviewing the previous literature, and including this study, it is understandable that further research on the topic needs to be completed to better understand and improve outcomes on the topic of burnout in APPs. Further, based off of West et al.'s (2020) findings, it is safe to predict that the research should be more focused on burnout and organizational influences, rather than skills of resilience. There is the need for more studies within the NP population, with larger samples, and longitudinal designs concerning the examination of burnout over time.

A valuable strategy, suggested by a previous review of literature, would be to distribute large scale surveys via the American Association of Nurse Practitioners to reach a large NP audience (Hoff et al., 2019). A strategy such as this would provide a large nation-wide sample, with great diversity. By completing more research on the topic, there will also be a better understanding in relation to the increased autonomy in relation to burnout. Over the years, NPs have been increasing their scope of practice, making this area of research even more important to recognize and understand.

Dissemination

The discoveries made from this clinical dissertation were discussed with the organizations involved, shared with the NDNPA via their website, and presented at the co-

investigator's final defense to the dissertation committee for the practice improvement project. The practice improvement project was also shared at the NDNPA Conference by poster exhibition. In addition, the project was shared via poster exhibition to graduate DNP students at NDSU in the Fall of 2020 by virtual video presentation and in the Spring of 2021 in person. There is the prospect to pursue publication of the dissertation to reach a larger audience and help improve well-being of working NPs and PAs and support policy and organizational changes.

Limitations

The results of this study should be interpreted cautiously as limitations exist. Sadly, due to the COVID-19 pandemic, the NDNPA Pharmacology Conference was held virtually for the first time. Although the sample was not largely diverse, the results can be reflective of the profession within the region targeted, including ND, MN, and possibly SD. Additionally, the COVID-19 pandemic could be a potential limitation due to the fact that participants were experiencing additional stress to their roles, making it difficult to determine if burnout and resilience could have been attributed to the unique time in history. A further limitation of the study was that the survey link did not get to all NPs in attendance of the conference. After the conference, the co-investigator discovered that some attendees did not receive the survey link within their registration e-mail. This technology error caused potential decreased sample size and diversity.

Another limitation within this realm, were incomplete surveys. The use of the CD-RISC and MBI-HSS tools were mildly effective when all comprehensive scores were not attained. Due to this, the sample size was decreased, reducing the overall understanding. A plausible explanation for this would be that students who attended the conference received the survey link

as a result of technology error. Students most likely started the survey and soon after initiation stopped the survey, realizing questions were pertaining to working NPs.

Unfortunately, there is a shortage of previous research on the topic of burnout among NPs and PAs, making it hard to understand scores without a baseline or trend to compare, or recommendations to build from. There is the possibility that this study will provide future investigators the ability to improve their study-design.

Next, the question pertaining to degree type (i.e. masters, doctoral, or online) was formatted so respondents could only choose one option. The question should have been formatted in a select all format, as both these degrees vary in format. The survey was already live when this error was noticed, so changes were not made to prevent any inconsistencies within the data collection. Comparing online versus in person programs could have been immensely helpful in comparing burnout rates and resilience. This error caused the inability to make this comparison, with no true understanding of the education format.

Additionally, as considered in the Discussion section, the question pertaining to team versus individual based care did not give a definition of what team-based care includes. This causes the results of this finding to be open for interpretation, with no solidified understanding of what each participant was indicating when selecting the "team-based" option. This limitation could impact results and recommendations by not defining team-based care prior to the survey question. As well, all the data collected was self-reported, thus leading to possible bias from individual perceptions.

Conclusion

The purpose of this PIP was to explore the prevalence of burnout and resiliency in correlation with demographic risk factors in practicing NPs who attended the NDNPA

conference in fall 2020 in order to initiate education and practice recommendations. Burnout is experienced throughout healthcare among HCPs and this project focused on APPs, specifically, NPs, due to the overall lack of research and understanding within the population.

The project involved the development and implementation of a survey, data analysis, and recommendations for practice. Burnout creates concern for compromised quality of patient care, increased healthcare cost(s), and most significantly, negative physical and psychological outcomes for healthcare providers. Although there were limitations, the findings from this project are meaningful as a baseline understanding of burnout in NPs. The project met its main objectives and delivers recommendations for future research on the topic, as well as suggestions for practicing NPs, and serves as a resource for healthcare organizations to mitigate the burden of burnout and increase the well-being of providers to protect the overall health of our country.

