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# A Mixed Methods Approach to Exploring Nurses' COVID-19 Experiences and Identifying Effective Coping Strategies for Common Nurse Job Strains

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# A MIXED METHODS APPROACH TO EXPLORING NURSES' COVID-19 EXPERIENCES AND IDENTIFYING EFFECTIVE COPING STRATEGIES FOR COMMON NURSE JOB STRAINS

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Natalie Armenteros

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To: Dean Michael R. Heithaus
College of Arts, Sciences and Education

This dissertation, written by Natalie Armenteros, and entitled A Mixed Methods Approach to Exploring Nurses' COVID-19 Experiences and Identifying Effective Coping Strategies for Common Nurse Job Strains, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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Date of Defense: March 31, 2022

The dissertation of Natalie Armenteros is approved.

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and Dean of the University Graduate School

Florida International University, 2022

## DEDICATION

This dissertation is dedicated to the nurses, and more generally, healthcare workers, that have fought tirelessly for two years on the frontlines of the COVID-19 pandemic. It is difficult to put into words how moving your stories were, and how grateful I am that you shared them with me in the hopes that we could, together, champion change for the healthcare field. Thank you for everything. With this dissertation, your voices and stories do not go untold, and I hope that this helps to shed a light on not just the inadequacies that have been exacerbated by the pandemic, but also the strength, courage, and resiliency found in each one of you.

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ABSTRACT OF THE DISSERTATION

# A MIXED METHODS APPROACH TO EXPLORING NURSES' COVID-19 EXPERIENCES AND IDENTIFYING EFFECTIVE COPING STRATEGIES FOR COMMON NURSE JOB STRAINS

by

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Miami, Florida

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Given the substantial range of stressors exacerbated by COVID-19 and their detrimental effects on healthcare workers, researchers have called for a more thorough investigation into how COVID-19 has impacted the health and well-being of healthcare workers. With nurses working on the frontlines of the COVID-19 pandemic, there is a sense of urgency to empirically gather information on these experiences, particularly for those working in epicenters of the outbreak. The primary goal of this collected papers dissertation is to help inform organizational policies and practices in the healthcare industry related to nurses' health and well-being. As such, this dissertation utilized a mixed-method design to 1) document and describe South Florida nurses' lived experiences of working during the COVID-19 pandemic and 2) identify effective coping strategies for STS, burnout, and compassion fatigue, strains that nurses are especially vulnerable to and may be exacerbated by the challenges associated with the current pandemic. The first study in this dissertation used a qualitative design and thematic analysis to identify seven themes

associated with understanding nurses' COVID-19-related workplace experiences: challenges related to working conditions, changes to quality of patient care, the impact of COVID-19 on physical and mental health, the nursing shortage, post-traumatic growth, leveraging personal resources to cope with workplace experiences, and strategies for retaining the nurse workforce and preparing for future health crises. The second study in this dissertation used meta-analytical techniques to identify coping strategies with the strongest empirical support for reducing three strain outcomes (STS, burnout, and compassion fatigue) and found that social support had the strongest empirical support for reducing burnout, while self-care had the strongest empirical support for reducing compassion fatigue. Due to the limited number of studies and exclusion criteria, STS was not meta-analyzed. Findings from both studies have important implications for how healthcare organizations create healthy workplaces for nurses and facilitate employee well-being.

TABLE OF CONTENTS

LIST OF TABLES

# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| CIs | Confidence Intervals |
| CVs | Credibility Intervals |
| CWB | Counterproductive Work Behavior |
| ICU | Intensive Care Unit |
| JD-R | Job Demands-Resources |
| OCB | Organizational Citizenship Behavior |
| PPE | Personal Protective Equipment |
| SARS | Severe Acute Respiratory Syndrome |
| SIOP | Society for Industrial and Organizational Psychology |
| STS | Secondary Traumatic Stress |

# COLLECTED PAPERS INTRODUCTION

This collected papers dissertation investigates the lived experiences of nurses on the frontlines of the COVID-19 pandemic using a qualitative study design and seeks to assess the effectiveness of various coping strategies used for managing secondary traumatic stress (STS), burnout, and compassion fatigue, three strains exacerbated by the pandemic, in nurses through a meta-analysis. The background to the problem, the problem statement, supporting empirical research, and purpose of the collected papers are discussed first. Then, an overview of the collected papers dissertation is described, and last, each proposed collected paper is presented in more detail.

## Background to the Problem

For decades, researchers and organizations alike have examined the impact of work- or job-related stress on employee health and well-being (Nixon et al., 2011; Sojo et al., 2015). Organizations are increasingly recognizing the importance of employee well-being in attaining organizational goals and, as such, an increased emphasis is being placed on creating work environments conducive to employee health and well-being (Richardson, 2017). In fact, the Society for Industrial and Organizational Psychology (SIOP) recently listed employee health, well-being, wellness, and safety as the #2 workplace trend in 2021 (Stark, 2021). In a survey conducted by the American Nurses Association (2011), acute and chronic effects of stress and overwork were reported by 74% of nurses as the top safety and health concern. Indeed, nursing is widely recognized as a particularly stressful occupation (D. Johnston et al., 2016; Sharma et al., 2014), given frequent exposure to patient-related stressors such as suffering, morbidity, vicarious trauma, challenges associated with caring for difficult patients (Hamilton et al., 2016;

McCloskey & Taggart, 2010), and job-related stressors such as limited resources (Sinclair et al., 2017). Nurses comprise the largest section of the health profession, making them a critical part of the healthcare system (Haddad et al., 2020). However, turnover is a major concern (Currie & Hill, 2012) and the healthcare industry faces a nursing shortage within the next decade (Rosseter, 2019) so it is critical for healthcare organizations to identify effective ways of retaining their workforce, particularly by prioritizing nurses' health and well-being at work.

## The Problem Statement

Given the substantial range of stressors created and exacerbated by COVID-19 and their effects on healthcare workers, researchers have called for a more thorough investigation into the effects of COVID-19 on the mental health and well-being of these employees (Alharbi et al., 2020a, 2020b). The stress placed on healthcare workers can result in severe emotional and psychological distress, particularly for those witnessing prolonged suffering of patients, like nurses in intensive or emergency care units (Alharbi et al., 2020a, 2020b). Furthermore, researchers have expressed concerns about the potential COVID-19 has to contribute to compassion fatigue and vicarious traumatization in critical care nurses (Alharbi et al., 2020b). Research in the nursing literature has previously established that healthcare professionals are vulnerable to STS and compassion fatigue, especially those who must frequently confront large numbers of dying patients or suffering (Alharbi et al., 2020a; Wallace et al., 2020), as is often the case for patients with COVID-19. Thus, there is a need to not only understand how working on the frontlines of this pandemic has shaped nurses' workplace, and even,

personal experiences, but also to identify effective strategies for coping with such psychological distress.

Thus, the current collected papers dissertation seeks to contribute to the emerging empirical literature on COVID-19's impact on frontline nurses and provide actionable strategies at individual and organizational levels for coping with distress, in addition to helping inform health and well-being initiatives aimed at the nursing population. To do so, this collected papers dissertation first utilizes a qualitative study design to describe nurses' experiences of working during the COVID-19 pandemic, with a focus on nurses working in one of the epicenters during 2020 and 2021: South Florida. Coupled with findings from this first study, past research can help to inform the decisions healthcare organizations make today and serve as a guideline for solving current workplace challenges. As such, the second study in this dissertation uses meta-analytical techniques to identify coping strategies with the strongest empirical support for managing STS, burnout, and compassion fatigue in nurses on a global scale.

## The Importance of a Healthy Workforce

While there are various non-work-related factors that contribute to negative health outcomes, employees spend more than 30% of their lives at work (Conrad, 1988), and the consensus in the occupational stress and health literature is clear: work can contribute to poor health and reduced well-being among employees (Caicedo et al., 2010). Work-related stress can have profound consequences for both employees and their respective organizations. For instance, employees with poor health and reduced well-being are less productive, make poor decisions on the job, and are more likely to be absent from work (Boyd, 1997). A telephone survey of employees working in the United States found that

health-related lost productive time cost organizations $225.7 billion per year (Stewart et al., 2003). Further, the cost to an organization for losing an employee can range from 1.5 to 2.5 times the employee's annual salary (Cascio, 2003; Page & Vella-Brodrick, 2009). Researchers have also found a negative relationship between employee well-being and turnover (Wright & Bonett, 2007), one of the primary concerns for many organizations (Boswell et al., 2008). Overall, organizations have been estimated to lose $300 billion each year due to absenteeism, turnover, workplace stress, and related healthcare costs (Stambor, 2006). Hence, organizations can save a significant amount of money in the long run by taking a preventative approach to well-being and creating healthy workplaces.

Healthiness is not simply defined by absence of illness or injury, but rather, the presence of positive emotions and experiences as well (Parker et al., 2003). As Parker et al. (2003) suggest, for instance, workplace safety does not only refer to avoidance of accidents and injuries on the job, but also adherence to safety guidelines and participation in safety trainings. The positive psychology literature examines ways in which individuals can experience positive emotions in their daily lives, and organizations can play a role in this process by creating workplaces that foster healthy employees (Envick, 2012). Research suggests that employees' experiences of positive emotions can greatly benefit organizations as well, given its impact on job performance (Luthans et al., 2008), as positive emotions allow for more optimal states of cognition (Fredrickson, 2001). Happy employees, that is, those who experience positive emotions frequently, have more positive supervisory performance ratings, handle managerial jobs better, show increased levels of performance and productivity, are less likely to engage in counterproductive

work behaviors (CWBs), and are at lower risk for experiencing burnout (Lyubomirsky et al., 2005). In fact, happy employees engage in more organizational citizenship behaviors (OCBs) and are less likely to have conflict with others at work (Lyubomirsky et al., 2005). Investing in employee wellness can lead to many other organizational benefits, including reduced sickness, fewer work-related accidents, higher levels of productivity, higher levels of organizational commitment, the development of resilience, lower levels of turnover, and improved company reputation (Bevan, 2010).

## Job Stressors and Associated Strains

Stress is a complex process that involves an appraisal of the situation, which, if perceived as threatening, produces a stress response that can have consequences for one's health and well-being (Gatchel & Kishino, 2012). Responses to stress can initiate discomfort, which can motivate an individual to address the source of stress. However, if an individual is unable to effectively cope or remedy the stressor, a strain response can manifest itself physically, psychologically, behaviorally, and/or emotionally (Gatchel & Kishino, 2012; Jex & Beehr, 1991; Spector, 1998). Moreover, the frequency and intensity of the stressor can create maladaptive stress responses if strong and persistent, although individual differences also play a role in the experience of stress (Gatchel & Kishino, 2012; Motowidlo et al., 1986).

Extensive research on occupational stress has led to a strong understanding of the work stress process and the ways in which stressors can impact employees across job contexts (Jex & Beehr, 1991; Lin, 2003). As businesses continue to evolve, employees' occupational health and well-being becomes ever more susceptible to workplace stress (C. Liu et al., 2007). In public organizations, for example, jobs are increasingly placing

high demands on employees relative to what they are offered in return (Audenaert et al., 2019; B. E. Wright, 2004), which can result in stress (Baum et al., 2007). Job stressors include anything in the work environment that requires cognitive, emotional, or physical effort over an extended period (De Jonge & Dormann, 2006). This includes factors such as job demands, role stressors, job insecurity, perceived control, poor leadership, interpersonal conflict, and organizational constraints, to name a few (Nixon et al., 2011; Sparks et al., 2001).

Job stressors have several implications for employee job attitudes and performance and can result in various detrimental strains for both the organization and its employees. In the past two decades, technostress has emerged as a type of job stressor, given that employees can now stay connected to work unremittingly and are oftentimes expected to do so (Richardson, 2017). Technostress has been associated with lower levels of productivity, job satisfaction, and organizational commitment (Ragu-Nathan et al., 2008; Tarafdar et al., 2007). Organizational constraints have been associated with several variables, including frustration, negative emotion, anxiety, CWBs, absenteeism, intention to quit, and withdrawal (Pindek & Spector, 2016). Role stressors, specifically role ambiguity and role overload, can negatively impact OCBs (Eatough et al., 2011) and job stressors can interfere with safety performance. For employees working under stressful conditions, the injury rates can be up to four times higher (J. J. Johnston, 1995), as employees may not be able to concentrate well, are easily distracted, and tend to be more emotionally exhausted (Fogarty & Mckeon, 2006; Halbesleben, 2010).

It is well known that job stressors can also result in an increased risk for a multitude of health problems (Karasek & Theorell, 1990; S. J. Linton, 2001; Pindek &

Spector, 2016). For instance, job insecurity is associated with deteriorated health, and employees who have high levels of job insecurity are 3.4 times more likely to avoid going to the doctor for fear of missing work and the associated consequences of being absent (Domenighetti et al., 2000). In countries like the U.S., the number of hours worked has been on the rise for years (Bosch, 1999; Johnson & Lipscomb, 2006), and according to a Gallup poll, employees work an average of 47 hours a week, adding close to one extra workday to every week (Saad, 2014). These extended work shifts can lead to increased fatigue (Poissonnet & Véron, 2000) and poor lifestyle habits, like smoking, poor diets, and lack of exercise (Maruyama et al., 1995). Telepressure, a preoccupation with immediate responding to work-related messages, is a newer type of job stressor that has emerged alongside advances in technology, and has been found to impact employees' physical and psychological health (Barber & Santuzzi, 2015). Destructive leadership is also associated with poor mental health, including stress and burnout, decreased well-being and psychological functioning, and increased frequency of affective symptoms (Montano et al., 2017). Furthermore, interpersonal conflict, organizational constraints, and workload are all associated with physical symptoms, including backaches, headaches, eye strain, sleep disturbances, dizziness, fatigue, appetite, and gastrointestinal problems (Nixon et al., 2011). Perceived control at work has a more nuanced relationship with employee health and well-being, given that a lack of control could be stressful to employees who desire autonomy, but not to employees who are not seeking more control in their role (Sparks et al., 2001). Suffice to say, employees who encounter job stressors are likely to experience strains as a result, unless they have adequate resources in their environment to help mitigate the negative consequences of such strains.

While several theories exist that can be used as a framework for the study of occupational stress, the Job Demands-Resources (JD-R) model is particularly useful in understanding the expected levels of employee stress resulting from varying workplace conditions (Bakker & Demerouti, 2007; Ganster & Rosen, 2013) and has been applied in organizations to inform psychosocial education policies, strategies, and risk assessments (Bakker & Demerouti, 2017). According to the JD-R, employee attitudes and performance outcomes are expected to diminish when employees face prolonged exposure to workplace demands with inadequate job resources, thereby experiencing chronic work-related strain (Bakker & Demerouti, 2007). For example, within the context of safety, risks and hazards as well as physical demands are related to burnout and poorer safety outcomes (Nahrgang et al., 2011). If employees have access to adequate resources, the impact of job demands on negative experiences are diminished (Bakker et al., 2005). One of the propositions of JD-R theory is that personal resources, such as optimism and self-efficacy, can serve a similar role as job resources. In other words, personal and job resources work together to reduce the strains that often result from job demands (Bakker & Demerouti, 2017). Both types of resources can serve as motivation for employees, and ultimately help to improve and facilitate job performance (Bakker & Demerouti, 2017).

**Job Stressors in Nursing**

While some stressors are common to all jobs, such as interpersonal conflict and work overload, perceived stressors may also differ depending on the context of the job (Narayanan et al., 1999). That is, experiencing patient deaths, for example, may be a significant stressor for nurses, but not a significant stressor for those working in other

professions. Several studies have examined the relationship between various work stressors and strains in nurses. Sources of stress in nurses include the length and intensity of work, role ambiguity, low levels of control, inexperienced or negligent staff members, interpersonal conflicts with physicians or other staff members, bureaucracy, verbal and physical abuse, dealing with patient suffering or death, insufficient or inadequate resources, and changes in the management of health services (Callaghan et al., 2000; Currid, 2008; Farrington, 1997; Motowidlo et al., 1986; Muncer et al., 2001; Prosser et al., 1997; Silén et al., 2008; Tyler & Cushway, 1992, 1995; Tyler & Ellison, 1994). Unfortunately, medical professionals are less likely than employees in other professions to acknowledge the impact of stress (Sexton et al., 2000).

Within the nursing profession exist a multitude of specialties including, but not limited to, geriatrics, hospice care, palliative care, perinatal, trauma, psychiatric, oncology, forensic, emergency room, or travel nursing ("Nursing Careers & Specialties for RNs," 2020). Depending on the specialization, the frequency and intensity of stressors may vary, and consequently, so do strain levels (Sherman, 2004). For example, nurses working in emergency departments are frequently exposed to high-intensity situations, such as high patient acuity, workplace violence, trauma, and death (Dominguez-Gomez & Rutledge, 2009). In fact, emergency department nurses indicate dealing with patients' pain and suffering is one of the most common causes of stress (Adeb-Saeedi, 2002). Another common stressor for emergency department nurses is verbal and physical aggression, given the nature of the work environment and presence of patients' family members (Adeb-Saeedi, 2002). To contrast, research has found that palliative care nurses' stressors are related to workload, inadequate resources, poor team

communication, role conflict, and the work environment (L. Peters et al., 2012). Certainly, overlap exists in the types of stressors different nursing units encounter, such as patient death and dying in emergency, hospice care, palliative care, and oncology units (Adeb-Saeedi, 2002; Naholi et al., 2015; Peters et al., 2012).

### *Disease Outbreaks: A Unique Nursing Stressor*

One type of stressor particularly unique to the nursing profession in terms of its impact is working through pandemics, where the expectation is to work directly with infected patients. Epidemics and pandemics have occurred over the course of several years, including Severe Acute Respiratory Syndrome (SARS), the Ebola virus, the Zika virus, and the H1N1/09 virus (World Health Organization, 2020). When these epidemics or pandemics occur, researchers have sought to understand how healthcare workers are impacted by the working conditions created under these circumstances (Shorey & Chan, 2020) and have learned a great deal from past outbreaks. During these periods of time, some of the more commonly experienced nursing stressors are exacerbated, and new ones may arise. Examples of stressors that became more intense during the H1N1 outbreak, for example, included staffing levels and heavy workloads, whereby healthcare workers, who are spread thin under normal circumstances, experienced a surplus of high acuity patients, while no changes to staffing levels were made to help meet the new demands (Corley et al., 2010).

In previous disease outbreaks, researchers have found that nurses and midwives faced several challenges, including public stigma and mistrust from the public who thought they were further transmitting the virus to the general population, being evicted from rented homes, inadequate personal protective equipment (PPE), lack of knowledge

about how to handle the virus, limitations to what the nurse-patient relationship could entail, and ethical dilemmas related to patient treatment and complying with safety guidelines (Erland & Dahl, 2017; Jones et al., 2017; Kollie et al., 2017). Similar challenges have been identified in other studies examining the impact of various disease outbreaks on nurses' working experiences (Honey & Wang, 2013; Ki & Maria, 2013; E. L. Y. Wong et al., 2012).

**Job Strains in Nursing**

The strain experienced by nurses as a result of job stressors can manifest itself in several ways, including experiences of burnout, fatigue, traumatic stress, STS, and compassion fatigue (Meadors et al., 2010; Ratrout & Hamdan-Mansour, 2017; Sinclair et al., 2017). STS is defined as the stress that ensues from helping or wanting to help someone who is suffering or traumatized (Figley, 1995). Burnout refers to an emotional reaction that results from prolonged exposure to work-related stressors (Maslach et al., 2001; Maslach & Jackson, 1981). Compassion fatigue is an outcome associated with caring for traumatized individuals and is defined as a work-related stress response that occurs in healthcare providers with a high orientation towards empathy (Hunsaker et al., 2015). It is associated with lower levels of self-care (Alkema et al., 2008), irritability, reduced standards of care, and plans for early retirement in healthcare providers (Cavanagh et al., 2019; Dasan et al., 2015). Relatedly, burnout is associated with poor quality of care and decreased safety in healthcare professionals (Salyers et al., 2017), as well as turnover (Leiter & Maslach, 2009) and hand hygiene compliance (Manomenidis et al., 2019) in nurses. Other strains include decreased patient safety, making errors on the job, psychosomatic disorders, drug and alcohol abuse, absenteeism, tardiness,

turnover, workplace injuries, and poor mental health (Berland et al., 2008; Dugan et al., 1996; Elfering et al., 2006; O'Brien-Pallas et al., 2004). The job stressors and associated strains that nurses experience, as well as the demanding nature of the profession, have implications for nurses' decisions to change careers (Collins et al., 2000; Strachota et al., 2003; Zeytinoglu et al., 2006) and the efficacy of treating patients (Muncer et al., 2001).

In a meta-synthesis of previous disease outbreaks and their impact on midwives and nurses (Shorey & Chan, 2020), researchers found that working under these circumstances led to negative psychological responses, including fear of contracting the virus and infecting loved ones, helplessness, and frustration associated with not being able to help patients in the ways they wanted due to safety guidelines, as well as feeling overwhelmed and afraid to go to work (Erland & Dahl, 2017; Jones et al., 2017; Kollie et al., 2017). During the H1N1 influenza outbreak, nurses were found to have low compliance rates with the use of PPE and lower vaccination rates compared to physicians (Mitchell et al., 2012). When the SARS outbreak occurred, high levels of posttraumatic stress were prevalent in nurses (P. Wu et al., 2009) and many considered resigning or looking for other jobs (Shiao et al., 2007).

The latest pandemic, COVID-19, has put nurses under tremendous stress, and many of these previously studied stressors and strains are reemerging. Among these, nurses are facing evictions from their rented homes as a result of working in close contact with COVID-19 patients (D. Ryan, 2020; Shugerman, 2020), fear of contracting the virus and spreading it to loved ones (Karimi et al., 2020), and working with inadequate or limited resources (Maben & Bridges, 2020). The consequences of being a nurse during this pandemic are alarming, and prior research has consistently warned about the impact

occupational stressors can have on health and well-being for those who dedicate and risk their lives to healing others (Gelsema et al., 2006). To that end, research aimed at not only understanding, but describing, the lived experiences of nurses working during the COVID-19 pandemic is critical to informing and advancing workplace health and well-being initiatives for these frontline workers.

## Stress Management Strategies and Interventions

In a survey conducted by the American Psychological Association, over 60% of respondents reported having the necessary resources to manage their work stress, suggesting that not all employees have what they need to cope (Tetrick & Winslow, 2015). However, the negative impact of stressors can be mitigated at both individual and organizational levels. At the individual level, employees can utilize coping strategies to deal with stressors at work. Coping strategies are behavioral and psychological efforts to try to eliminate or reduce stressors or their impact (Mazzola et al., 2011). In response to workplace stressors, qualitative research has revealed that common coping strategies are talking to others about the stressor, preventing the stressor from reoccurring, and withdrawing and focusing on non-work-related activities (Mazzola et al., 2011). At the organizational level, companies have started implementing stress management interventions and employee wellness programs to help improve employee health and well-being (Parks & Steelman, 2008; Richardson & Rothstein, 2008). In fact, a Workplace Wellness Programs report found that about half of U.S. employers offer some type of wellness promotion initiative to employees (Mattke et al., 2013). These wellness programs are organizational initiatives aimed at improving employee health and well-being and are designed to reduce illness and associated healthcare costs (Goetzel et al.,

2014). A meta-analysis on the effectiveness of such programs found that participation is associated with reduced absenteeism and increased job satisfaction (Parks & Steelman, 2008).

In healthcare, efforts have been aimed at holistic interventions to reduce stress, such as mindfulness and meditation training (Asuero et al., 2014; Moody et al., 2013), psychosocial skills training (Mealer et al., 2014), physical activity training (Tucker et al., 2011), communication training (R. Wei et al., 2017), and other interventions aimed at treating the individual, the work environment, or a combination of the two (Günüşen & Üstün, 2010; Jeon et al., 2012; Yamagishi et al., 2008). Resilience is a common trait examined in the nursing literature as a coping strategy, as research suggests that it is a malleable trait and allows individuals to bounce back from adversity (Hart et al., 2014; Lanz & Bruk-Lee, 2017). As such, many stress intervention strategies are aimed at building resiliency in nurses (Magtibay et al., 2017; Mealer et al., 2014). Mindfulness and meditation trainings are other common stress management interventions used in nursing (Mackenzie et al., 2006; Pipe et al., 2009), as they are effective in treating several chronic disorders and general mental and physical health (Grossman et al., 2004). Although many of these studies have found support for the efficacy of various stress management interventions for nurses, studies are often limited by sample sizes, making generalizability difficult to achieve (Chesak et al., 2019). More research is needed to determine the extent to which these various coping strategies are, in fact, effective in reducing strains in nurses.

## Purpose of Collected Papers

This dissertation utilizes a mixed-method design to document and describe the

lived experiences of nurses working on the frontlines of the COVID-19 pandemic and identify coping strategies that are effective in reducing STS, burnout, and compassion fatigue, strains that may be exacerbated in nurses by the challenges associated with working during this pandemic. It is critical that researchers empirically gather information on what this experience has been like, particularly for those working in epicenters of the outbreak, where hospitals have been overwhelmed and nurses have had to adjust to daily encounters with various job stressors. Hence, study one employs a qualitative design with individual interviews to understand this mass casualty event from nurses' perspectives using thematic analysis.

While research has examined a plethora of coping strategies, ranging from personal factors such as resiliency to organizational-level factors such as managing the number of hours worked per week, that can help nurses manage STS, burnout, and compassion fatigue, a more critical, robust, and quantitative analysis is still needed to identify which strategies have the strongest empirical support to enable organizations to focus their efforts on and align their policies and procedures with. In study two of this dissertation, a meta-analysis was used to assess the average magnitude of the relationship between these various coping strategies and burnout and compassion fatigue.

