NURSES' BURNOUT POST COVID: A QUANTITATIVE STUDY

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Abstract

The mental, emotional, and physiological health of healthcare professionals deteriorated during the COVID-19 pandemic and professionals reported experiencing symptoms of depression, anxiety, and posttraumatic stress. The researcher conducted a quantitative research study that focused on measuring burnout in nursing professionals working in an emergency department (ED) and intensive care unit (ICU) post COVID-19 pandemic. A casual comparable study using a cross-sectional survey design was used to gather the research data. Furthermore, the Maslach Burnout Scale has been described as the gold standard for measuring burnout and was used to collect current data. The research was aimed at determining which group of nursing professionals were at higher risk for experiencing burnout and if stress management techniques were associated with burnout levels.

The goal of this study was to identify the current state of nursing professionals' mental health years after the onset of COVID-19. In addition, evaluate burnout differences amongst the nursing groups. The study also identified associations between nursing professional's burnout and their participation in stress management techniques.

The researcher believed the study would make known that nurses working in the ED experienced higher levels of burnout than nurses working in the ICU. This study aimed to provide current and relevant information regarding nurse's burnout to healthcare organizations and leaders with hopes of producing a plan for creating a healthier work lifestyle for professionals.

Dedication

This dissertation is devoted to my late best friend and spiritual sister, Tierra Johnson who kindly blessed my life with her warm presence and beautiful spirit before she was called home to be with the lord. She has always encouraged and supported me throughout my educational, professional, and personal journey.

This dissertation is also dedicated to my family because they have taught me to be strong during times when I didn't know my own strength. I am grateful to have had such wonderful people in my life that have loved me unconditionally and supported me throughout my educational endeavors.

Lastly, I would like to show appreciation and dedication to my friends that have supported me throughout my lifetime whether it was big or small, the love and support never went unnoticed. I love and thank you all!!!!

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Chapter 1: Foundation of the Study

Introduction

Coronavirus (COVID-19) is an infectious disease that causes mild to severe respiratory issues and a range of other symptoms including loss of taste or smell, fever, confusion, and issues involving speech and/or mobility ([WHO], 2023). COVID-19 is not limited to age or race and individuals who contract it can become very ill and possibly die. The first COVID-19 cases were detected in Wuhan, China in December 2019 where individuals reported experiencing pneumonia like symptoms ([CDC], 2022). Shortly after the first case appeared in China the United States (US) reported its first confirmed case of COVID-19 in Washington state which caused the US to activate it emergency operation center ([WHO], 2023).

According to the Centers for Disease Control and Prevention as the number of confirmed cases continued to increase so did death rates across the world for individuals who were suffering with COVID-19, in early February of 2020 a total of 1,013 individuals had died from the virus ([CDC], 2022). In March 2020, the World Health organization declared COVID-19 as a pandemic and individual states began to force quarantine orders in which people were advised to stay at home to prevent the spread of COVID-19 ([CDC], 2022). However, this did not stop the spread of the virus and individuals continued to develop symptoms of COVID-19 (Cucinotta & Vanelli, 2020). In the beginning of this crisis little was known about the virus and providers were unsure of the proper treatment ([CDC], 2022). As COVID-19 continued to spread a higher demand for healthcare beds, providers, and other equipment was needed to service patients (Bong et al., 2020).

The onset of COVID-19 created an influx of changes and challenges for healthcare systems (El Bcheraoui et al., 2020). Furthermore, the COVID-19 pandemic had a major impact

on healthcare professional's mental and physical health (da Silvia et al., 2021). Healthcare professionals were also suffering from the virus and dying with 157 identified deaths in May 2020 compared to 30,000 deaths of the general population (Kursumovic et al., 2020). Since these professionals were considered essential workers, they were expected to show up to work during these traumatic times. Eight states (Idaho, Maine, NY, Michigan, Missouri, Texas, NJ, and New Hampshire) temporarily waived or modified licensing regulations for healthcare professionals because of the extreme need for workers to assist during COVID-19 (Bayne et al., 2020).

According to Moya- Salazar et al. (2022) who conducted a qualitative analysis of two cross-sectional studies which included over a thousand health care workers found that COVID-19 increased substance use (alcohol and drugs) in healthcare professionals affecting their quality of life and work performance. Professionals had to endure intense working conditions, sleep deprivation, trauma, and issues in social relationships due to the pandemic (Ballesio et al., 2021). Though, COVID-19 continues to be contracted by individuals, the effects of the disease are not as severe as they were when it first emerged (Vicidomini & Roviello, 2023).

Healthcare organizations and professionals have gained a lot of insight over the years regarding the disease and its management. However, it is important that the needs of healthcare workers are being met to ensure they are healthy and can provide quality care following this traumatic event. Nursing professionals identified being mostly affected by the changes that occurred following the pandemic particularly those nurses working in critical care units increasing their risk for burnout (Hamed et al., 2020). This burnout ideology has been studied in the healthcare industry for years and remains a relevant topic because it is a major problem in the United States (Maslach & Schaufeli., 2018). Furthermore, it was reported that burnout increased in healthcare professionals by 36.1% during the peak of COVID-19 (Kok et al., 2021).

Healthcare professionals described feeling symptoms of depression, anxiety, and PTSD (Pappa et al., 2021).

Problem Statement

The problem within the healthcare system is professionals' mental and emotional wellbeing has gone unrecognized by organizations and leaders leaving nurses to report extreme levels of burnout due to workplace pressures (Mohanty et al., 2019). Murat et al. (2021) conducted a descriptive cross-sectional study to explore burnout, stress, and depression levels in nurses. A total of 705 nurses that worked in healthcare capacity between May and July 2020 participated in the study. These researchers suggested that nurses who worked in emergency departments (ED) and intensive care units (ICU) displayed their commitment to their profession while working during the pandemic but also increased their risk for experiencing burnout and mental health symptoms. The lack of attention to professionals mental, physical, and emotional health affected different segments of the health care field (Duwel et al., 2022).

In 1974, psychologist Hebert J. Freudenberger brought attention to the theory of burnout in which he explained was exhaustion due to poor work experiences because of ineffective professional relationships (Coles, 2017). Shortly after Freudenberger discussed his ideas of burnout Christina Maslach added to the field by providing a detailed explanation for the term. According to Maslach et al. (1996) there are three concepts that determine individual's burnout including emotional exhaustion, depersonalization, and personal accomplishment. These concepts explored professionals' feelings and attitudes towards their workplace, the people they serve, and their coworkers.

Burnout in health care professionals was identified as a global health concern and has affected health care organizations, communities, and patients (Sultana et al., 2020). Factors

including poor quality care, medical errors, and inadequate staffing have been recognized as some of the issues that occurred due to professional's burnout (Dyrbye et al., 2018). In addition, nursing professionals who worked in the ED and ICU units were considered more susceptible to burnout due to the departments increased work overload (Manzano Garcia & Ayala Calvo, 2021).

Since 2020, the healthcare system has undergone several changes that resulted from the COVID-19 pandemic (Rawaf et al., 2020). Researchers utilized a convenience sample of 771 nurses from 10 different hospitals in Spain and found that professionals reported increased risk for burnout during the COVID-19 pandemic due to factors associated with demand and resources coupled with lack of social support (Manzano Garcia & Ayala Calvo, 2021). According to Havaei et al. (2021) during the COVID-19 pandemic nursing professionals were forced to operate in unsafe working conditions. This included working with a shortage of personal protective equipment, inadequate staffing, and insufficient safety precautions causing professionals to feel unsafe while providing care.

In June and July of 2020 nursing professionals in a Canadian region reported practicing over capacity and being forced to take on numerous of patients at a time (Havaei et al., 2021). In a systematic review including 13 articles' researchers identified that professionals reported experiencing mental health symptoms during the pandemic including symptoms of depression (22.8%), anxiety (23.2%), and insomnia (38.9%) (Pappa et al., 2020). Healthcare organizations and leaders should understand the magnitude of the problem so they can provide effective interventions and strategies to promote a healthy lifestyle for their workers (Jalili et al., 2021).

The onset of the COVID-19 pandemic occurred in 2019 and over time professionals learned to manage the virus with the invention of vaccinations, treatment strategies, and public

health practices (Vuong et al., 2022). Health care professionals have been educated on the virus and trained to properly treat patients. Research showed that COVID-19 vaccinations were linked to 90% decrease in severe COVID-19 outcomes and death rates ([CDC], 2022). However, little was known about the wellbeing of professionals specifically nursing professionals' years after the onset of COVID-19. Are nursing professionals still suffering from increased burnout symptoms that occurred during the pandemic? Do these professionals participate in stress management activities? There has been limited research regarding burnout in nursing professionals' years after the COVID-19 pandemic.

The aim of this research was to evaluate burnout levels in nursing professionals who worked in the ED and ICU following the pandemic and to assess if a significant association between burnout and stress management techniques exist within these professionals. These two departments of the hospital provide critical care to patients and requirements for working in both areas can be very challenging. Though COVID-19 created an influx of work for all essential health care staff those working in the ED and ICU witnessed more life-threatening cases. ED and ICU nurses served as frontline workers during the COVID-19 pandemic which included triaging patients and caring for those on life support while following inconsistent guidelines (Moore et al., 2022). While there is substantial research regarding nurses working in both departments there was minimal information that compared burnout between the two after the stabilization of the COVID-19 outbreak. The researcher was interested in studying if burnout differs amongst the two groups of nurses while providing implications for health care organizations to improve the wellbeing of health care staff years after the COVID-19 pandemic.

Professionals mental, physical, and emotional wellbeing plays a vital role in the success of healthcare organizations and patients' outcomes (Schlak et al., 2021). It is important that

organizations consider the effects that burnout had on professionals and identify effective strategies for decreasing burnout. Identifying and addressing the issue of burnout will likely improve the quality of care for patients, reduce medical errors, and create a more satisfying feeling towards one's workplace (Melnyk et al., 2021).

Significance of the Study

Burnout theory was defined as a persistent response due to chronic stress in the workplace (Maslach et al., 1996). Burnout theory has been studied for decades and is used to identify emotional, psychological, and mental health issues in healthcare professionals. The current study focused on identifying the core dimensions of burnout in nursing professionals working in the ED and ICU units of any hospital. This provided current information regarding nursing professional's burnout levels post COVID-19. The researcher was interested in identifying differences in emotional exhaustion, depersonalization, and personal accomplishment amongst these nurses following the decline in COVID-19. This study also measured if there was an association between burnout levels and participation in stress management techniques.

This project anticipated to bring awareness to healthcare organizations and leaders regarding the present burnout levels of nurses. Knowing the severity of the issue allowed organizations to focus on process improvements and other strategies that will aid in decreasing burnout in professionals. Burnout is important because of the effect that it has on professionals' wellbeing, patient satisfaction, and outcomes. Information from this study provided relevant implications to organizations and professionals and identified if there were any differences amongst the groups of nurses.

This study builds on scholarly work that discussed burnout issues before and during COVID-19. There is substantial research that discussed the problems that nursing professionals

suffered during COVID-19 and how it has affected their ability to care for patients and their mental health (Crowe et al., 2021). It was imperative to understand if COVID-19 had a longer impact on nursing professionals or if symptoms of burnout decreased since the decline in COVID-19 cases.

The main objectives were to determine the severity of burnout in nursing professionals working in the ED and ICU unit after the COVID-19 decline and explore if there were any major differences amongst the burnout constructs in these nurses which assisted with providing implications for moving forward. The ED and ICU unit are two central areas of the hospital that provide life-saving care to patients. The responsibilities of nurses working in these areas are far more demanding because of the high acuity and the fact that they care for patients that experience life threatening and severe conditions impacts their emotional instability (Al Barmawi et al., 2019).

Methodology

The research was conducted using a quantitative method. Given that the study assessed burnout patterns a quantitative approach was found to be more ideal for the objectives and research questions being studied. The study employed a casual comparative design which explored differences amongst the two groups of nurses.

A cross sectional survey was used to collect the data using the Maslach Burnout Inventory (MBI)- Human Services Survey (HSS) for Medical Personnel (MP). The researcher gained permission from Mind Garden, Inc to administer the MBI survey. The MBI scale consisted of 22-items allocated by the three constructs (emotional exhaustion, depersonalization, and personal accomplishment). These constructs are independent of each other, so each participant had three scores one for each construct. The researcher included a question to

determine if participants participated in stress management techniques and the responders answered yes or no.

The population of interest was nursing professionals working in a hospital setting. The target sample was nurses worked in the ED and ICU of any hospital. The target sample size was 102 with hopes of 51 participants per group for ED and ICU nurses. The researcher utilized a third-party source called Centiment to gather participants to participate in the study. Centiment is a data collection platform that is linked to a wide network of nurses. Information regarding the study was provided to a Centiment representative and the representative unlocked the survey to qualified nursing professionals. The survey appeared on the qualified participants Centiment profile.

The survey was completed online through the Centiment platform and participants had the ability to complete the survey in their desired setting. The survey should have only taken 5-7 minutes to complete, and professionals were only allowed to complete the survey once. The professionals should have answered the questions as accurate as possible and to the best of their ability. The survey had to be fully completed before it was able to be submitted therefore, all questions on the survey were answered.

Prior to starting the survey, the participants were provided with a consent form that outlined the study's procedures and participating rights. The survey was anonymous because no identifiable information was collected. Information regarding potential risk of the study were provided to participants from Centiment. One potential risk was psychological harm from sensitive wording on the survey. For example, and individual who was suffering from extreme burnout could have read a statement on the survey that caused them to relive an emotional experience. If participants reported psychological harm Centiment staff were available to provide

resources for them to seek additional support. This specific methodology and design were chosen to measure the research questions.