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APPENDIX A. IRB APPROVAL

NDSU NORTH DAKOTA STATE UNIVERSITY

April 16, 2020

Heidi Saarinen
Nursing

Re: IRB Determination of Exempt Human Subjects Research:
Protocol #PH20247, "Assessing Burnout and Resiliency Among Nurse Practitioners"

NDSU Co-investigator(s) and research team: Kezia Sogard
Date of Exempt Determination: 4/16/2020 Expiration Date: 4/15/2023
Study site(s): online Funding Agency: n/a

The above referenced human subjects research project has been determined exempt (category 2(ii)) in accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, Protection of Human Subjects). This determination is based on the original protocol received 4/15/2020.

Please also note the following:
• If you wish to continue the research after the expiration, submit a request for recertification several weeks prior to the expiration.
• 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.
• Notify the IRB promptly of any adverse events, complaints, or unanticipated problems involving risks to subjects or others related to this project.
• Report any significant new findings that may affect the risks and benefits to the participants and the IRB.

Research records may be subject to a random or directed audit at any time to verify compliance with IRB standard operating procedures.

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

Kristy Shirley

Kristy Shirley, CIP, Research Compliance Administrator

For more information regarding IRB Office submissions and guidelines, please consult https://www.ndsu.edu/research/for_researchers/research_integrity_and_compliance/institutional_review_board_irb/. This Institution has an approved FederalWide Assurance with the Department of Health and Human Services: FWA00002439.

INSTITUTIONAL REVIEW BOARD
NDSU Dept 4000 | PO Box 6050 | Fargo ND 58108-6050 | 701.231.8995 | Fax 701.231.8098 | ndsu.edu/irb

Shipping address: Research 1, 1735 NDSU Research Park Drive, Fargo ND 58102

APPENDIX B. MASLACH BURNOUT INVENTORY AGREEMENT

Hi, Kezia Sogard

Thank you for shopping with Mind Garden!

ORDER DETAILS - PAYMENT COMPLETE

Order: XVRENGRPK
Completed on: 09/20/2019 12:34:18
Payment: Free order

Product	Unit price	Quantity	Total price
Mind Garden Application Forms - Remote Online Use Application Form -	$0.00	1	$0.00
		Shipping	$0.00
		Total Tax	$0.00
		Total	**$0.00**

APPENDIX C. CONNOR-DAVIDSON SURVEY AGREEMENT

Dear Kezia:

Thank you for your interest in the Connor-Davidson Resilience Scale (CD-RISC). I am pleased to grant permission for use of the CD-RISC 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 or off-site collaborators are involved with your project, their use of the scale is restricted to the project 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 unauthorized distribution or the possibility of modification. **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 not appear in any form where it is accessible to the public without permission and should be removed from electronic and other sites once the project has been completed.**

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, although in some circumstances the formatting may be adapted with permission of either Dr. Connor or Dr. Davidson. If you wish to create a non-English language translation or culturally modified version of the CD-RISC, please let us know and we will provide details of the standard procedures.

4. Three forms of the scale exist: the original 25 item version and two shorter versions of 10 and 2 items respectively. When using the CD-RISC 25, CD-RISC 10 or CD-RISC 2, whether in English or other language, please include the full copyright statement and use restrictions as it appears on the scale.

5. A fee of $ 50 US (or $30 if you are a student) is payable to Jonathan Davidson at 2434 Racquet Club Drive, Seabrook Island, SC 29455, USA, either by PayPal (www.paypal.com, account mail@cd-risc.com), cheque, bank wire transfer (in US $$), international money order or Western Union. **This fee covers a maximum 1000 administrations of the scale in this project.**

6. Complete and return this form via email to mail@cd-risc.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 and of payment, an electronic copy of the scale will be sent.

For questions regarding use of the CD-RISC, please contact Jonathan Davidson at mail@cd-risc.com.

Sincerely yours,

Jonathan R. T. Davidson, M.D.

Agreed to by:

Kezia Seagord — 10-6-19

Signature (printed) Date

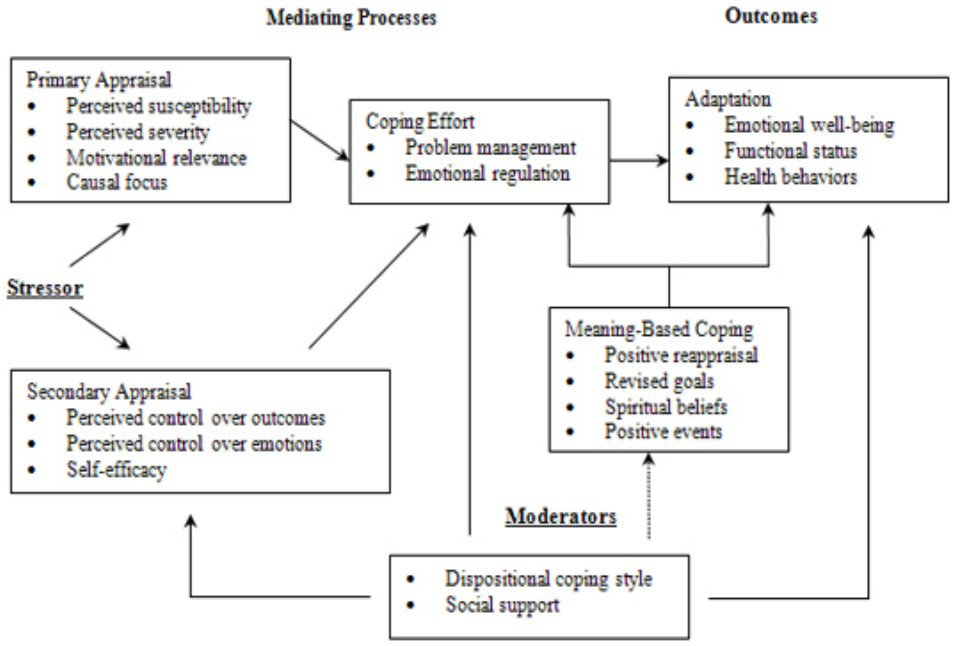
Doctor of Nursing Practice Student

Title

North Dakota State University

Organization

APPENDIX D. TRANSACTIONAL MODEL OF STRESS AND COPING



(Glanz & Shwartz, 2002)

APPENDIX E. SURVEY

Instructions: Please rate your current awareness of burnout and resiliency.
A score of "0" is not aware at all and "10" is very aware.

1. I feel I am aware of what burnout is
2. I feel I am aware of risk factors that can lead to burnout
3. I feel I am aware of what resiliency is
4. I feel I am aware of how I can be resilient in my practice

Instructions: Please answer the following questions to the best of your ability.

1. What is your current age?
2. What was your sex assigned at birth?
    a. Male
    b. Female
    c. Prefer not to disclose
3. What is your current marital status?
    a. Married
    b. Widowed
    c. Divorced
    d. Separated
    e. Never married
4. What type of nurse practitioner program did you attend?
    a. Masters
    b. Doctoral
    c. Online
    d. Other (please describe)
5. How many children are you the primary caregiver for
    a. (range from 0-10+)
6. How many years of work experience do you have as an advanced practice registered nurse (APRN)?
    a. (range from 0-30+)
7. What area or specialty do you work in?
    a. Cardiology
    b. Dermatology
    c. Emergency medicine
    d. Family medicine
    e. Internal medicine
    f. Orthopedics
    g. Pediatrics
    h. Psychiatry
    i. Women's health
    j. Other (please describe)
8. What type of setting do you work in?
    a. Urban
    b. Rural
    c. Other (please describe)

9. Does your work environment have an individual or team-based approach?
    a. Individual
    b. Team based
    c. Other (please describe)
10. How would you describe your APRN income?
    a. Hourly
    b. Salary
    c. Productivity
    d. Other (please describe)
11. What is the average number of hours worked per week? (including on call coverage if applicable)?
    a. (range from 0-100+)
12. what is the average number of hours you volunteer or serve on committees pertaining to your job per month?
    a. (range from 0-50+)
13. 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.
    a. Average number of drinks per week: (fill out number)
    b. I do not consume alcohol.
14. Have you ever been diagnosed with a mental health condition? If so, please specify. (select all that apply)
    a. Depression
    b. Anxiety
    c. Suicidal thoughts or suicide attempts
    d. Other (please describe)
    e. I have not been diagnosed with a mental health condition.
15. What are your main coping mechanisms? (select all that apply)
    a. Exercise
    b. Family and friends
    c. Medication
    d. Meditation
    e. Sleep
    f. Therapy
    g. Other (please describe)

MBI - Human Services Survey for Medical Personnel - MBI-HSS (MP):

I feel emotionally drained from my work.
I have accomplished many worthwhile things in this job.
I don't really care what happens to some patients.

Information on burnout:
Burnout in health care professionals is best described as a stress reaction that results in emotional exhaustion, depersonalization, and a decreased sense of personal accomplishment.
Burnout in health care providers can lead to increased risk of psychological and physical distress. There is a large amount of risk factors for burnout among health care providers today. Some common risk factors include: hours worked, work-hoe life balance, time pressures, chaotic work environments, little control over work pace, high stress specialties, little experience, lack of resources, increased requirements electronic health records, as well as other personal and demographic risk factors.

Connor Davidson Resilience Scale 25

Information on resiliency:
Resiliency is most commonly described as a trait that helps with the ability to recover quickly from difficult events or circumstances.
Health care professionals 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.