## Overview of Collected Papers

This dissertation will produce two collected papers, each tackling a different critical aspect of working as a nurse. That is, the first study seeks to understand the experiences of nurses working on the frontlines of the COVID-19 pandemic, and the second study seeks to identify effective coping strategies for reducing STS, burnout, and compassion fatigue in nurses, outcomes that are often result from traumatic events

experienced on the job. This research helps provide actionable recommendations to healthcare organizations and their employees related to employee health and well-being. The overall goal is to contribute to the emerging empirical literature on the impact of COVID-19 on healthcare workers to better understand what healthcare organizations can do to promote wellness in the workplace and allow nurses to perform their jobs safely and effectively, while also providing actionable employee health and well-being strategies for nurses suffering from psychological distress that is informed from a body of established research.

## Collected Paper 1

### *Purpose*

Study one is a qualitative examination and documentation of nurses' lived experiences on the frontlines of the COVID-19 pandemic. Specifically, the study seeks to describe nurses' workplace and personal experiences during this health crisis and identify what coping mechanisms and resources have been leveraged to provide healthcare organizations with actionable recommendations for preparing their workforce for future disasters and, more generally, creating workplace environments that foster employee wellness.

### *Method*

Twenty nurses working directly with COVID-19 patients in South Florida were recruited to participate in the study. Specifically, only nurses working in emergency room, medical or surgical intensive care units (ICUs), or COVID-specific units were eligible for participation. Individual interviews were conducted using a video conferencing application (i.e., Zoom) and consisted of semi-structured, open-ended

questions designed to gather specific information regarding their workplace experiences during the COVID-19 pandemic. All participants were compensated with $75 Amazon e-gift cards.

### *Data Analysis*

Interviews were first recorded and transcribed, then NVivo 12 software was used to analyze the data using an inductive approach to reflexive thematic analysis as proposed by Braun and Clarke (2012). Closed-ended questions (i.e., nursing characteristics) were analyzed using descriptive statistics in SPSS.

### *Publication Submission and Formatting*

The journal for future manuscript submission will be determined later, but all sections are written in accordance with the APA Publication Manual (7th ed.).

## Collected Paper 2

### *Purpose*

Throughout the nursing literature, it is well-established that nurses are especially vulnerable to the development of STS, burnout, and compassion fatigue because of frequent encounters with stressful and traumatizing events on the job. Given the current state of events surrounding the COVID-19 pandemic and its potential to further exacerbate these strains, it is of utmost importance for researchers to identify efficacious coping strategies for combating these nursing strains in a timely manner. The use of a meta-analysis can help to address this research question by examining which coping strategies previously studied in the literature emerge as having the strongest empirical support for reducing STS, burnout, and compassion fatigue in nurses. Findings of this nature can help to inform potential prevention and intervention strategies aimed at

improving nurses' occupational well-being.

### *Method*

Psychology and nursing journal databases were utilized in the search for studies, which began with literature searches to locate all acceptable statistics (i.e., t-statistics, correlations) between various coping strategies (i.e., resilience, social support, self-care) and STS, burnout, and/or compassion fatigue in samples of nurses across hospital units and around the world. Unpublished research was also included in the meta-analysis by putting out calls for research on listservs and emailing researchers for unreported data from studies found via the literature searches. Coding categories were created to group similar coping strategies together following Rourke's (2007) three tiers of strategies for preventing compassion fatigue first, and later further distinguishing between coping strategies using more specific category names. Furthermore, individualism was used as a moderator to examine if such cultural orientation plays a role in the effectiveness of a particular coping strategy-strain relationship. Construct measurement of STS and compassion fatigue was a proposed moderator in this paper but was unable to be tested due to a limited number of studies that met the inclusion criteria for analyses.

### *Data Analysis*

The meta-analysis was used to identify which coping strategies have the strongest empirical support for reducing STS, burnout, and compassion fatigue in nurses using the Hunter and Schmidt (1990) psychometric meta-analysis procedure. The statistical analyses were conducted using Excel and R Shiny.

### *Publication Submission and Formatting*

The journal for future manuscript submission will be determined later, but all

sections were written in accordance with the APA Publication Manual (7th ed.).

## Implications of Collected Papers Research

For years, researchers have been warning the public of an unavoidable rise in manmade disasters, like pandemics, given an increase in long-distance traveling and globalization (Kessler et al., 2012). COVID-19 is not the first pandemic to plague society, and it certainly will not be the last, as history has recorded the events of the Bubonic Plague, several influenza outbreaks, and the HIV/AIDS pandemic, to name a few. Researchers have shared preparedness strategies for future pandemics (Mason & Friese, 2020), highlighting the importance of organizations having policies in place to protect their workers from the next pandemic, health crises, or other disaster, which includes prioritizing employee health and well-being. This collected papers dissertation contributes to the advancement of workplace health and well-being, in addition to helping healthcare organizations aim their policies, practices, and interventions at creating a healthier workforce that enables nurses and other healthcare professionals to perform their jobs safely and effectively without sacrificing their mental and physical well-being in the process.

The use of a qualitative study design provides researchers and practitioners alike with a deeper understanding of what it has been like for nurses to work during this pandemic, and what healthcare organizations can do to better support their employees during future disasters. Furthermore, this research aims to fill a significant gap in the literature by identifying the most effective coping mechanisms for nurses suffering from STS, burnout, and compassion fatigue. Findings of this nature can help guide the healthcare industry in focusing their efforts on implementing policies and practices that

align with the best strategies for reducing these important strains, which may help aid in the retention of nurses and minimize the expected nursing shortage. Additionally, several studies have suggested that there are ethnic and cultural differences in coping (Bjorck et al., 2001; Cross, 1995; Lam & Zane, 2004; P. T. P. Wong et al., 2006), which has implications for how organizations around the world prepare for and handle future crises. Thus, findings from this dissertation have potentially far-reaching implications for society on a global level and for future research on coping strategies in nurses and other healthcare professionals.

## References


Adeb-Saeedi, J. (2002). Stress amongst emergency nurses. *Australian Emergency Nursing Journal*, *5*(2), 19–24. https://doi.org/10.1016/S1328-2743(02)80015-3

Alharbi, J., Jackson, D., & Usher, K. (2020a). Personal characteristics, coping strategies, and resilience impact on compassion fatigue in critical care nurses: A cross-sectional study. *Nursing & Health Sciences*, *22*(1), 20–27. https://doi.org/10.1111/nhs.12650

Alharbi, J., Jackson, D., & Usher, K. (2020b). The potential for COVID-19 to contribute to compassion fatigue in critical care nurses. *Journal of Clinical Nursing*, *29*(15–16), 2762–2764. https://doi.org/10.1111/jocn.15314

Alkema, K., Linton, J. M., & Davies, R. (2008). A study of the relationship between self-care, compassion satisfaction, compassion fatigue, and burnout among hospice professionals. *Journal of Social Work in End-of-Life & Palliative Care*, *4*(2), 101–119. https://doi.org/10.1080/15524250802353934

American Nurses Association. (2011). *ANA health and safety survey*. https://www.nursingworld.org/practice-policy/work-environment/health-safety/health-%0Asafety-survey/%0A

Asuero, A. M., Queraltó, J. M., Pujol-Ribera, E., Berenguera, A., Rodriguez-Blanco, T., & Epstein, R. M. (2014). Effectiveness of a mindfulness education program in primary health care professionals: A pragmatic controlled trial. *Journal of Continuing Education in the Health Professions*, *34*(1), 4–12. https://doi.org/10.1002/chp.21211

Audenaert, M., George, B., & Decramer, A. (2019). How a demanding employment relationship relates to affective commitment in public organizations: A multilevel analysis. *Public Administration*, *97*(1), 11–27. https://doi.org/10.1111/padm.12378

Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309–328. https://doi.org/10.1108/02683940710733115

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*(3), 273–285. https://doi.org/10.1037/ocp0000056

Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, *10*(2), 170–180. https://doi.org/10.1037/1076-8998.10.2.170

Barber, L. K., & Santuzzi, A. M. (2015). Please respond ASAP: Workplace telepressure and employee recovery. *Journal of Occupational Health Psychology*, *20*(2), 172–189. https://doi.org/10.1037/a0038278

Baum, A., Gatchel, R. J., & Krantz, D. S. (2007). An introduction to health psychology. In *Psychology, Health & Medicine* (3rd ed., Vol. 12). McGraw-Hill. https://doi.org/10.1080/13548500701281389

Berland, A., Natvig, G. K., & Gundersen, D. (2008). Patient safety and job-related stress: A focus group study. *Intensive and Critical Care Nursing*, *24*(2), 90–97. https://doi.org/10.1016/j.iccn.2007.11.001

Bevan, S. (2010). *The business case for employees health and wellbeing*. The Work Foundation. http://investorsinpeople.ph/wp-content/uploads/2013/08/The-Business-Case-%0Afor-Employee-Health-and-Wellbeing-Feb-2010.pdf%0A

Bjorck, J. P., Cuthbertson, W., Thurman, J. W., & Lee, Y. S. (2001). Ethnicity, coping, and distress among Korean Americans, Filipino Americans, and Caucasian Americans. *The Journal of Social Psychology*, *141*(4), 421–442. https://doi.org/10.1080/00224540109600563

Bosch, G. (1999). Working time: Tendencies and emerging issues. *International Labour Review*, *138*(2), 131–150.

Boswell, A. T., Ren, W. R., & Hinrichs, A. T. (2008). Voluntary employee turnover: Determinants, processes, and future directions. In C. L. Cooper & J. Barling (Eds.), *Handbook of organizational behavior* (pp. 196–216). Sage Handbooks.

Boyd, A. B. (1997). Employee traps—Corruption in the workplace. *Management Review*, *86*(8), 9–10.

Braun, V., & Clarke, V. (2012). Thematic analysis. In *APA handbook of research methods in psychology, Vol 2: Research designs: Quantitative, qualitative, neuropsychological, and biological.* American Psychological Association. https://doi.org/10.1037/13620-004

Caicedo, M. H., Maartensson, M., & Roslender, R. (2010). Managing and measuring employee health and wellbeing: A review and critique. *Journal of Accounting & Organizational Charge*, *6*(4), 436–459.

Callaghan, P., Tak-Ying, S. A., & Wyatt, P. A. (2000). Factors related to stress and coping among Chinese nurses in Hong Kong. *Journal of Advanced Nursing*, *31*(6), 1518–1527. https://doi.org/10.1046/j.1365-2648.2000.01434.x

Cascio, W. F. (2003). Changes in workers, work, and organizations. *Handbook of Psychology*, 399–422. https://doi.org/doi:10.1002/0471264385.wei1216

Cavanagh, N., Cockett, G., Heinrich, C., Doig, L., Fiest, K., Guichon, J. R., Page, S., Mitchell, I., & Doig, C. J. (2019). Compassion fatigue in healthcare providers: A systematic review and meta-analysis. *Nursing Ethics*, *27*(3), 639–665. https://doi.org/10.1177/0969733019889400

Chesak, S. S., Cutshall, S. M., Bowe, C. L., Montanari, K. M., & Bhagra, A. (2019). Stress Management Interventions for Nurses: Critical Literature Review. *Journal of Holistic Nursing*, *37*(3), 288–295. https://doi.org/10.1177/0898010119842693

Cheung, T., Fong, T. K. H., & Bressington, D. (2020). COVID-19 under the SARS Cloud: Mental health nursing during the pandemic in Hong Kong. *Journal of Psychiatric and Mental Health Nursing*, 1–3. https://doi.org/10.1111/jpm.12639

Collins, K., Jones, M. L., Mcdonnell, A., Read, S., Jones, R., & Cameron, A. (2000). Do new roles contribute to job satisfaction and retention of staff in nursing and professions allied to medicine? *Journal of Nursing Management*, *8*(1), 3–12. https://doi.org/10.1046/j.1365-2834.2000.00149_8_1.x

Conrad, P. (1988). Worksite health promotion: The social context. *Social Science & Medicine*, *26*(5), 485–489. https://doi.org/10.1016/0277-9536(88)90381-4

Corley, A., Hammond, N. E., & Fraser, J. F. (2010). The experiences of health care workers employed in an Australian intensive care unit during the H1N1 Influenza pandemic of 2009: A phenomenological study. *International Journal of Nursing Studies*, *47*(5), 577–585. https://doi.org/10.1016/j.ijnurstu.2009.11.015

Cross, S. E. (1995). Self-construals, coping, and stress in cross-cultural adaptation. *Journal of Cross-Cultural Psychology*, *26*(6), 673–697. https://doi.org/10.1177/0022022195026006l0

Currid, T. J. (2008). The lived experience and meaning of stress in acute mental health nuses. *British Journal of Nursing*, *17*(14), 880–884.

Currie, E. J., & Hill, R. A. C. (2012). What are the reasons for high turnover in nursing? A discussion of presumed causal factors and remedies. *International Journal of Nursing Studies*, *49*(9), 1180–1189. https://doi.org/10.1016/j.ijnurstu.2012.01.001

Dasan, S., Gohil, P., Cornelius, V., & Taylor, C. (2015). Prevalence, causes and consequences of compassion satisfaction and compassion fatigue in emergency care: A mixed-methods study of UK NHS Consultants. *Emergency Medicine Journal*, *32*(8), 588–594. https://doi.org/10.1136/emermed-2014-203671

De Jonge, J., & Dormann, C. (2006). Stressors, resources, and strain at work: A longitudinal test of the triple-match principle. *Journal of Applied Psychology*, *91*, 1359–1374. https://doi.org/10.1037/0021-9010.91.5.1359

Domenighetti, G., D'Avanzo, B., & Bisig, B. (2000). Health effects of job insecurity among employees in the Swiss general population. *International Journal of Health Services*, *30*(3), 477–490. https://doi.org/10.2190/B1KM-VGN7-50GF-8XJ4

Dominguez-Gomez, E., & Rutledge, D. N. (2009). Prevalence of secondary traumatic stress among emergency nurses. *Journal of Emergency Nursing*, *35*(3), 199–204.

Dugan, J., Lauer, E., Bouquot, Z., Dutro, B. K., Smith, M., & Widmeyer, G. (1996). Stressful nurses: The effect on patient outcomes. *Journal of Nursing Care Quality*, *10*(3), 46–58.

Eatough, E. M., Chang, C.-H., Miloslavic, S. A., & Johnson, R. E. (2011). Relationships of role stressors with organizational citizenship behavior: A meta-analysis. *Journal of Applied Psychology*, *96*(3), 619–632. https://doi.org/10.1037/a0021887

Elfering, A., Semmer, N. K., & Grebner, S. (2006). Work stress and patient safety: Observer-rated work stressors as predictors of characteristics of safety-related events reported by young nurses. *Ergonomics*, *49*(5–6), 457–469. https://doi.org/10.1080/00140130600568451

Envick, B. R. (2012). Investing in a healthy workforce: The impact of physical wellness on psychological well-being and the critical implications for worker performance. *Academy of Health Care Management Journal*, *8*(1/2), 21–32.

Erland, E., & Dahl, B. (2017). Midwives' experiences of caring for pregnant women admitted to Ebola centres in Sierra Leone. *Midwifery*, *55*, 23–28. https://doi.org/10.1016/j.midw.2017.08.005

Farrington, A. (1997). Strategies for reducing stress and bunout in nursing. *British Journal of Nursing*, *6*(1), 44–50.

Figley, C. R. (1995). Compassion fatigue: Toward a new understanding of the costs of caring. In B. H. Stamm (Ed.), Secondary traumatic stress: Self-care issues for clinicians, researchers, and educators (pp. 3–28). The Sidran Press.

Fogarty, G. J., & Mckeon, C. M. (2006). Patient safety during medication administration: The influence of organizational and individual variables on unsafe work practices and medication errors. *Ergonomics*, *49*(5–6), 444–456.

https://doi.org/10.1080/00140130600568410

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. In *American Psychologist* (Vol. 56). American Psychological Association. https://doi.org/10.1037/0003-066X.56.3.218

Ganster, D. C., & Rosen, C. C. (2013). Work stress and employee health: A multidisciplinary view. *Journal of Management*, *39*(5), 1085–1122. https://doi.org/10.1177/0149206313475815

Gatchel, R. J., & Kishino, N. D. (2012). Conceptual approaches to occupational health and wellness: An overview. In R. J. Gatchel & I. Z. Schultz (Eds.), *Handbook of Occupational Health and Wellness* (pp. 3–21). Springer US. https://doi.org/10.1007/978-1-4614-4839-6_1

Gelsema, T. I., van der Doef, M., Maes, S., Janssen, M., Akerboom, S., & Verhoeven, C. (2006). A longitudinal study of job stress in the nursing profession: Causes and consequences. *Journal of Nursing Management*, *14*(4), 289–299. https://doi.org/10.1111/j.1365-2934.2006.00635.x

Goetzel, R. Z., Henke, R. M., Tabrizi, M., Pelletier, K. R., Loeppke, R., Ballard, D. W., Grossmeier, J., Anderson, D. R., Yach, D., Kelly, R. K., McCalister, T., Serxner, S., Selecky, C., Shallenberger, L. G., Fries, J. F., Baase, C., Isaac, F., Crighton, K. A., Wald, P., … Metz, R. D. (2014). Do workplace health promotion (wellness) programs work? *Journal of Occupational and Environmental Medicine*, *56*(9), 927–934. http://dx.doi.org/10.1097/JOM.0000000000000276

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research*, *57*(1), 35–43. https://doi.org/10.1016/S0022-3999(03)00573-7

Günüşen, N. P., & Üstün, B. (2010). An RCT of coping and support groups to reduce burnout among nurses. *International Nursing Review*, *57*(4), 485–492. https://doi.org/10.1111/j.1466-7657.2010.00808.x

Haddad, L. M., Annamaraju, P., & Toney-Butler, T. J. (2020). *Nursing shortage*. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK493175/%0A

Halbesleben, J. R. B. (2010). The role of exhaustion and workarounds in predicting occupational injuries: A cross-lagged panel study of health care professionals. *Journal of Occupational Health Psychology*, *15*(1), 1–16. https://doi.org/10.1037/a0017634

Hamilton, S., Tran, V., & Jamieson, J. (2016). Compassion fatigue in emergency medicine: The cost of caring. *Emergency Medicine Australasia*, *28*(1), 100–103. https://doi.org/10.1111/1742-6723.12533

Hart, P. L., Brannan, J. D., & De Chesnay, M. (2014). Resilience in nurses: An integrative review. *Journal of Nursing Management*, *22*(6), 720–734. https://doi.org/10.1111/j.1365-2834.2012.01485.x

Honey, M., & Wang, W. Y. Q. (2013). New Zealand nurses perceptions of caring for patients with influenza A (H1N1). *Nursing in Critical Care*, *18*(2), 63–69. https://doi.org/10.1111/j.1478-5153.2012.00520.x

Hunter, J. E., & Schmidt, F. L. (1990). *Methods of meta-analysis: Correcting error and bias in research findings*. SAGE Publications.

Jeon, Y.-H., Luscombe, G., Chenoweth, L., Stein-Parbury, J., Brodaty, H., King, M., & Haas, M. (2012). Staff outcomes from the Caring for Aged Dementia Care REsident Study (CADRES): A cluster randomised trial. *International Journal of Nursing Studies*, *49*(5), 508–518. https://doi.org/10.1016/j.ijnurstu.2011.10.020

Jex, S. M., & Beehr, T. A. (1991). Emerging theoretical and methodological issues in the study of work-related stress. *Research in Personnel and Human Resources Management*, *9*(31), 1–365.

Johnson, J. V., & Lipscomb, J. (2006). Long working hours, occupational health and the changing nature of work organization. *American Journal of Industrial Medicine*, *49*(11), 921–929. https://doi.org/10.1002/ajim.20383

Johnston, D., Bell, C., Jones, M., Farquharson, B., Allan, J., Schofield, P., Ricketts, I., & Johnston, M. (2016). Stressors, Appraisal of Stressors, Experienced Stress and Cardiac Response: A Real-Time, Real-Life Investigation of Work Stress in Nurses. *Annals of Behavioral Medicine*, *50*(2), 187–197. https://doi.org/10.1007/s12160-015-9746-8

Johnston, J. J. (1995). Occupational injury and stress. *Journal of Occupational and Environmental Medicine*, *37*(10), 1199–1203. https://doi.org/10.1097/00043764-199510000-00010

Jones, S., Sam, B., Bull, F., Pieh, S. B., Lambert, J., Mgawadere, F., Gopalakrishnan, S., Ameh, C. A., & van den Broek, N. (2017). 'Even when you are afraid, you stay': Provision of maternity care during the Ebola virus epidemic: A qualitative study. *Midwifery*, *52*, 19–26. https://doi.org/10.1016/j.midw.2017.05.009

Karasek, T., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. Basic Books.

Karimi, Z., Fereidouni, Z., Behnammoghadam, M., Alimohammadi, N., Mousavizadeh, A., Salehi, T., Mirzaee, M. S., & Mirzaee, S. (2020). The lived experience of nurses caring for patients with COVID-19 in Iran: A phenomenological study. *Risk Management and Healthcare Policy*, *13*(2), 1271–1278. https://doi.org/10.2147/RMHP.S258785

Kessler, R. C., McLaughlin, K. A., Koenen, K. C., Petukhova, M., & Hill, E. D. (2012).

The importance of secondary trauma exposure for post-disaster mental disorder. *Epidemiology and Psychiatric Sciences*, *21*, 35–45.

Ki, L. K., & Maria, H. S. Y. (2013). Perceptions of emergency nurses during the human swine influenza outbreak: A qualitative study. *International Emergency Nursing*, *21*, 240–246.

Kollie, E. S., Winslow, B. J., Pothier, P., & Gaede, D. (2017). Deciding to work during the Ebola outbreak: The voices and experiences of nurses and midwives in Liberia. *International Journal of Africa Nursing Sciences*, *7*, 75–81. https://doi.org/10.1016/j.ijans.2017.09.002

Lam, A. G., & Zane, N. W. S. (2004). Ethnic differences in coping with interpersonal stressors: A test of self-construals as cultural mediators. *Journal of Cross-Cultural Psychology*, *35*(4), 446–459. https://doi.org/10.1177/0022022104266108

Lanz, J. J., & Bruk-Lee, V. (2017). Resilience as a moderator of the indirect effects of conflict and workload on job outcomes among nurses. *Journal of Advanced Nursing*, *73*(12), 2973–2986. https://doi.org/10.1111/jan.13383

Leiter, M. P., & Maslach, C. (2009). Nurse turnover: The mediating role of burnout. *Journal of Nursing Management*, *17*(3), 331–339. https://doi.org/10.1111/j.1365-2834.2009.01004.x

Lin, S. (2003). Occupational stress research: A review. *Psychological Science (China)*, *26*(3), 494–497.

Linton, S. J. (2001). Occupational psychological factors increase the risk for back pain: A systematic review. *Journal of Occupational Rehabilitation*, *11*(1), 53–66. https://doi.org/10.1023/A:1016656225318

Liu, C., Spector, P. E., & Shi, L. (2007). Cross-national job stress: A quantitative and qualitative study. *Journal of Organizational Behavior*, *28*(2), 209–239. https://doi.org/10.1002/job.435

Luthans, F., Norman, S. M., Avolio, B. J., & Avey, J. B. (2008). The mediating role of psychological capital in the supportive organizational climate—Employee performance relationship. *Journal of Organizational Behavior*, *29*(2), 219–238. https://doi.org/10.1002/job.507

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, *131*(6), 803–855. https://doi.org/10.1037/0033-2909.131.6.803

Maben, J., & Bridges, J. (2020). Covid-19: Supporting nurses' psychological and mental health. *Journal of Clinical Nursing*, *29*(15–16), 2742–2750. https://doi.org/10.1111/jocn.15307

Mackenzie, C. S., Poulin, P. A., & Seidman-Carlson, R. (2006). A brief mindfulness-based stress reduction intervention for nurses and nurse aides. *Applied Nursing Research*, *19*(2), 105–109. https://doi.org/10.1016/j.apnr.2005.08.002

Magtibay, D. L., Chesak, S. S., Coughlin, K., & Sood, A. (2017). Decreasing stress and burnout in nurses: Efficacy of blended learning with stress management and resilience training program. *JONA: The Journal of Nursing Administration*, *47*(7–8), 391–395.

Manomenidis, G., Panagopoulou, E., & Montgomery, A. (2019). Job burnout reduces hand hygiene compliance among nursing staff. *Journal of Patient Safety*, *15*(4), e70–e73.

Maruyama, S., Kohno, K., & Morimoto, K. (1995a). A study of preventative medicine in relation to mental health among middle-management employees (part 2). *Japaense Journal of Hygiene*, *50*(4), 849–860.

Maruyama, S., Kohno, K., & Morimoto, K. (1995b). [A study of preventive medicine in relation to mental health among middle-management employees (Part 2)–effects of long working hours on lifestyles, perceived stress and working-life satisfaction among white-collar middle-management employees]. *Japanese journal of hygiene*, *50*(4), 849–860. https://doi.org/10.1265/jjh.50.849

Maslach, C., & Jackson, S. (1981). Burnout in health professions: A social psychological analysis. In G. Sanders & J. Susl (Eds.), *Social Psychology of Health and Illness* (pp. 227–251).

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, *52*(1), 397–422. https://doi.org/10.1146/annurev.psych.52.1.397

Mason, D. J., & Friese, C. R. (2020). Protecting health care workers against COVID-19—And being prepared for future pandemics. *JAMA Health Forum*, *1*(3), e200353–e200353. https://doi.org/10.1001/jamahealthforum.2020.0353

Mattke, S., Liu, H. H., Caloyeras, J. P., Huang, C. Y., Van Busum, K. R., Khodyakov, D., & Shier, V. (2013). *Workplace wellness programs study: Final report*. RAND Corporation. https://www.rand.org/pubs/research_reports/RR254.html

Mazzola, J. J., Schonfeld, I. S., & Spector, P. E. (2011). What qualitative research has taught us about occupational stress. *Stress and Health*, *27*(2), 93–110. https://doi.org/10.1002/smi.1386

McCloskey, S., & Taggart, L. (2010). How much compassion have I left? An exploration of occupational stress among children's palliative care nurses. *International Journal of Palliative Nursing*, *16*(5), 233–240.