Research Questions/Hypotheses

The research questions (RQ) were focused on burnout in nursing professionals working in the ED and ICU department of a hospital setting. RQ1: Is there a difference in measured burnout between ED and ICU nurses post COVID-19 pandemic. RQ2: Is there a relationship between burnout and stress management actions in ED and ICU nurses? For RQ1, the researcher hypothesized that burnout scores amongst nursing professionals working in the ED and ICU would be moderate with ED nurses experiencing burnout at higher rates. The null hypothesis was no difference in burnout scores amongst ED and ICU nurses post COVID-19. For RQ2, the researcher hypothesized that the participation in stress management techniques would decrease burnout scores for both ED and ICU nurses. The null hypothesis was no difference in stress management actions and burnout in ED and ICU nurses.

The researcher chose to concentrate on research questions that would help identify the current state of nursing professional's distress. The reason for the questions was to add to current research that discussed nursing professionals' well-being during COVID-19. The researcher wanted to identify if nursing professionals were still experiencing high to severe burnout in the hospital and whether these nurses were participating in stress management techniques.

There have been inconsistencies within research that explained which group of nurses may be at higher risk for burnout. It was not known if these differences were specific to city and states. For example, researchers believed that ICU nurses experienced higher levels of burnout compared to those nurses working in other departments (Guttormson et al., 2022). However, Chor et al. (2021) found that 53% of nurses working in the emergency department reported

moderate to severe burnout which is more significant than other nurses. It was also imperative that the study determined which group of nurse's burnout scores were higher to help organizations understand which departments needed more attention when it came to process improvements.

The use of coping mechanisms was shown to produce a positive effect on professional's well-being (Portero de la cruz et al., 2020). During the COVID-19 pandemic organizations and professionals attempted to implement strategies to reduce burnout, however, burnout scores were still moderate in nurses (Bianchini & Copeland, 2021).

Definition of Terms

The key terms explored professionals' feelings and attitudes toward themselves, their workplace including coworkers, and the people they served. These terms were used to define burnout which has been described as emotional and psychological distress from workplace burdens (Maslach et al., 1996). The following terms are used on the MBI-HSS for Medical Personnel.

Emotional exhaustion- feelings of depletion from one's workplace.

Depersonalization- feelings of disconnect/detachment from their work, clients, and coworkers.

Personal accomplishment- individuals' self-worth and how they feel about their success at their workplace.

Assumptions, Delimitations, and Limitations

The researcher hoped to add to the field of research regarding burnout and provide suitable implications for the field of nursing to create a better work environment for professionals. Due to the field of nursing constantly growing, and organizations are continuously looking for strategies to retain employees the expansion of this research was assumed to be

useful. The need for nursing professionals continues to increase due to the growing need of healthcare services. It would be highly beneficial for healthcare leaders and organizations to educate themselves on the issues that have affected staff ratings, patient outcomes, and most importantly professionals mental, physical, and psychological wellbeing.

It was projected that nursing professionals working in the ED would report higher levels of burnout compared to nurses working in the ICU. This assumption was made because emergency department nurses are the emergency response team of the hospital and have been trained to deal with a range of crisis chronic and acute health issues. In turn, these nurses were assumed to be less likely to participate in stress management techniques.

To ensure the study employed respectable data the researcher set boundaries including the sample of interests and the chosen design. Though, there is a plethora of nurses working in different healthcare fields the researcher decided to focus on those working in high demanding areas of the hospital. A boundary was also set when determining the design because there were several surveys that had been created to measure burnout and the researcher felt it would be in the best interest of the study to utilize the MBI-HSS for Medical Personnel.

Although the researcher was able to set boundaries within the study there were a few circumstances regarding the study that was out of the researchers control or seen as potential weakness. First, utilizing a cross-sectional survey was seen as a limitation because the researcher only measured burnout levels at one point in time and had no way of determining outside effects on participants responses. Another limitation was the lack of interpersonal interaction between the researcher and the participants because the survey was completed online, and it did not require the two to have a direct interaction. Lastly, the number of individuals that responded was

out of the researchers control a small sample size could be seen as a limitation due to challenges in knowing if the findings are true while increasing the chance of a type ll error.

Chapter 2: Literature Review

Introduction

A large percentage of research that focused on burnout in nursing professionals explored factors that contributed to burnout in these professionals including poor leadership, inadequate staffing, and lack of organizational support (Dall'Ora et al., 2020). While these studies provided significant insight to the field of burnout, limited studies narrowed their focus to explore burnout in those nurses who worked in the ICU and ED following COVID-19. There was limited knowledge regarding the difference in burnout levels amongst ICU and ED nurses post COVID-19 and the impact that stress management techniques had on these specific nurses.

The purpose of this review was to summarize and synthesize literature associated with the following research questions: Is there a difference in measured burnout between ED and ICU nurses post COVID-19 pandemic? Is there a relationship between burnout and stress management actions in ED and ICU nurses? This literature explored burnout in nursing professionals and its effect on their overall wellbeing. This review also investigated factors that may have contributed to nursing burnout and the impact on patient care. Information regarding nursing professionals' engagement in stress management techniques were also discussed in this chapter. Table 1 contains an outline of references that have been included.

Table 1

SUMMARY OF REFERENCES

Literature Type	More than 5 Years (< 2018)	Within 5 Years 2018-2023	Total
Peer-reviewed Journals	2	107	109
Seminal and other books	1	1	2
Dissertations	0	2	2
Websites	0	2	2
Total sources	3	112	115

Burnout Theory

In 1974, psychologist Hebert Freudenberger first coined the term burnout after recognizing physical and mental depletion in volunteer staff while working at a free clinic in New York City (Maslasch & Schaufeli, 2018). After observing the clinic staff for almost a year he noticed symptoms related to exhaustion and inefficacy (Reith, 2018). The burnout term became well-known with over a 140 different definitions and models and was first acknowledged in social professions and then known in all occupational contexts where individuals experienced stress (Hillert et al., 2020).

Shortly after the work of Freudenberger was presented social psychologist Christina Maslach who studied cognitive strategies in individuals with stressful jobs and how these individuals reacted to their emotions added to the field of burnout (Enzmann & Schaufeli, 2020). Maslach believed that burnout consisted of more than just emotional exhaustion and she developed the term to include cognitive self-defense mechanisms including depersonalization and dehumanization in which she called it a multidimensional theory of burnout (Maslach,1998). In this multidimensional model burnout was broken down into three components: emotional exhaustion which was defined as depletion from one’s emotional resources, depersonalization which described a negative detachment from others and dissatisfaction with one's work

environment, and lastly reduced personal accomplishment which was explained as a sense of professional futility and underachievement (Maslach & Leiter, 2016).

Emotional exhaustion, depersonalization, and reduced personal accomplishment were factors used to describe burnout which was defined as an extended response to stressors in the workplace (Maslach, 1998). A person's confidence in their ability to deal with challenging circumstances, or self-efficacy, has been shown to have a significant inverse association with burnout (Zhang et al., 2022). In addition to refining the burnout term, Maslach also created the Maslach Burnout Inventory Scale, which has been one of the most widely used instruments to measure burnout (Lim et al., 2019). The phenomenon of burnout emerged as a major factor due to long-term social pressures at work (Maslach & Leiter, 2016).

Nurses in Healthcare Systems

Nurses have had a wide range of tasks and obligations within the healthcare system including physical evaluations, medication administration, health teaching and therapy, coordination of care amongst different facilities and more (Chan et al., 2021). Caring for increasingly complex patients increased the difficulty of nursing (Ivziku et al., 2022). On average, nurses spent about a third of their work hours providing direct care to patients, with the remainder going toward prescription preparation, team communication, and documentation (Walter et al., 2019). Research indicated that nurses who worked long shifts often developed burnout (Dyrbye et al., 2019). Acute care and inpatient nursing staff were particularly vulnerable to burnout (Lima et al., 2023). Factors like rising patient awareness, rising motivations for patient satisfaction (which demands greater nurse attention), limits on nurse assistance, and an increasing nursing shortage have all been related to the upsurge in burnout amongst acute care

nurses (Foy, 2022). Due to the wide range of tasks that nurses performed daily, they were selected as the population to research (Foy, 2022).

During COVID-19 the daily variations in a nurse's workload were mostly attributed to the diversity of the people under the nurse's care (Schulze et al., 2022). The number of patients that needed care and the disease severity dramatically altered daily workloads (Schulze et al., 2022). A patients' conditions could rapidly deteriorate at any given time (Rohatgi, 2021). Nurses were responsible for monitoring their patients and taking corrective action when their physical state required it (Sharma et al., 2020). Nurses were under extra pressure because they had to focus on the needs of all their patients while also caring for the one who was failing (Sharma et al., 2020). Patient turnover events, including admissions, transfers, and discharges, could change the number of patients in a ward at any given time (Wulandari et al., 2020). The amount of work a nurse must do fluctuated significantly if the number of patients changed. On average, ten occurrences could occur daily in a single care unit (Wulandari et al., 2020). To fully account for the time and effort required by nurses measuring the number of patient turnover occurrences is not sufficient (Wulandari et al., 2020).

Nurses are invaluable especially in times of medical crisis and have a high risk of being affected by disease transmission, burnout, a lack of inspiration, and even psychological trauma (Martínez-López et al., 2020). Ninety million individuals contracted COVID-19 and 1.9 million died (Sarria-Guzmán et al., 2021). Alnazly et al. (2021) stated that a variety of variables, such as the unequal and increased volume of work, tiredness, the spread of nosocomial infections, and the necessity to make professionally tough decisions on rationing treatment, were identified as having an important effect on nurses' psychological and physical well-being. After an outbreak, nurses were more vulnerable to experience mental effects like acute stress disorder, PTSD,

depression, anger, sleeplessness, and emotional burnout due to factors like isolation, diminished social support, fear of infecting family and friends, and abrupt changes in the workplace (Ravalier et al., 2020). Understanding the challenges that derived from COVID-19 and nurses' encounters was necessary for policy design and actions to support nurses' health following the outbreak (Alnazly et al., 2021).

COVID-19

A significant influence of recent burnout in healthcare professionals was attributed to the latest COVID-19 pandemic that emerged in December 2019 (Shreffler et al., 2020). COVID-19 appeared first in Wuhan, China and was identified as a coronavirus disease that affected mainly the respiratory system but was not limited to other organ systems. This disease was known to be fatal due to the wide range of severe pneumonia like symptoms that individuals experienced including fever, dry cough, and hypoxia (Yuki et al., 2020). In March 2020 a pandemic was declared by the World Health Organization due to the severity of the virus ([CDC], 2022). COVID-19 was global and affected millions of individuals (Vellingiri et al., 2020).

The spread of COVID-19 caused the healthcare systems to be overburdened because by March 2020 millions of people had been affected with majority needing hospitalization (Khanna et al., 2020). The healthcare system was operating on a shortage because of the disproportionate staff to patient ratio, lack of personal protective equipment, and insufficient resources to care for patients (Sen-Crowe et al., 2021). In attempt to prevent the spread of COVID-19 in the healthcare systems healthcare professionals were encouraged to wear personal protective equipment including masks, gloves, goggles, gowns, and more in which these items became scarce because of the overflow in patient care (Boškoski et al., 2020).

In addition to a shortage of personal protective equipment healthcare systems also struggled with not having enough hospital beds and oxygen equipment to treat COVID-19 patients (Lodha & Kabra, 2021). In California and many other states during the COVID-19 crisis governments utilized alternate care sites to aide in treating the surplus of ill patients and to decompress hospitals that were overburdened with COVID-19 patients (Christensen et al., 2023). Many of these patients required oxygen equipment during their hospital stay and after discharge which triggered a shortage in oxygen equipment causing avoidable deaths (Usher, 2021).

The COVID-19 crisis created challenges and distress for healthcare workers due to providing direct care to individuals with COVID-19, shortages, and isolation orders (Wu et al., 2020). Healthcare workers who treated COVID-19 patients suffered from anxiety for many of reasons including being fearful of contracting their family members with the virus (Xiang et al., 2020). Shutdown orders were implemented, and people were encouraged to quarantine and social distant in efforts to prevent the spread of COVID-19 ([WHO, 2020]). According to Ness et al. (2021), nurses and other health care professionals have been and will continue to be significantly impacted mentally and physically from caring for COVID-19 patients and their families.

Caring for COVID-19 Positive Patients

Caregiver stress was associated with COVID-19 and was the topic of recent studies (Gordon et al., 2021). Three studies employed trial participants in an ED and ICU, Gordon et al (2021) and Cadge et al (2021), were two articles that provided qualitative information, while the third study included cross-sectional quantitative research (Firew et al., 2020).The research conducted by Firew et al. (2020) revealed that frontline healthcare professionals, including nurses, who had a higher exposure to COVID-19 patients were more susceptible to contracting the infection themselves. Nurses who looked after more than 100

COVID-19 patients or those who were in direct association with infected individuals for more than 50% of their total working hours had a significantly higher risk of contracting the virus (Firew et al., 2020). Workers who spent more than half their time taking care of COVID-19 patients were also shown to have significantly greater stress, panic, and burnout rates than those who spent less than a quarter of their time caring for COVID-19 patients (Firew et al., 2020). Gordon et al (2021) discovered that nurses felt afraid and helpless when caring for patients with COVID-19.

Higher rates of depression and burnout were also observed among professionals who were hospitalized due to COVID-19 (Firew et al., 2020). Sixteen ICU nurses were questioned for qualitative research, and four themes surfaced from their accounts of caring for COVID-19 victims during the initial outbreak (Cadge et al., 2021). Findings highlighted nurses' concerns which included getting along with their new coworkers, keeping up with their established networks, receiving adequate information, keeping spirits high, and being recognized for their efforts throughout the outbreak at the organizational level (Cadge et al., 2021). According to Cadge et al. (2021), nurses struggled with specific roles, the interruption of employee interactions due to rollout, the need for extra assistance due to nurses serving under new management, and a lack of proper and adequate recognition from hospital management were identified as subthemes. These three investigations showed that ED and ICU nurses were significantly impacted by their direct interaction with COVID-19 patients.