Instructions: Please rate your current awareness of burnout and resiliency.
A score of "0" is not aware at all and "10" is very aware.

1. I feel I am aware of what burnout is
2. I feel I am aware of risk factors that can lead to burnout
3. I feel I am aware of what resiliency is
4. I feel I am aware of how I can be resilient in my practice

APPENDIX F. SURVEY CONSENT

NDSU **North Dakota State University**
Department 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 Among Nurse Practitioners

Dear participant,

My name is Kezia Sogard, 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 practitioners 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 practitioners.

Because you are a nurse practitioner at the NDNPA conference, 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.

By taking part in this research, you may benefit by understanding more regarding 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 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.

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 $10 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 Kezia Sogard at 701-570-9504 or kezia.r.kvernum@ndsu.edu, or contact my advisor, Heidi Saarinen at 701-231-7821 or heidi.saarinen@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 your taking part in this research. If you wish to receive a copy of the results, please contact me at kezia.r.kvernum@ndsu.edu or visit the North Dakota Nurse Practitioner Association's (NDNPA) website in December of 2020 for results and recommendations.

Please click below to complete the survey.

Thank you for your time,

Kezia Sogard DNP-S
Heidi Saarinen, DNP, FNP-C

APPENDIX G. EXECUTIVE SUMMARY

Executive Summary

Assessing Burnout and Resilience Among Nurse Practitioners

Introduction to Study

The topic of burnout among medical doctors (MD) has been increasingly researched and documented, and discoveries have been made that highlight the overall alarming amount of burnout present in this population. The consequences of burnout are far-reaching, including concern for compromised quality of patient care, increased healthcare cost(s), and negative physical and psychological outcomes for healthcare providers. Beyond MDs, the population of advanced practice providers (APPs), more specifically, nurse practitioners (NPs), has been minimally researched. Nurse practitioners are likely at heightened risk of burnout, comparable to MDs, due to their overall workloads within an evolving healthcare system. This study was performed to increase understanding and awareness of risk factors for burnout and resilience as a protective factor to initiate education and recommendations to improve outcomes for NPs.

Project Design

The practice improvement project used a descriptive mixed methods approach by electronically distributing surveys to a convenience sample of NPs who attended the North Dakota Nurse Practitioners Association's (NDNPA) Pharmacology Conference virtually. Quantitative numerical data was obtained using the validated MBI-SS and CD-RISC tools. Open ended questions were included within the survey to help understand demographic risk factors and coping mechanisms. Both sets of data were evaluated, and possible correlations observed to recognize whether variables could possibly be related.

Main Findings

- *Resilience scores among NPs were slightly below national average*
- *No correlations were made between age, years of experience, number of children cared for, hours worked, and hours volunteered to burnout and resilience*
- *Resilience was higher and burnout was lower in team-based working NPs*
- *Rural working NPs had higher resilience*
- *Urban working NPs had slightly higher burnout*
- *Specialty versus primary care working NPs had similar burnout*
- *NPs without mental health condition(s) had higher levels of resilience*
- *NPs who utilized more coping mechanisms had higher resilience scores*
- *NPs working in specialties had higher resilience*
- *NPs working on productivity had the highest levels of resilience, followed by salary, and hourly*
- *There was no consistent correlation of resilience as a protective factor to burnout*

Recommendations

- *Although this study adds to topic of burnout and NPs, further research with larger samples and longitudinal designs needs to be performed on understanding burnout and organizational influences*
- *NPs must advocate for themselves, review the latest research, and take into consideration the overall psychological impact certain jobs can entail, such as setting, specialty, team versus individual based, and compensation type*
- *Healthcare organizations can consider increasing team-based work environments, as well as NPs applying to team-based positions*
- *Using multiple coping mechanisms (i.e. exercise, family, friends, medication, meditation, sleep, therapy, church, and spirituality) is suggested for higher levels of resilience*
- *Additionally, putting forth efforts to increase resilience remains important, as it is learnable and those with higher resilience are more adaptable to adverse change*
- *10 Ways to Build Resilience: https://wellmd.stanford.edu/content/dam/sm/wellmd/documents/10-ways-to-build-resilience.pdf*
- *The Road to Resilience: https://wellmd.stanford.edu/content/dam/sm/wellmd/documents/road-to-resilience.pdf*

Conclusion

The results of this study should be interpreted cautiously, as limits do exist. Although there were limitations, the findings from this project are meaningful as a baseline understanding of burnout and resilience in NPs, specifically, those in North Dakota and the surrounding areas. The project met its main objectives and delivers recommendations for future research on the topic, as well as suggestions for practicing NPs, and serves as a resource for healthcare organizations to mitigate the burden of burnout and increase the well-being of healthcare providers.