Meadors, P., Lamson, A., Swanson, M., White, M., & Sira, N. (2010). Secondary traumatization in pediatric healthcare providers: Compassion fatigue, burnout, and secondary traumatic stress. *OMEGA - Journal of Death and Dying*, *60*(2), 103–128.

https://doi.org/10.2190/OM.60.2.a

Mealer, M. L., Conrad, D., Evans, J., Jooste, K., Solyntjes, J., Rothbaum, B., & Moss, M. (2014). Feasibility and acceptability of a resilience training program for intensive care unit nurses. *American Journal of Critical Care*, *23*(6), e97–e105. https://doi.org/10.4037/ajcc2014747

Mitchell, R., Ogunremi, T., Astrakianakis, G., Bryce, E., Gervais, R., Gravel, D., Johnston, L., Leduc, S., Roth, V., Taylor, G., Vearncombe, M., & Weir, C. (2012). Impact of the 2009 influenza A (H1N1) pandemic on Canadian health care workers: A survey on vaccination, illness, absenteeism, and personal protective equipment. *American Journal of Infection Control*, *40*(7), 611–616. https://doi.org/10.1016/j.ajic.2012.01.011

Montano, D., Reeske, A., Franke, F., & Hüffmeier, J. (2017). Leadership, followers' mental health and job performance in organizations: A comprehensive meta-analysis from an occupational health perspective. *Journal of Organizational Behavior*, *38*(3), 327–350. https://doi.org/10.1002/job.2124

Moody, K., Kramer, D., Santizo, R. O., Magro, L., Wyshogrod, D., Ambrosio, J., Castillo, C., Lieberman, R., & Stein, J. (2013). Helping the helpers: Mindfulness training for burnout in pediatric oncology—A pilot program. *Journal of Pediatric Oncology Nursing*, *30*(5), 275–284. https://doi.org/10.1177/1043454213504497

Motowidlo, S. J., Packard, J. S., & Manning, M. R. (1986). Occupational stress: Its causes and consequences for job performance. *Journal of Applied Psychology*, *71*(4), 618–629. https://doi.org/10.1037/0021-9010.71.4.618

Muncer, S., Taylor, S., Green, D. W., & Mcmanus, I. C. (2001). Nurses' representations of the perceived causes of work-related stress: A network drawing approach. *Work & Stress*, *15*(1), 40–52. https://doi.org/10.1080/02678370120688

Naholi, R. M., Nosek, C. L., & Somayaji, D. (2015). Stress among oncology nurses. *Clinical Journal of Oncology Nursing*, *19*(1), 115–117.

Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology*, *96*, 71–94. https://doi.org/10.1037/a0021484

Narayanan, L., Menon, S., & Spector, P. (1999). A cross-cultural comparison of job stressors and reactions among employees holding comparable jobs in two countries. *International Journal of Stress Management*, *6*(3), 197–212. https://doi.org/10.1023/A:1021986709317

Nixon, A. E., Mazzola, J. J., Bauer, J., Krueger, J. R., & Spector, P. E. (2011). Can work

make you sick? A meta-analysis of the relationships between job stressors and physical symptoms. *Work & Stress*, *25*(1), 1–22. https://doi.org/10.1080/02678373.2011.569175

O'Brien-Pallas, L., Shamian, J., Thomson, D., Alksnis, C., Koehoorn, M., Kerr, M., & Bruce, S. (2004). Work-related disability in Canadian nurses. *Journal of Nursing Scholarship*, *36*(4), 352–357. https://doi.org/10.1111/j.1547-5069.2004.04063.x

Page, K. M., & Vella-Brodrick, D. A. (2009). The 'what', 'why' and 'how' of employee well- being: A new model. *Social Indicators Research*, *90*(3), 441–458. http://dx.doi.org/10.1007/s11205-008-9270-3

Parker, S. K., Turner, N., & Griffin, M. A. (2003). Designing healthy work. In D. A. Hofmann & L. E. Tetrick (Eds.), *Health and Safety in Organizations* (pp. 91–130). Jossey-Bass.

Parks, K. M., & Steelman, L. A. (2008). Organizational wellness programs: A meta-analysis. *Journal of Occupational Health Psychology*, *13*(1), 58–68.

Penney, L. M., & Spector, P. E. (2005). Job stress, incivility, and counterproductive work behavior (CWB): The moderating role of negative affectivity. *Journal of Organizational Behavior*, *26*(7), 777–796. https://doi.org/10.1002/job.336

Peters, L., Cant, R., Sellick, K., O'Connor, M., Lee, S., & Burney, S. (2012). Is work stress in palliative care nurses a cause for concern? A literature review. *International Journal of Palliative Nursing*, *18*(11), 561–567.

Pindek, S., & Spector, P. E. (2016). Organizational constraints: A meta-analysis of a major stressor. *Work & Stress*, *30*(1), 7–25. https://doi.org/10.1080/02678373.2015.1137376

Pipe, T. B., Bortz, J. J., Dueck, A., Pendergast, D., Buchda, V., & Summers, J. (2009). Nurse leader mindfulness meditation program for stress management: A randomized controlled trial. *JONA: The Journal of Nursing Administration*, *39*(3). https://journals.lww.com/jonajournal/Fulltext/2009/03000/Nurse_Leader_Mindfulness_Meditation_Program_for.8.aspx

Poissonnet, C. M., & Véron, M. (2000). Health effects of work schedules in healthcare professions. *Journal of Clinical Nursing*, *9*(1), 13–23. https://doi.org/10.1046/j.1365-2702.2000.00321.x

Prosser, D., Johnson, S., Kuipers, E., Szmukler, G., Bebbington, P., & Thornicroft, G. (1997). Perceived sources of work stress and satisfaction among hospital and community mental health staff, and their relation to mental health, burnout and job satisfaction. *Journal of Psychosomatic Research*, *43*(1), 51–59. https://doi.org/10.1016/S0022-3999(97)00086-X

Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The

consequences of technostress for end users in organizations: Conceptual development and empirical validation. *Information Systems Research*, *19*(4), 417–433.

Ratrout, H. F., & Hamdan-Mansour, A. M. (2017). Factors associated with secondary traumatic stress among emergency nurses: An integrative review. *Open Journal of Nursing*, *7*, 1209–1226.

Registered Nursing. (2020). *Nursing careers & specialties for RNs*. Registered Nursing. https://www.registerednursing.org/nursing-careers/#Travel-Nurse

Richardson, K. M. (2017). Managing employee stress and wellness in the new millennium. In *Journal of Occupational Health Psychology* (Vol. 22). Educational Publishing Foundation. https://doi.org/10.1037/ocp0000066

Richardson, K. M., & Rothstein, H. R. (2008). Effects of occupational stress management intervention programs: A meta-analysis. In *Journal of Occupational Health Psychology* (Vol. 13). Educational Publishing Foundation. https://doi.org/10.1037/1076-8998.13.1.69

Rosseter, R. (2019). Nursing shortage. In *American Association of Colleges of Nursing*. https://www.aacnnursing.org/news-information/fact-sheets/nursing-shortage

Ryan, D. (2020). COVID-19: Nurses and first responders face housing discrimination due to pandemic. In *Vancouver Sun*. https://vancouversun.com/news/local-news/nurses-and-%0Afirst-responders-face-housing-discrimination-due-to-pandemic%0A

Saad, L. (2014). The "40-hour" workweek is actually longer—By seven hours. In *Gallup*. https://news.gallup.com/poll/175286/hour-workweek-actually-longer-seven-hours.aspx

Salyers, M. P., Bonfils, K. A., Luther, L., Firmin, R. L., White, D. A., Adams, E. L., & Rollins, A. L. (2017). The relationship between professional burnout and quality and safety in healthcare: A meta-analysis. *Journal of General Internal Medicine*, *32*(4), 475–482. https://doi.org/10.1007/s11606-016-3886-9

Sexton, J. B., Thomas, E. J., & Helmreich, R. L. (2000). Error, stress, and teamwork in medicine and aviation: Cross sectional surveys. *BMJ*, *320*(7237), 745 LP – 749. https://doi.org/10.1136/bmj.320.7237.745

Sharma, P., Davey, A., Davey, S., Shukla, A., Shrivastava, K., & Bansal, R. (2014). Occupational stress among staff nurses: Controlling the risk to health. *Indian Journal of Occupational and Environmental Medicine*, *18*(2), 52–56. https://doi.org/10.4103/0019-5278.146890

Sherman, D. W. (2004). Nurses' stress & burnout: How to care for yourself when caring for patients and their families experiencing life-threatening illness. *The American Journal of Nursing*, *104*(5), 48–56.

Shiao, J. S.-C., Koh, D., Lo, L.-H., Lim, M.-K., & Guo, Y. L. (2007). Factors predicting nurses' consideration of leaving their job during the SARS outbreak. *Nursing Ethics*, *14*(1), 5–17. https://doi.org/10.1177/0969733007071350

Shorey, S., & Chan, V. (2020). Lessons from past epidemics and pandemics and a way forward for pregnant women, midwives and nurses during COVID-19 and beyond: A meta-synthesis. *Midwifery*, *90*, 102821. https://doi.org/10.1016/j.midw.2020.102821

Shugerman, E. (2020). Coronavirus nurses face eviction, housing discrimination from scared landlords. In *The Daily Beast*. https://www.msn.com/en-us/news/us/coronavirus-%0Anurses-face-eviction-housing-discrimination-from-scared-landlords/ar-BB11Oa7k%0A

Silén, M., Tang, P. F., Wadensten, B., & Ahlström, G. (2008). Workplace distress and ethical dilemmas in neuroscience nursing. *Journal of Neuroscience Nursing*, *40*(4). https://journals.lww.com/jnnonline/Fulltext/2008/08000/Workplace_Distress_and_Ethical_Dilemmas_in.6.aspx

Sinclair, S., Raffin-Bouchal, S., Venturato, L., Mijovic-Kondejewski, J., & Smith-MacDonald, L. (2017). Compassion fatigue: A meta-narrative review of the healthcare literature. *International Journal of Nursing Studies*, *69*, 9–24. https://doi.org/10.1016/j.ijnurstu.2017.01.003

Sjöberg, A., Pettersson-Strömbäck, A., Sahlén, K.-G., Lindholm, L., & Norström, F. (2020). The burden of high workload on the health-related quality of life among home care workers in Northern Sweden. *International Archives of Occupational and Environmental Health*, *93*(6), 747–764. https://doi.org/10.1007/s00420-020-01530-9

Sojo, V. E., Wood, R. E., & Genat, A. E. (2015). Harmful Workplace Experiences and Women's Occupational Well-Being: A Meta-Analysis. *Psychology of Women Quarterly*, *40*(1), 10–40. https://doi.org/10.1177/0361684315599346

Sparks, K., Faragher, B., & Cooper, C. L. (2001). Well-being and occupational health in the 21st century workplace. *Journal of Occupational and Organizational Psychology*, *74*(4), 489–509. https://doi.org/10.1348/096317901167497

Spector, P. E. (1998). A control theory of the job stress process. In G. L. Cooper (Ed.), *Theories of Organizational Stress* (pp. 153–169). Oxford.

Stambor, Z. (2006). Employees: A company's best asset. *Monitor on Psychology*, *37*(3). http://www.apa.org/monitor/mar06/employees%0A

Stark, A. (2021). Top 10 work trends for 2021. In *Society for Industrial and Organizational Psychology*. https://www.siop.org/Research-Publications/Items-of-Interest/ArtMID/19366/ArticleID/4914/Top-10-Work-Trends-for-2021

Stewart, W. F., Ricci, J. A., Chee, E., Morganstein, D., & Lipton, R. (2003). Lost productive time and cost due to common pain conditions in the US workforce. *JAMA*, *290*(18), 2443–2454. https://doi.org/10.1001/jama.290.18.2443

Strachota, E., Normandin, P., O'Brien, N., Clary, M., & Krukow, B. (2003). Reasons registered nurses leave or change employment status. *JONA: The Journal of Nursing Administration*, *33*(2). https://journals.lww.com/jonajournal/Fulltext/2003/02000/Reasons_Registered_Nurses_Leave_or_Change.8.aspx

Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems*, *24*(1), 301–328. https://doi.org/10.2753/MIS0742-1222240109

Tetrick, L. E., & Winslow, C. J. (2015). Workplace stress management interventions and health promotion. *Annual Review of Organizational Psychology and Organizational Behavior*, *2*(1), 583–603. https://doi.org/10.1146/annurev-orgpsych-032414-111341

Tucker, S. J., Lanningham-Foster, L. M., Murphy, J. N., Thompson, W. G., Weymiller, A. J., Lohse, C., & Levine, J. A. (2011). Effects of a worksite physical activity intervention for hospital nurses who are working mothers. *AAOHN Journal*, *59*(9), 377–386. https://doi.org/10.1177/216507991105900902

Tyler, P. A., & Cushway, D. (1992). Stress, coping and mental well-being in hospital nurses. *Stress Medicine*, *8*(2), 91–98. https://doi.org/10.1002/smi.2460080206

Tyler, P. A., & Cushway, D. (1995). Stress in nurses: The effects of coping and social support. *Stress Medicine*, *11*(1), 243–251. https://doi.org/10.1002/smi.2460110140

Tyler, P. A., & Ellison, R. N. (1994). Sources of stress and psychological well-being in high-dependency nursing. *Journal of Advanced Nursing*, *19*(3), 469–476. https://doi.org/10.1111/j.1365-2648.1994.tb01109.x

Wallace, C. L., Wladkowski, S. P., Gibson, A., & White, P. (2020). Grief during the COVID-19 pandemic: Considerations for palliative care providers. *Journal of Pain and Symptom Management*, *60*(1), e70–e76. https://doi.org/10.1016/j.jpainsymman.2020.04.012

Wei, R., Ji, H., Li, J., & Zhang, L. (2017). Active intervention can decrease burnout in ED nurses. *Journal of Emergency Nursing*, *43*(2), 145–149. https://doi.org/10.1016/j.jen.2016.07.011

Wong, E. L. Y., Wong, S. Y. S., Lee, N., Cheung, A., & Griffiths, S. (2012). Healthcare workers' duty concerns of working in the isolation ward during the novel H1N1 pandemic. *Journal of Clinical Nursing*, *21*(9-10), 1466–1475. https://doi.org/10.1111/j.1365-2702.2011.03783.x

Wong, P. T. P., Wong, L. C. J., & Scott, C. (2006). Beyond stress and coping: The positive psychology of transformation. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of Multicultural Perspectives on Stress and Coping* (pp. 1–26). Springer.

World Health Organization. (2020). *Disease outbreaks*. World Health Organization. https://www.who.int/emergencies/diseases/en/

Wright, B. E. (2004). The role of work context in work motivation: A public sector application of goal and social cognitive theories. *Journal of Public Administration Research and Theory*, *14*(1), 59–78. https://doi.org/10.1093/jopart/muh004

Wright, T. A., & Bonett, D. G. (2007). Job satisfaction and psychological well-being as nonadditive predictors of workplace turnover. *Journal of Management*, *33*(2), 141–160. https://doi.org/10.1177/0149206306297582

Wu, P., Fang, Y., Guan, Z., Fan, B., Kong, J., Yao, Z., Liu, X., Fuller, C. J., Susser, E., Lu, J., & Hoven, C. W. (2009). The psychological impact of the SARS epidemic on hospital employees in China: Exposure, risk perception, and altruistic acceptance of risk. *The Canadian Journal of Psychiatry*, *54*(5), 302–311. https://doi.org/10.1177/070674370905400504

Xanthopoulou, D., Bakker, A. B., Dollard, M. F., Demerouti, E., Schaufeli, W. B., Taris, T. W., & Schreurs, P. J. G. (2007). When do job demands particularly predict burnout? The moderating role of job resources. *Journal of Managerial Psychology*, *22*, 766–786.

Yamagishi, M., Kobayashi, T., & Nakamura, Y. (2008). Effects of web-based career identity training for stress management among Japanese nurses: A randomized control trial. *Journal of Occupational Health*, *50*(2), 191–193. https://doi.org/10.1539/joh.L7086

Zeytinoglu, I. U., Denton, M., Davies, S., Baumann, A., Blythe, J., & Boos, L. (2006). Retaining nurses in their employing hospitals and in the profession: Effects of job preference, unpaid overtime, importance of earnings and stress. *Health Policy*, *79*(1), 57–72. https://doi.org/10.1016/j.healthpol.2005.12.004

# AT THE BEDSIDE: A QUALITATIVE EXAMINATION OF SOUTH FLORIDA NURSES' COVID-19 EXPERIENCES

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**At the Bedside: A Qualitative Examination of South Florida Nurses' COVID-19 Experiences**

"*As they say in hospice care, 'There's a good death,' and to me, that's not happening with COVID-19… It leaves a horrible void deep within your soul. It's painful*." (as cited in Teeman, 2020)

"*I'm tired of walking into rooms and your patient [is] dead. You just walk into a room and there's a dead body in there*." (in NowThis, 2020)

"*I never thought I'd have a job where people thank me for my service and my son cries every night worrying I will die*." (as cited by @jessdeede, Twitter, 2020)

"*My babies are too young to read this now. And they'd barely recognize me in my gear. But if they lose me to COVID I want them to know Mommy tried really hard to do her job*." (Cornelia Griggs, Twitter, 2020)

The healthcare industry faces a grave nursing shortage, as the demand for nurses continues to grow, but the number of nurses available for these jobs is steadily decreasing (Rosseter, 2019). The U.S. Bureau of Labor Statistics expects that, by 2022, over 500,000 nurses will reach retirement and 1.1 million new nurses are projected to be needed to avoid a nursing shortage (E. Richards & Terkanian, 2013). Yet, this statistic fails to consider the number of nurses that leave the profession early as a result of occupational stress (Mosadeghrad, 2013). Stress is an unpleasant emotional experience that leads to behavioral consequences (Motowidlo et al., 1986) and can have particularly negative implications if not dealt with promptly and effectively. Occupational stress can be detrimental for not only employees, but the organization as well. In fact, organizations can stand to lose billions of dollars each year as a result of employee ill-health and its associated consequences (Stambor, 2006; Stewart et al., 2003). Amidst the unprecedented COVID-19 pandemic, the demand for nurses is at an all-time high, but the already problematic turnover rates have been exacerbated due to occupational stress and resulting

strains (Labrague & de los Santos, 2020a). One way to address the impending nursing shortage is for healthcare organizations to use targeted efforts to retain existing nurses by providing safe environments for them to work in and promoting employee health and well-being (Ritter, 2011).

As such, it is of utmost importance to document and describe the lived experiences of nurses' working in epicenters of the COVID-19 outbreak. Doing so will help to better understand nurses' related workplace and personal experiences and identify actionable employee wellness solutions, which are especially useful in times of crisis where stress can be heightened. This study places an intentional focus on nurses working in one of the epicenters of COVID-19, South Florida, and utilizes a qualitative design to answer the following research questions:

1) What are the lived experiences of nurses working during the COVID-19 pandemic?

2) How have these experiences influenced nurses' professional and personal lives?

3) What resources have nurses leveraged and what has been most effective?

4) What should healthcare organizations do to prepare for future health crises?

## Occupational Stress in Nurses

According to a Health Risk Appraisal report by the American Nurses Association (2017), workplace stress was cited as the top work environment health and safety risk by nurses. In addition, only 56% of respondents had healthy foods available to them during work hours, less than half of respondents exercised more than twice a week, nearly 70% of nurses reported putting their patients' health and safety above their own, and

respondents slept fewer hours than the average American (American Nurses Association, 2017). When nurses are unable to take care of themselves, patient safety and quality of patient care may suffer as well, and indeed, job stress is associated with more patient safety incidents (Elfering et al., 2006; Y.-M. Park & Kim, 2013). Occupational stress among nurses, then, can result in a variety of physical, psychological, and behavioral consequences (Parikh et al., 2004).

A stress response at work can be initiated by various occupational and work demands, including environmental stressors (Quick & Henderson, 2016). While some stressors are prevalent across occupations, others are job-specific and require tailored prevention and intervention strategies (Beehr et al., 2000). Wheeler (1997) found that nurses experience various occupational stressors related to leadership, organizational control, the job itself, and human resources. Specifically, nurses face daily challenges associated with role ambiguity, lack of autonomy (Dolan et al., 1992), strenuous workloads with inadequate time to complete tasks (Ross-Adjie et al., 2007), dealing with difficult colleagues and patients, and scarce resources (Clegg, 2001; Lambert & Lambert, 2001; McGrath et al., 2003). Common strains, or consequences of experiencing stress, include burnout, compromising quality of patient care, decreased safety (Salyers et al., 2017), reduced levels of self-care (Alkema et al., 2008), high turnover (Leiter & Maslach, 2009), and career change considerations (Zeytinoglu et al., 2006).

Coping is a process by which the effects of stress can be buffered or minimized to prevent further strain (Parikh et al., 2004). The type of coping response elicited is influenced by several factors, such as the source of stress and the individual's appraisal of the situation (Monat & Lazarus, 1991). Nurses use problem-focused and emotion-focused

coping strategies, avoidance, and social support to deal with occupational stress (Isa et al., 2019). Problem-focused coping involves engaging in behaviors that aim to resolve the situation that is causing distress, while emotion-focused coping refers to regulating such distress (Folkman & Lazarus, 1985). Qualitative research has found that, outside of the workplace, nurses engage in both positive coping strategies such as socializing with colleagues, exercising, engaging in activities at home and with family, and maladaptive coping strategies, such as substance abuse and antisocial behaviors, including avoiding others and displacement (Happell et al., 2013).

**The Changing Nature of Work for Nurses During COVID-19**

The global outbreak of COVID-19 has posed an extraordinary and unprecedented challenge to healthcare workers. An early meta-analysis on the effects of COVID-19 on the mental health of healthcare workers indicated high levels of anxiety, depression, and insomnia have been consequences of working on the frontlines of a pandemic (Pappa et al., 2020). Nurses are working with limited resources to treat and care for patients for extended periods of time (Maben & Bridges, 2020; Morley et al., 2020; Newby et al., 2020; Ripp et al., 2020), and are thereby exposed to significant stress both on and off the job (Kackin et al., 2020) and vulnerable to psychosocial problems (Huang et al., 2020; Lai et al., 2020). Nurses have expressed concerns related to safety, the allocation of scarce resources, and the changing nature of nurse-patient relationships (Morley et al., 2020).

Around the world, nurses have reported stress, sadness, anxiety, depression, and fear while treating COVID-19 patients (Kackin et al., 2020; Karimi et al., 2020; Q. Liu et al., 2020). Quantitative research in Hong Kong, for example, revealed high levels of

burnout, anxiety, and mental exhaustion in medical and nursing staff during the pandemic (Cheung et al., 2020). In the U.S., nurses face physical and emotional challenges associated with ensuring workplace safety for all healthcare staff, given the nationwide shortage of PPE and everchanging safety guidelines (Shinners & Cosme, 2020). In China, emergency department nurses were more likely to suffer from depression (An et al., 2020; Lai et al., 2020) and were at higher risk for anxiety and depression compared to physicians (J. Guo et al., 2020; Z. Liu et al., 2020; Pappa et al., 2020), given their more frequent and closer contact with patients. The daily stress of facing possible contagion on the job, having limited information about the virus, the risk and fear of infecting loved ones, working with limited resources and inadequate PPE, and well over 2,000 COVID-related nurse deaths worldwide (International Council of Nurses, 2021) has made this specific workforce especially vulnerable to suicide (Rahman & Plummer, 2020).

Furthermore, as COVID-19 has overwhelmed hospital systems and led to staff shortages, nurses have experienced increased workloads. In China, for instance, nurses' workloads increased by 1.5 to 2 times their normal work hours and workloads (Sun et al., 2020). In the United Kingdom, previously established nurse-patient ratios changed from one nurse per patient to one nurse for every 6 or more patients (Maben & Bridges, 2020). The United States, with its high numbers of COVID-19 cases, faces similar challenges related to overwhelmed hospitals and staffing shortages, leading nurses to feel overwhelmed, anxious irritable, and difficulty sleeping (American Nurses Association, 2021; International Council of Nurses, 2021). In Florida, for example, the number of COVID-19 cases has been so high at times that a typically 15-minute hospital admission process can now have patients brought in as emergencies waiting for up to an hour (The

Associated Press, 2021). Moreover, Florida hospitals are losing their nursing workforce to lucrative job opportunities in other states for double or triple their current salaries and in August of 2021, almost 70% of hospitals in Florida faced critical staffing shortages (The Associated Press, 2021). Consequently, nurses are reporting fatigue and exhaustion from working long shifts in full PPE (Kackin et al., 2020; Maben & Bridges, 2020; Ripp et al., 2020). The intensity of these workloads is also changing (Maben & Bridges, 2020), as nurses are providing end-of-life care more frequently and must adjust to patients' rapid deterioration, which many may not be accustomed to (Maben & Bridges, 2020). Nurses are also having to assume the role of loved ones for their patients, given the isolation guidelines in place that prohibit family from visiting (Maben & Bridges, 2020). Finally, due to finite resources, nurses face ethical dilemmas when forced to decide which patients should be prioritized or tended to (Maben & Bridges, 2020).