Recurrent exposure to stressful or traumatic events could result in long-term stress or PTSD (Genova, 2021). The scarcity of bedside nurses exacerbated by the unpleasant events nurses encountered throughout the COVID-19 pandemic, such as a persistent work-life imbalance and recurrent exposure to severe stress (Garcia et al., 2021). As a result of the

pandemic's stressors, fewer nurses were able to attend to patient care, which increased the strain on the remaining nurses as they tried to maintain attendance despite a lack of clinical support and enough staffing (Shah et al., 2022). Based on the findings from Genova (2021), it was evident that there was a lack of institutional support for nurses caring for individuals affected by the virus. Long-term impacts from continued exposure to stressful situations and the development of trauma from severe stress were made possible by the failure to follow up for mental conditions and the rising stress levels related to working at the bedside throughout the COVID-19 outbreak (Gao et al., 2022).

Sagherian et al. (2020) surveyed 384 nurses to learn more about their experiences with sleeplessness, exhaustion, and psychosocial health. After analyzing data throughout the COVID-19 pandemic, the study found that nurses suffered from insomnia, exhaustion, and psychological symptoms like burnout (Sagherian et al., 2020). There was an increase in sleeplessness and a huge increase in depersonalization among nurses who explicitly cared for COVID-19 patient populations compared to those who did not (Sagherian et al., 2020). Depersonalization is a psychopathic personality characterized by a loss of subjective identity and a lack of familiarity with one's behavior (Martínez-López et al., 2020). Nurses reported higher levels of PTSD symptoms intensity and average levels of mental discomfort in the investigation (Sagherian et al., 2020). According to Sagherian et al. (2020), the outbreak created a foundation for the onset of long-term stress among nurses at the bedside due to their continual exposure to stressful events, such as the risk of infection, mortality, isolation, and fear.

The pandemic played a significant role in the lives of essential workers in the healthcare field. Ornell et al. (2020) reported that pandemics have had a persistent effect on professional's mental well-being even long after the pandemic has ended. These researchers discussed issues

that caused strain for healthcare professionals during the pandemic including being isolated from family, long work hours, and direct contact with patients who were diagnosed with the virus. Healthcare professionals were easily exposed to secondary stress during COVID-19 (Ornell et al., 2020).

Burnout in ED Nurses

According to Yu et al. (2021), burnout has always been a global issue for nurses working in the ED with these nurses reporting high burnout scores. More than 50% of ED nurses reported high scores on emotional exhaustion (greater than 30) and high on depersonalization (greater than 12) (Jose et al., 2020; Rodriguez et al., 2021). These nursing professionals reported emotional exhaustion due to feeling drained by their work. Jose et al. (2020) found that nurses working in the ED during the pandemic reported fear of contracting the virus and passing it to their loved ones. Increased workload during the pandemic was also reported by these group of nurses as a contributor of high levels of burnout. Ahorsu et al. (2022) suggested that fear of COVID-19 increased ED nurses' emotional exhaustion and stress. These results proposed that COVID-19 negatively impacted nurses' mental health.

Chor et al. (2021) noted that 53% of ED nurses reported moderate to severe burnout and contributing factors included poor social support and work pressure from social isolation and increased workload. Research identified the existence of burnout in nurses working in the ED with many associating factors related to COVID-19. Researchers also discovered that ED nurses were at higher risk for anxiety and post-traumatic stress disorder likely increasing their feelings of emotional exhaustion (Alanazi et al., 2021; Rodriguez et al., 2021). Additional studies found burnout to be associated with job dissatisfaction during the pandemic and nursing professionals

reported increased conflict and nervousness in the ED setting (Dixon et al., 2021; Manchana, 2022).

A difference that was found in the literature was nurses reported positive feelings regarding the future of their work (Corlade-Andrei et al., 2022). Researchers believed that being optimistic about the future likely reduced professional's burnout level. Nursing professionals reported experiencing burnout but had feelings of happiness towards their job due to helping others (Corlade-Andrei et al., 2022). Unlike other studies Ocak et al. (2021), did not find any significant association with occupation (nursing) on burnout. These researchers also did not find a relationship between age, marital status, and burnout. Statistically significant difference was identified between gender ($p=0.003$), education ($p=0.006$), and COVID-19 history to influence burnout in professionals working in the ED.

Burnout in ICU Nurses

Researchers explored burnout in nursing professionals working in the ICU and reported similar results as those working in the ED. Researchers believed ICU nurses experienced higher levels of burnout compared to those nurses working in other departments (Guttormson et al., 2022). Da Silva and Barbosa (2021) conducted a systematic study exploring the impact of COVID-19 on ICU nurses and discovered that nurses compared to doctors during COVID-19 were far more likely to experience mental health symptoms including depression, anxiety, and PTSD. ICU nurses during COVID-19 experienced physical and mental health issues that impacted their ability to care for patients (Gordon et al., 2021). These nurses also reported experiencing symptoms such as decreased appetite, fatigue, suicidal thoughts, and difficulty sleeping due to witnessing the death of their patients and heavy workloads (Shen et al., 2020; Petrișor et al., 2021). Burnout scores varied by countries for ICU nurses, those nurses who

reported high levels of burnout also reported experiencing secondary traumatic stress and 22% described their intent to leave the job (Toscano et al., 2022).

There were several factors that were associated with burnout in ICU nurses during COVID-19 including staffing shortages, personal protective equipment (PPE) shortage, and increased mortality (Bruyneel et al., 2021). Nurses who experienced PPE shortages had higher burnout scores (Guttormson et al., 2022). During the pandemic healthcare organizations did not have an adequate supply of (PPE) to protect healthcare workers from contracting the virus leading professionals to feel unsafe in their practice (Morley et al., 2020). Hospitals also faced a chronic staffing shortage of ICU nurses during the peak of COVID-19 (Lynch et al., 2021). This increased the nurse-to-patient ratio to 1.5 to 4, when ICU nurses typically care for one to two patients. Lynch et al. (2021) reported that the ICU nurse shortage was linked with poor health outcomes.

The COVID-19 pandemic increased burnout symptoms for ICU nurses from 25.5% to 38.0% (Kok et al., 2021). The components associated with the increase in burnout included scarcity of resources (time, staffing) and working longer hours (Boateng et al., 2021; Kok et al., 2021). ICU nurses who reported working extended hours during the pandemic and having to work with professionals who were not skilled to work in ICU caused an increase in burnout symptoms (Kok et al., 2021). According to Mehta et al. (2021), ICU professionals had to deal with a high volume of patients and their high acuity. An increase in patient care needs created a surge in ICU nurses' responsibilities. ICU professionals reported feeling as if they had to choose between high quality of care and safe working conditions while providing care during COVID-19 (Mehta et al., 2021).

COVID-19 Burdens on Nurses

Studies on the psychological and emotional wellness of medical professionals have shown that nurses' levels of anxiety, depression, and insomnia increased during the COVID-19 epidemic (Stelnicki et al., 2020). This was due to an increase in workload brought on by a significant increase in the population of patients, the lack of adequate PPE, and the necessity to make moral decisions in the face of current working challenges (Stelnicki et al., 2020). According to Stelnicki et al. (2020), these traits were recognized as typical causes of the psychological issues that nurses dealt with during the COVID-19 outbreak. There were documented cases of rising infections and mortality among nurses due to the disease, increasing their emotional and social burden and jeopardizing their general mental health status (Stelnicki et al., 2020). The worldwide rise in COVID-19 infections burdened the healthcare system (Stelnicki et al., 2020).

Burnout affected nurses' physical and emotional health making it more difficult for them to perform at their best (Navarro Prados et al., 2022). The mounting work-related stress and the ensuing rise in the patient population brought on by COVID-19 significantly impacted nurses' physical health (Datta et al., 2022). Burnout occurred to varying degrees in nursing due to exposure to long working hours (Guixia & Hui, 2020). According to Guixia and Hui (2020), nurses experienced the stress of working long hours while providing care for patients with various medical conditions. The continual exposure and involvement in emotionally draining work environments was blamed for the feelings of exhaustion and burnout (Acharya & Ronoh Cheruto, 2021). Pressures like fatigue and exhaustion were felt physically by nurses taking care of COVID-19 victims. The pandemic's heavy workload, erratic work schedules, and work structures, hindered performance and productivity and left nurses feeling exhausted and sleepy

(Acharya & Ronoh Cheruto, 2021). Nurses who worked in healthcare centers during medical crisis were found to be more susceptible to stress and burnout because they were more afflicted on the job (Yılmaz, 2017). Critical patient care increased nurse's workload which resulted in uncomfortable working conditions and limited time to fully attend to patients' needs which also contributed to burnout (Yılmaz, 2017).

Lower levels of job satisfaction frequently followed burnout among nurses (Soto-Rubio et al., 2020). According to Soto-Rubio et al. (2020), low job satisfaction and burnout were linked to a decreased willingness to take on leadership roles and provide adequate patient care. Nurses were on the front lines of patient care during COVID-19 management. Nurses worked long hours to care for a growing COVID-19 patient group (Alnazly et al., 2021). Family commitments and personal interests caused individuals to lack sufficient time for themselves (Fernandez-Peña et al., 2020). The shortage of free time negatively affected nurses' quality of life especially in terms of leisure activities (Acharya & Ronoh Cheruto, 2021). A growing number of nurses reported an imbalance between their personal and professional lives (Acharya & Ronoh Cheruto, 2021). Despite having little free time nurses continued to dedicate themselves to working as efficiently and productively as possible (Acharya & Ronoh Cheruto, 2021). To avoid spreading the illness to their families, particularly older adults, who were more likely to contract the illness and displayed more chronic manifestations, nurses limited their social interactions (Fernandez-Peña et al. 2020). The nurses' performance, productivity levels, and social lives were significantly impacted (Giannis, 2021).

Nursing Turnover Intentions

Turnover intentions have been defined as a professional's likelihood of leaving their current organization within a certain time frame which has been the main predictor of turnover

(Wubetie et al., 2020). High turnover rates for nurses have insinuated future nursing shortages (Edwards-Dandridge, 2019), and have been identified as an international healthcare issue (Gebregziabher et al., 2020). Nursing turnover or intent to leave the workforce has been linked to nurses' intrinsic needs not being met (Perry et al., 2018). Nurses make up a large portion of the healthcare system (Schwerdtle et al., 2020) and high turnover rates can cause a financial strain on healthcare organizations (Bae, 2022). Turnover and the intention to leave affects the quality of patient care and causes pressure on other professionals (Adams et al., 2019).

Falatah (2021) conducted an integrative review to evaluate pre and post COVID-19 literature focused on nurse turnover. The review consisted of 43 studies that were published between 2016-2021. One objective that was explored in the review was the difference in turnover and turnover intention rates before and after COVID-19. The approved studies all used a quantitative research method with a vast majority consisting of a cross-sectional design while two studies had a longitudinal design. The researcher found that nurses who worked directly with COVID-19 infected patients had higher rates of turnover intentions. Some predictors for turnover following COVID-19 were listed as clinicals stress and the fear of contracting the virus, with younger nurses having higher intentions to leave. Predictors of turnover intention pre COVID-19 were described by sociodemographic factors including age, sex, and marital status. It was also noted in the study that COVID-19 increased turnover intention rate (Falatah, 2021).

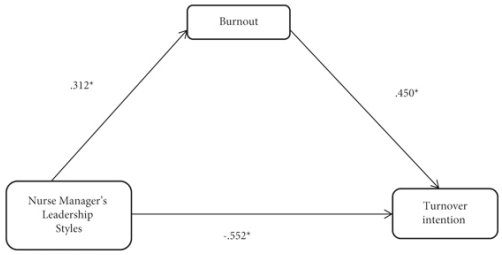
Nashwan et al., 2021 conducted a cross sectional survey study to compare nurses' turnover intentions before and during COVID-19. The study included a total of 512 nurses that worked for the largest healthcare provider in Qatar between August and September of 2020. The study found that those nurses who previously suffered from extreme stress their levels were increased during COVID-19 from 12.7% to 33.2%. Like Falatah (2021), Nashwan et al also

discovered that nurse's turnover intention was increased during COVID-19 but due to psychological distress. The pandemic increased anxiety and stress within nurses causing them to feel overwhelmed (Nashwan et al., 2021). Turnover intentions were influenced by years of work experience and age (Nashwan et al., 2021). Nurses who had 5-10 years' work experience had higher turnover intentions than those who have 5 years or less experience. Nurses 30 and older had higher turnover intentions during COVID-19 (Nashwan et., 2021).

Turnover rates have been globally high for nursing professionals (Bae, 2022) with an average rate of 26.8 in the USA and 44.3% in New Zealand (Nelson-Brantley et al., 2018). It is important that healthcare systems recognize factors contributing to nurses' turnover intentions to decrease turnover rates. Poku et al (2022) reported that the relationship between nurse managers leadership style and turnover intention was partially mediated by burnout as shown in Figure 1. According to Rutledge et al (2022) turnover intention was impacted by chronic fatigue, and they did not find burnout to be a predictor of turnover intentions (Rutledge et al., 2022). Researchers have suggested for organizations to implement cost effective interventions including increased leadership involvement, shared decision making, and meaningful recognition to address nursing turnover and burnout (Adams et al., 2019).

Figure 1

EFFECT OF BURNOUT ON THE RELATIONSHIP BETWEEN NURSE MANAGER LEADERSHIP STYLES AND TURNOVER INTENTION



Note: Taken from Poku et al. (2022) Impacts of nursing work environment on turnover intentions: the mediating role of burnout in Ghana. Nursing Research and Practice, 2022. Rutledge, D. N., Douville, S., & Winokur, E. J. (2022). Chronic fatigue predicts hospital nurse turnover intentions. JONA: The Journal of Nursing Administration, 52(4), 241-247.

COVID-19 as Shared Trauma

Holmes et al. (2021) defined COVID-19 as collective trauma, meaning a whole society has been exposed to the same risk and anxiety. Collective trauma can be caused by natural disasters such as hurricanes or artificial catastrophes like terrorist attacks (Tosone, 2019). The profound impact of COVID-19 on society affected everyone globally and left aftereffects in some capacity, but those that worked in healthcare and treated patients with COVID-19 were affected more significantly (Obrenovic et al., 2021). Healthcare professionals received increased exposure to the collective trauma through their personal lives and professional employment (Holmes et al., 2021). Considering previous research demonstrating a correlation between traumatic experiences and burnout, Holmes et al (2021) proposed to employ shared traumatic experiences as a determinant of burnout. When a provider of aid and the person receiving aid have been affected by the same traumatic experience and are still working through its aftermath, they were said to be working through shared trauma (Tosone, 2020). No matter how similar or unlike their experiences were, the clinical environment could alter their emotional and cognitive

responses to those encounters and if the professional was not aware of how much the trauma has affected them, they could possibly cause harm to the patients (Tosone, 2020).

Those healthcare professionals who could not accurately assess the extent to which they had been influenced by trauma were at higher risk for burnout, anxiety, depression, traumatic stress disorder, and other mental health issues (Luceño-Moreno et al., 2020). Due to the rarity of professionals and patients suffering the same trauma during the exact time, this concept had mostly been explored in the aftermath of catastrophes like 9/11 (DePierro et al., 2020). The idea of shared trauma was first discussed throughout the London Blitz of World War II when innocent people lived and worked in distressing surroundings (Tosone, 2019). It was quickly abandoned in favor of studies focused on post-traumatic stress disorder (PTSD) and the experiences of soldiers and those who witnessed trauma firsthand (Christian, 2022). After 9/11, the idea was brought back into the spotlight as traumatic events inside communities, such as terrorist attacks, school shootings, and natural catastrophes, received increased media (Christian, 2022).

Shared trauma was outlined by Tosone (2020) as the effective and useful cognitive, behavioral, multimodal, and spiritual responses that professionals encounter due to dual exposure to the same collective trauma as their patients. Christian (2022) acknowledged the COVID-19 outbreak as a potentially massive problem. The uncommon occurrence of shared trauma has caused a shortage of literature on the subject and the solutions that could help those who have experienced it (Tosone, 2019). There have been calls for more study and lobbying from within institutions to support staff who have experienced trauma together effectively, but these efforts have been somewhat broad and lack specifics for healthcare professionals in this

situation (Tosone, 2020). Healthcare professionals, particularly those who were on the front lines of the pandemic, were at increased risk for experiencing trauma and burnout.

Organizational Support to Reduce Burnout for Shared Trauma

Burnout is the phenomenon that has been extensively studied in the context of occupational health and psychology (Edú-Valsania et al., 2022). A protracted, clinical manifestation wherein signs of emotional weariness emerge because of the mental pressure of dealing with different stressors was how experts described burnout (Tosone, 2020). To tackle the personal and professional aspects that led to burnout, it was recommended that future studies focused on countermeasures at both the personal and corporate levels (Montgomery & Maslach, 2019). Health professionals who experienced burnout were less inclined to look for solutions for their problems, burnout seemed to perpetuate itself. According to Alahmari et al. (2022), help-seeking and help-receiving were adversely encountered and led to emotions of inequity or incompetence among hospital employees without suitable organizational structure and processes to assist workers facing burnout.

An employee's emotional exhaustion was prone to be compounded by emotions of shame or regret, which made it harder for them to ask for assistance (Alahmari et al., 2022). Montgomery and Maslach (2019) found that workers who felt appreciated and respected were less likely to encounter burnout in the workplace. Scholars labeled it institutional support or organizational capability and used methods to quantify the extent to which workers reported receiving such support from their employer (Holmes et al., 2021). According to Dinibutun (2020), an investigation would aid in decreasing the degree of burnout that professionals experience and reduce the attrition rate that adds to adverse outcomes for their patients by focusing on assisting healthcare providers in resolving their burnout.

Coping Mechanisms and Resilience

According to Duncan (2020), during tragic events individuals are more likely to suffer from psychological distress if they lack sufficient coping mechanisms. Coping mechanisms were identified as strategies used to prevent psychological harm and it was reported that these strategies could be used to relieve burnout in healthcare professionals (Maresca et al., 2022). Kunzler et al (2020) described resilience as a fast recovery or management of mental health symptoms during and after a crisis. Mitchell (2020) found that nurses who exhibited resilience at work were more likely to succeed in their jobs and were able to persevere in difficult circumstances. Velana and Rinkenauer (2021) reported that during the COVID-19 pandemic a major challenge for health care systems was improving nurses' resilience related to work related pressures by enhancing effective coping strategies.

A plethora of coping strategies have been used in attempt to decrease burnout and build resiliency in nursing professionals including humor, utilizing social support, and work-life balance (Cooper et al., 2020). Öksüz et al. (2019) conducted a descriptive study to examine resilience in nursing professionals, factors that play a role in resilience, and its association with perceived social support and job satisfaction. The study included 242 nurses at three public hospitals in Turkey. A descriptive data form was used to collect the data which included the Resilience Scale for Adults (RSA), the Multidimensional Scale of Perceived Social Support (MSPSS), and the Minnesota Job Satisfaction Scale (MJSS). The form also included information regarding the nurses' demographics.

Öksüz et al. (2019) utilized the Resilience Scale for Adults to identify protective factors that aide in supporting resilience and the scale consisted of 33 items on the form. The Multidimensional Scale of Perceived Social Support was used to identify support from family,

friends, and others which contained of 12 items. Internal and external job satisfaction was measured using the Minnesota Job Satisfaction Scale and had 20-items on the form. The researcher distributed the form to the nurses in their breakroom at the hospital which included a quiet area for them to be able to focus. The findings indicated that social support, job satisfaction, and resilience improved nurses' ability to cope with workplace stressors. Contrary to the overall findings nurses that worked day and night shifts reported lower resilience as well as nurses with less experience. Öksüz et al. (2019) theorized that resilience levels would increase if managers incorporated strategies to that involved increasing social support at work.

Cooper et al. (2020) conducted an electronic database literature review that consisted of 1,920 studies that focused on attributes, experiences, and consequences that related to nurses' resilience. The literature identified some key attributes related to nurses' resilience which included social support (feeling valued), self-efficacy (increased self-confidence), and optimism (having a positive attitude). Nurses attitude and perception of their ability to be successful contributed to their resilience in the workplace (Cooper et al., 2020; Öksüz et al., 2019). Social support was shown to be a major predictor of resilience because individuals strived to feel a sense of belonging (Manomenidis et al., 2019). Cooper et al. (2020) projects that if nursing attributes are not met and measures are not taken to maintain resilience than the nursing shortage will continue to increase which would negatively affect patient outcomes.

Huang et al. (2020) explored emotional responses and coping strategies in front line nursing staff and nursing students during COVID-19. A snowball sampling method was used to encourage participation. Participants completed an online survey between February 1, 2020, and February 9, 2020. Researchers used a positive and negative emotion scale to measure emotional responses including anger, sadness, and anxiousness. Coping strategies were measured using the

Brief COPE scale with adjustments. The survey was completed by 802 nursing participants and the results indicated that nursing professionals on the front line were more likely to experience anxiety, fear, sadness, and anger comparative to nursing students. It was also implied that women nurses engaged in problem focused coping (problem solving) than men nurses who followed more of an emotion focused coping strategy (reducing emotional distress). The research suggested that problem focused coping was associated with increased anxiety. In contrast, other researchers reported that problem focused coping was found to be a protective factor for nursing professionals (Mazzella et al., 2019).

Mindfulness Meditation

Mindfulness meditation programs have been considered potential interventions for reducing stress and burnout in nursing professionals (Green & Kinchen, 2021). Mindfulness training is the ability to be aware of one's own feelings and emotions, and the ability to respond positively to stressful situations through utilization of self-regulation techniques (Suleiman-Martos et al., 2020). Mindfulness techniques include but are not limited to strategies such as deep breathing, yoga, walking, and body scanning (Shapero et al., 2018)

Bianchini and Copeland (2020) studied the effects of mindfulness-based interventions and self-care strategies on stress and burnout in nursing professionals. A quasi-experimental, pretest and posttest was used to gather the data. The study consisted of 150 nurses and these professionals agreed to participate in mindfulness techniques over a 3-month period. Training regarding yoga practices, self-care activities, deep breathing, and guided imagery were provided prior to participation. These professionals completed a pre and posttest survey to measure the effectiveness of the mindfulness-based interventions. Researchers concluded that the perceived

stress score in nurses decreased after the use of mindfulness-based interventions, but the scores were not statistically significant (Bianchini & Copeland, 2020).

The stress management resiliency program (SMART program) was an 8-week program that consisted of different skills involving the mind, body, and lifestyle to test its effect on healthcare professionals' well-being and job satisfaction (Dossett et al., 2021). Table 2 provides a list of skills that were covered in the sessions. The techniques used in this training included yoga, meditation, and mindfulness to aid in reducing stress. Participants spent 1.5 hours weekly participating in the program sessions that was co-facilitated. The study included 36 healthcare workers pre and posttest surveys. The results showed that healthcare professionals including nurse practitioners experienced enhanced mental and physical health along with job satisfaction (Dossett et al., 2021).

Table 2

Topics Covered in the SMART Program

Session	Topics/Skills Covered
1	Science of mind-body medicine, Breath awareness & single-pointed focus meditations, Appreciations, Goal setting and tracking weekly practice
2	Body scan, Recuperative sleep, Stress warning signals exercise, Introduction to "mini relaxations"
3	Mindfulness, Mindful eating, Identifying emotions & physical sensations, Social support
4	Yoga, Movement and exercise, Negative automatic thoughts, Thought distortions
5	Insight imagery, Adaptive perspectives/cognitive restructuring, Problem solving & acceptance, Healthy eating behaviors
6	Contemplation practice, Relaxation signals, Comparing optimism & pessimism, Promoting physical activity
7	Loving-kindness meditation, Creative expression, Empathy, Self-compassion
8	Idealized-self meditation, Humor and laughter yoga, Energy battery, Staying resilient

Note: Taken from Dossett et al. (2021) Stress Management and resiliency training for healthcare professionals: a mixed-methods, quality-improvement, cohort study. Journal of occupational and environmental medicine, 63(1), 64-68.

Chapter Summary

Nursing burnout has been a global problem that posed serious risks to the nursing field and the public's health in many nations (Yu et al., 2021). Thus, it was crucial to estimate nursing burnout and related aspects to investigate its causes and explore effective strategies for combating it. High rates of burnout among nurses have been linked to poor working conditions in terms of personnel, organizational structure, fear of contracting the virus, and poor leadership (Dall'Ora et al., 2020). Since nurses constituted the most significant segment of the healthcare staff and have proven to be invaluable throughout the latest COVID-19 disease outbreak, it was important to recognize the added stress that has been endured while identifying the gap in literature regarding burnout post COVID-19 pandemic.

Chapter 3 emphasized the methodology used to evaluate differences in burnout amongst nursing professionals and the presence of stress management participation. The chapter outlined the purpose and goal of the research design and additional factors for conducting research including safety measures, validity, reliability, and research participants. Chapter 3 also included the data collection process and the use of the Maslach Burnout Inventory Scale.

Chapter 3: Methodology

The purpose of this chapter was to present the research methodology for the quantitative study that explained the impact of COVID-19 on nursing professionals that worked in the ED and ICU. This method allowed the researcher to gather data needed to address the proposed research questions that focused on nursing professional's burnout post COVID-19 and nurses engagement in stress management strategies. The use of the Maslach Burnout Inventory was explained in depth and will provide further understanding for the use of this research. Additional topics was also addressed including the design, ethical concerns, safety measures, and description of participants.

Research Questions

This study's intentions were to answer the following research questions:

RQ1: Is there a difference in measured burnout between ED and ICU nurses post COVID-19 pandemic?

H_{01}: There is no difference in burnout scores amongst ED and ICU nurses post COVID-19.

RQ2: Is there a relationship between burnout and stress management actions in ED and ICU nurses?

H_{02}: There is no relationship in stress management actions and burnout scores in ED and ICU nurses.

Design and Methodology

A quantitative approach using a cross-sectional research design was selected to gather information from participants. A cross sectional survey design allowed the researcher to collect data across participants at one point in time. The researcher was only interested in surveying participants once during the study. A quantitative approach was selected due to the interest of

evaluating if a difference existed between the two groups and understanding the relationship between variables (burnout and stress management strategies). The Maslach Burnout Inventory (MBI) is a psychological assessment tool that measures occupational distress encompassing the three constructs: emotional exhaustion, depersonalization, and personal accomplishment (Maslach & Leiter, 2021). The MBI: Human Services Survey (HSS) for Medical Personnel (MP) was the chosen measurement tool for the current study because it allowed the researcher to develop a notion of burnout on the two different nursing groups. Given that there was limited information regarding the current state of professional's burnout levels primary data was collected to answer the research questions.

A quantitative perspective was accomplished using Burnout theory. After observing a decline in enthusiasm and dedication among volunteers at a mental health facility in 1974, Freudenberger discovered the term burnout to explain this occurrence (Coles, 2017). Social psychologist Christina Maslach added to the field of burnout by introducing the three dimensions of burnout and presenting the Maslach Burnout Inventory Scale (Maslach, 1998). According to Maslach's definition, burnout refers to emotional exhaustion and a lack of emotional resources that develops in response to chronic stress in the workplace (Alahmari et al., 2022). Emotional exhaustion, an adverse and estranged reaction to other people, and a pessimistic outlook result from depersonalization and a decline in feelings of efficacy and productivity in the workplace (Maslach, 1996).