To make matters worse, healthcare workers have been unable to find suitable solutions for their psychological distress associated with working on the frontlines of the pandemic (J. Guo et al., 2020). In one study, only one-third of medical staff had received help with their psychological distress from mental health professionals (Z. Liu et al., 2020). Even when help is sought out, its accessibility and usage are hindered by the lengthy time lags between requests for appointments and meeting times (Aycock & Boyle, 2009). Debriefing is a process used by nurses to discuss critical incidents with the goal of recovering from any distress experienced as a result (Hanna & Romana, 2007). However, nearly 60% of nurses in one study did not have routine access to debriefing opportunities after critical incidents at work, and some found debriefing processes to cause more harm than good, expressing fear over losing promotions and concerns about

ability to perform on the job (Ross-Adjie et al., 2007). It is well-known that long-term exposure to significant stressors coupled with the inability to cope effectively with any resulting traumatic experiences may lead to psychological disorders (Mealer et al., 2007), increased absenteeism, lower levels of productivity (Adriaenssens et al., 2012), and poorer quality of patient care (Donnelly & Siebert, 2009; Gates et al., 2011). In fact, overworked healthcare workers in China during the COVID-19 outbreak were found to be less likely to comply with safety procedures, such as frequently washing hands, and those on the frontlines participated less regularly in trainings on safety practices (M. Zhang et al., 2020). In Turkey, quality of patient care has suffered as a result of worsening working conditions during the pandemic (Kackin et al., 2020). Taken together, these stressors have strong implications for the well-being of not just nurses, but patients as well.

## The Importance of Nurse Well-Being

It is evident that much of the emerging research on how COVID-19 impacts nurses has focused on its detrimental consequences and negative implications. While this study seeks to understand some of the challenges nurses have faced during the current global health crisis, it also recognizes that there is an opportunity to explore the more positive aspects of well-being within the nursing profession and what positive traits or qualities have been leveraged to manage working during these challenging times. Positive psychology, however, offers a refreshing perspective for framing the study of well-being in nurses as it emphasizes the conditions and processes that facilitate flourishing and positive functioning at both individual and group levels (Gable & Haidt, 2005). Positive psychology shifts the narrative from fixing what is wrong to one that instead chooses to

focus on positive qualities and experiences. Additionally, positive psychology explores individual-level positive traits such as spirituality and perseverance that are often studied in the nursing literature (i.e., Pesut, 2002; Pike, 2011; Stagman-Tyrer, 2014), making this lens a particularly useful one for the current research aims.

Well-being is a multidimensional phenomenon that consists of evaluating life experiences in a positive manner and subsequently having positive feelings and emotions (Diener & Seligman, 2004). In the study of well-being, there are two distinct approaches: the hedonic and eudaimonic views. The hedonic approach to well-being seeks to maximize human happiness and defines well-being in terms of pleasure versus pain, thereby providing research with a clear aim of identifying appropriate intervention strategies. In contrast, the eudaimonic approach argues that subjective happiness does not always equate to well-being, but rather, well-being is developed by finding meaning, personal expressiveness, and positive functioning (R. M. Ryan & Deci, 2001). Research, however, suggests that well-being is a phenomenon that encompasses aspects from both approaches (Compton et al., 1996; King & Napa, 1998; McGregor & Little, 1998).

Interestingly, several studies have emerged in the nursing literature that focus on the sense of occupational calling that often drives motivation in nurses (i.e., Afsar et al., 2019; Eley et al., 2012; Emerson, 2017). Early research on the COVID-19 nursing experience has suggested that nurses who think of their career as a calling have had more favorable outcomes in terms of job performance and quality of patient care (Zhou et al., 2020; Zhu et al., 2020). Moreover, traits like hardiness and resilience in nurses (Abdollahi et al., 2014; Hyun-Ji & Hyunkyung, 2017) and self-compassion in healthcare workers have been shown to contribute to happiness (Benzo et al., 2017). As such, this

study seeks to explore the potential positive experiences and emotions nurses have encountered during the pandemic, which could help to inform the types of stress management and prevention strategies healthcare organizations employ.

Nurses are entrusted with the lives of those they care for, so a focus is often placed on patients' health and well-being, thereby leaving their own well-being unchecked. It is appropriate, then, to reciprocate this level of care by investing in nurses' health and well-being at work, as ill-health should not be an inevitable byproduct of being a dedicated healthcare provider. Considering that the COVID-19 pandemic continues to overwhelm healthcare workers, there is a growing need to bring attention to the lived experiences of nurses during this time and identify efficacious strategies for improving employee well-being, as well as to better prepare for the inevitable next health crisis. Not only will doing so help to retain a healthy workforce of nurses, but it will also ensure that there is no compromise on patient or nurse wellness. As such, in the present study, interview methods and thematic analysis are leveraged to investigate the lived experiences of South Florida nurses working during the COVID-19 pandemic.

## Method

### Sample and Setting

While many qualitative studies often use smaller sample sizes in comparison to quantitative research (Braun & Clarke, 2013), the current study consisted of 20 full-time registered nurses (RNs) working directly with COVID-19 patients. This is more than double the sample size of what some qualitative nursing studies on the impact of COVID-19 have used (i.e., Kackin et al., 2020; Q. Liu et al., 2020) and was considered an

adequate size for its ability to capture desired diversity within the sample and address the scope and purpose of the study (Braun & Clarke, 2021).

**Inclusion/Exclusion Criteria.** Given that there might be differences in healthcare policies and procedures across, and even within, states that could impact nurses' experiences while working during the pandemic, only RNs who were employed in South Florida hospitals were eligible for participation in the study. Eligibility on this criterion was determined by screening for self-reported employer zip code. Any participants employed in zip codes that did not belong to Broward, Miami-Dade, Palm Beach, Port St. Lucie, or Monroe counties were excluded. All participants were required to be at least 18 years of age. Additionally, only RNs working full-time in emergency room, medical or surgical ICU, or COVID-specific units were eligible for participation. Licensed Practical Nurses (LPNs) and Certified Nurse Assistants (CNAs) were excluded from participation.

**Demographic Information.** A total of 53 individuals expressed interest in participating in the study by completing the initial screening survey. Of these, 35 participants were eligible for participation based on the study's inclusion and exclusion criteria. The final sample ($N$ = 20) consisted of mostly women (70%), with a mean age of 30.4 ($SD$ = 6.66) years. Sixty-five percent of participants worked day shifts, 30% worked night shifts, and 5% worked swing shifts. Data were collected from participants working in Miami-Dade County (45%), Broward County (40%), and Palm Beach County (15%). All participants were employed full-time and had earned at least a bachelor's degree (80%). Sixty percent of participants reported working in a COVID-specific unit, 10% worked in medical ICU, 5% worked in a stepdown ICU, 5% worked in a pediatric ICU, and 5% worked in an emergency room. While these were the self-reported units

participants worked in, interviews revealed that many worked across various units, including COVID-specific units, whenever additional staff was needed. Participants had worked in the nursing field for less than 1 year (10%), 1 to 5 years (55%), 6 to 10 years (25%), and 11 to 15 years (10%). Participants had been in their current job role for less than 1 year (10%), 1 to 5 years (70%), 6 to 10 years (15%), and 11 to 15 years (5%).

Participants who identified with more than one race were given the option to indicate what those races were in terms of primary and secondary race. 65% of participants reported Latino/a or Hispanic American as their primary race, 20% reported White or Euro-American (non-Hispanic), and 15% reported Black, Afro-Caribbean, or African American. In terms of secondary race, 45% of participants were Latino/a or Hispanic American, 35% were White or Euro-American (non-Hispanic), 10% were Black, Afro-Caribbean, or African American, 5% were Middle Eastern or Arab American, and 5% did not specify. These demographics reflect the diverse local population in South Florida. Most participants lived with other family members (40%), 30% lived with their spouse/partner, 25% lived with both their spouse/partner and their children, and 5% lived alone. Seventy-five percent of participants reported not living with any individuals who were at high-risk for contracting COVID-19. For a breakdown of the sample's demographic and occupational characteristics, see Table 1.

*[Insert Table 1 Here]*

## Procedure

**Qualitative Methodology.** One can only describe the world by the way in which it is experienced. As such, qualitative research is ideal for exploring nurses' lived experiences of the COVID-19 pandemic, as it is often utilized to better understand

nurses' experiences across a variety of contexts (i.e., Kackin et al., 2020; Lima et al., 2018; Vasli & Dehghan-Nayeri, 2016). Phenomenology is a type of qualitative methodology which focuses on understanding a phenomenon through people's lived experiences (Cibangu & Hepworth, 2016). It is also a widely-used methodology in the nursing literature (Beck, 1994; J. Linton & Farrell, 2009; Persolja et al., 2020), as it examines how meaning is experienced by its subjects, allowing for the lived experiences of these individuals to inform research. In the current study, phenomenology was used to study the object (the COVID-19 pandemic), and its subjects (South Florida RNs). Given that the present research questions are relational in nature, this was deemed an appropriate methodology for the study. Phenomenology enables nurses to describe their experiences during a novel and unprecedented phenomenon like the COVID-19 pandemic, as it allows for these subjective experiences to color an event. Indeed, little is known regarding the pandemic's impact on the sample of interest, and new research and information is constantly emerging.

Qualitative research is useful in providing insight into employees' thoughts surrounding their workplace experiences (Mazzola et al., 2011), as it can elicit unconstrained depictions and first-hand accounts of workplace experiences (Schonfeld & Farrell, 2010). Because discussing topics related to the COVID-19 pandemic in a healthcare context may be a particularly sensitive issue for some, if not all, nurses, private and individual interviews were conducted, as research suggests that this is an appropriate approach for delicate topics (Decker et al., 2011). Moreover, semi-structured interviews are one of the most common methods of data collection in nursing research, as they provide powerful insights into nurses' lived experiences (K. Peters & Halcomb,

2015). Each nurse has seen the pandemic uniquely through their own lens, and, as such, can contribute to our overall understanding of the extent to which COVID-19 impacted these healthcare professionals.

**Recruitment and Interview Process.** The study utilized a sample of convenience and recruitment was conducted via listservs and social media outlets, including LinkedIn and Facebook, as well as nursing blogs. Human Resources departments of hospitals in South Florida were contacted directly via email and by phone, provided with the study's recruitment information, and asked to share with nurses. It is unknown if this approach was successful in reaching nurses, as most did not respond back with confirmation. All individuals interested in participating were asked to fill out a brief online survey via Qualtrics included in the recruitment advertisements to determine eligibility. This survey asked for employment type (part-time/full-time), year of birth, their employer's zip code, current role, hospital unit, whether work had included direct treatment and caring of COVID-19 patients in the past year, time availability for an interview, and preferred contact method. Eligible participants were contacted through their preferred form of communication to set up a time for an interview via a video conferencing application (Zoom) at a time most convenient for them. Since only 20 spots were available, eligible participants scheduled for interviews on a first come, first serve basis.

A semi-structured interviewing format was used to allow for flexibility in the discussion of related topics that were not originally included in the set of questions used on all participants (see Appendix A). Given the novelty of the pandemic, it was important to allow for some flexibility in questions asked to collect new information that might not have been previously considered (Burnard et al., 2008). The interview questions (see

Table 2) were developed based on existing qualitative research on the impact of COVID-19 on nurses (Kackin et al., 2020; Shinners & Cosme, 2020; Sun et al., 2020). One-on-one interviews were conducted via Zoom and recorded for transcription purposes. The use of a video conferencing application for data collection eliminates the need for participants to travel and any potential costs associated with traveling, making it easier to incentivize participation in the study and recruit participants who may be geographically distant, as was the case in the current study. Additionally, interviews held virtually helped to accommodate for the irregular work hours nurses had and allowed for more flexibility in the times nurses could set aside for participation. All participants were compensated with $75 Amazon e-gift cards for completing the interview. The length of the interviews ranged from 21 to 56 minutes ($M$ = 34.5, $SD$ = 10.7), with a median of 33 minutes, although most interviews were 41, 36, or 22 minutes in length. All interviews were held between May and June of 2021. It is important to note that during the data collection period, COVID-19 positivity rates in Florida were extremely low (5-7%) compared to current trends (33%; Johns Hopkins Coronavirus Research Center, 2021) and hospitals were experiencing a period of calmness as a result.

The interviewer used a standard script for all participants, which included an opening statement to help establish rapport, as well as the set of interview questions and a closing statement. The opening statement explained who the researcher was, what the purpose of the study was, and a statement about the flexibility in keeping cameras on or off during the interview to ensure the participant was always comfortable. All participants were provided a crisis hotline number and were read a statement of confidentiality that ensured their identities would be kept private and protected to the

fullest extent provided by law in the reporting of the results. Demographic information and consent to participate was obtained at the onset of each interview via a second online survey hosted on the Qualtrics platform. The survey first provided participants with an online consent form and then presented questions about gender, primary and secondary race/ethnicity, primary and secondary familial nation of origin, industry tenure, job tenure, shift type, education level, who they lived with, and whether anyone they lived with was at high-risk for contracting COVID-19. The survey also asked participants to provide a pseudonym to be used to quote them in this paper. At the end of each interview, participants were verbally notified that the interview was complete, the recording had ended, and were thanked for their participation in the study. Compensation was then immediately emailed to participants upon completion of the interviews as a token of appreciation for participation.

**Subjectivity Statement.** The primary researcher approached this study's research questions using an occupational health psychology (OHP) lens, which focuses on employee well-being and performance on the job as they relate to workplace conditions. The motivation for this research came about as a means by which to understand how to improve workplace environments for a specific population of employees because of a major change to the way in which work is done, brought on by COVID-19. As such, the development of the interview questions and the thinking behind understanding nurses' workplace experiences during the pandemic stem from this OHP training background. It is possible that having a training background in a different area, such as clinical or developmental psychology, or even nursing, could have taken this research down a different path in terms of purpose, research questions, and findings. In addition, it is

worth noting that the primary researcher does not have a personal connection to COVID-19, as no loved ones have been lost to the illness thus far, a painful experience which could have presented itself as a bias that taints the interviews and the interpretation of the discussions. Nonetheless, the primary researcher is not entirely removed from this event, as the world has collectively watched, followed, and read about nurses' experiences while working during the pandemic through the media and by having informal conversations with these individuals firsthand. When COVID-19 news coverage began, the primary researcher read several accounts of nurses' terrifying experiences at work as cases began to rise, and it was a driving factor in pursuing this research because of its timeliness and critical importance to the healthcare field. The primary researcher is also a Hispanic woman, making her strongly positioned to understand woman-specific workplace issues and communicate with a population of nurses that are mostly Hispanic/Latino. In addition, the primary researcher has previous experiences conducting semi-structured interviews and focus groups. Given the primary researcher's status as an 'outsider' in the nursing field, there is a degree of limited understanding of disease processes, standard hospital procedures and structures, as well as guidelines and policies that could potentially play a role in the interpretation and analysis of the data.

**Data Management and Human Subjects Protection**

This project was reviewed by the Institutional Review Board at the researcher's institution and was approved for complying with all human subjects guidelines. All files were saved with unique codes using the following notation: P1_Chosen Pseudonym. As an example, participants were numbered based on the order in which interviews took place and labeled using their chosen pseudonym to maintain confidentiality. Only the

primary researcher and the advisor had access to the interview recordings and transcriptions, which were stored securely on a cloud-based server with limited access based on permissions in a password protected personal computer. During the transcription process of the audio interviews, any personal identifiers, such as participant and company names, were replaced with marked generic descriptions and excluded from the results.

**Data Analysis**

The audio data were transcribed in English using non-strict-verbatim language and speaker tracking. Later, transcriptions were analyzed using reflexive thematic analysis, using guidelines proposed by Braun and Clarke (2012). While phenomenology refers to the means through which data is collected, reflexive thematic analysis provides researchers with the tools needed to interpret and make sense of the data. Reflexive thematic analysis is a widely used and well-established, multi-disciplinary process for analyzing qualitative data that generally consists of six phases (Braun & Clarke, 2006). That is, when using reflexive thematic analysis to examine qualitative data, coders often move back and forth between different phases. Reflexive thematic analysis allows for flexibility in analyzing complex data (Braun & Clarke, 2006) while still producing rich summaries of the participants' subjective experiences and thoughts in an accurate manner (Aguinaldo, 2012). In a study seeking to understand the lived experiences of nurses working amidst a global health crisis, this type of analysis was ideal. Ultimately, the goal of thematic analysis is to find the best fit of analysis, making it an iterative process for answering research questions.

The first phase in thematic analysis included becoming familiar with the data, a process in which the data is read over several times to become familiar with and immersed in the content. During the second phase, preliminary codes were generated that helped to identify important features of the data, thereby aiding in answering the research questions posed. Next, initial themes were generated by examining the codes from the second phase and identifying patterns of meaning across the data. In the fourth phase, themes were reviewed and refined to ensure that the themes were answering the research questions. The fifth phase involved creating informative names for each theme and determining the scope and focus of the themes. Theme development is generally an active process in which the coder seeks to find overlap across generated codes that capture the most important patterns in the data that help to answer the research questions. Finally, the final phase resulted in a contextualization of the analysis in relation to existing literature on the topic (Braun & Clarke, 2013).

Qualitative analyses were conducted by the primary investigator of the study. Specifically, an inductive orientation to thematic analysis was utilized with NVivo 12 software, one of the more common qualitative data analysis software programs (Burnard et al., 2008). The inductive orientation to analyzing qualitative data uses the content of the data to direct the coding and theme development, rather than a predetermined theoretical framework (Burnard et al., 2008), in a process referred to as open coding. Themes, as such, were not assumed prior to coding and a codebook was not used, as these are typically characteristic of deductive orientations within thematic analysis (Braun & Clarke, 2020). Thus, inter-rater reliability was not a key measure of coding quality in the current study, given that the coding process was open and organic, meaning

that no coding framework was determined prior to data analysis and employed (Braun & Clarke, 2020, 2021). Instead, a line-by-line examination of the qualitative data was used to identify salient themes across participant responses. Further, a combination of semantic and latent approaches to coding and theme development were used, as in some instances there was a need to report concepts and assumptions underpinning the data, while other instances called for a more explicit reflection of the data (Braun & Clarke, 2019). This approach was coupled with a critical realist focus, which reports an assumed reality evident in the data (Braun & Clarke, 2019).

**Establishing Trustworthiness**

Some researchers argue that validity and rigor, while inherently concepts often used when discussing quantitative research, are nonetheless important to build into the qualitative research process (Porter, 2007; Sundler et al., 2019). The way in which scientific rigor and phenomenological validity were achieved in the current paper are discussed here in terms of reflexivity, dependability, credibility, and transferability. Reflexivity is concerned with maintaining a reflective attitude throughout the research process and creating an ongoing process in which understanding of the data and themes is questioned. Multiple researchers that can question each other's statements is one way to maintain reflexivity and is the approach used in the current study (Malterud, 2001; Sundler et al., 2019). To clarify, the primary researcher conducted all data analyses, but a secondary researcher reviewed the final theme and sub-theme development, and a debriefing session was facilitated by both researchers to discuss findings, patterns, and overall, confirm that the understanding of the data was sound. Dependability is associated with replication of findings, that is, whether results would be repeated if the study was

replicated with the same or similar subjects in the same or similar context. In the current study, dependability was achieved via peer review of transcripts and data analysis, as well as the use of audio recordings from the interviews. Credibility refers to the presentation and meaningfulness of the findings, including transparency of methodology and data analysis (Kitto et al., 2008; Sundler et al., 2019). This was achieved by providing excerpts from the interviews to support the relevance of each theme and sub-theme, full transparency of procedures and interview questions used, as well as the details of the analyses and conclusions drawn (Sjöström & Dahlgren, 2002). Finally, transferability is conceptualized as the usefulness and relevance of the results to other research, including the relevance of the findings across contexts (Sundler et al., 2019). This is not to say the findings are generalizable, a term often used in quantitative research, but rather, that they are authentic. As such, to address transferability, a detailed description of the participants and their respective demographic information are provided to enable readers to compare the current sample to other groups or individuals and their experiences, as well as other research findings (Curtin & Fossey, 2007).

*[Insert Table 2 Here]*

## Results

The process of analyzing the qualitative data using thematic analysis led to the development of seven overall themes that were guided by the study's research questions. In this section, each theme is presented and expanded upon, with key participant examples for each sub-theme. Exemplar quotes, broken down by themes and sub-themes, are displayed in Table 3. Each quote is accompanied by the pseudonym each participant chose for themselves, their self-reported hospital unit, and their job tenure in years. This

study first aimed to understand nurses' lived experiences during the pandemic, and how these experiences shaped their lives both on the job and outside of work. The use of thematic analysis led to the development of five themes that help to answer these first two research questions, which are summarized in the paragraphs below.

**Theme 1: Navigating the Challenges Related to Working Conditions**

One of the most notable stark changes to nurses' professional lives because of the ongoing pandemic was related to their workplace environments. Specifically, nearly all participants ($N$ = 16) discussed unsafe working conditions under which they carried out their job responsibilities, due to a variety of factors such as inadequate PPE and large volumes of work that did not allow them to conduct procedures without distractions. While the pandemic brought about supply shortages of both equipment and staffing, the seriousness of the illness and extreme fear of contagion and infecting others also increased nurses' safety performance on the job. Many nurses, for example, became more vigilant about washing their hands in between procedures and general cleanliness during their shifts, something that more tenured nurses noted they were less strict and concerned about prior to the pandemic. Two sub-themes were identified: lack of adequate resources and safety.

**Lack of Adequate Resources.** Participants ($N$ = 15) lacked a variety of resources that made their work significantly more difficult, dangerous, and overwhelming. A PPE shortage (including gloves, gowns, and N95 masks) forced nurses to reuse the same PPE over the course of several days, weeks, and even months, which went against recommended health and safety guidelines. Others mentioned being short-staffed due to high turnover, restrictions on staff allowed to enter COVID floors, and nurses out sick

with COVID-19. In addition, hospitals were overwhelmed with patients and ran out of beds, resulting in patients spilling over into other units. These factors had implications for nurses' workloads, as they led to increased and atypical job responsibilities. Finally, the lack of both accessible and helpful mental health resources was mentioned, and there seemed to be variability across hospitals in terms of what was offered and whether it was widely used and effective:

> *We have a pastoral care, non-denominational spiritual people in our hospital that come by. Which was nice and all, but I'm of the mindset that prayer doesn't really comfort me. It's not gonna help me take care of patients any better. It's not gonna help me feel any less scared when I come into work, usually. There was that. I felt like if we had just people, in general, talking to us about how we're feeling and listening to that. Just saying, "It's okay. I'm here to hear you." Or whatever it is. I would've appreciated that a little more.*
>
> - Julia, COVID-Specific Unit, 5 years

> *But resources, in the beginning they were really scarce... if you were taking care of a COVID patient you were back the next day with the same patient, reusing your mask, your goggles...*
>
> - Amelia, Medical ICU, 4 years

> *We would pretty much do everything. We were environmental cleaning... I really didn't get a lot of outside help because they weren't really allowin' a lot of people on COVID floor... They would try to make us unclog the toilets or fix our own supply because they wouldn't come in.... Definitely, we didn't train to do that. Nor do we ever think you would be doing that, even taking out the garbage. We had to do that too.*
>
> - Lisa, COVID-Specific Unit, 4 years

**Safety.** Participants ($N$ = 16) also discussed the challenges related to workplace safety. Some nurses admitted to being so overwhelmed with their patients and workloads that they would overlook or miss steps in their administration of medications, raising concerns about the safety and well-being of their patients. Others found the courage to use their safety voice when observing unsafe practices or when concerned about a patient,

something they struggled with prior to the pandemic. This was especially true of novice nurses who felt they lacked confidence in their skills at the onset of their careers but were gradually building up the courage to speak up when they had a concern. Furthermore, participants commented on how the novelty of the virus and unclear information early on about how it was transmitted shed light on just how dangerous nursing could be, thus reminding nurses of the importance of cleanliness, sanitation, and following safety guidelines at work, which had often been glossed over prior to the pandemic:

> *There's days that I'm working, and I'm working so fast, and then I pause, and I'm like, "I'm handling this in an unsafe manner, and I need to slow down....” That's how I know I'm burnt out, when I start feeling that way... for example, this one time I was gonna give this patient a medication, and I scanned it, and the medication—it comes in a pill and it's supposed to be cut in half—and I had a doctor calling me on one line. Another doctor going up to me for something else, and then I had my nursing assistant telling me, hey, room so-and-so is asking for you 'cause they need this. I was like, "There's so many things going on at once and so many people need me" and so I almost forgot to cut the pill in half. It was a blood pressure medication. Maybe had I not cut it in half, the patient's blood pressure would have gotten really low or something. Then, I put the medications in the little cup without having cut that one, and I was like, "Wait, something here doesn't seem right."... Sometimes when you have so many interruptions coming in, a small detail like that, it's so easy to overlook it.*
>
> - Amy, COVID-Specific Unit, 1 year

> *... pre-COVID we'd see so many different things, and we kinda became dull to different diseases and you just kinda go in and out of the rooms and wouldn't care. This COVID thing really made us pay attention to how we handled ourselves at work and patient safety.*
>
> - Carlos, Emergency Room, 6 years

> *... the biggest thing I have noticed is that nurses became more vocal to what they needed as far as safe staffing ratios, things like that, and I think that because of it, the culture has changed. I think it’s become more nurse-driven, so I feel that because of that momentum that we did get during the pandemic with saying, “Hey, we need more of this. We need more of that...”*
>
> - Lisa, COVID-Specific Unit, 4 years

### Theme 2: Drastic Changes to Quality of Patient Care

Most participants ($N$ = 17) discussed the negative impact of the pandemic on the quality of patient care, attributed to a variety of reasons, including higher nurse-patient ratios and fewer interactions, physical limitations when wearing PPE, patients refusing to follow safety protocols or acknowledge they had the coronavirus, ever-changing safety guidelines, and colleagues unwilling to enter rooms to assist with care. Many also discussed the deep sadness and trauma experienced from watching so many patients die and emphasized the loneliness those patients experienced in their final days. Two sub-themes were identified: limitations and barriers to typical patient care practices, and uncertainty and constant change.