A Multidimensional Theory of Burnout by Christina Maslach (1998) discussed the development of the burnout theory and its advancement. Burnout theory has been seen as an occupational threat that leads to personal and social deterioration in human service professionals (Maslach and Leiter, 2016). According to Maslach (1998) the theory of burnout has the potential

to affect the quality of work and the dynamic of social relationships. Burnout theory focuses on a broader aspect of stress in the workplace and provides a clearer understanding for measuring burnout (Maslach,1998). In addition, the Maslach Burnout Inventory (MBI) was created as an instrument to measure all three aspects of the burnout theory including emotional exhaustion, depersonalization, and personal accomplishment (Maslach, 1998). The MBI is the most widely used scale for measuring burnout (Schaufeli et al., 2001).

Description of Research Participants

Sampling Method

The population studied was registered nurses that worked in a hospital setting. These professionals had increased exposure to acute and chronic medical issues. The participants completed a survey consisting of questions related to burnout. Requirements for participating in the study included being a nurse who worked in the ED or ICU unit of any hospital. The researcher was only interested in professionals that worked in the two high-demanding areas of the hospital to add to research regarding the current state of burnout in these professionals and to explore differences amongst the two groups.

To gather participants for the study a criterion purposeful sampling method was used. Centiment which is a data collection platform was utilized to connect with ICU and ED nursing professionals. This platform was used to promote the study and gain access to professionals working in the ICU and ED. Thousands of professionals including nurses have joined Centiment's platform to assist in completing surveys. When signing up to be a part of the network professionals answered targetable questions that helped connect researchers with their exact audience. Nurses working in the two departments were notified by their profile on the platform asking for their participation. The survey included a question that assisted in identifying

which department of the hospital the nurses worked in. Before entering the survey, individuals were provided a consent form that detailed the requirements for the study, then after individuals had the option to agree or decline to participate in the study.

The criterion purposeful sampling method was most suitable because it gave all nurses working in an ICU and ED department that were linked to the company's website an equal chance of participating in the study. The benefit of utilizing criterion purposeful sampling in this study included being able to easily recognize or gather participants that were associated with the Centiment platform because of the criteria that was defined for the particular sample. This sampling method was most beneficial because it allowed the researcher to reach a specific target audience quickly. This was useful because of the enormous number of nurses associated with the platform.

A limitation for using criterion purposeful sampling included utilization of a non-probability sampling method that is prone to extreme diversity amongst participants and results. Another possible limitation in using criterion purposeful sampling for this study is researcher bias due to utilization of a third-party platform.

Sample Size

A priori analysis was completed to determine the appropriate sample size that would produce a sufficient power level for each research question to assess for possible differences. A priori analysis was conducted using current evidence from recent studies. The variable that was used to conduct the priori analysis was emotional exhaustion (Maslach, 1996). This concept had the most items on the MBI survey and is a general definition for burnout.

The first study that was used to gather reasonable estimates for the prior analysis was "Prevalence and Associated Factors of Burnout Risk among Emergency nurses during COVID-

19 Pandemic". The study utilized the MBI scale to determine the risk of burnout among emergency room nurses during covid. A mean score of 14.39 was evaluated for emotional exhaustion in nursing professionals working in the ED with a standard deviation score of 7.964 (Susila & Laksmi, 2022).

The second study that was used to determine reasonable estimates for the ICU nursing population was "Investigating burn-out contributors and mitigators among intensive care unit nurses during COVID-19: a focus group interview study" The mean score for emotional exhaustion was 32.35 and the standard deviation was 10.66 (Saravanan et al., 2022). These scores were used to determine an effect size to calculate the appropriate sample size.

The effect that was calculated using g*power was 1.909, however based on Cohen suggestions the conventional effect sizes are listed as "small", "medium", and large" and the values are listed as 0.2, 0.5, and 0.8 (Kang, 2021). A medium effect size of 0.5 with a significance level of .05, and a power level of .80 was used to compute the sample size. The total sample size that was computed using the statistical software g*power is 102. The desired sample size was 102 participants with hopes of having a total of 51 participants for the ICU and ED group. The three factors were combined using a one-tail t-test.

Operationalization of variables/constructs

The Maslach Burnout Inventory scale (MBI)- Human Services Survey for Medical Personnel is the survey that was utilized to collect the data. The MBI-HSS (MP) scale is an instrument that was designed by Christine Maslach to measure burnout in medical professionals. The scale consists of 22-items and explores professionals' feelings and attitude towards themselves, their workplace including coworkers, and the people they serve. The scale is used to evaluate a person's burnout risk level by examining the three constructs.

Emotional exhaustion has been described as feelings of depletion from one's workplace. This section of the survey is comprised of nine items that mirror the question "I feel emotionally drained by my work". All the items are related to one another as they focus on individuals' feelings towards their workplace (Maslach et al., 1996).

Depersonalization explores individuals' feelings of disconnect/detachment from their work, clients, and coworkers. This section of the survey has five items that reflect the example "I feel I deal with my team/colleagues impersonally, as if they are objects". In this section of the survey participants rate how disconnected they feel from their work environment (Maslach et al., 1996).

Personal accomplishment explores individuals' self-worth and how they feel about their success at their workplace. There are eight items on the scale that examine feelings of accomplishment. The questions related to personal accomplishment imitate the example "I accomplish many worthwhile things in this job". These items assess participants emotions towards their sense of self-worth (Maslach et al., 1996).

The items on the survey are answered using a likert scale based on a 7-point frequency. The frequency consists of *0-never, 1-a few times per year, 2-once a month, 3-a few times per month, 4-once a week, 5- a few times per week, and 6- every day*. Higher scores for emotional exhaustion and depersonalization indicate increased risk for burnout. A score of 30 or higher for emotional exhaustion is considered high level burnout. A score of 12 or greater for depersonalization is said to be high level burnout. Lower scores for personal accomplishment indicate high level of burnout. A score of 33 or less for personal accomplishment is considered high level burnout. All constructs are independent of one another, and scores should not be

combined. This leaves participants with three scores one for each construct (Maslach et al., 1996).

In addition to the MBI-HSS (MP) questionnaire the researcher included the question "do you participate in stress management techniques?" and participants were able to answer yes or no. This question was used to explore if there was a relationship between burnout and stress management actions amongst the group of nurses.

Reliability and Validity

The MBI-HSS scale has been a well-known instrument for measuring burnout (Hadžibajramović et al., 2022). The instrument was transformed and developed into several versions to accommodate different groups and job positions (Maslach, 1996). During the final development of the MBI-HSS researchers assessed for reliability and validity using different subjects.

The reliability of this instrument was ensured by estimating internal consistency based on samples that were not used in the item selection to avoid improper inflation. The Cronbach's coefficients alpha was used to estimate the internal consistency (n=1,316). The reliability coefficients for the constructs were .90 for emotional exhaustion, .79 for depersonalization, and .71 for personal accomplishment. The standard error for each construct were 3.80 for emotional exhaustion, 3.16 for depersonalization, and 3.73 for personal accomplishment. The coefficient scores indicated adequate reliability for the scale (Maslach et al., 1996).

Founders of the MBI-HSS also measured reliability using test-retest data on two samples. One sample included a group of graduate students in social welfare and administrators in a health agency with sessions divided over a two-to-four-week interval and the test-retest coefficients were .82 for emotional exhaustion, .60 for depersonalization, and .80 for personal

accomplishment. The coefficients varied from low to moderately high, but they were all significant on a .001 level. The second sample was completed on a group of 248 teachers and the two sessions were separated over a one-year period. The test-retest reliabilities for the constructs were identified as .60 for emotional exhaustion, .54 for depersonalization, and .57 for personal accomplishment. Additionally, studies have continued to measure the reliability of these constructs and the coefficients have been found to be stable over time (Maslach et al., 1996).

Validity of the MBI scale was ensured by measuring convergent validity. The founders of the MBI scale assessed convergent validity in several ways. First, the MBI scores were correlated with behavioral ratings from someone close to the participant. Next, the MBI scores were correlated with specific job characteristics that were known to be associated with burnout. Lastly, MBI scores were correlated with outcomes associated with burnout (Maslach et al., 1996).

According to Maslach et al. (1996) all correlations were found to show substantial validity for the MBI. Researchers discovered that individuals who reported high on emotional exhaustion and depersonalization were rated by their peers as being emotionally drained. It was also found that when caseloads were high the scores for emotional exhaustion and depersonalization were high while personal accomplishment was low.

Data Collection Plan and Procedures

The MBI scale has been shown by numerous studies to provide substantial evidence for reliability and validity (Maslach, 1998). The data was collected using the MBI scale because it was shown to be creditable. The researcher targeted all nurses that currently worked in an ICU and ED unit of any hospital. The researcher utilized Centiment a data collection platform which assisted with gathering participants for the study.

Centiment connects researchers with survey respondents through an online interface. The researcher was linked with nursing professionals through Centiment by form of their personal profile on the site. The researcher was in communication with a representative from the platform who learned about the study and was able to distribute the survey appropriately to qualified professionals. Nursing professionals who met all requirements for participating in the study received a link for the survey on their dashboard. The company charged a fee for utilizing their services and the fee was based on the number of participants that responded to the survey. Participants received an unspecified compensation from Centiment for their participation in the study.

A consent form was provided prior to completing the survey. The consent form that was applied was encouraged by Franklin IRB. It notified participants that participation was anonymous, voluntary, and discussed their right for discontinuing participation at any time. An essential goal of the study was to guarantee all ethical standards were well-thought-out. Identifying any risk for harm to the participants was important and discussed with the Centiment representative. Centiment notifies participants of potential benefits and risk that could occur while participating in studies and offer assistance in the event that participants report any type of harm. A potential risk in this study was psychological harm from sensitive wording from the survey. Individuals who may have suffered from extreme burnout had the potential to read a statement on the survey that could have caused them to relive an emotional experience.

The survey was assessable for a total of six weeks April 18,2023- May 31,2023 which gave professionals adequate time to complete it and gave the researcher time to gather as many respondents as possible. The survey was expected to be completed within 5-7 minutes. It consisted of 24 questions and was not able to be submitted unless all questions were answered.

Participants were only able to complete the survey once. Reminder notifications were sent weekly until the survey ended. The survey was anonymous to help reduce survey bias.

Data Analyses Procedures

After gathering the data, it was transferred to a Microsoft excel spreadsheet to be sorted and cleaned by removing irrelevant data. The information was strategically sorted to separate responses for each set of nurses. In addition, the data was divided by nurses working in the ICU and ED units with their responses to each statement which assisted the researcher in answering the research questions. Once the nurses were divided by their departments then their scores were separated by each construct.

After the data had been sorted it was evaluated for outliers, duplicate responses, and missing points. The outliers were identified by Microsoft excel and assumption testing to eliminate error and bias. The excel program also assisted in identifying duplicate responses. No duplicate responses occurred during the process. If a duplicate response had occurred, then one of the responses would have been omitted. The data did not present with missing points because the survey could only be submitted if all questions were answered.

Following the sorting and cleaning of the data the information was uploaded to the statistical program Statistical Package for Social Sciences (SPSS) version 28. This program permitted the researcher to analyze the data using different quantitative analysis. The first step in analyzing the data consisted of exploring descriptive statistics to review basic statistics of the two data sets. The descriptive statistics provided general information about the samples.

The data was analyzed inferentially by running a simple t-test, two Mann-Whitney U tests, and three-point biserial correlation analyses. RQ1: Is there a difference in measured burnout between ED and ICU nurses post COVID-19 pandemic. RQ2: Is there a relationship

between burnout and stress management actions in ED and ICU nurses? The hypothesis for RQ1 was tested using a t-test for emotional exhaustion and two Mann-Whitney U tests for depersonalization and personal accomplishment. A t-test and Mann-Whitney tests was compiled to compare the means of the groups. These tests were conducted to help understand if differences exist in burnout between the two groups. To test hypotheses and answer RQ2, three-point biserial correlation analyses was conducted to determine the strength of the correlation between stress management participation and burnout in ED and ICU nurses.

Data Security Plan

The study was submitted and approved by Franklin Institutional Review Board (IRB). The researcher provided IRB with a letter from Centiment with approval for using the platform. The researcher acknowledged the importance of protecting participants privacy and maintained confidentiality of research data. Participants completed a consent form that notified them of their rights to privacy. To reduce privacy concerns, no identifiable information such as name, date of birth, addresses, or phone numbers was collected during the study. The researcher engaged with Centiment to collect the data because of its support to academic research. Centiment works to safeguard confidential data by the utilization of encryption services which reduces outside parties' ability to read the data because of the encoding ([Centiment], 2023).

Additional measures to ensure privacy and confidentiality of research data was guaranteeing that all computers and software were guarded with strong passwords including creating longer passwords with special characters to reduce the chances of someone guessing the password or unlocking computers and systems. A secure transmission process was followed by compressing data files to reduce the risk of failed file transfers. The data was not transferred

using social media outlets, text messages or any other unsecured transmission. The research data was stored on an encrypted personal computer where all software updates have been applied.

The researcher provided a thorough review of the survey to ensure it was free from bias. Participants safety, privacy, and rights were vital aspects while conducting the research study and the researcher explored every element to ensure that participants and research data was protected.

Chapter 4: Data Collection and Analysis

The purpose of this study was to identify the current state of nursing professionals' mental health years after the onset of COVID-19. In addition, determine if there was a relationship between burnout scores in nursing professionals working in the emergency department and intensive care unit. The study also aimed to identify associations between nursing professionals and their participation in stress management techniques. Survey data were collected online using Centiment, which is a data collection platform. Data were analyzed using SPSS statistical software. An independent-samples *t*-test and two Mann-Whitney U tests were used to answer Research Question 1 and three-point biserial correlation analyses were used to answer Research Question 2. This chapter includes a description of the sample and presents the results of the descriptive, assumption, and hypothesis testing.

Data Preparation

The first step in the data analysis process was to prepare the data for analysis. This included converting text responses to numeric responses in Excel, looking for missing values, and removing unnecessary cells, such as start and end times and IP addresses. Once data were prepared for analysis, they were exported to SPSS.

Survey data included responses to the MBI-HSS for Medical Personnel, a question regarding nurses' work setting (i.e., ED or ICU), and a question regarding whether they had participated in stress management techniques. The MBI-HSS comprised 22 items across three subscales: emotional exhaustion, depersonalization, and personal accomplishment. The responses options were: 0 = *never*, 1 = *a few times a year or less*, 2 = *once a month or less*, 3 = a *few times a month*, 4 = *once a week*, 5 = *a few times a week*, and 6 = *every day*. A composite score was calculated for each of the subscales, which represent the three dependent variables in

this study. There is no composite scale for the survey as a whole. The composite score for emotional exhaustion was calculated by averaging individuals' scores for the nine emotional exhaustion items (Maslach et al., 1996). The composite score for depersonalization was calculated by averaging individuals' scores for the five depersonalization items (Maslach et al., 1996). The composite score for personal accomplishment was calculated by averaging individuals' scores for the eight personal accomplishment items (Maslach et al., 1996). Higher scores on the emotional exhaustion and depersonalization subscales indicate elevated symptoms of burnout and lower scores on the personal accomplishment subscale indicate elevated symptoms of burnout (Maslach et al., 1996).

The response options for the question about nurses' work setting included 1 = *ED* and 2 = *ICU*. The response options for the question about whether nurses participated in stress management techniques were 1 = *yes* and 0 = *no*. No additional data were collected. Furthermore, there were no missing values identified during data preparation.

Characteristics of the Sample

The sample consisted of 104 nurses who work in either the emergency department (ED) or intensive care unit (ICU) of a hospital. Participating nurses were randomly selected from the online data collection platform Centiment. The frequencies and percentages of nurses who participated in stress management techniques and worked in the ED versus ICU were calculated. The results showed that 44 (42.3%) of nurses did not participate in stress management techniques and 60 (57.7%) did participate in stress management techniques (Table 3). Additionally, 51 (49.0%) worked in the ED and 53 (51.0%) worked in the ICU (Table 4)

Table 3

Frequency and Percentage of Nurses Participating in Stress Management Techniques

		Frequency	Percent
Participate in Stress Management Techniques	No	44	42.3
	Yes	60	57.7
	Total	104	100.0

Table 4

Frequency and Percentage of Nurses by Work Setting

		Frequency	Percent
Department	Emergency Department (ED)	51	49.0
	Intensive Care Unit (ICU)	53	51.0
	Total	104	100.0

Descriptive statistics were calculated for each of the dependent variables in this study: emotional exhaustion, depersonalization, and personal accomplishment. The descriptive statistics include mean, median, variance, standard deviation, minimum, maximum, range, interquartile range, skewness, and kurtosis. The mean emotional exhaustion score was 26.23 (SD = 1.39), the mean depersonalization score was 9.31 (SD = 0.75), and the mean personal accomplishment score was 38.70 (SD = 0.75; Table 5). These scores were calculated for the total sample.

Table 5

DESCRIPTIVE STATISTICS FOR DEPENDENT VARIABLES

			Statistic	Std. error
Emotional Exhaustion	Mean		26.2308	1.39154
	95% Confidence Interval for Mean	Lower Bound	23.4710	
		Upper Bound	28.9906	
	5% Trimmed Mean		26.2949	
	Median		25.5000	
	Variance		201.383	
	Std. Deviation		14.19095	
	Minimum		0.00	
	Maximum		53.00	
	Range		53.00	
	Interquartile Range		22.75	
	Skewness		-.083	.237
	Kurtosis		-.921	.469
Depersonalization	Mean		9.3077	.74655
	95% Confidence Interval for Mean	Lower Bound	7.8271	
		Upper Bound	10.7883	
	5% Trimmed Mean		8.9786	
	Median		7.0000	
	Variance		57.963	
	Std. Deviation		7.61332	
	Minimum		0.00	
	Maximum		27.00	
	Range		27.00	
	Interquartile Range		12.00	
	Skewness		.585	.237
	Kurtosis		-.893	.469
Personal Accomplishment	Mean		38.7019	.74665
	95% Confidence Interval for Mean	Lower Bound	37.2211	
		Upper Bound	40.1827	
	5% Trimmed Mean		39.2885	
	Median		41.0000	
	Variance		57.978	
	Std. Deviation		7.61434	
	Minimum		11.00	
	Maximum		48.00	
	Range		37.00	
	Interquartile Range		11.00	
	Skewness		-1.172	.237
	Kurtosis		1.447	.469

Descriptive statistics were also calculated for the dependent variables after separating the sample into groups according to nurses' work setting. For nurses who work in the ED, the mean score for emotional exhaustion was 24.43 (*SD* = 2.20), the mean score for depersonalization was 8.76 (*SD* = 1.13), and the mean score for personal accomplishment was 39.63 (*SD* = 1.06). For nurses who work in the ICU, the mean score for emotional exhaustion was 27.96 (*SD* = 1.71), the mean score for depersonalization was 9.83 (*SD* = 0.99), and the mean score for personal accomplishment was 37.81 (*SD* = 1.05; Table 6). The scores for ICU nurses were higher than the scores for ED nurses in terms of emotional exhaustion and depersonalization. However, scores were higher for ED nurses than ICU nurses in terms of personal accomplishment. Hypothesis testing for Research Question 1 determined whether this difference was meaningful.

Table 6

DESCRIPTIVE STATISTICS FOR DEPENDENT VARIABLES BY NURSES WORK SETTING

	Emotional Exhaustion		Depersonalization		Personal Accomplishment	
Department	*M*	*SD*	*M*	*SD*	*M*	*SD*
Emergency Department (ED)	24.43	15.72	8.76	8.05	39.63	7.56
Intensive Care Unit (ICU)	27.96	12.45	9.83	7.21	37.81	7.63

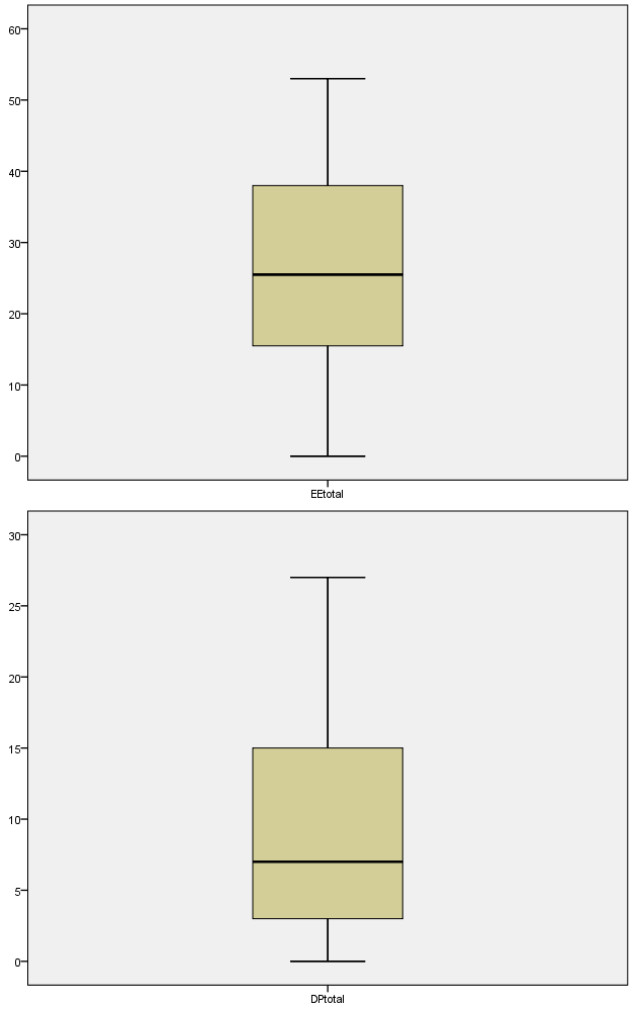
Assumptions Testing

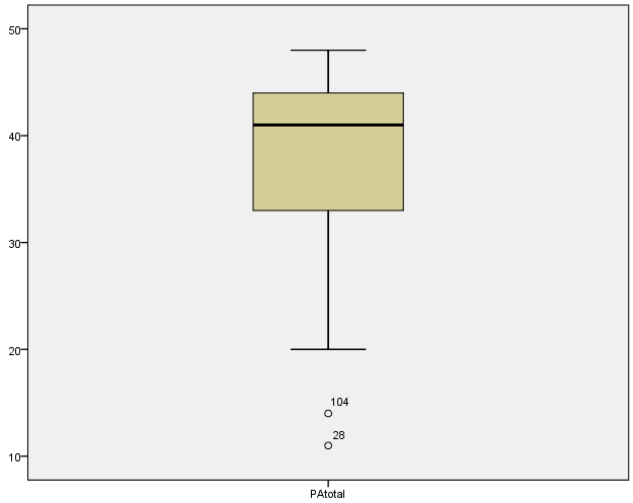
There are multiple assumptions of parametric testing that must be examined to determine whether parametric or non-parametric tests should be used to analyze data. The assumptions associated with *t*-tests and point biserial correlations include independence of observations, outliers, homogeneity of variances, and normality (Laerd Statistics, 2018). If data violate any of these assumptions, a non-parametric alternative should be used if one exists. The assumption independence of observation was not assessed using statistical testing; it was established during

the design of the study by splitting the sample into two groups that are independent from one another. The presence of outliers was assessed by looking at the boxplots that were generated from descriptive analyses (Laerd Statistics, 2018). The boxplots revealed that emotional exhaustion and depersonalization met the assumption for outliers. However, personal accomplishment did not meet the assumption of outliers because two cases extended more than 1.5 box-lengths from the edge of the box (Figure 2). The two cases were identified as case number 28 and 104 and were removed from the dataset.

Figure 2

BOXPLOTS FOR EMOTIONAL EXHAUSTION, DEPERSONALIZATION, AND PERSONAL ACCOMPLISHMENT





The assumption of homogeneity of variance was tested using Levene's test, where a significance level greater than .05 indicates the assumption has been met. The results of Levene's test revealed that each of the variables met the assumption of homogeneity of variance. Table 7 provides the results of the Levene's tests.

Table 7

LEVENE'S TEST FOR EQUALITY OF VARIANCES

	F	Sig.
Emotional Exhaustion	3.570	.062
Depersonalization	.844	.360
Personal Accomplishment	.171	.680

Normality was assessed using the Kolmogorov-Smirnov test of normality. When the significance level of the Kolmogorov-Smirnov test statistic is less than .05, the data violate the assumption of normality. According to the results of the Kolmogorov-Smirnov tests, depersonalization and personal accomplishment violated the assumption of normality (Table 8).

Table 8

TESTS OF NORMALITY

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Emotional Exhaustion	.066	104	.200	.972	104	.027
Depersonalization	.149	104	<.001	.913	104	<.001
Personal Accomplishment	.139	104	<.001	.903	104	<.001

The data for depersonalization and personal accomplishment violated the assumption of normality. Therefore, the non-parametric Mann-Whitney U test will be used for these two variables when testing the hypotheses for Research Question 1. A *t*-test will still be used for emotional exhaustion. Although data for depersonalization and personal accomplishment violated the assumption of normality, point biserial correlation analyses were still conducted for Research Question 2.

Results of Hypothesis Testing

Research Question 1

RQ1 asked: Is there a difference in measured burnout between ED and ICU nurses post COVID-19 pandemic? The hypothesis for this research question was tested using a *t*-test for emotional exhaustion and two Mann-Whitney U Tests for depersonalization and personal accomplishment. The results of the *t*-test for emotional exhaustion revealed that there is no significant difference in emotional exhaustion levels for nurses who worked in the ED compared to nurses who worked in the ICU, $t(102) = -1.272$, $p = .206$, two-sided (Table 9).

The results of the Mann-Whitney U Test for depersonalization revealed that there is no significant difference in depersonalization levels for nurses who worked in the ED compared to nurses who worked in the ICU, $U = 1180.50$, $z = -1.114$, $p = .265$ (Table 10). The results of the

Mann-Whitney U Test for personal accomplishment revealed that there is no significant difference in personal accomplishment levels for nurses who worked in the ED compared to nurses who worked in the ICU, $U = 1076.000$, $z = -1.502$, $p = .133$ (Table 11). Based on the results of the analyses for Research Question 1, the null hypothesis was retained.

Table 9

RESULTS OF THE INDEPENDENT-SAMPLES T-TEST FOR EMOTIONAL EXHAUSTION

	T	df	Significance 2-sided *p*
Emotional Exhaustion	-1.272	102	.206

Table 10

RESULTS OF THE MANN-WHITNEY U TEST FOR DEPERSONALIZATION

Depersonalization	Total N	104	Retain the null hypothesis
	Mann-Whitney U	1180.500	
	Standardized Test Statistic	-1.114	
	Asymptotic Sig. (2-sided test)	.265	

Table 11

RESULTS OF THE MANN-WHITNEY U TEST FOR PERSONAL ACCOMPLISHMENT

Personal Accomplishment	Total N	102	Retain the null hypothesis
	Mann-Whitney U	1076.000	
	Standardized Test Statistic	-1.502	
	Asymptotic Sig. (2-sided test)	.133	

Research Question 2

RQ 2 asked: Is there a relationship between burnout and stress management actions in ED and ICU nurses? To test hypotheses and answer Research Question 2, point biserial correlation analyses were conducted between participation in stress management techniques and the dimensions of burnout. Prior to conducting the point biserial correlation analysis, the assumptions were checked. The first assumption is that one of the two variables is measured on a continuous scale. The burnout dimensions of emotional exhaustion, depersonalization, and personal accomplishment are measured on continuous scales.