**Limitations and Barriers to Typical Patient Care Practices.** Many participants ($N$ = 15) discussed at length the difficulty experienced when caring for patients diagnosed with COVID-19 and how the quality of patient care had diminished during the pandemic. One notable challenge was the amount of time it took to put on all the required PPE to enter a room, especially when time was of the essence. The PPE presented other obstacles as well, such as difficulty communicating with patients and colleagues while wearing masks, being unable to provide comfort to patients with a smile or physical touch, and simply being uncomfortable to wear for long periods of time. Additionally, some nurses recounted dealing with angry family members, patients who could not understand what was happening to them or why, and the lack of contact with patients that created a lonely experience for them. In fact, one nurse described a situation in which a patient refused to acknowledge they had COVID-19 and died from resisting care, despite getting multiple warnings from nurses. This kind of resistance from patients was novel and resulted in

increased difficulty providing quality patient care:

> *I mean, if it didn't exist, would we be gowned up? Would we have to go through this? Your care would be different. As far as people who didn't believe it was—they didn't listen. We had one patient that, gosh, we musta told him that if you don't keep the high flow on, you're gonna go down. You're gonna go down. He passed away two weeks later, and it was all because it was hard to get them to understand.*
>
> - Lizzy, COVID-Specific Unit, 6 years

> *I would say, the biggest problem that I've had is when the patient codes because the patient's near death. When that happens, you have to react fast, but what's difficult with the COVID patients is that you have to gown up and get everything on before you can go into the room to help. For me personally, that's the hardest part 'cause I like to be—not quick, but when I see something, I react very quickly because that's the patient life's on the line. I think it's very difficult having to see the heart rate or the respiration or something go on in the room, and you literally have to wait, put your gown, put the shoe cover, put your goggles, put everything, then you're able to go into the room.*
>
> - Nora, Surgical ICU, 1 year

> *You have some patients that are very anxious, understandably, and then you have some patients that are just angry. They don't know what's gonna happen to them, and they want to make sure that you're doing everything that you can. You want to make sure that you're giving off that you're doing everything that you can to make them comfortable. But sometimes nothing is enough, and they don't want to be in that situation, so they take their anger out on you.*
>
> - Rocco, COVID-Specific Unit, 1 year

**Uncertainty and Constant Change.** Given the novelty of the COVID-19 virus, many nurses ($N$ = 12) felt lost and unsure when it came to understanding the disease process and the best way to treat patients. This lack of knowledge about the virus hindered the quality of patient care they were able to provide, given the limited information available at the time. Furthermore, hospitals frequently changed safety guidelines and protocols, such as first telling employees not to wear masks and later changing the rule to require mask-wearing. This created further confusion and frustration

and made it difficult for nurses to be consistent with their work. To add to this, nurses felt worried about going to work each day because of the drastic ways patient would decompensate from one day to the next:

> *The N95 masks that we were getting, initially, the filters were to be changed every three months. First, it started off with every month. Then it went to three months. Then it went to they were good for a year. It was like, who are we going by? How are we coming up with these guidelines? Then it was the whole two-mask thing. Whether we had to wear two masks just for our day-to-day routine.*
>
> - Lizzy, COVID-Specific Unit, 6 years

> *Oh, man. You never know what to expect. That's for sure. You walk in and you never know how many patients you're gonna have or how many are stable or unstable.*
>
> - Lazaro, COVID-Specific Unit, 1 year

> *Everything was brand-new. I felt like pretty much every day, we're learning about a new symptom, trying to figure out different ways to treat all the patients. There were so many patients coming in every day. I felt very overwhelmed in the beginning of it. It was really hard 'cause we tried to do our best, but there was a lot of things that are over our control. We couldn't do anything for some patients.*
>
> - Sarah, Emergency Room, 2 years

**Theme 3: The Impact of COVID-19 on Physical and Mental Health**

All participants ($N$ = 20) explained how working during the pandemic had taken a toll on their physical and mental health and well-being. In terms of physical ailments, one participant had recurring urinary tract infections from not having time to use the restroom during work shifts and another experienced nightmares and trouble sleeping, filled with the dread of going to work. Participants also described various symptoms of ill mental health, including burnout and compassion fatigue, because of compounded traumatic experiences of patient death and suffering. The numerous accounts of stressful workplace experiences highlighted the level of stress nurses were under since March of 2020. As

such, two sub-themes were identified based on these narratives: fear of contagion, and traumatic experiences, burnout, and compassion fatigue.

**Fear of Contagion.** Nearly all participants ($N$ = 19) discussed being fearful throughout the pandemic because they were concerned with taking the virus hone with them and infecting loved ones. Given the fear of spreading the virus, many nurses avoided physical contact with others and would avoid close contact with family for long periods of time out of concern for their well-being. In most cases, participants were more concerned about their loved ones than getting sick themselves. Some participants were so fearful of the unknown virus that they increased safety precautions both at work and at home to ensure that they would not get sick or spread the disease to others:

> *A lot of us, including myself, I know we talked about it at work a lot. We were just nervous. Nervous that we might get sick or more importantly, we bring it home. That was a huge concern of ours. 'Cause I mean we've always been around infectious disease, and it's part of the job... Bringing it home was never really a concern for most of us until COVID, really.*
>
> - Carlos, Emergency Room, 6 years

> *A lot of our doctors and our nurses couldn't even live at their own home. Some of 'em rented out efficiencies just to protect their family from catching COVID.*
>
> - Lisa, COVID-Specific Unit, 4 years

> *... especially with my grandmother who I know very much loves to be around me and get that type of contact from me, it makes me sad to know 'cause she's like, "I want a hug," and I'm like, "No, I can't give you a hug," and she gets all sad, so that kind of makes me sad...*
>
> - Michael, COVID-Specific Unit, less than 1 year

**Traumatic Workplace Experiences, Burnout, and Compassion Fatigue.** While facing mortality is often an inherent part of nursing, the COVID-19 pandemic rapidly accelerated the frequency with which nurses experienced patient death and

suffering, particularly with the death of uncharacteristically young patients. Several participants ($N$ = 12) discussed the many challenges associated with losing patients to COVID-19. Due to hospital restrictions keeping family members away from their sick loved ones, participants described scheduling video-conferencing calls between dying patients and their families in efforts to give them a chance to say goodbye. These participants recognized that they were the last ones patients saw and interacted with before dying and were saddened by the loneliness these patients experienced, dreading the idea that it could have been their own family member in the same predicament. Participants discussed the profound sadness in losing so many patients to COVID-19 and the difficulty of trying to cope with so much loss in such a short period of time. These high mortality rates led many nurses to describe experiences of compassion fatigue, emotional numbness, and desensitization to patient deaths.

Almost all participants ($N$ = 19) made mention of some form of ongoing mental ailments as a result of these experiences. This included feeling stressed, frustrated, burnt out, and experiencing compassion fatigue. A small number of participants ($N$ = 6) were new nurses who started working in their profession during the pandemic, which created an additional level of stress as they not only navigated the challenges associated with being novice, but also pandemic-induced stressors. These novice nurses commented on how starting their career during the pandemic had accelerated the development of burnout and stress, which they thought would have taken longer to develop under normal circumstances. Other participants were frustrated and stressed by the lack of adherence to guidelines such as wearing masks or social distancing by their local communities, friends, and family. Having experienced first-hand the tragic patient outcomes for those with

COVID-19, they spent a lot of time trying to convince their loved ones to follow safety guidelines and were frustrated when they were not listened to, as it had a direct impact on their work:

> *It is so frustrating, because people don't realize that just because they don't have symptoms that they could be carrying the disease. They can go to grandmother's house, a friend's house, give it to them, and then they go and give it to somebody and they go and then it just continues to spread. I've had people close to me they don't want to wear their mask, because it's uncomfortable, or they're going out to places that are crowded and packed. It's like now you're gonna go home to your family who can potentially-- maybe they'll be okay, but then they'll go and see somebody who may be susceptible to having terrible symptoms from it. It's frustrating.*
>
> - James, COVID-Specific Unit, 5 years

> *... usually, the people that were getting Zoom calls, or that we were doing Zoom calls were people that were not doing well. One Zoom call had about 20 family members trying to talk to the patient that was pretty much nearly dying. It was very hard.*
>
> - Lizzy, COVID-Specific Unit, 6 years

> *There was many, many nights where a lot of the nurses afterwards they were just beside themselves just feeling so powerless and so hopeless over what to do, because it's very difficult to just be faced with so much death every single day. It really did affect a lot of people as far as their mental sanity. There was a lot of people that kinda went through bouts of depression and kind of just really needed that extra, extra little love just to kinda get through. That time was very difficult, very, very difficult on an emotional and personal level.*
>
> - Lisa, COVID-Specific Unit, 4 years

> *Seeing those very, very sick patients, it's not easy. A lot of them—I've seen a handful of patients pass, which has been difficult in some cases, especially when I've seen patients as young as 30 years old pass, that you're talking to them one day, and the next day they're gone, so it's—it could be difficult to handle those types of scenarios.*
>
> - Michael, COVID-Specific Unit, less than 1 year

*... it's like it's just another person that unfortunately passes away, and you become, like I said, desensitized to it. There's good things, and there's bad things about that. Obviously, good things in the sense that it allows you to stay more level-headed when things are going south because you're used to it, but not so good in the sense that you become a little more dull with the sympathy and empathy for patients and their families.*

- Rocco, COVID-Specific Unit, 1 year

*... I was juggling the stressors of being a new nurse plus being a COVID nurse versus had I been already, like, a few years of experience, I would've already had so much experience to fall back on that I would've only had like, "oh, I have stress about COVID. I have to learn about this new disease process, but that's fine. I already have all my skills on my belt."*

- Amy, COVID-Specific Unit, 1 year

**Theme 4: The Nursing Shortage Domino Effect**

One of the biggest challenges participants faced was the nursing shortage (*N* = 15), which created a cascade of problems in their respective hospital units; high nurse-patient ratios, heavy workloads, additional job responsibilities, poorer quality of patient care, and, consequently, high turnover. The nursing shortage created a vicious cycle: turnover, poor workplace conditions, more turnover. These workplace conditions and the inability to provide quality care to patients led many nurses to reconsider their career goals and identify alternative job opportunities that would allow them to operate under less stressful conditions. Accordingly, two sub-themes were identified: causes and consequences of the nursing shortage.

**Causes.** Participants (*N* = 12) explained the issues in their workplaces that played a role in contributing to and exacerbating the nursing shortage during the pandemic. Travel nursing was identified as one of the main reasons for staffing shortages due to its competitive pay and financial benefits, while others pointed to poor management and

overwhelming workloads, as well as highly selective nursing programs that restricted the number of nurses on the job market. In addition, many nurses were getting sick with COVID-19 and were unable to be replaced, further exacerbating staffing issues in participants' respective units:

> *I was like I need to start traveling and making good money so that's what I did. I was traveling all around Florida working COVID and getting paid a lot better. I would tell all my peers, "They can do the same. The grass is green on the other side, go get some money." I started traveling nursing and honestly, I will probably never go back to working as a permanent nurse in a permanent position, unless things get better for us even after this pandemic is over... same stress, but more financial benefits.*
>
> - Sasha, COVID-Specific Unit, 6 years

> *I complain about this every day at work. I think we need to fix the nursing shortage... That starts with education. I know that I had a talk once with my advisor in my College of Nursing, that they simply did not have enough nursing professors. They did not have enough classroom space or the budget did not allow to create bigger classrooms or pay more professors for nursing students. Nursing school is extremely selective, and while I get it that you can't just have anyone become a nurse, there's a lot of qualified people that are getting denied because the application pool is so competitive that they just don't make the cut. We need more nurses.*
>
> - Amy, COVID-Specific Unit, 1 year

> *Then you had nurses who are getting sick or died. I didn't have any that died, but I had somebody that got sick and were out three or four months. Can't replace them. It was really challenging with the workload because the nurses were droppin', and you couldn't really replace them. Both because staff nurses were gettin' sick, and then the per diem pool that they usually use as a buffer to make up for gaps, if people call out, if a unit is short, they're like, "See you later, I'm going to Texas because I wanna make $100 an hour doing travel nursing." The workload definitely increased, so I felt the pressure there.*
>
> - Dan, COVID-Specific Unit, 2 years

**Consequences.** Participants ($N$ = 14) elaborated on the impact the nursing shortage had on their workplace experiences, quality of patient care, and their career

decisions. Many picked up extra shifts to help cover units, including units they did not belong to. Nearly all who discussed the impact of the shortage noted the unmanageable number of patients they were expected to care for, and the ongoing fight to keep nurse-patient ratios low despite influxes of COVID-related patients. Participants also faced ethical dilemmas in terms of providing patient care. Specifically, due to staff shortages, nurses faced impossible decisions regarding which patients to prioritize during their shifts, leading to imbalances in patient care and, ultimately, poorer outcomes for those who were not prioritized during that shift. One participant expressed her frustration with her previous unit and explained she had already put in her two weeks' notice prior to the interview so she could focus on herself and her education:

> *"We're so short staffed and I had to leave you with all these people here and nobody could cover your lunch." I wasn't even getting that in return, so I'm getting a new job and I'm going to work in a urgent care for kids, something a little less stressful and somewhere where I could just be able to focus on me and my studies and my education and then go from there.*
>
> - Taylor, Medical ICU, 2.5 years

> *My floor you're supposed to have five because I'm in a critical care unit. You're supposed to have five, but they push it to six. Then during COVID, since there was not enough nursing, a lot of nurses quit... Then it went up to nine and then they brought it down to seven now, they try to put us back up to eight, but we're fighting to stay at seven.*
>
> - Lazaro, COVID-Specific Unit, 1 year

> *Then in the adult world, there's so many problems 'cause, unfortunately, we're just so understaffed in adults. Like I said, you have to choose who you're gonna focus on for the day, unfortunately. It always tends to be the sicker ones, and then the ones who aren't so sick end up being sick because you were taking care of the ones who weren't as sick. Or you were taking care of the ones who were sick, so the ones who aren't as sick, now they're probably not gonna make it.*
>
> - Nati, Step-Down ICU, 5 years

### Theme 5: Experiences of Post-Traumatic Growth

Even in the darkest of times, nearly all participants described various forms of post-traumatic growth ($N$ = 19), defined by positive experiences that emerged from their workplace experiences. This theme not only showcases participants' perseverance and determination in the face of hardship, but also their undying commitment to their profession, even if their career path shifted its course because of their experiences. As such, four sub-themes were identified: ambition, meaningful work, learning experience, and resilience and pride.

**Ambition.** Many participants ($N$ = 9) were inspired to return to school, with many already enrolled in a graduate program at the time of their interview. Part of the reasoning for returning to school was wanting to make a bigger impact in patient care and having more power in their roles. These nurses felt burnt out in their units and wanted to explore other opportunities in nursing that would be better for their well-being. They recognized that they could not work in units like the ICU forever, due to how physically and emotionally taxing it could be. Others were considering exploring an education-oriented career within the nursing profession, as they felt they had acquired enough knowledge to share with novice nurses and enjoyed teaching others:

> *I think I definitely wanna go back to school after working with COVID and just in the ICU in general.*
>
> - Nicole, Pediatric ICU, 2 years

> *I feel like with the pandemic now, I'm considering going to grad school 'cause I wanted to learn more and improve my skills.*
>
> - Sarah, Emergency Room, 2 years

> *It was always, is, in the back of my head. I think that work in the pandemic made me realize, this is the time I need to push myself to obtain a higher education and not be at the bedside anymore because of how, nobody can do this forever, we get burned out very easily. That's why I pushed myself to seek further education.*
>
> - Sasha, COVID-Specific Unit, 6 years

**Meaningful Work.** Participants (*N* = 11) felt reminded of why they loved nursing and why their work was so important and meaningful. Although the pandemic exacerbated many occupational stressors and the work was challenging, nurses felt a sense of accomplishment when they could successfully treat a patient diagnosed with COVID-19 and watch them leave the hospital healthy. Others saw the work they did as challenging, which made it even more rewarding when they were successful with patient care:

> *There's moments that I'm like, "Okay, this is why I did it," and those moments remind me of why I like nursing, and they get me through it.*
>
> - Amy, COVID-Specific Unit, 1 year

> *It's scary, but it makes me feel good. I'm contributing to society and community and helping with the pandemic and doing my part.*
>
> - Emma, COVID-Specific Unit, 6 months

> *Loved it... I ended up loving it because it's a challenge. It became a challenge and I would love to see patients getting better.*
>
> - Sasha, COVID-Specific Unit, 6 years

**Learning Experience.** Participants (*N* = 12) reframed their workplace experiences as unique learning opportunities that helped them sharpen their skills, acquire knowledge, and develop confidence to be better in their roles. In other instances, participants gained perspective on life, as one described:

*It really has made me realize that so many things are just so not worth getting upset over... I've met my family at dinner after work. Someone will complain that their pizza wasn't made right or something, and I'm like, "Are you kidding me? I just bagged a body, and you're gonna complain?"*

- Emma, COVID-Specific Unit, 6 months

*Every day I learned something new at my job, so I like to keep it open. I mentioned that we have younger nurses on the unit. They teach me stuff, and then hopefully I am teaching them things too.*

- Ingrid, Medical ICU, 11 years

*Well, as a nurse, I feel way more confident in my skills, my nursing skills now. I don't know if that's just because time has passed or because I went through taking care of COVID patients.*

- Amy, COVID-Specific Unit, 1 year

**Resilience and Pride.** Several participants ($N$ = 11) reflected on how resilient they and their colleagues had become throughout the pandemic. One participant recounted how their oncology unit had been converted to a COVID unit during the pandemic, and when given the option to return to oncology, the nurses unanimously chose to remain a COVID unit, and deemed this decision a form of resilience. They recognized the level of endurance needed to overcome the obstacles faced in the workplace and were not only proud to be nurses, but also expressed feeling proud of their colleagues for their hard work.

*I feel like they were also exhausted, but they wanted to keep the floor as COVID. Our manager actually gave us the option at one point. He was like, "Do you guys wanna stay COVID or do you wanna go back to regular? We feel like you guys need a break." They sent out a vote, and everyone said, "No, we want to stay COVID."*

- Amy, COVID-Specific Unit, 1 year

> *It definitely makes me proud to do what I do. I mean, I've always been a proud nurse. Definitely, it does make me even more proud to be a nurse and know these people that I work alongside with every single day who take care of these patients and save lives every day...*
>
> - Nati, Step-Down ICU, 5 years

> *I think I've just become a stronger nurse at the end of the day. I've definitely become – I think I've grown within these two years just because of how quickly I've seen things – patients deteriorate and decompensate. I think I've changed for the better and become a stronger nurse because of it.*
>
> - Taylor, Medical ICU, 2.5 years

**Theme 6: Leveraging Personal Resources to Cope with Workplace Experiences**

The third research question in this study sought to identify what resources nurses took advantage of during the pandemic with the goal of deepening our understanding of what nurses find to be the most effective ways to cope with the difficult experiences they encounter in the workplace. This question was addressed via the current theme. All participants ($N$ = 20) discussed the coping strategies they used when they were feeling burnt out, overwhelmed, and stressed by work and the pandemic. Some found various forms of exercise, such as running, going to the gym, and yoga, ways to detach from work and decompress. Others relied on quality time with their family and friends, as they valued being able to speak about their workday and being listened to, even if it did not solve any of the problems they were having. Participants also looked within for coping, as they reminded themselves of their purpose as a nurse, that these challenges come with the job, and that, at the end of the day, they are doing rewarding and meaningful work. Three sub-themes were identified as the main coping strategies employed by nurses: self-care strategies, support, and sense of duty and professional responsibility.

**Self-Care Strategies.** Participants ($N$ = 9) highlighted the increased importance of self-care during the pandemic. For these nurses, self-care meant getting adequate

amounts of sleep, doing yoga or meditation, exercising, detaching from COVID-19-related news and social media, and spending quality time with family. Some participants noted that they had started new self-care strategies, such as meditation and yoga, because of pandemic-induced stress:

> *Yeah, I definitely hit the gym on my days off and play with my son, just have a good—hit the beach. We all go outside, hit the sand.*
>
> - Ingrid, Medical ICU, 11 years

> *Definitely yoga. Yeah. Yoga and meditating, meditating for sure. I actually meditate in the middle of my shift, yeah, I usually go to a room turn off the lights, but face the corner. It's like one of the doctor's room where you change and stuff. I usually get around four in the morning. I usually meditate for about five minutes.*
>
> - Lazaro, COVID-Specific Unit, 1 year

> *I did a lot of running. A lot of running at that time, too. I've been running for a very long time, and I always say that that saved my life then, and it saved my life now because I don't think I could've just process as many emotions and feelings without giving myself a lot of space and time to do that. That was another part of my self-care.*
>
> - Julia, COVID-Specific Unit, 5 years

**Support.** Every participant ($N$ = 20) stressed the importance of their support systems in surviving the pandemic. These support systems ranged from community ($N$ = 8), organizational ($N$ = 11), and coworker support ($N$ = 19), as well as support from friends and family ($N$ = 13). Community support was perceived as gratitude and recognition for their hard work from strangers. Organizational support was perceived as what their employer offered in terms of wellness resources, compensation, workloads, and PPE. Coworker support was perceived as informal debriefing sessions, crying together, helping each other gather resources when caring for COVID-infected patients, celebrating milestones to keep morale high, and acknowledging their collective

workplace experiences to remind each other that they were not alone. Many mentioned how much closer they had become with their team during the pandemic because they relied heavily on their support. Participants' friends and family provided support by listening to them talk about their workday, taking care of their children, checking in with them, and making meals for them:

> *... they tried to get us travel nurses, which helped our patient load, and I know that was a very large expense.... we were very grateful for that help, and they did open up some support forums. Every week they would have almost like a crisis hotline of sorts. They did a lot more employee health and wellness type of things via Zoom... They had a lot more pastoral care... as far as if we needed prayer, if we needed just someone to talk to. My employer, I think, tried very hard to kinda mitigate as best they could the emotional side of it. Financially they provided a bonus at one point for anyone that had taken care of COVID patients...*
>
> - Lisa, COVID-Specific Unit, 4 years

> *Our unit, for example, would have times where we would sit within the unit and pretty much just talk about how our day was going, what our current situations. It was just a moment to reflect on things. That, I will say, I think has been very helpful in terms of dealing with the whole situation.*
>
> - Lizzy, COVID-Specific Unit, 6 years

> *They are also my support system for all my venting and if I ever did any crying, they were there for me. My parents would hear all my stories about what happened at the hospital. They would help me get my mind off of it. I feel like that helped me a lot, distracting me from COVID world.*
>
> - Amy, COVID-Specific Unit, 1 year

**Sense of Duty and Professional Responsibility.** Some participants ($N$ = 6) coped with their experiences by reminding themselves that they were meant to be a nurse, that the work they did was their calling, and that it was their duty to care for the sick. While still appreciated, many found it strange to be thanked for their service, when they felt they were simply doing their job as expected:

*I know that I'm meant to be a nurse. For me, that's something I always tell myself. I don't see myself ever doing anything else. I enjoy helping people. It's what I love. Even when you see patients like that, even though it's very sad at times, I just remind myself, they're also someone's family members, and it's really nice.*

- Nora, Surgical ICU, 1 year

*Even just random people when I show up in scrubs, they'll literally thank me. I'm like, "I didn't do anything."*

- Emma, COVID-Specific Unit, 6 months

*I just try to be as careful as possible. Just go from there. It is what it is. I didn't try to think about it too much. I just went in and did my job.*

- Dan, COVID-Specific Unit, 2 years

**Theme 7: Retaining the Nurse Workforce and Preparing for Future Crises: Insight into Current Frustrations**

Finally, this study's last research question was aimed at identifying what healthcare organizations can do to better prepare their workforce for future crises, which was addressed with the current theme. Many participants ($N$ = 11) elaborated on their ideas for necessary changes to improve working conditions and reduce nurse burnout. Others mentioned how current policies and practices by their hospital or respective units were helpful in facilitating quality patient care and employee satisfaction. Two sub-themes were identified that can be used to inform how healthcare organizations work to retain their workforce and facilitate wellness: awareness and meaningful action, and compensation.

**Awareness and Meaningful Action.** Some participants ($N$ = 5) felt a disconnect between the support and resources needed to do their jobs and the actions hospital leaders took to support them. For example, one participant explained how a continental breakfast

had been promised to the nurses for their hard work, and that the actual breakfast provided was a pack of muffins not nearly enough for a single unit. While the point was not that there was a discrepancy between what was promised and what was provided, participants were frustrated with the lack of meaningful action taken by their hospitals' leaders to support nurses in their work. Participants felt less concerned with receiving recognition and free food, but rather advocated for having adequate staffing levels, better compensation and financial incentives, and overall improved working conditions. Others expressed the need for not only better staffing and nurse-patient ratios, but also more time off, better mental health and wellness resources, and for leaders to make informed decisions by listening to nurses' concerns when raised:

> *... if the administration was gonna make decisions about the unit, or just about anything, in general, I wish it would've been more of a conversation with the people obviously doing the care, versus just whether it be the manager or no conversation with the manager at all sometimes decisions were made. Getting that insight and not making any—not rash decisions or rushed decisions. Just making informed decisions.*
>
> - Julia, COVID-Specific Unit, 5 years

> *Wellness, nothing... they try to force eight patients on us on nurse's week. They only got us a pack of muffins for the whole floor for the night and day shift.*
>
> - Lazaro, COVID-Specific Unit, 1 year

> *I think with a lower number of patients, you're really able to connect. Really, you're able to spend that extra 10 minutes sitting on the edge of the bed with that patient because when you have four or five patients, you can't do that.*
>
> - Emma, COVID-Specific Unit, 6 months

**Compensation.** Participants ($N$ = 7) also felt that they were not being adequately compensated for their hard work. Some discussed how their employers had offered bonuses for brief periods of time for taking care of COVID patients, called hazard pay,

but many mentioned that this financial incentive was temporary despite continuing to care for these patients. Additionally, participants were frustrated with their employers for paying temporary travel nurses, who did not understand the ins and outs of their unit and would ultimately leave for another hospital, thus had no loyalty to the organization, significantly more than what they were being compensated as full-time employees. This led to feeling unrecognized and underappreciated for frequently putting their lives on the line, risking infection, and going above and beyond their expected job responsibilities:

> *... I just feel like I think there's a challenge of feeling like maybe you don't get paid enough to do what you do.*
>
> - Amelia, Medical ICU, 4 years

> *... they were saying that travel nurses were getting paid so much money, and nurses that had contracts were not getting even a bonus. That was kind of a slap in the face to some of them.*
>
> - Amy, COVID-Specific Unit, 1 year

> *Who wants to get an extra $150, then they get taxed anyways, which after taxes they're probably, the whole $150 goes into taxes. I think if you up their bonus to at least $250, $300, $350, you get more help, more people come to work, less people are stressed, you get better care, no risk of falls, people get cleaned, there's no risk of pressure wounds or infection.*
>
> - Lazaro, COVID-Specific Unit, 1 year

*[Insert Table 3 Here]*

## Discussion

This study explored the lived experiences of South Florida nurses working on the frontlines of the COVID-19 pandemic using thematic analysis. Given the high stakes in healthcare, both with regards to human life and financially, it is paramount to understand how this pandemic shaped the lives of nurses and identify actionable plans to better care for nurses moving forward. Therefore, this study sought to understand how nurses' lived

experienced during the pandemic shaped their professional and personal lives, and how they coped with its impact. This study also identified actionable ways in which healthcare organizations can better prepare for the next disaster and work to retain their employees.