The second assumption is that the other variable is a dichotomous variable. The participation in stress management technique is a yes or no item which is a dichotomous variable. The third assumption is that there are no outliers in the continuous variables. As previously checked using boxplots, there are no outliers in the dataset. The results of the point biserial correlation analysis is presented in Table 12. The results showed that participation in stress management techniques has a significant but weak correlation with depersonalization (r = .194, p = .048). However, no significant correlation is observed for emotional exhaustion and participation in stress management techniques (r = .153, p = .121) as well as personal accomplishment and participation in stress management techniques (r = -.035, p = .728).

Table 12

POINT BISERIAL CORRELATION ANALYSES RESULTS

		Participate_in_SM	Emotional Exhaustion	Depersonalization	Personal Accomplishment
Participate_in_SM	Pearson *r*	1	.153	.194*	-.035
	p		.121	.048	.728
	N	104	104	104	102
Emotional Exhaustion	Pearson *r*	.153	1	.722**	-.433**
	p	.121		.000	.000
	N	104	104	104	102
Depersonalization	Pearson *r*	.194*	.722**	1	-.557**
	p	.048	.000		.000
	N	104	104	104	102
Personal Accomplishment	Pearson *r*	-.035	-.433**	-.557**	1
	p	.728	.000	.000	
	N	102	102	102	102

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

A post hoc analysis was conducted to compare the difference in depersonalization scores between those who participated in the stress management technique and those who did not. A Mann-Whitney U test was conducted to compare the mean rank of depersonalization scores. The result showed that there is no significant difference in depersonalization levels for nurses who participated in stress management techniques compared to nurses who did not, $U = 1037.00$, $z = -1.865$, $p = .062$ (Table 13).

Table 13

RESULTS OF THE MANN-WHITNEY U TEST FOR DEPERSONALIZATION BASED ON PARTICIPATION IN SM

Depersonalization	Total N	104	Retain the null hypothesis
	Mann-Whitney U	1037.00	
	Standardized Test Statistic	-1.865	
	Asymptotic Sig. (2-sided test)	.062	

Chapter Summary

Descriptive statistical analyses were conducted to describe characteristics of the sample. The results showed that 44 (42.3%) of nurses did not participate in stress management techniques and 60 (57.7%) did participate in stress management techniques. Additionally, 51 (49.0%) worked in the ED and 53 (51.0%) worked in the ICU. Inferential statistical analyses (i.e., *t*-test, Mann-Whitney U test, and point biserial correlation) were conducted to determine whether there was a difference in measured burnout between ED and ICU nurses and to determine the effects of stress management participation on emotional exhaustion, depersonalization, and personal accomplishment in ED and ICU nurses. The results of the inferential analyses revealed that there were no significant differences in emotional exhaustion, depersonalization, and personal accomplishment among nurses who worked in the ED compared to nurses who worked in the ICU. The results of the analyses also revealed that there were no significant interactions between the effects of work setting and stress management participation on emotional exhaustion, depersonalization, and personal accomplishment. The results of the point biserial correlation analyses determined that there is no relationship between participation in stress management techniques and emotional exhaustion and personal accomplishment. A significant but weak correlation was observed between participation in stress management

techniques and depersonalization. The post hoc analysis determined that there is no significant difference in mean ranks of depersonalization scores between nurses who participated in stress management and nurses who did not. Chapter 5 includes the implications and recommendations that were drawn from these results.

Chapter 5: Conclusions and Recommendations

Introduction

The purpose of this study was to identify the current state of nursing professionals' mental health after the onset of COVID-19. Additionally, this study sought to determine if there was a relationship between burnout scores in nursing professionals working in the emergency department and intensive care unit. The study also investigated associations between nursing professionals and their participation in stress management techniques. A quantitative-based cross-sectional research design was used, and survey data was collected online using the Maslach Burnout Inventory scale (MBI)- Human Services Survey for Medical Personnel. Data were analyzed using SPSS statistical software version 28. Participants included 104 nurses who worked in either the emergency department (ED) or intensive care unit (ICU) of a hospital. An independent-sample *t*-test and two Mann-Whitney U tests were used to answer Research Question 1, while a series of point biserial correlation analyses answered Research Question 2.

The research questions were: 1.) Is there a difference in measured burnout between ED and ICU nurses post-COVID-19 pandemic? 2.) Is there a relationship between burnout and stress management actions in ED and ICU nurses? The researcher hypothesized that burnout scores in nursing professionals working in the ICU and ED would be moderate with ED nurses experiencing burnout at higher rates. The null hypothesis was that there is no difference in burnout scores amongst ICU and ED nurses post-COVID-19. The variables studied were emotional exhaustion, depersonalization, and personal accomplishment. This chapter includes a discussion of results and findings, limitations of results and findings, a summation of key findings, recommendations for further research, and a conclusion.

Discussion of Results and Findings

Overview of Findings

RQ1. The first research question was: Is there a difference in measured burnout between ED and ICU nurses post-COVID-19 pandemic? The results of the *t*-test for the variable of emotional exhaustion revealed that was no significant difference in emotional exhaustion levels for nurses who worked in the ED compared to nurses who worked in the ICU, $t(102) = -1.272$, $p = .206$. The results of the Mann-Whitney U Test for depersonalization found that there was no significant difference in depersonalization levels for nurses who worked in the ED compared to nurses who worked in the ICU, $U = 1180.50$, $z = -1.114$, $p = .265$. The results of the Mann-Whitney U Test for the variable of personal accomplishment found that there is no significant difference in personal accomplishment levels for nurses who worked in the ED compared to nurses who worked in the ICU, $U = 1076.000$, $z = -1.502$, $p = .133$. Based on the results of the analyses for research question one, the null hypothesis was supported.

RQ2. The second research question asked: Is there a relationship between burnout and stress management actions in ED and ICU nurses? Point biserial correlation analyses were conducted to answer this research question. The results showed that participation in stress management techniques has a significant but weak correlation with depersonalization ($r = .194$, $p = .048$). However, no significant correlation is observed for emotional exhaustion and participation in stress management techniques ($r = .153$, $p = .121$) as well as personal accomplishment and participation in stress management techniques ($r = -.035$, $p = .728$). A Mann-Whitney U test was conducted to compare the mean rank of depersonalization scores. The result showed that there is no significant difference in depersonalization levels for nurses who

participated in stress management techniques compared to nurses who did not, $U = 1037.00$, $z = -1.865$, $p = .062$.

In summary, descriptive statistical analyses revealed that 44 (42.3%) of nurses did not participate in stress management techniques while 60 (57.7%) did participate in stress management techniques. In addition, the findings of this study showed no significant interactions between the effects of work setting and stress management participation on emotional exhaustion, depersonalization, or personal accomplishment.

Discussion of Findings

The findings for the first research question indicated there was no statistical relationship between emotional exhaustion, depersonalization, personal accomplishment, or between the effects of work setting and stress management participation for nurses who worked in the ED compared to nurses who worked in the ICU post-COVID-19 pandemic. The scholarly research indicated nursing professionals working in the ICU and ED have reported similar levels of burnout. However, this finding is not shared by all studies, as Guttormson et al. (2022) found ICU nurses experienced higher levels of burnout compared to those nurses working in other departments. While the scholarly research found nurses working in hospitals experienced increased stress and burnout compared to those working in private sectors, this study indicated that stress levels are not measurably different for nurses if they work in the ICU or the ED (Murat et al., 2021). Research has found that 53% of nurses working in the emergency department reported moderate to severe burnout, contributing factors which included limited social support (Chor et al., 2021). If the findings from this study hold true (Chor et al., 2021), it can be hypothesized that nurses working in the ICU experience similar levels of burnout and lack of social support.

A helpful finding from the literature is that nurses have shared experiencing burnout but retain feelings of happiness towards their job due to helping others (Corlade-Andrei et al., 2022). Nurses may be drawn to the field of healthcare because they are motivated to help others in their time of greatest need, and this motivation may protect against excess stress. During the pandemic, nurses knew their value as frontline workers, and those who worked during the pandemic displayed their commitment to their profession while also exposing themselves to increased risk of disease, burnout, and mental health symptoms (Ahorsu et al., 2022; Jose et al., 2020; Murat et al., 2021). While nurses are now working in a post-pandemic setting, many of the risks and challenges remain. A supportive motivation does not entirely protect against burnout, as over 50% of nurses working in the emergency department show high rates of emotional exhaustion and depersonalization (Jose et al., 2020; Rodriguez et al., 2021). The high rates of emotional exhaustion may also be related to an increased workload due to staffing shortages (Chor et al., 2021; Jose et al., 2020; Lynch et al., 2021).

Scholarly research found that during the pandemic nurses working in the ICU experienced physical and mental health challenges that have impacted their ability to care for patients (Gordon et al., 2021). These challenges include decreased appetite, fatigue, suicidal thoughts, and lack of quality sleep because of heavy workloads requiring witnessing many deaths (Petrișor et al., 2021; Shen et al., 2020). If the findings from this study hold, it can be hypothesized that nurses working in the ED also experience similar levels of physical and mental health challenges. This emphasizes improving the professional quality of life for all nurses no matter what department they work in.

The findings for the second research question indicated there were no statistical interactions between stress management techniques and emotional exhaustion nor personal

accomplishment. However, a significant but weak correlation existed between the use of stress management techniques and depersonalization. These shallow findings generally contradict the study by Alenezi et al. (2019) that found a reduction in burnout symptoms through stress management participation in a burnout intervention. Alenezi et al.'s (2019) burnout intervention was best-evidenced-based, culturally aligned, and utilized breathing exercises, muscle relaxation, social support, music making, and guided imagery. Like the present study, Alenezi et al. (2019) used descriptive statistics and ANOVA with SPSS to investigate the variables of burnout. Nearly 300 nurses participated in this study, which had a control group and a group that experienced burnout intervention. This study emphasizes that stress and burnout are the most challenging aspects of being a nurse and can be addressed through stress management techniques (Alenezi et al., 2019).

The findings for the second research question indicated there were no statistical interactions between stress management techniques and emotional exhaustion nor personal accomplishment. However, a significant but weak correlation existed between the use of stress management techniques and depersonalization. These finding contradict the findings supported by many scholarly studies (Aryankhesal et al., 2019; Barrett & Stewart, 2021; Copeland, 2021; Green & Kinchen, 2021; Hamama et al., 2019; Veiga et al., 2019). The messages from these studies suggest:

- Any amount of stress management intervention (yoga, journaling, breathing, relaxation, exercise, etc.) has benefits for reducing burnout (Copeland, 2021).
- Most burnout interventions include elements of communication skills, social support, psychological interventions, and encouraging participation (Aryankhesal et al., 2019).

- Mindfulness techniques reduce stress and burnout by reducing self-compassion, and negative thinking, and increasing resiliency (Green & Kinchen, 2021).
- Online and virtual tools can be used as stress reduction support (Barrett & Stewart, 2021).
- Practices as simple as psychomotor relaxation can significantly reduce the symptoms that contribute to nursing burnout (Veiga et al., 2019).

It remains unclear why the findings for the second research question in this study found such limited statistical interactions between the effects of stress management participation on emotional exhaustion, depersonalization, or personal accomplishment when considering the weight of the trends in scholarly research. In this study, 44 (42.3%) participants did not participate in stress management techniques and 60 (57.7%) did participate in stress management techniques. Additionally, 51 (49%) worked in the ED and 53 (51%) worked in the ICU. Since 42.3% of participants did not practice stress management, they are unable to contribute to the findings if it impacts the variables of emotional exhaustion, depersonalization, or personal accomplishment. That leaves 60 participants who participated in stress management techniques, which may have been too small a population to accurately weigh the results. The lack of greater statistical significance of stress management techniques on the variables may be related to the small sample size or participant bias.

Limitations of Results and Findings

One limitation of this study is that the variable of gender was not specifically tested. Scholarly research has found female nurses who worked with COVID-19 patients experienced higher levels of stress, depression, and burnout compared to men (Murat et al., 2021; Ocak et al., 2021). This study can neither confirm nor deny this finding as it did not investigate the role of

gender in variables' outcomes. Limitations of this quantitative study include the use of cross-sectional survey, where individuals' perceptions are subject to personal bias and other influences that might affect the responses, they provided to the survey questions. In addition, the small sample size prevents generalizing the findings to the larger population. It is also a limitation to use a single location for gathering participants which may limit the generalizability of the findings.

Summation of Key Findings

Scholarly research has found that nurses working in the emergency department were at higher risk for anxiety and post-traumatic stress disorder that could impact feelings of emotional exhaustion (Alenezi et al., 2021; Rodriguez et al., 2021). If these findings are supported by this study, it can be hypothesized that nurses working in the ICU also experience similar levels of anxiety and post-traumatic stress disorder that could impact feelings of emotional exhaustion. This correlation can inform trauma-based support systems for healthcare providers that raise a new baseline for emotional support and social connectivity in healthcare.

The findings from this study found that there was no statistical difference in emotional exhaustion, depersonalization levels, personal accomplishment, or between the effects of work setting for nurses who worked in the ED compared to nurses who worked in the ICU post-COVID-19 pandemic. However, this finding does not lessen the importance of preventing burnout by addressing the many aspects of the work setting that undermine the longevity and health of nurses. While nurses are working in post-pandemic conditions, the healthcare work setting must prepare itself to manage the next pandemic more successfully. The problems nurses experienced during COVID-19 provide a blueprint for improvements that need to be made in

healthcare culture that may result in improved patient outcomes and improved nursing retention (Falatah, 2021).

The findings for the second research question indicated there were no statistical interactions between stress management techniques and emotional exhaustion nor personal accomplishment. However, a significant but weak correlation existed between the use of stress management techniques and depersonalization. No findings from the literature reviewed gave any indication why stress management techniques should have a measurable impact exclusively on depersonalization. Presumably, by removing stress with specific techniques, nurses were free to interact more personally with their work than nurses who did not adopt stress management techniques. Because stress is so draining, stress management techniques have a high likelihood of giving subjects greater personal resources, like focus and energy, on the tasks they care about. This is one possible interpretation this finding that can be verified by further review of the literature and future research.