This study makes several contributions to the empirical literature on the impact of COVID-19 on frontline nurses. First, qualitative research on occupational stress is underutilized (Mazzola et al., 2011), making the methods used in this study to examine nurse stressors, strains, and coping a novel contribution to the occupational stress literature. Additionally, this study used a South Florida nursing sample to examine the unique experiences of those working in one of the epicenters of the COVID-19 outbreak in the United States. To date, most of the qualitative research conducted on this topic has been done using samples outside of the United States (Catania et al., 2021; Galehdar et al., 2020; Kackin et al., 2020; Sun et al., 2020; Tan et al., 2020). Thus, the diverse collection of perspectives and experiences from majority Hispanic/Latino nurses and other minority backgrounds offer novel insight into the lived experiences of both novice and tenured nurses in South Florida. Furthermore, this study captures potential avenues for improvement within the United States healthcare system, one that is different compared to other parts of the world (Lameire et al., 1999), to help retain and better prepare the nursing workforce for future disease outbreaks. Finally, results from this study contribute to the growing body of qualitative research exploring the post-traumatic growth experiences arising from these difficult times (Q. Liu et al., 2020; Sun et al., 2020).

## Occupational Stressors and Strains Experienced During COVID-19

The narratives in this study revealed several stressors that were exacerbated by COVID-19 which can ultimately be categorized by the nature of work during the pandemic and resourcing (i.e., staffing and PPE allocation) issues. Even prior to the onset of COVID-19, these stressors were not unfamiliar to nurses, as they have been identified as challenges in past disease outbreaks (K. K. Lam & Hung, 2013; Shiao et al., 2007), in addition to periods of normalcy in the workplace (Adib-Hajbaghery et al., 2012; Hayward et al., 2016). However, the extent to which these stressors impacted the workplace and spilled over into nurses' personal lives was nonetheless critical to document during this pandemic, as the challenges discussed by participants were echoed globally in research conducted over the course of 2020 and 2021, stressing the clear international concern regarding nurse well-being (Catania et al., 2021; J. Guo et al., 2020; Halcomb et al., 2020; Karimi et al., 2020; Savitsky et al., 2021; Shinners & Cosme, 2020).

Several relationships seemed to exist between the stressors identified in this study, such as the relationship between workload and safety concerns. Many participants overwhelmed with high nurse-patient ratios and from working long shifts felt fatigued and burnt out, which ultimately led to unsafe workplace practices. Workloads also seemed to be related to decreased quality of patient care, as participants lacked the necessary time to dedicate to their patients due to staffing shortages, thereby forcing them to make difficult decisions when prioritizing patients. Indeed, research has shown that inadequate staffing levels are generally related to poor patient care (Ball et al., 2018; Littlejohn et al., 2012; D. A. Richards & Borglin, 2019) and that nurses are aware and vocal about such concerns (Ball et al., 2014).

The most revealing aspect identified by looking across the nurses' narratives of their experiences was the cyclical process that seemed to be present between workloads and the nursing shortage. Some current research has found that nurses with experience taking care of COVID-19 patients or working in COVID-19 units have higher levels of turnover intent (Kim et al., 2020). Challenging workloads led many to leave their jobs for lucrative travel nursing jobs, but this, in turn, also contributed to increased job responsibilities and high patient ratios for those who stayed, thereby further perpetuating the vicious cycle of staffing shortages. Multiple studies have found support for both workloads leading to turnover intent (Çamveren et al., 2020; Phillips, 2020), and high turnover leading to higher workloads (Kox et al., 2020). Moreover, research has found nurses are more inclined to pursue travel nursing when compensation is competitive in hospitals seeking to fill vacancies with temporary employees (Gottlieb & Zenilman, 2020), suggesting that several factors have played a role in contributing to the nursing shortage.

Findings from this study highlighted the inconsistencies across hospitals, and even units, in providing participants with other resources like wellness services, mental health counseling, hazard pay or financial incentives, adequate PPE, and even standard safety guidelines. Research shows that critical care nurses with high levels of perceived wellness support from their employer were more than twice as likely to have better mental health outcomes than those with lower perceptions of wellness support (Melnyk et al., 2021). Additionally, meta-analytic research has found job resources (i.e., social support, leadership, and safety climate) help mitigate burnout, a strain known to be detrimental to safety performance (Nahrgang et al., 2011). More specifically, in the

healthcare industry, physical demands explained the largest amount of variance in accidents and injuries (Nahrgang et al., 2011). This corroborates the narratives in this study, as participants described the physical challenges of providing quality patient care in heavy, hot, and uncomfortable PPE and their limited ability to smile at patients, communicate effectively with colleagues, and react quickly during emergencies. Previous COVID-19 research echoes these experiences, such as the physical demands of wearing PPE, using poorer quality PPE, and not having enough of it available (Catania et al., 2021; Kackin et al., 2020; Karimi et al., 2020; Maben & Bridges, 2020; Shinners & Cosme, 2020; Sun et al., 2020).

It is well-known that traumatic events at work are common in the nursing profession (Buurman et al., 2011), and can have detrimental effects on nurses' well-being after repeated exposure (Adriaenssens et al., 2012; Lima et al., 2018; P. Wu et al., 2009). Frequently experiencing traumatic events at work can result in the development of various strains, including compassion fatigue, secondary traumatic stress, and burnout (Adriaenssens et al., 2012; Dominguez-Gomez & Rutledge, 2009b). Indeed, participants in this study revealed the extent to which providing patient care during COVID-19 had been both physically and mentally demanding, a finding consistent with research on healthcare workers' mental health during the pandemic (Benfante et al., 2020). Nurses are at particularly high risk for becoming stressed, given the empathetic relationships they develop with their patients and the degree to which they are involved in the patient care process (Velando-Soriano et al., 2020). Given that COVID-19 patients were highly contagious, these individuals were forced to spend most of their hospital stay in isolation, and many participants in this study discussed the strong bonds developed with these

patients as a result, since they were the only source of physical contact patients had. This increased level of involvement with the patients, naturally, also exposes nurses to more opportunities to experience burnout (Vargas et al., 2014).

Nearly all who participated in this study reported experiencing some form of a strain, such as burnout and compassion fatigue, thereby providing further support for the high prevalence of burnout (Woo et al., 2020) and compassion fatigue (Y.-Y. Zhang et al., 2018) among nurses globally. Burnout, in particular, has been known to be highest in intensive and critical care units due to the volatile work environment and high acuity patient population (Woo et al., 2020), where a majority of participants in this study worked due to the severe presentation of COVID-19 in patients. Lack of sleep, difficulty sleeping, and fatigue were commonly reported physical symptoms by participants, which generally have been shown to be consequences of work-related stressors, such as workload, organizational constraints (Nixon et al., 2011), work schedules, and stress (Barnes et al., 2016). Some participants reported being so exhausted that they caught themselves on the brink of making medical errors while providing patient care. This is an important finding, as burnout has a well-established link to several nursing work outcomes, such as poorer quality of patient care (Laschinger & Leiter, 2006; Vahey et al., 2004) and patient safety (Laschinger & Leiter, 2006; Prapanjaroensin et al., 2017; Teng et al., 2010).

**The Importance of Effective Coping**

Having strong support systems at work and in their personal lives, engaging in self-care behaviors, and thinking of nursing as an occupational calling were the three major forms of coping participants found to be helpful in mitigating the physical and

mental challenges they faced. Nurses often use emotion-focused coping to help manage their demanding jobs (Happell et al., 2013; Isa et al., 2019). Connections with family, friends, and colleagues help nurses focus on their belief systems, put workplace stressors into perspective, and ultimately, cope with their work environments (Hart et al., 2014b). Both emotional (the act of providing care and empathy) and instrumental (assistance with problem solving or tangible help) support (Semmer et al., 2008) were received by participants in the form of colleagues assisting them with tasks at work, and friends and family bringing meals to them at home, listening to them talk about their day, and understanding the challenges of being a nurse during the pandemic. Social support is a critical resource and a well-established factor that contributes to health and well-being, job satisfaction (Bradley & Cartwright, 2002), job performance, and work engagement (Nasurdin et al., 2018) in nurses. Throughout the past year and a half, perceived organizational and social support have been found to decrease anxiety (Labrague & de los Santos, 2020b) and increase resilience (Kılınç & Sis Çelik, 2021) in frontline nurses.

Moreover, participants reported engaging in several forms of self-care, including meditation, yoga, and exercise in general, all of which are effective in enhancing problem solving skills and increasing nurses' abilities to focus on patient needs (Raingruber & Robinson, 2007). Detaching from work was also frequently mentioned by participants as a form of self-care, and has been found to be a coping strategy used by other healthcare workers during the pandemic (Fauzi et al., 2020). In the current study, recovery experiences included not following the news coverage on COVID-19 during off-hours and turning off social media, spending quality time with loved ones, and relaxing at home. Recovery experiences are non-work-related events that can positively influence

well-being and job performance (Binnewies et al., 2009). Without proper recovery from stressful job demands, strains can become chronic (Sonnentag & Fritz, 2015).

The nursing profession is a demanding and challenging one, even outside the context of a pandemic, making it almost a requirement to be dedicated to the job, motivated to do the job, and to find purpose in the work done. In most careers, it is not enough to work solely for financial compensation, and, in fact, it is well-known that pay levels are only marginally related to job satisfaction (Judge et al., 2010). Research has found that nurses with a sense of calling for their career have had better job performance and quality of patient care outcomes during the pandemic (Zhou et al., 2020; Zhu et al., 2020). Indeed, having a sense of calling helps nurses care for and support their patients, drives collaboration with team members (Raatikainen, 1997), and increases organizational commitment and organizational citizenship behaviors (Afsar et al., 2019).

**Silver Linings and Considerations for Moving Forward**

Despite the personal and professional obstacles described by nurses in this study, several noteworthy, positive experiences also emerged. An interesting pattern identified in the current study was participants' desire to return to school as either a form of professional development or as a means by which to find less stressful job opportunities within nursing (i.e., academia or administration). Research has found that job dissatisfaction, personal and professional growth, including a commitment to continuous learning and power in making changes within the healthcare system (Harris & Burman, 2016), employer incentives, and interest in graduate education are among many factors that influence nurses' decisions to go back to school (Broussard & White, 2014; C. Delaney & Piscopo, 2004; Duffy et al., 2015), all of which were described as motivators

by participants. Many participants also described how the work done during COVID-19 reminded them of the impact their work has and why they became a nurse in the first place. Meaningful work is characterized by experiencing positive emotions through work, perceiving work to be helpful to others, and a positive attitude about the impact such work can have on others (Steger et al., 2012). Meaningful work has been shown to decrease turnover intentions (Cortese et al., 2014) and have positive effects on task performance in nurses (Tong, 2018).

Post-traumatic growth refers to positive changes to self-perception, interpersonal relationships, and one's philosophy of life that result from having gone through arduous life experiences (Tedeschi & Calhoun, 1996), and has been shown to be common in intensive care nurses working during the COVID-19 pandemic (R. Chen et al., 2021). This study found that participants felt as though they had developed resiliency during the pandemic, and this was showcased in a variety of ways, as resilience can be built using distinct strategies. For example, resilience can be strengthened via cognitive reframing, wherein nurses can recreate their work environment to be more effective (i.e., thinking of COVID-19 as a challenge or learning experience), emotional toughness and detachment, which allows nurses to perform difficult procedures on patients and focus on the more positive aspects of patient care (i.e., seeing patients recover from illness), and reconciliation, by which nurses find meaning in their work that is congruent with their values (Hart et al., 2014b). One novel finding was nurses' willingness to speak up proactively about workplace and patient safety, often referred to as safety voice (Conchie et al., 2012). This is noteworthy, as healthcare workers have been known to underutilize

their safety voice due to workplace hierarchies and power dynamics (Morrow et al., 2016).

In terms of how to better prepare for future health crises, participants provided insight into what they believed would be beneficial to the nursing workforce. What is in dire need of attention, from the participants' perspectives, is greater awareness from both hospital administrators and nurse leadership of the daily challenges faced in the work environments, followed by meaningful action taken to improve these working conditions. Nurse supervisors tend to perceive characteristics of the work environment, such as appropriate nurse-patient ratios and distributive justice, more favorably than their employees (Carson et al., 1998), which can lead to inaccurate assessments of workplace experiences, including safety practices (Hurtado et al., 2017). Adequate compensation was noted as another opportunity for improving conditions for nurses, as participants felt they were not rewarded appropriately for their hard work, especially when caring for highly contagious patients. Participants were relatively young nurses, who are often more concerned about pay than tenured nurses (Ernst et al., 2004). Nonetheless, feeling like one is not being compensated fairly can lead to turnover intentions, as many participants alluded to in this study, and feeling underappreciated, undervalued, and unrecognized for loyalty and hard work (Purvis & Cropley, 2003). Many suggested that by targeting these specific issues, nurses would be more inclined to remain with their organization, as well as be better equipped to provide high quality patient care without having to let their own well-being fall to the wayside.

## Practical Implications

The current study offers several practical implications for healthcare organizations to leverage in their efforts to promote nurse well-being, improve retention rates and workplace safety, and ensure high-quality patient care. The first implication is the emphasis that should be placed on wellness by individual nurses and their respective employers, as both parties can play a prominent role in promoting well-being. The importance of sleep, for instance, especially in a high-stress profession like nursing, is understated as it can have invaluable ripple effects on factors such as absenteeism, job performance, workplace safety, decision-making, and interpersonal relationships (Barnes et al., 2016; Gordon et al., 2017; Hafner et al., 2017; Harrison & Horne, 1999). Seven to eight hours of sleep is considered good sleep hygiene, as well as having consistent sleep routines (Witkoski & Dickson, 2010). Since nurses frequently work extended shifts, incorporating scheduled napping opportunities into long shifts can be an alternative solution when more sleep cannot be achieved off-hours, and has been shown to improve nurses' job performance and decrease fatigue (Smith-Coggins et al., 2006). Alternatively, offering nurses weekend breaks as recovery periods, rather than mid-week breaks, are beneficial to decreasing emotional exhaustion and increasing vigor in nurses (Drach-Zahavy & Marzuq, 2013).

Mindfulness, a self-regulation strategy used to reduce stress, manage emotions, and increase positive responses to stressful events (Bishop, 2002), is often recommended for nurses who are considered at-risk for experiencing strains at work, such as nurses under 30 years old and recent graduates (Aycock & Boyle, 2009). It can also be implemented as a training or intervention by healthcare organizations as part of

workplace health promotion programs (Zeller & Levin, 2013). Mindfulness training has been shown to have several favorable outcomes for nurses and nurses-in-training (Guillaumie et al., 2017; van der Riet et al., 2018), including decreased levels of stress, burnout, depression and anxiety (Foureur et al., 2013; Lan et al., 2014; Suleiman-Martos et al., 2020), improved well-being, happiness, and empathy (Beddoe & Murphy, 2004; Foureur et al., 2013; Lan et al., 2014), and enhanced self-awareness, sleep, and concentration (van der Riet et al., 2015), all of which are essential to enhancing well-being. Resilience has also been shown to be a malleable coping strategy nurses can develop to manage stressful situations at work using positive approaches (Babanataj et al., 2019), and may be effective at reducing burnout in the short-term (Lanz, 2020), making it another effective training program healthcare organizations can leverage and include in their health promotion programs.

Additionally, having access to resources at work, such as enough staff to distribute patient loads, psychological and financial support, and adequate PPE, especially during critical events like pandemics, is necessary to ensure that nurses can do their jobs safely. Accessible resources go hand in hand with mental health and well-being, as research has shown that access to job resources leads to positive well-being outcomes (Nahrgang et al., 2011). The staffing shortages reported in this study are partially a result of Florida making nurse-patient ratios unrestricted, which gives healthcare organizations the ability to assign as many patients to a nurse as needed. As such, healthcare organizations in Florida may consider implementing staffing plans or committees, currently used in other states such as Nevada, Texas, Ohio, and Connecticut, to name a few. Staffing plans allow hospital administrators, in collaboration with nursing

staff, to determine the most effective staffing plans that will produce favorable patient outcomes (Tevington, 2011). Indeed, research has found that improved nurse staffing levels are associated with lower patient failure-to-rescue and mortality rates, as well as shorter hospital stays (Lang et al., 2004).

Workload is negatively related to work engagement among nurses (Tomic & Tomic, 2011), and recent Gallup research suggests that the highest turnover intent rates are among disengaged employees during the COVID-19 pandemic (Gandhi & Robison, 2021). In general, replacing employees is costly for organizations, as it can cost one-half to two times employees' salaries (Gandhi & Robison, 2021). The solution to developing effective employee retention strategies involves equipping leaders with people management skills, such as providing career development opportunities and establishing a clear team vision and goals. Creating positive employee experiences in the workplace are essential to engaging, and, in turn, retaining a workforce (Gandhi & Robison, 2021). Job enrichment, for example, which involves providing employees with more autonomy in their roles (Tumi et al., 2021), can be achieved by acquiring knowledge and skills that help pave the way for new career pathways, and increase job satisfaction, as well as intent to stay in nurses (Estryn-Behar et al., 2010; Flinkman et al., 2008; Shields & Ward, 2001).

Another remedy for heavy workloads and issues of understaffing is high quality rest breaks, which can have a positive impact on nurse wellness (Wendsche et al., 2017). Nurses often sacrifice their work breaks or opportunities during a shift to eat a meal, which can compromise personal and patient safety, and quality of patient care (Witkoski & Dickson, 2010). Thus, rest breaks can help alleviate nurses from their workplace

demands (Wendsche et al., 2017). Even micro-breaks, that is, informal activities in-between job tasks that provide immediate relief, have been found to be effective in mitigating the impact of job stress on work engagement in nurses (H. Wang et al., 2021). A discussion of people management would be incomplete without consideration of compensation, as adequate pay and financial incentives should be understood as an investment in the organization's long-term success. Since support alone is not an absolute solution to addressing nurse well-being and staffing shortages, healthcare organizations must consider rewarding their nurses for good work and loyalty by providing incentives such as hazard pay, bonuses, and raises whenever possible to facilitate employee motivation (Velando-Soriano et al., 2020).

Furthermore, organizations are increasingly recognizing the importance of having employees be vocal about workplace safety and, as such, are constantly seeking to better understand how to promote safety voice in their workers. With COVID-19 still being a very dangerous situation for healthcare workers, safety has never been more important. Therefore, enabling employees to voice their concerns about safety, particularly in a high-stakes industry like healthcare, is essential in encouraging organizations to learn more about safety and in facilitating the prevention of employee injuries and patient safety (Hofmann & Morgeson, 1999). Safety participation, defined as vocalizing concerns about safety, includes voluntary participation in safety activities or meetings, promoting safety programs at work, and sharing safety-related concerns with others (Cree & Kelloway, 1997; Griffin & Neal, 2000; Mullen, 2005). Safety compliance refers to abiding by an organization's safety policies. While safety participation can be influenced through transformational leadership behaviors aimed at building trust and cooperation

among employees, safety compliance can be encouraged by monitoring within a supportive learning environment where employees can learn from their mistakes without fear of negative consequences (Griffin & Hu, 2013; Griffin & Neal, 2000). It cannot be emphasized enough that while enabling nurses to speak up is the first critical step in promoting workplace safety, it also the organization's responsibility to respond to concerns of safety by taking meaningful action in a timely manner, as no growth can be achieved without changes to the way in which organizational decisions are made.

## Limitations

It is important to highlight the limitations of the current study and encourage future research to address these limitations, in addition to other proposed recommendations for research in this area. First, the current study was limited to data collection at one time point, and future research should consider collecting qualitative data at several time points to understand long-term lived experiences. For example, at the time of the interviews, between May and June of 2021, Florida was in a period of 'calmness' during the pandemic, where participants were starting to feel a little relief from the challenges of the past year. During those two months, the number of COVID-19 daily cases ranged anywhere between 2,000 and 3,000, a stark comparison to the over 54,000 daily cases in September of 2021 (Johns Hopkins Coronavirus Research Center, 2021). At the time of this writing, cases are surging in Florida again due to the rise in COVID-19 variants (Allen et al., 2021), so following up with participants at a later time point to gather further information on their continuing workplace experiences could have provided further insights. It is also important to note here that the COVID-19 pandemic is ongoing, and the current study captured only a fraction of its impact on nurses. Thus,

research on the effects of the pandemic will continue to emerge, which may bring about novel findings about nurses' continued lived experiences during this time.

Furthermore, while this study's research questions were aimed at RNs, this sample is still limited to emergency room, medical or surgical ICU, or COVID-specific unit RNs. Therefore, it is possible that the lived experiences of these participants are not generalizable to other hospital units or healthcare workers, as it is known that workplace stressors and strains are experienced at differing levels across nursing units (i.e., Branch & Klinkenberg, 2015; M. Park et al., 2015). The current sample also consisted of mostly female nurses (70%), who have been shown to be at greater risk for mental health issues than men (Dominguez-Gomez & Rutledge, 2009b; S. Liu et al., 2021). However, as of 2019, the nursing population in Florida consisted of 87% women (Florida Center for Nursing, 2020), making this study's sample a close and accurate reflection of the state's nursing population.

## Future Directions

Several promising avenues of research in this area exist, given that COVID-19 is undoubtedly going to continue to impact the healthcare workforce for the foreseeable future. As such, future research should consider collecting data from a broader group of nursing units or healthcare workers to explore any similarities or differences in lived experiences of the COVID-19 pandemic across roles and units. While the scope of this study did not include examining gender differences in the lived experiences of nurses during the pandemic, an opportunity for future research includes understanding such differences, as some COVID-19 research has suggested that more women have lost their jobs than men, more women hold job roles that place them at high risk for contracting the

virus, and women have had more career disruptions due to increased childcare responsibilities (Carli, 2020).

Moreover, the way in which workplace demands influence workplace safety in occupations where the negligence of safety behaviors can result in not only financial consequences, but also in the loss of lives is well-known (Nahrgang et al., 2011). However, there is little qualitative research on the impact of COVID-19, given its novelty, so future research may consider examining the relationship between workplace demands and safety in nurses caring for COVID-19 patients. Another interesting avenue for future research that this study merely scraped the surface of is the unique COVID-19 experiences of newly graduated nurses who have started their careers amidst the pandemic, and the apparent gap between education and practice, among other unique challenges for this specific nursing population. It may be beneficial to have a deeper understanding of these experiences to better prepare current and future nursing students for their careers in healthcare, as well as understand the long-term effects of beginning a nursing career under such high-stress circumstances.

## Conclusion

This study described the lived experiences of nurses working during the COVID-19 pandemic, and helped to document the various stressors, strains, serendipitous outcomes, coping strategies, and current needs as told by nurses in South Florida. Nurses dedicate their lives to serving others and often put their own lives at risk by doing so, making it of utmost importance to not only give them a platform on which to speak about their workplace and personal experiences, but also to encourage healthcare organizations to prioritize the well-being of their workforce and address their needs. While COVID-19

is the latest disease outbreak wreaking havoc on the healthcare community, it certainly will not be the last to do so. It is imperative that we take care of our healthcare workforce now to better prepare for the future of the field.

**Table 1**
Demographic and occupational statistics

| | N (%) |
|---|---|
| **Gender** | |
| Woman | 14 (70%) |
| Man | 6 (30%) |
| **Primary Race** | |
| Black/Afro-Caribbean/African American | 3 (15%) |
| Latino or Hispanic American | 13 (65%) |
| White or Euro-American (non-Hispanic) | 4 (20%) |
| **Secondary Race** | |
| Black/Afro-Caribbean/African American | 2 (10%) |
| Latino or Hispanic American | 9 (45%) |
| Middle Eastern or Arab American | 1 (5%) |
| White or Euro-American (non-Hispanic) | 7 (35%) |
| Did not specify | 1 (5%) |
| **Primary Familial Nation of Origin** | |
| Brazil | 1 (5%) |
| Colombia | 1 (5%) |
| Cuba | 7 (35%) |
| Guatemala | 1 (5%) |
| Haiti | 2 (10%) |
| Poland | 2 (10%) |
| Puerto Rico | 2 (10%) |
| Scotland | 1 (5%) |
| United States | 2 (10%) |
| Did not specify | 1 (5%) |

**Table 1 (continued)**
Demographic and occupational statistics

| | N (%) |
|---|---|
| **Secondary Familial Nation of Origin** | |
| Colombia | 2 (10%) |
| Ecuador | 1 (5%) |
| France | 1 (5%) |
| Germany | 1 (5%) |
| Italy | 1 (5%) |
| Portugal | 1 (5%) |
| Puerto Rico | 2 (10%) |
| Scotland | 1 (5%) |
| Turkey | 2 (10%) |
| Did not specify | 10 (50%) |
| **Education Level** | |
| Associate degree | 2 (10%) |
| Bachelor's Degree | 16 (80%) |
| Master's Degree | 2 (10%) |
| **County of Employment** | |
| Broward | 8 (40%) |
| Miami-Dade | 9 (45%) |
| Palm Beach | 3 (15%) |
| **Shift Type** | |
| Day Shift | 13 (65%) |
| Night Shift | 6 (30%) |
| Swing Shift | 1 (5%) |

*Note.* $N = 20$.