Although limited, these findings should not limit the value of utilizing stress management techniques to prevent burnout in nurses. Research has shown that any amount of stress management techniques can go a long way (Copeland, 2021), but this approach has yet to become consistently utilized in healthcare settings. Awareness must continue to grow for the need to support the nursing community working in any department and field with the benefits of stress management.

The lessons learned from the heightened stress of the pandemic period provide lasting implications for ways in which healthcare culture can be improved to support nursing (Rucker et al., 2021). This study found minimal statistical difference in depersonalization levels and stress management techniques and no statistical correlation between stress management techniques

with personal accomplishment and emotional exhaustion. However, these findings do not negate the need to support the prevention of burnout in nursing culture through improved work settings and stress management. Lasting support for nurses of all departments can theoretically reduce burnout, increase retention, improve patient outcomes, and improve nurses' quality of life (Aryankhesal et al., 2019; Barrett & Stewart, 2021; Copeland, 2021; Green & Kinchen, 2021; Hamama et al., 2019; Veiga et al., 2019).

Learning Outcome 1: Ethical Leadership and Management Theory in a Healthcare Organization

Healthcare leaders and organizations can play a significant role in combatting burnout in nursing staff. The findings can be utilized by healthcare leaders and organizations in a few ways. This information can first bring awareness to organizations and leaders regarding burnout following a pandemic. One strategy that healthcare leaders and organizations can focus on to assist with burnout is improving their healthcare readiness programs to incorporate funding and strategies to deal with professionals' burnout during and following a public health emergency. Previous studies showed that major issues increasing burnout during the pandemic included lack of equipment, staffing, and bed shortages. In this healthcare readiness enhancement healthcare leaders and organizations should include budgets and strategies to ensure that professionals are prepared to handle any type of crisis that arises.

Research question 1 determined that there was no significant difference in burnout levels in ED nurses compared to ICU nurses. However, the descriptive statistics revealed that ED and ICU nurses reported moderate to high burnout following the pandemic. Lynch et al (2021) found that the nurse-to-patient ratio increased during COVID-19 causing nurses to report increased burnout. A recommendation for leaders and organizations includes putting a limit on the number

of patients assigned to a nurse with no exceptions so nurses do not feel overwhelmed even during a crisis. Healthcare leaders and organizations should also limit the amount of overtime that is allowed for nurses to encourage more time for self-care. Another recommendation entails shortening nurse's workday from 12-hour shifts to 10-hour shifts. Ornell et al (2020) found that working long hours was identified as a stressor for nurses working during the pandemic.

Research question 2 showed that participation in stress management techniques has a significant but weak correlation with depersonalization and had no significant correlation for emotional exhaustion and personal accomplishment. As noted previously, stress management techniques were found to have a positive impact on nursing professionals in other studies (Alenezi et al., 2019). However, that was not the circumstance in this study. Given that, the researcher would recommend for healthcare organizations to focus on burnout individually versus collectively. The plan would be for organizations to provide training to healthcare leaders so they can work with each nursing professional on their team to explore and identify their burnout and needs so they can provide assistance accordingly. This recommendation was suggested because the nurses may have different causes for their burnout which means their issue may need to be addressed differently.

Recommendations for Further Research

This study found that there was no statistical difference in emotional exhaustion, depersonalization levels, personal accomplishment, or between the effects of work setting and stress management participation for nurses who worked in the ED compared to nurses who worked in the ICU post-COVID-19 pandemic. This finding emphasizes that the stress and demands of working in healthcare are relatively similar whether or not nurses work in the ICU or the ED. This highlights the need for all nurses to be accorded the same degree of support to

manage the risk of burnout, depersonalization, stress, and exhaustion. Research has focused on what type of nurse needs the most support (Murat et al., 2021) but this study finds the need for more research on how to support all nurses holistically regardless of where they practice.

While researchers have found that nurses working in the emergency department were at higher risk for anxiety and post-traumatic stress disorder and emotional exhaustion, this study indicated no measurable difference from nurses who work in the ED or the ICU (Alenezi et al., 2021; Rodriguez et al., 2021). This leads to the need for further research if the findings of this study hold in many healthcare contexts. More research is needed on the mental health, physical health, and perspectives of nurses working in many different departments of healthcare to determine if their needs are differentiated by where they serve.

Additional studies performed during the pandemic on the emergency department nursing population found burnout was associated with job dissatisfaction, increased conflict, and nervousness (Dixon et al., 2021; Manchana, 2022). If these findings are aligned with the findings from this study, it can be hypothesized that nurses working in the ICU also experience similar levels of burnout in the domains of job dissatisfaction, increased conflict, and nervousness. However, nurses are often able to overcome these pressures by applying optimism rooted in positive feelings regarding the future of their work (Corlade-Andrei et al., 2022). As such, it would be helpful to study what contextual factors are present in nursing populations that successfully maintain optimism. These contextual factors may inform a best-evidenced-based approach to sustaining improved healthcare culture for frontline workers.

While this study suggests homogeneity between nursing populations working in different departments, the literature suggests that nurses serving during the COVID-19 pandemic were at a higher risk of mental health symptoms including depression, anxiety, and PTSD when compared

to doctors (Da Silva & Barbosa, 2021). This finding presents the opportunity to research this claim in greater depth. If nurses are found to consistently be experiencing higher impacts of stress in their work compared to doctors the context that supports this may need to be adjusted for the longevity of the valuable profession.

The findings for the second research question indicated no statistical interactions between the effects of stress management participation on emotional exhaustion or personal accomplishment but some minor correlation with depersonalization. These results contradicted the majority of the findings from the literature review. Many elements related to work setting were found to impact nurses' rate of emotional exhaustion, depersonalization, or personal accomplishment. These work-setting elements included staff shortages, workload, lack of PPE, lack of social support, and fear of disease (Ahorsu et al., 2022; Bruyneel et al., 2021; Chor et al., 2021; Guttormson et al., 2022; Lynch et al., 2021). This contradiction in findings indicates the need for more precise research on the relationship between work setting and emotional exhaustion, depersonalization, or personal accomplishment for all nurses. Also, further attention on why depersonalization emerged as the only significant outcome for stress-management techniques in nurses is warranted based on these findings.

Aryankhesal et al. (2019) emphasized that burnout is a complicated phenomenon, and that a combination of interventions should be used to treat/prevent it. More research is needed on what contextual factors influence the choice of which interventions support the best outcomes in nursing populations. Chesak et al. (2019) found that the majority of stress management interventions are geared towards supporting individuals rather than supporting the overall work setting or culture. In addition, in a systematic review, Chesak et al. (2019) found a lack of methodological rigor in the studies investigating stress management interventions. A lack of

randomized controlled trials, studies only moderating reaching the best-evidenced based standards of design, too small a use of common measurement tools across studies, and too few studies analyzing organizational strategies to reduce nurses' stress found (Chesak et al., 2019). As such, greater methodological rigor and design accountability is needed to support holistic nursing support.

Practice Implications

This study found that emotional exhaustion was high in both group of nurses but there was no significant difference in emotional exhaustion levels for nurses who worked in the ED compared to nurses who worked in the ICU. Additionally, findings indicated there were no statistical interactions between stress management techniques and emotional exhaustion or personal accomplishment. While these findings contradict some of the research (Alenezi et al., 2019), they may also highlight other strategies that may be utilized including organizational support, employee assistance programs, and burnout education along with stress management to help reduce burnout in nursing professionals. Other factors may impact nursing burnout than the stress factors studied herein. This finding has the practice implication of encouraging researchers to investigate new methods for supporting the nursing population. The findings indicate that nursing professionals in the ED and ICU share similar emotional exhaustion scores and an implication for this finding is to explore the root causes of the emotional distress and focus on eliminating the issue. While stress management and emotional exhaustion did not have a significant interaction within this study a practical implication for organizations should be to provide mandatory time off for professionals to engage in self-care.

This study found that participation in stress management techniques had a significant but weak correlation with depersonalization. This finding contradicts the findings supported by many

scholarly studies (Aryankhesal et al., 2019; Barrett & Stewart, 2021; Copeland, 2021; Green & Kinchen, 2021; Hamama et al., 2019; Veiga et al., 2019). A practice implication for this finding is that to be on the safe side, nurses should be provided with stress management technique training and education as a form of prevention. As this study revealed, all nurses may not need this support, but providing it will act as a form of due diligence. Providing training and education on stress management may go a long way toward improving self-awareness of the job risks in the nursing population.

Chapter Summary

The purpose of this quantitative-based cross-sectional research study was to identify the current state of nursing professionals' mental health after the onset of COVID-19. This study sought to determine if there was a relationship between burnout scores in nursing professionals working in the emergency department (ED) and intensive care unit (ICU). Supporting this focus, associations between nursing professionals and their participation in stress management techniques were investigated using the Maslach Burnout Inventory scale (MBI)- Human Services Survey for Medical Personnel.

This study found no statistical difference in emotional exhaustion, depersonalization levels, personal accomplishment, or between the effects of work setting for nurses who worked in the ED compared to nurses who worked in the ICU post-COVID-19 pandemic regardless of work setting or participation in stress management techniques. The strongest contribution from this study may be that nurses' experience of emotional exhaustion, depersonalization, or personal accomplishment may not be very different whether or not they work in the ICU or ED, and whether or not they practice stress management or are influenced by work setting. Nurses may

experience similar challenges no matter what setting they work in and applying best-evidenced-based methods supporting nursing outcomes is valuable regardless of setting.

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Appendix A: Centiment Permission

To Whom It May Concern,

A faculty member and/or student at your institution wishes to conduct a survey using Centiment LLC in order to support their research. This letter is being sent to you because the student has indicated that they need a letter from Centiment LLC granting them permission to use our services to support their research. Please accept this letter as evidence of such permission.

Students are allowed to conduct research via Centiment's platform as long as they abide by our Terms of Use.

Centiment LLC is a data collection platform through which researchers can connect with respondents in order to deploy surveys through an online interface. We work with researchers across all industries, including academia, to provide top quality data for a myriad of purposes including students using our online tools to conduct academic research.

If you have any questions about this letter, please don't hesitate to reach out to support@centiment.co with the name of the student who requested to use our services.

Sincerely,

Centiment LLC

Appendix B: Mind Garden, Inc Permission for MBI Scale

mind garden

www.mindgarden.com

To Whom It May Concern,

The above-named person has made a license purchase from Mind Garden, Inc. and has permission to administer the following copyrighted instrument up to that quantity purchased:

Maslach Burnout Inventory forms: Human Services Survey, Human Services Survey for Medical Personnel, Educators Survey, General Survey, or General Survey for Students.

The three sample items only from this instrument as specified below may be included in your thesis or dissertation. Any other use must receive prior written permission from Mind Garden. The entire instrument form may not be included or reproduced at any time in any other published material. Please understand that disclosing more than we have authorized will compromise the integrity and value of the test.

Citation of the instrument must include the applicable copyright statement listed below.
Sample Items:

MBI - Human Services Survey - MBI-HSS:
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 recipients.

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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.

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MBI - Educators Survey - MBI-ES:
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 students.

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Appendix C: Informed Consent

Nurses' burnout post covid: A quantitative study

Consent to Participate in a Research Study

You are invited to take part in a study that identify levels of burnout in nursing professionals working in the Intensive Care Unit (ICU) and Emergency Department (ED) of a hospital and its relation to participation in stress management techniques. If you volunteer to participate in the research study, you will be asked to complete a survey in which you answer 24 questions about burnout and stress management participation. We expect this survey to take about 5-7 minutes and require you to complete all questions to receive compensation.

Study investigators will not be able to link your survey responses to you. While your responses are completely anonymous to the research team, Centiment will be made aware of your participation via your Centiment ID so that you receive compensation.

If you are 18 years of age or older, understand the statements above, and consent to participate in the study, click on the "I Agree" button to begin the survey. If you do not wish to participate in this study, please close your browser window now.

Appendix D: Survey

2

Which department of the hospital do you currently work in?

Intensive Care Unit (ICU)
Emergency Department (ED)

3

I feel emotionally drained from my work

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Everyday

4

I feel used up at the end of the workday

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Everyday

5

I feel fatigued when I get up in the morning and have to face another day on the job

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Everyday

6

I can easily understand how my patients feel about things

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

7

I feel I treat some patients as if they were impersonal objects

Never
A few times a year or less

Once a month or less
A few times a month
Once a week
A few times a week
Every day

8

Working with people all day is really a strain for me

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

9

I deal very effectively with the problems of my patients

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

10

I feel burned out from my work

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

11

I feel I'm positively influencing other people's lives through my work

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

12

I've become more callous toward people since I took this job

Never
A few times a year or less
Once a month or less

A few times a month
Once a week
A few times a week
Every day

13

I worry that this job is hardening me emotionally

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

14

I feel very energetic

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

15

I feel frustrated by my job

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

16

I feel I'm working too hard on my job

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

17

I don't really care what happens to some patients

Never
A few times a year or less
Once a month or less
A few times a month

Once a week
A few times a week
Every day

18

Working with people directly puts too much stress on me

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

19

I can easily create a relaxed atmosphere with my patients

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

20

I feel exhilarated after working closely with my patients

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

21

I have accomplished many worthwhile things in this job

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

22

I feel like I'm at the end of my rope

Never
A few times a year or less
Once a month or less
A few times a month
Once a week

A few times a week
Every day

23

In my work, I deal with emotional problems very calmly

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

24

I feel patients blame me for some of their problems

Never
A few times a year or less
Once a month or less
A few times a month
Once a week
A few times a week
Every day

25

Do you participate in stress management techniques?

Yes
No