**Table 2**

Interview questions

1. Why did you choose nursing as a career?
2. What are your thoughts regarding being a nurse working during the COVID-19 pandemic?
3. What are your colleagues' attitudes regarding working during the pandemic?
4. Can you tell me about the experiences you've had while caring for patients diagnosed with COVID-19?
5. Why did you choose nursing as a career?
6. How did you feel when you started caring for patients diagnosed with COVID-19?
7. How do you feel now?
8. What problems have you faced while caring for these patients?
9. What has changed while providing care during the pandemic compared to working in your department prior to the pandemic?
10. How have local, state, and/or federal policies impacted your work during the pandemic?
11. What has been your biggest challenge in your current role during this crisis?
12. What difference would it have made if you were in a different role?
13. What do you think is needed to effectively address this challenge?
14. What, if anything, has changed in your personal life as a result of working with COVID-19 patients?
15. What, if anything, has changed in your professional life as a result of working with COVID-19 patients?
16. What, if anything, has changed regarding your perception of nursing as a profession?
17. How has your employer helped you during this time?
18. Has your employer offered any wellness resources or implemented any policies,
19. practices, or initiatives to help you during this time?
20. How have your colleagues helped you during this time?
21. How have your friends and family helped you during this time?
22. What other support or resources do you still need or would have wanted to receive?
23. What has helped you cope with working with patients diagnosed with COVID-19?
24. What long-term impact do you think COVID-19 will have on the nursing field?
25. Do you have any other thoughts you would like to share?
26. What made you want to participate in this study?

**Table 3**

Themes, sub-themes, and exemplar quotes

| Theme | Sub-Theme | Exemplar Quote |
|---|---|---|
| Navigating the Challenges Related to Working Conditions | Lack of Adequate Resources (N = 15) | But resources, in the beginning they were really scarce... if you were taking care of a COVID patient you were back the next day with the same patient, reusing your mask, your goggles... |
| | Safety (N = 16) | There's days that I'm working, and I'm working so fast, and then I pause, and I'm like, "I'm handling this in an unsafe manner, and I need to slow down.... That's how I know I'm burnt out, when I start feeling that way... for example, this one time I was gonna give this patient a medication, and I scanned it, and the medication—it comes in a pill and it's supposed to be cut in half—and I had a doctor calling me on one line. Another doctor going up to me for something else, and then I had my nursing assistant telling me, hey, room so-and-so is asking for you 'cause they need this. I was like, "There's so many things going on at once and so many people need me" and so I almost forgot to cut the pill in half. It was a blood pressure medication. Maybe had I not cut it in half, the patient's blood pressure would have gotten really low or something. Then, I put the medications in the little cup without having cut that one, and I was like, "Wait, something here doesn't seem right."... Sometimes when you have so many interruptions coming in, a small detail like that, it's so easy to overlook it. |
| Drastic Changes to Quality of Patient Care | Limitations and Barriers to Typical Patient Care Practices (N = 15) | I mean, if it didn't exist, would we be gowned up? Would we have to go through this? Your care would be different. As far as people who didn't believe it was—they didn't listen. We had one patient that, gosh, we musta told him that if you don't keep the high flow on, you're gonna go down. You're gonna go down. He passed away two weeks later, and it was all because it was hard to get them to understand. |
| | Uncertainty and Constant Change (N = 12) | Everything was brand-new. I felt like pretty much every day, we're learning about a new symptom, trying to figure out different ways to treat all the patients. There were so many patients coming in every day. I felt very overwhelmed in the beginning of it. It was really hard 'cause we tried to do our best, but there was a lot of things that are over our control. We couldn't do anything for some patients. |

**Table 3 (continued)**

Themes, sub-themes, and exemplar quotes

| Theme | Sub-Theme | Exemplar Quote |
|---|---|---|
| The Impact of COVID-19 on Physical and Mental Health | Fear of Contagion (*N* = 19) | A lot of us, including myself, I know we talked about it at work a lot. We were just nervous. Nervous that we might get sick or more importantly, we bring it home. That was a huge concern of ours. 'Cause I mean we've always been around infectious disease, and it's part of the job... Bringing it home was never really a concern for most of us until COVID, really. |
| | Traumatic Workplace Experiences, Burnout, and Compassion Fatigue (*N* = 19) | ... it's like it's just another person that unfortunately passes away, and you become, like I said, desensitized to it. There's good things, and there's bad things about that. Obviously, good things in the sense that it allows you to stay more level-headed when things are going south because you're used to it, but not so good in the sense that you become a little more dull with the sympathy and empathy for patients and their families. |
| The Domino Effect of the Nursing Shortage | Causes (*N* = 12) | I was like I need to start traveling and making good money so that's what I did. I was traveling all around Florida working COVID and getting paid a lot better. I would tell all my peers, "They can do the same. The grass is green on the other side, go get some money." I started traveling nursing and honestly, I will probably never go back to working as a permanent nurse in a permanent position, unless things get better for us even after this pandemic is over... same stress, but more financial benefits. |
| | Consequences (*N* = 14) | My floor you're supposed to have five because I'm in a critical care unit. You're supposed to have five, but they push it to six. Then during COVID, since there was not enough nursing, a lot of nurses quit... Then it went up to nine and then they brought it down to seven now, they try to put us back up to eight, but we're fighting to stay at seven. |

**Table 3 (continued)**

Themes, sub-themes, and exemplar quotes

| Theme | Sub-Theme | Exemplar Quote |
|---|---|---|
| Experiences of Post-Traumatic Growth | Ambition (*N* = 9) | I think I definitely wanna go back to school after working with COVID and just in the ICU in general. |
| | Meaningful Work (*N* = 11) | There's moments that I'm like, "Okay, this is why I did it," and those moments remind me of why I like nursing, and they get me through it. |
| | Learning Experience (*N* = 12) | Every day I learned something new at my job, so I like to keep it open. I mentioned that we have younger nurses on the unit. They teach me stuff, and then hopefully I am teaching them things too. |
| | Resilience and Pride (*N* = 11) | I think I've just become a stronger nurse at the end of the day. I've definitely become – I think I've grown within these two years just because of how quickly I've seen things – patients deteriorate and decompensate. I think I've changed for the better and become a stronger nurse because of it. |
| Leveraging Personal Resources to Cope with Workplace Experiences | Self-Care Strategies (*N* = 9) | I did a lot of running. A lot of running at that time, too. I've been running for a very long time, and I always say that that saved my life then, and it saved my life now because I don't think I could've just process as many emotions and feelings without giving myself a lot of space and time to do that. That was another part of my self-care. |
| | Support (*N* = 20) | Our unit, for example, would have times where we would sit within the unit and pretty much just talk about how our day was going, what our current situations. It was just a moment to reflect on things. That, I will say, I think has been very helpful in terms of dealing with the whole situation. |
| | Sense of Duty and Professional Responsibility (*N* = 6) | I know that I'm meant to be a nurse. For me, that's something I always tell myself. I don't see myself ever doing anything else. I enjoy helping people. It's what I love. Even when you see patients like that, even though it's very sad at times, I just remind myself, they're also someone's family members, and it's really nice. |

**Table 3 (continued)**

Themes, sub-themes, and exemplar quotes

| Theme | Sub-Theme | Exemplar Quote |
|---|---|---|
| Retaining the Nurse Workforce and Preparing for Future Crises: Insight into Current Frustrations | Awareness and Meaningful Action (*N* = 5) | Wellness, nothing... we try to force eight patients on us on nurse's week. They only got us a pack of muffins for the whole floor for the night and day shift. |
| | Compensation (*N* = 7) | ... they were saying that travel nurses were getting paid so much money, and nurses that had contracts were not getting even a bonus. That was kind of a slap in the face to some of them. |

References

Abdollahi, A., Abu Talib, M., Yaacob, S. N., & Ismail, Z. (2014). Hardiness as a mediator between perceived stress and happiness in nurses. *Journal of Psychiatric and Mental Health Nursing*, *21*(9), 789–796. https://doi.org/10.1111/jpm.12142

Adib-Hajbaghery, M., Khamechian, M., & Alavi, N. M. (2012). Nurses' perception of occupational stress and its influencing factors: A qualitative study. *Iranian Journal of Nursing and Midwifery Research*, *17*(5), 352–359. PubMed.

Adriaenssens, J., de Gucht, V., & Maes, S. (2012). The impact of traumatic events on emergency room nurses: Findings from a questionnaire survey. *International Journal of Nursing Studies*, *49*(11), 1411–1422. https://doi.org/10.1016/j.ijnurstu.2012.07.003

Afsar, B., Umrani, W. A., & Khan, A. (2019). The impact of perceived calling on work outcomes in a nursing context: The role of career commitment and living one's calling. *Journal of Applied Biobehavioral Research*, *24*(1), e12154. https://doi.org/10.1111/jabr.12154

Aguinaldo, J. P. (2012). Qualitative analysis in gay men's health research: Comparing thematic, critical discourse, and conversation analysis. *Journal of Homosexuality*, *59*(6), 765–787. https://doi.org/10.1080/00918369.2012.694753

Alkema, K., Linton, J. M., & Davies, R. (2008). A study of the relationship between self-care, compassion satisfaction, compassion fatigue, and burnout among hospice professionals. *Journal of Social Work in End-of-Life & Palliative Care*, *4*(2), 101–119. https://doi.org/10.1080/15524250802353934

Allen, J., Almukhtar, S., Aufrichtig, A., Barnard, A., Block, M., Cahalan, S., Cai, W., Calderone, J., Collins, K., Conlen, M., Cook, L., Gianordoli, G., Harmon, A., Harris, R., Hassan, A., Huang, J., Issawi, D., Ivory, D., Lai, R., … Yourish, K. (2021, July 19). *Tracking Coronavirus in Florida: Latest map and case count*. The New York Times. https://www.nytimes.com/interactive/2021/us/florida-covid-cases.html

American Nurses Association. (2017). *Executive summary: American Nurses Association health risk appraisal (key findings: October 2013-October 2016)*. American Nurses Association. https://www.nursingworld.org/~495c56/globalassets/practiceandpolicy/healthy-nurse-healthy-nation/ana-healthriskappraisalsummary_2013-2016.pdf

American Nurses Association. (2021). *Pulse on the nation's nurses COVID-19 survey series: Mental health and wellness*. ANA Enterprise: COVID-19 Resource Center. https://www.nursingworld.org/practice-policy/work-environment/health-safety/disaster-preparedness/coronavirus/what-you-need-to-know/mental-health-and-wellbeing-survey

An, Y., Yang, Y., Wang, A., Li, Y., Zhang, Q., Cheung, T., Ungvari, G. S., Qin, M.-Z., An, F.-R., & Xiang, Y.-T. (2020). Prevalence of depression and its impact on quality of life among frontline nurses in emergency departments during the COVID-19 outbreak. *Journal of Affective Disorders*, *276*, 312–315. https://doi.org/10.1016/j.jad.2020.06.047

Aycock, N., & Boyle, D. (2009). Interventions to manage compassion fatigue in oncology nursing. *Clinical Journal of Oncology Nursing*, *13*(2), 183–191.

Babanataj, R., Mazdarani, S., Hesamzadeh, A., Gorji, M. H., & Cherati, J. Y. (2019). Resilience training: Effects on occupational stress and resilience of critical care nurses. *International Journal of Nursing Practice*, *25*(1), e12697. https://doi.org/10.1111/ijn.12697

Ball, J. E., Bruyneel, L., Aiken, L. H., Sermeus, W., Sloane, D. M., Rafferty, A. M., Lindqvist, R., Tishelman, C., & Griffiths, P. (2018). Post-operative mortality, missed care and nurse staffing in nine countries: A cross-sectional study. *Special Issue: The Impact of Nursing*, *78*, 10–15. https://doi.org/10.1016/j.ijnurstu.2017.08.004

Ball, J. E., Murrells, T., Rafferty, A. M., Morrow, E., & Griffiths, P. (2014). 'Care left undone' during nursing shifts: Associations with workload and perceived quality of care. *BMJ Quality & Safety*, *23*(2), 116. https://doi.org/10.1136/bmjqs-2012-001767

Barnes, C. M., Jiang, K., & Lepak, D. P. (2016). Sabotaging the benefits of our own human capital: Work unit characteristics and sleep. *Journal of Applied Psychology*, *101*(2), 209–221. https://doi.org/10.1037/apl0000042

Barnes, C. M., & Wagner, D. T. (2009). Changing to daylight saving time cuts into sleep and increases workplace injuries. *Journal of Applied Psychology*, *94*(5), 1305–1317. https://doi.org/10.1037/a0015320

Beck, C. T. (1994). Phenomenology: Its use in nursing research. *International Journal of Nursing Studies*, *31*(6), 499–510. https://doi.org/10.1016/0020-7489(94)90060-4

Beddoe, A. E., & Murphy, S. O. (2004). Does mindfulness decrease stress and foster empathy among nursing students? *Journal of Nursing Education*, *43*(7), 305–312. https://doi.org/10.3928/01484834-20040701-07

Beehr, T. A., Jex, S. M., Stacy, B. A., & Murray, M. A. (2000). Work stressors and coworker support as predictors of individual strain and job performance. *Journal of Organizational Behavior*, *21*, 391–405.

Benfante, A., Di Tella, M., Romeo, A., & Castelli, L. (2020). Traumatic stress in healthcare workers during COVID-19 pandemic: A Review of the immediate impact. *Frontiers in Psychology*, *11*, 2816. https://doi.org/10.3389/fpsyg.2020.569935

Benzo, R. P., Kirsch, J. L., & Nelson, C. (2017). Compassion, mindfulness, and the happiness of healthcare workers. *EXPLORE*, *13*(3), 201–206. https://doi.org/10.1016/j.explore.2017.02.001

Binnewies, C., Sonnentag, S., & Mojza, E. J. (2009). Feeling recovered and thinking about the good sides of one's work. *Journal of Occupational Health Psychology*, *14*(3), 243–256. https://doi.org/10.1037/a0014933

Bishop, S. R. (2002). What do we really know about mindfulness-based stress reduction? *Psychosomatic Medicine*, *64*(1). https://journals.lww.com/psychosomaticmedicine/Fulltext/2002/01000/What_Do_We_Really_Know_About_Mindfulness_Based.10.aspx

Bradley, J. R., & Cartwright, S. (2002). Social support, job stress, health, and job satisfaction among nurses in the United Kingdom. *International Journal of Stress Management*, *9*(3), 163–182. https://doi.org/10.1023/A:1015567731248

Branch, C., & Klinkenberg, D. (2015). Compassion fatigue among pediatric healthcare providers. *MCN: The American Journal of Maternal/Child Nursing*, *40*(3). https://journals.lww.com/mcnjournal/Fulltext/2015/05000/Compassion_Fatigue_Among_Pediatric_Healthcare.6.aspx

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper (Ed.), *APA handbook of research methods in psychology, Vol 2: Research designs: Quantitative, qualitative, neuropsychological, and biological.* (pp. 57–71). American Psychological Association.

Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners* (M. Carmichael, Ed.). SAGE Publications.

Braun, V., & Clarke, V. (2019, April). *Answers to frequently asked questions about thematic analysis*. Reading List and Resources for Thematic Analysis. https://cdn.auckland.ac.nz/assets/psych/about/our-research/documents/Answers%20to%20frequently%20asked%20questions%20about%20thematic%20analysis%20April%202019.pdf

Braun, V., & Clarke, V. (2020). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, 1–25. https://doi.org/10.1080/14780887.2020.1769238

Braun, V., & Clarke, V. (2021). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health*, *13*(2), 201–216. https://doi.org/10.1080/2159676X.2019.1704846

Broussard, L., & White, D. (2014). School nurse intention to pursue higher education. *The Journal of School Nursing*, *30*(5), 340–348. https://doi.org/10.1177/1059840513509111

Burnard, P., Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Analysing and presenting qualitative data. *British Dental Journal*, *204*(8), 429–432. https://doi.org/10.1038/sj.bdj.2008.292

Buurman, B. M., Mank, A. P. M., Beijer, H. J. M., & Olff, M. (2011). Coping with serious events at work: A study of traumatic stress among nurses. *Journal of the American Psychiatric Nurses Association*, *17*(5), 321–329. https://doi.org/10.1177/1078390311418651

Çamveren, H., Arslan Yürümezoğlu, H., & Kocaman, G. (2020). Why do young nurses leave their organization? A qualitative descriptive study. *International Nursing Review*, *67*(4), 519–528. https://doi.org/10.1111/inr.12633

Carli, L. L. (2020). Women, gender equality and COVID-19. *Gender in Management: An International Journal*, *35*(7/8), 647–655. https://doi.org/10.1108/GM-07-2020-0236

Carson, P., Carson, K., Yallapragada, R., & Roe, C. (1998). Nursing supervisors' view through rose-colored glasses: An overestimation of employees' positive attitudes. *Health Care Superv*, *16*(4), 68–74. PubMed. https://doi.org/10.1097/00126450-199806000-00011

Catania, G., Zanini, M., Hayter, M., Timmins, F., Dasso, N., Ottonello, G., Aleo, G., Sasso, L., & Bagnasco, A. (2021). Lessons from Italian front-line nurses' experiences during the COVID-19 pandemic: A qualitative descriptive study. *Journal of Nursing Management*, *29*(3), 404–411. https://doi.org/10.1111/jonm.13194

Chen, R., Sun, C., Chen, J.-J., Jen, H.-J., Kang, X. L., Kao, C.-C., & Chou, K.-R. (2021). A large-scale survey on trauma, burnout, and posttraumatic growth among nurses during the COVID-19 pandemic. *International Journal of Mental Health Nursing*, *30*(1), 102–116. https://doi.org/10.1111/inm.12796

Cheung, T., Fong, T. K. H., & Bressington, D. (2020). COVID-19 under the SARS cloud: Mental health nursing during the pandemic in Hong Kong. *Journal of Psychiatric and Mental Health Nursing*, *n/a*(n/a). https://doi.org/10.1111/jpm.12639

Cibangu, S. K., & Hepworth, M. (2016). The uses of phenomenology and phenomenography: A critical review. *Library & Information Science Research*, *38*(2), 148–160. https://doi.org/10.1016/j.lisr.2016.05.001

Clegg, A. (2001). Occupational stress in nursing: A review of the literature. *Journal of Nursing Management*, *9*(2), 101–106. https://doi.org/10.1046/j.1365-2834.2001.00216.x

Compton, W. C., Smith, M. L., Cornish, K. A., & Qualls, D. L. (1996). Factor structure of mental health measures. *Journal of Personality and Social Psychology*, *71*(2), 406–413. https://doi.org/10.1037/0022-3514.71.2.406

Conchie, S. M., Taylor, P. J., & Donald, I. J. (2012). Promoting safety voice with safety-specific transformational leadership: The mediating role of two dimensions of trust. *Journal of Occupational Health Psychology*, *17*(1), 105–115. https://doi.org/10.1037/a0025101

Cortese, C., Gatti, P., & Ghislieri, C. (2014). Job demands, meaningful work, and turnover intention among nurses. *Med Lav*, *105*(1), 37–47. PubMed.

Cree, T., & Kelloway, E. K. (1997). Responses to occupational hazards: Exit and participation. *Journal of Occupational Health Psychology*, *2*(4), 304–311. https://doi.org/10.1037/1076-8998.2.4.304

Curtin, M., & Fossey, E. (2007). Appraising the trustworthiness of qualitative studies: Guidelines for occupational therapists. *Australian Occupational Therapy Journal*, *54*(2), 88–94. https://doi.org/10.1111/j.1440-1630.2007.00661.x

Decker, S. E., Naugle, A. E., Carter-Visscher, R., Bell, K., & Seifert, A. (2011). Ethical issues in research on sensitive topics: Participants' experiences of distress and benefit. *Journal of Empirical Research on Human Research Ethics*, *6*(3), 55–64. https://doi.org/10.1525/jer.2011.6.3.55

Delaney, C., & Piscopo, B. (2004). RN-BSN Programs: Associate degree and diploma nurses' perceptions of the benefits and barriers to returning to school. *Journal for Nurses in Staff Development*, *20*(4), 157–161.

Diener, E., & Seligman, M. E. P. (2004). Beyond money: Toward an economy of well-being. *Psychological Science in the Public Interest*, *5*(1), 1–31. https://doi.org/10.1111/j.0963-7214.2004.00501001.x

Dolan, S. L., Van Ameringen, M. R., Corbin, S., & Arsenault, A. (1992). Lack of professional latitude and role problems as correlates of propensity to quit amongst nursing staff. *Journal of Advanced Nursing*, *17*(12), 1455–1459. https://doi.org/10.1111/j.1365-2648.1992.tb02817.x

Dominguez-Gomez, E., & Rutledge, D. N. (2009). Prevalence of secondary traumatic stress among emergency nurses. *Journal of Emergency Nursing*, *35*(3), 199–204. https://doi.org/10.1016/j.jen.2008.05.003

Donnelly, E., & Siebert, D. (2009). Occupational risk factors in the emergency medical services. *Prehospital and Disaster Medicine*, *24*(5), 422–429. https://doi.org/DOI: 10.1017/S1049023X00007251

Drach-Zahavy, A., & Marzuq, N. (2013). The weekend matters: Exploring when and how nurses best recover from work stress. *Journal of Advanced Nursing*, *69*(3), 578–589. https://doi.org/10.1111/j.1365-2648.2012.06033.x

Duffy, M. T., Friesen, M. A., Speroni, K. G., Swengros, D., Shanks, L. A., Waiter, P. A., & Sheridan, M. J. (2014). BSN completion barriers, challenges, incentives, and strategies. *Journal of Nursing Administration*, *44*(4), 232–236. https://doi.org/10.1097/NNA.0000000000000054

Eley, D., Eley, R., Bertello, M., & Rogers-Clark, C. (2012). Why did I become a nurse? Personality traits and reasons for entering nursing. *Journal of Advanced Nursing*, *68*(7), 1546–1555. https://doi.org/10.1111/j.1365-2648.2012.05955.x

Emerson, C. (2017). Calling to nursing. *Advances in Nursing Science*, *40*(4), 384–394. https://doi.org/10.1097/ANS.0000000000000185

Ernst, M. E., Franco, M., Messmer, P. R., & Gonzalez, J. L. (2004). Nurses' job satisfaction, stress, and recognition in a pediatric setting. *Pediatric Nursing*, *30*(3), 219–228. Gale Academic OneFile.

Estryn-Behar, M., van der Heijden, B. I. J. M., Fry, C., & Hasselhorn, H.-M. (2010). Longitudinal analysis of personal and work-related factors associated with turnover among nurses. *Nursing Research*, *59*(3). https://journals.lww.com/nursingresearchonline/Fulltext/2010/05000/Longitudinal_Analysis_of_Personal_and_Work_Related.3.aspx

Fauzi, M. F., Mohd Yusoff, H., Muhamad Robat, R., Mat Saruan, N. A., Ismail, K. I., & Mohd Haris, A. F. (2020). Doctors' mental health in the midst of COVID-19 pandemic: The roles of work demands and recovery experiences. *International Journal of Environmental Research and Public Health*, *17*(19), 7340. PubMed. https://doi.org/10.3390/ijerph17197340

Flinkman, M., Laine, M., Leino-Kilpi, H., Hasselhorn, H.-M., & Salanterä, S. (2008). Explaining young registered Finnish nurses' intention to leave the profession: A questionnaire survey. *International Journal of Nursing Studies*, *45*(5), 727–739. https://doi.org/10.1016/j.ijnurstu.2006.12.006

Florida Center for Nursing. (2020, June). *Florida's 2018-2019 registered nurse (RN) workforce supply: Characteristics and trends*. https://floridasnursing.gov/forms/supply/2018-2019%20RN%20Supply%20-%20FINAL%2006.2020.pdf

Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology*, *48*(1), 150–170. https://doi.org/10.1037//0022-3514.48.1.150

Foureur, M., Besley, K., Burton, G., Yu, N., & Crisp, J. (2013). Enhancing the resilience of nurses and midwives: Pilot of a mindfulness based program for increased health, sense of coherence and decreased depression, anxiety and stress. *Contemporary Nurse*, *45*(1), 114–125. https://doi.org/10.5172/conu.2013.45.1.114

Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology*, *9*(2), 103–110. https://doi.org/10.1037/1089-2680.9.2.103

Galehdar, N., Toulabi, T., Kamran, A., & Heydari, H. (2020). Exploring nurses' perception about the care needs of patients with COVID-19: A qualitative study. *BMC Nursing*, *19*(1), 119. https://doi.org/10.1186/s12912-020-00516-9

Gandhi, V., & Robison, J. (2021, July 22). *The "Great Resignation" is really the "Great Discontent."* Gallup. https://www.gallup.com/workplace/351545/great-resignation-really-great-discontent.aspx

Gates, D. M., Gillespie, G. L., & Succop, P. (2011). Violence against nurses and its impact on stress and productivity. *Nursing Economics*, *29*(2), 59–66.

Gordon, A. M., Mendes, W. B., & Prather, A. A. (2017). The social side of sleep: Elucidating the links between sleep and social processes. *Current Directions in Psychological Science*, *26*(5), 470–475. https://doi.org/10.1177/0963721417712269

Gottlieb, J., & Zenilman, A. (2020). *When nurses travel: Labor supply elasticity during COVID-19 surges* (Issues 2020–166). Becker Friedman Institute for Research In Economics. https://EconPapers.repec.org/RePEc:bfi:wpaper:2020-166

Griffin, M. A., & Hu, X. (2013). How leaders differentially motivate safety compliance and safety participation: The role of monitoring, inspiring, and learning. *Safety Science*, *60*, 196–202. https://doi.org/10.1016/j.ssci.2013.07.019

Griffin, M. A., & Neal, A. (2000). Perceptions of safety at work: A framework for linking safety climate to safety performance, knowledge, and motivation. *Journal of Occupational Health Psychology*, *5*(3), 347–358. https://doi.org/10.1037/1076-8998.5.3.347

Guillaumie, L., Boiral, O., & Champagne, J. (2017). A mixed-methods systematic review of the effects of mindfulness on nurses. *Journal of Advanced Nursing*, *73*(5), 1017–1034. https://doi.org/10.1111/jan.13176

Guo, J., Liao, L., Wang, B., Li, X., Guo, L., Tong, Z., Guan, Q., Zhou, M., Wu, Y., Zhang, J., & Gu, Y. (2020). Psychological effects of COVID-19 on hospital staff: A national cross-sectional survey of China Mainland. *The Lancet*, 1–20.

Hafner, M., Stepanek, M., Taylor, J., Troxel, W. M., & van Stolk, C. (2017). Why sleep matters- the economic costs of insufficient sleep: A cross-country comparative analysis. *Rand Health Quarterly*, *6*(4), 11–11. PubMed.

Halcomb, E., McInnes, S., Williams, A., Ashley, C., James, S., Fernandez, R., Stephen, C., & Calma, K. (2020). The experiences of primary healthcare nurses during the COVID-19 pandemic in Australia. *Journal of Nursing Scholarship*, *52*(5), 553–563. https://doi.org/10.1111/jnu.12589

Hanna, D. R., & Romana, M. (2007). Debriefing after a crisis. *Nursing Management*, *38*(8). https://journals.lww.com/nursingmanagement/Fulltext/2007/08000/Debriefing_after_a_crisis.11.aspx

Happell, B., Reid-Searl, K., Dwyer, T., Caperchione, C. M., Gaskin, C. J., & Burke, K. J. (2013). How nurses cope with occupational stress outside their workplaces. *Collegian*, *20*(3), 195–199. https://doi.org/10.1016/j.colegn.2012.08.003

Harris, P. W., & Burman, M. E. (2016). Nurses returning to school: Motivators, inhibitors and job satisfaction. *Journal of Professional Nursing*, *32*(2), 85–93. https://doi.org/10.1016/j.profnurs.2015.10.008

Harrison, Y., & Horne, J. A. (1999). One night of sleep loss impairs innovative thinking and flexible decision making. *Organizational Behavior and Human Decision Processes*, *78*(2), 128–145. https://doi.org/10.1006/obhd.1999.2827

Hart, P. L., Brannan, J. D., & De Chesnay, M. (2014). Resilience in nurses: An integrative review. *Journal of Nursing Management*, *22*(6), 720–734. https://doi.org/10.1111/j.1365-2834.2012.01485.x

Hayward, D., Bungay, V., Wolff, A. C., & MacDonald, V. (2016). A qualitative study of experienced nurses' voluntary turnover: Learning from their perspectives. *Journal of Clinical Nursing*, *25*(9–10), 1336–1345. https://doi.org/10.1111/jocn.13210

Hofmann, D. A., & Morgeson, F. P. (1999). Safety-related behavior as a social exchange: The role of perceived organizational support and leader–member exchange. *Journal of Applied Psychology*, *84*(2), 286–296. https://doi.org/10.1037/0021-9010.84.2.286

Huang, L., Lin, G., Tang, L., Yu, L., & Zhou, Z. (2020). Special attention to nurses' protection during the COVID-19 epidemic. *Critical Care*, *24*(1), 120. https://doi.org/10.1186/s13054-020-2841-7

Hurtado, D. A., Kim, S.-S., Subramanian, S. V., Dennerlein, J. T., Christiani, D. C., Hashimoto, D. M., & Sorensen, G. (2017). Nurses' but not supervisors' safety practices are linked with job satisfaction. *Journal of Nursing Management*, *25*(7), 491–497. https://doi.org/10.1111/jonm.12484

Hyun-Ji, K., & Hyunkyung, C. (2017). The mediating effect of resilience on the relationship between emotional labor and happiness of clinical nurses. *Korean Journal of Occupational Health Nursing*, *26*(1), 40–46. https://doi.org/10.5807/kjohn.2017.26.1.40

International Council of Nurses. (2021). *International Council of Nurses COVID-19 Update* (pp. 1–4). https://www.icn.ch/sites/default/files/inline-files/ICN%20COVID19%20update%20report%20FINAL.pdf

Isa, K. Q., Ibrahim, M. A., Abdul-Manan, H.-H., Mohd-Salleh, Z.-A. H., Abdul-Mumin, K. H., & Rahman, H. A. (2019). Strategies used to cope with stress by emergency and critical care nurses. *British Journal of Nursing*, *28*(1), 38–42. https://doi.org/10.12968/bjon.2019.28.1.38

Johns Hopkins Coronavirus Research Center. (2021, September 19). *Florida—COVID-19 Overview*. Johns Hopkins University & Medicine - Coronavirus Research Center. https://coronavirus.jhu.edu/region/us/florida

Judge, T. A., Piccolo, R. F., Podsakoff, N. P., Shaw, J. C., & Rich, B. L. (2010). The relationship between pay and job satisfaction: A meta-analysis of the literature. *Journal of Vocational Behavior*, *77*(2), 157–167. https://doi.org/10.1016/j.jvb.2010.04.002

Kackin, O., Ciydem, E., Aci, O. S., & Kutlu, F. Y. (2020). Experiences and psychosocial problems of nurses caring for patients diagnosed with COVID-19 in Turkey: A qualitative study. *International Journal of Social Psychiatry*, 0020764020942788. https://doi.org/10.1177/0020764020942788

Karimi, Z., Fereidouni, Z., Behnammoghadam, M., Alimohammadi, N., Mousavizadeh, A., Salehi, T., Mirzaee, M. S., & Mirzaee, S. (2020). The lived experience of nurses caring for patients with COVID-19 in Iran: A phenomenological study. *Risk Management and Healthcare Policy*, *13*(2), 1271–1278. https://doi.org/10.2147/RMHP.S258785

Kim, Y.-J., Lee, S.-Y., & Cho, J.-H. (2020). A study on the job retention intention of nurses based on social support in the COVID-19 situation. *Sustainability*, *12*(18). https://doi.org/10.3390/su12187276

King, L. A., & Napa, C. K. (1998). What makes a life good? *Journal of Personality and Social Psychology*, *75*(1), 156–165. https://doi.org/10.1037/0022-3514.75.1.156

Kitto, S. C., Chesters, J., & Grbich, C. (2008). Quality in qualitative research. *Medical Journal of Australia*, *188*(4), 243–246.

Kılınç, T., & Sis Çelik, A. (2021). Relationship between the social support and psychological resilience levels perceived by nurses during the COVID-19 pandemic: A study from Turkey. *Perspectives in Psychiatric Care*, *57*(3), 1000–1008. https://doi.org/10.1111/ppc.12648

Kox, J. H. A. M., Groenewoud, J. H., Bakker, E. J. M., Bierma-Zeinstra, S. M. A., Runhaar, J., Miedema, H. S., & Roelofs, P. D. D. M. (2020). Reasons why Dutch novice nurses leave nursing: A qualitative approach. *Nurse Education in Practice*, *47*, 102848. https://doi.org/10.1016/j.nepr.2020.102848

Labrague, L. J., & de los Santos, J. A. A. (2020a). Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses. *Journal of Nursing Management*, *n/a*(n/a). https://doi.org/10.1111/jonm.13168

Labrague, L. J., & de los Santos, J. A. A. (2020b). COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. *Journal of Nursing Management*, *28*(7), 1653–1661. https://doi.org/10.1111/jonm.13121

Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., Wu, J., Du, H., Chen, T., Li, R., Tan, H., Kang, L., Yao, L., Huang, M., Wang, H., Wang, G., Liu, Z., & Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open*, *3*(3), e203976–e203976. https://doi.org/10.1001/jamanetworkopen.2020.3976

Lam, K. K., & Hung, S. Y. M. (2013). Perceptions of emergency nurses during the human swine influenza outbreak: A qualitative study. *International Emergency Nursing*, *21*(4), 240–246. https://doi.org/10.1016/j.ienj.2012.08.008

Lambert, V. A., & Lambert, C. E. (2001). Literature review of role stress/strain on nurses: An international perspective. *Nursing & Health Sciences*, *3*(3), 161–172. https://doi.org/10.1046/j.1442-2018.2001.00086.x

Lameire, N., Joffe, P., & Wiedemann, M. (1999). Healthcare systems—An international review: An overview. *Nephrology Dialysis Transplantation*, *14*(suppl_6), 3–9. https://doi.org/10.1093/ndt/14.suppl_6.3

Lan, H. K., Subramanian, P., Rahmat, N., & Kar, P. C. (2014). The effects of mindfulness training program on reducing stress and promoting well-being among nurses in critical care units. *The Australian Journal of Advanced Nursing*, *31*(3), 22–31. https://search.informit.org/doi/10.3316/ielapa.285671898965330

Lang, T. A., Hodge, M., Olson, V., Romano, P. S., & Kravitz, R. L. (2004). Nurse-patient ratios: A systematic review on the effects of nurse staffing on patient, nurse employee, and hospital outcomes. *JONA: The Journal of Nursing Administration*, *34*(7). https://journals.lww.com/jonajournal/Fulltext/2004/07000/Nurse_Patient_Ratios__A_Systematic_Review_on_the.5.aspx

Lanz, J. J. (2020). Evidence-based resilience intervention on nursing students: A randomized controlled pilot trial. *International Journal of Applied Positive Psychology*, *5*(3), 217–230. https://doi.org/10.1007/s41042-020-00034-8

Laschinger, H. K. S., & Leiter, M. P. (2006). The impact of nursing work environments on patient safety outcomes: The mediating role of burnout engagement. *JONA: The Journal of Nursing Administration*, *36*(5). https://journals.lww.com/jonajournal/Fulltext/2006/05000/The_Impact_of_Nursing_Work_Environments_on_Patient.19.aspx

Leiter, M. P., & Maslach, C. (2009). Nurse turnover: The mediating role of burnout. *Journal of Nursing Management*, *17*(3), 331–339. https://doi.org/10.1111/j.1365-2834.2009.01004.x

Lima, L., Gonçalves, S., & Pinto, C. (2018). Sudden death in paediatrics as a traumatic experience for critical care nurses. *Nursing in Critical Care*, *23*(1), 42–47. https://doi.org/10.1111/nicc.12326

Linton, J., & Farrell, M. J. (2009). Nurses' perceptions of leadership in an adult intensive care unit: A phenomenology study. *Intensive and Critical Care Nursing*, *25*(2), 64–71. https://doi.org/10.1016/j.iccn.2008.11.003

Littlejohn, L., Campbell, J., & Collins-McNeil, J. (2012). Comparative analysis of nursing shortage. *International Journal of Nursing*, *1*(1), 21–26.

Liu, C., Spector, P. E., & Shi, L. (2007). Cross-national job stress: A quantitative and qualitative study. *Journal of Organizational Behavior*, *28*(2), 209–239. https://doi.org/10.1002/job.435

Liu, Q., Luo, D., Haase, J. E., Guo, Q., Wang, X. Q., Liu, S., Xia, L., Liu, Z., Yang, J., & Yang, B. X. (2020). The experiences of health-care providers during the COVID-19 crisis in China: A qualitative study. *The Lancet Global Health*, *8*(6), e790–e798. https://doi.org/10.1016/S2214-109X(20)30204-7

Liu, S., Yang, L., Zhang, C., Xu, Y., Cai, L., Ma, S., Wang, Y., Cai, Z., Du, H., Li, R., Kang, L., Zheng, H., Liu, Z., & Zhang, B. (2021). Gender differences in mental health problems of healthcare workers during the coronavirus disease 2019 outbreak. *Journal of Psychiatric Research*, *137*, 393–400. https://doi.org/10.1016/j.jpsychires.2021.03.014

Liu, Z., Han, B., Jiang, R., Huang, Y., Ma, C., Wen, J., Zhang, T., Wang, Y., Chen, H., & Ma, Y. (2020). Mental health status of doctors and nurses during COVID-19 epidemic in China. *The Lancet*.

Maben, J., & Bridges, J. (2020). Covid-19: Supporting nurses' psychological and mental health. *Journal of Clinical Nursing*, *29*(15–16), 2742–2750. https://doi.org/10.1111/jocn.15307

Malterud, K. (2001). Qualitative research: Standards, challenges, and guidelines. *The Lancet*, *358*(9280), 483–488. https://doi.org/10.1016/S0140-6736(01)05627-6

Mazzola, J. J., Schonfeld, I. S., & Spector, P. E. (2011). What qualitative research has taught us about occupational stress. *Stress and Health*, *27*(2), 93–110. https://doi.org/10.1002/smi.1386

McGrath, A., Reid, N., & Boore, J. (2003). Occupational stress in nursing. *International Journal of Nursing Studies*, *40*(5), 555–565. https://doi.org/10.1016/S0020-7489(03)00058-0

McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: On doing well and being yourself. *Journal of Personality and Social Psychology*, *74*(2), 494–512. https://doi.org/10.1037/0022-3514.74.2.494

Mealer, M. L., Shelton, A., Berg, B., Rothbaum, B., & Moss, M. (2007). Increased prevalence of post-traumatic stress disorder symptoms in critical care nurses. *American Journal of Respiratory and Critical Care Nurses*, *175*(7), 693–697.

Melnyk, B. M., Tan, A., Hsieh, A. P., Gawlik, K., Arslanian-Engoren, C., Braun, L. T., Dunbar, S., Dunbar-Jacob, J., Lewis, L. M., Millan, A., Orsolini, L., Robbins, L. B., Russell, C. L., Tucker, S., & Wilbur, J. (2021). Critical care nurses' physical and mental health, worksite wellness support, and medical errors. *American Journal of Critical Care*, *30*(3), 176–184. https://doi.org/10.4037/ajcc2021301

Monat, A., & Lazarus, R. S. (1991). Stress and coping– Some current issues and controversies. In A. Monat & R. S. Lazarus (Eds.), *Stress and coping: An anthology* (pp. 1–15). Columbia University Press.

Morley, G., Grady, C., McCarthy, J., & Ulrich, C. M. (2020). Covid-19: Ethical challenges for nurses. *Hastings Center Report*, *50*(3), 35–39. https://doi.org/10.1002/hast.1110

Morrow, K. J., Gustavson, A. M., & Jones, J. (2016). Speaking up behaviours (safety voices) of healthcare workers: A metasynthesis of qualitative research studies. *International Journal of Nursing Studies*, *64*, 42–51. https://doi.org/10.1016/j.ijnurstu.2016.09.014

Mosadeghrad, A. M. (2013). Occupational stress and turnover intention: Implications for nursing management. *International Journal of Health Policy and Management*, *1*(2), 169–176. PubMed. https://doi.org/10.15171/ijhpm.2013.30

Mullen, J. (2005). Testing a model of employee willingness to raise safety issues. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement*, *37*(4), 273–282. https://doi.org/10.1037/h0087262

Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology*, *96*, 71–94. https://doi.org/10.1037/a0021484

Nasurdin, A. M., Ling, T. C., & Khan, S. N. (2018). Linking social support, work engagement and job performance in nursing. *International Journal of Business and Society*, *19*(2), 363–386. ABI/INFORM Collection.

Newby, J. C., Mabry, M. C., Carlisle, B. A., Olson, D. M., & Lane, B. E. (2020). Reflections on nursing ingenuity during the COVID-19 pandemic. *The Journal of*

*Neuroscience Nursing : Journal of the American Association of Neuroscience Nurses*, *52*(5), E13–E16. https://doi.org/10.1097/JNN.0000000000000525

Pappa, S., Ntella, V., Giannakas, T., Giannakoulis, V. G., Papoutsi, E., & Katsaounou, P. (2020). Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain, Behavior, and Immunity*, *88*, 901–907. https://doi.org/10.1016/j.bbi.2020.05.026

Parikh, P., Taukari, A., & Bhattacharya, T. (2004). Occupational stress and coping among nurses. *Journal of Health Management*, *6*(2), 115–127. https://doi.org/10.1177/097206340400600203

Park, M., Cho, S.-H., & Hong, H.-J. (2015). Prevalence and perpetrators of workplace violence by nursing unit and the relationship between violence and the perceived work environment. *Journal of Nursing Scholarship*, *47*(1), 87–95. https://doi.org/10.1111/jnu.12112

Park, Y.-M., & Kim, S. Y. (2013). Impacts of job stress and cognitive failure on patient safety incidents among hospital nurses. *Safety and Health at Work*, *4*(4), 210–215. https://doi.org/10.1016/j.shaw.2013.10.003

Persolja, M., Marin, M., Caporale, L., Odasmini, B., Scarsini, S., Fiorella, V., De Lucia, P., & Palese, A. (2020). Chief Nurse Executives involuntary turnover in times of health care reforms: Findings from an interpretative phenomenology study. *Health Services Management Research*, *33*(4), 172–185. https://doi.org/10.1177/0951484820923923

Pesut, B. (2002). The development of nursing students' spirituality and spiritual care-giving. *Nurse Education Today*, *22*(2), 128–135. https://doi.org/10.1054/nedt.2001.0664

Peters, K., & Halcomb, E. (2015). Interviews in qualitative research. *Nurse Researcher*, *22*(4), 6–7. https://doi.org/10.7748/nr.22.4.6.s2

Phillips, C. (2020). Relationships between workload perception, burnout, and intent to leave among medical–surgical nurses. *JBI Evidence Implementation*, *18*(2). https://journals.lww.com/ijebh/Fulltext/2020/06000/Relationships_between_workload_perception,.11.aspx

Pike, J. (2011). Spirituality in nursing: A systematic review of the literature from 2006–10. *British Journal of Nursing*, *20*(12), 743–749. https://doi.org/10.12968/bjon.2011.20.12.743

Porter, S. (2007). Validity, trustworthiness and rigour: Reasserting realism in qualitative research. *Journal of Advanced Nursing*, *60*(1), 79–86. https://doi.org/10.1111/j.1365-2648.2007.04360.x

Prapanjaroensin, A., Patrician, P. A., & Vance, D. E. (2017). Conservation of resources theory in nurse burnout and patient safety. *Journal of Advanced Nursing*, *73*(11), 2558–2565. https://doi.org/10.1111/jan.13348

Purvis, L. J., & Cropley, M. (2003). The psychological contracts of National Health Service nurses. *Journal of Nursing Management*, *11*(2), 107–120. https://doi.org/10.1046/j.1365-2834.2003.00357.x

Quick, J. C., & Henderson, D. F. (2016). Occupational stress: Preventing suffering, enhancing wellbeing. *International Journal of Environmental Research and Public Health*, *13*(5), 1–11. https://doi.org/10.3390/ijerph13050459

Raatikainen, R. (1997). Nursing care as a calling. *Journal of Advanced Nursing*, *25*(6), 1111–1115. https://doi.org/10.1046/j.1365-2648.1997.19970251111.x

Rahman, A., & Plummer, V. (2020). COVID-19 related suicide among hospital nurses; case study evidence from worldwide media reports. *Psychiatry Research*, *291*, 113272. https://doi.org/10.1016/j.psychres.2020.113272

Raingruber, B., & Robinson, C. (2007). The effectiveness of tai chi, yoga, meditation, and reiki healing sessions in promoting health and enhancing problem solving abilities of registered nurses. *Issues in Mental Health Nursing*, *28*(10), 1141–1155. https://doi.org/10.1080/01612840701581255

Richards, D. A., & Borglin, G. (2019). 'Shitty nursing' – The new normal? *International Journal of Nursing Studies*, *91*, 148–152. https://doi.org/10.1016/j.ijnurstu.2018.12.018

Richards, E., & Terkanian, D. (2013, December). Occupational employment projections to 2022. *U.S. Bureau of Labor Statistics*. https://www.bls.gov/opub/mlr/2013/article/occupational-employment-projections-to-2022.htm#:~:text=The%20projected%20employment%20growth%20rates,nurses%20working%20in%20those%20hospitals.

Ripp, J., Peccoralo, L., & Charney, D. (2020). Attending to the emotional well-being of the health care workforce in a New York City health system during the COVID-19 pandemic. *Academic Medicine : Journal of the Association of American Medical Colleges*, *95*(8), 1136–1139. https://doi.org/10.1097/ACM.0000000000003414

Ritter, D. (2011). The relationship between healthy work environments and retention of nurses in a hospital setting. *Journal of Nursing Management*, *19*(1), 27–32. https://doi.org/10.1111/j.1365-2834.2010.01183.x

Ross-Adjie, G. M., Leslie, G., & Gillman, L. (2007). Occupational stress in the ED: What matters to nurses? *Australasian Emergency Nursing Journal*, *10*(3), 117–123. https://doi.org/10.1016/j.aenj.2007.05.005

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*(1), 141–166. https://doi.org/10.1146/annurev.psych.52.1.141

Salyers, M. P., Bonfils, K. A., Luther, L., Firmin, R. L., White, D. A., Adams, E. L., & Rollins, A. L. (2017). The relationship between professional burnout and quality and safety in healthcare: A meta-analysis. *Journal of General Internal Medicine*, *32*(4), 475–482. https://doi.org/10.1007/s11606-016-3886-9

Savitsky, B., Radomislensky, I., & Hendel, T. (2021). Nurses' occupational satisfaction during Covid-19 pandemic. *Applied Nursing Research*, *59*, 151416. https://doi.org/10.1016/j.apnr.2021.151416

Schonfeld, I. S., & Farrell, E. (2010). Qualitative methods can enrich quantitative research on occupational stress: An example from one occupational group. In P. L. Perrewé & D. C. Ganster (Eds.), *New Developments in Theoretical and Conceptual Approaches to Job Stress* (Vol. 8, pp. 137–197). Emerald Group Publishing Limited. https://doi.org/10.1108/S1479-3555(2010)0000008007

Semmer, N. K., Elfering, A., Jacobshagen, N., Perrot, T., Beehr, T. A., & Boos, N. (2008). The emotional meaning of instrumental social support. *International Journal of Stress Management*, *15*(3), 235–251. https://doi.org/10.1037/1072-5245.15.3.235

Shiao, J. S.-C., Koh, D., Lo, L.-H., Lim, M.-K., & Guo, Y. L. (2007). Factors predicting nurses' consideration of leaving their job during the SARS outbreak. *Nursing Ethics*, *14*(1), 5–17. https://doi.org/10.1177/0969733007071350

Shields, M. A., & Ward, M. (2001). Improving nurse retention in the National Health Service in England: The impact of job satisfaction on intentions to quit. *Journal of Health Economics*, *20*(5), 677–701. https://doi.org/10.1016/S0167-6296(01)00092-3

Shinners, J., & Cosme, S. (2020). COVID-19: Perspectives from nurses across the country. *The Journal of Continuing Education in Nursing*, *51*(7), 304–308. https://doi.org/10.3928/00220124-20200611-05

Sjöström, B., & Dahlgren, L. O. (2002). Applying phenomenography in nursing research. *Journal of Advanced Nursing*, *40*(3), 339–345. https://doi.org/10.1046/j.1365-2648.2002.02375.x

Smart, D., English, A., James, J., Wilson, M., Daratha, K. B., Childers, B., & Magera, C. (2014). Compassion fatigue and satisfaction: A cross-sectional survey among US healthcare workers. *Nursing & Health Sciences*, *16*(1), 3–10. https://doi.org/10.1111/nhs.12068

Smith-Coggins, R., Howard, S. K., Mac, D. T., Wang, C., Kwan, S., Rosekind, M. R., Sowb, Y., Balise, R., Levis, J., & Gaba, D. M. (2006). Improving alertness and

performance in emergency department physicians and nurses: The use of planned naps. *Annals of Emergency Medicine*, *48*(5), 596-604.e3. https://doi.org/10.1016/j.annemergmed.2006.02.005

Sonnentag, S., & Fritz, C. (2015). Recovery from job stress: The stressor-detachment model as an integrative framework. *Journal of Organizational Behavior*, *36*(S1), S72–S103. https://doi.org/10.1002/job.1924

Stagman-Tyrer, D. (2014). Resiliency and the nurse leader: The importance of equanimity, optimism, and perseverance. *Nursing Management*, *45*(6). https://journals.lww.com/nursingmanagement/Fulltext/2014/06000/Resiliency_and_the_nurse_leader__The_importance_of.12.aspx

Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring meaningful work: The Work and Meaning Inventory (WAMI). *Journal of Career Assessment*, *20*(3), 322–337. https://doi.org/10.1177/1069072711436160

Suleiman-Martos, N., Gomez-Urquiza, J. L., Aguayo-Estremera, R., Cañadas-De La Fuente, G. A., De La Fuente-Solana, E. I., & Albendín-García, L. (2020). The effect of mindfulness training on burnout syndrome in nursing: A systematic review and meta-analysis. *Journal of Advanced Nursing*, *76*(5), 1124–1140. https://doi.org/10.1111/jan.14318

Sun, N., Wei, L., Shi, S., Jiao, D., Song, R., Ma, L., Wang, H., Wang, C., Wang, Z., You, Y., Liu, S., & Wang, H. (2020). A qualitative study on the psychological experience of caregivers of COVID-19 patients. *American Journal of Infection Control*, *48*(6), 592–598. https://doi.org/10.1016/j.ajic.2020.03.018

Sundler, A. J., Lindberg, E., Nilsson, C., & Palmér, L. (2019). Qualitative thematic analysis based on descriptive phenomenology. *Nursing Open*, *6*(3), 733–739. https://doi.org/10.1002/nop2.275

Tan, R., Yu, T., Luo, K., Teng, F., Liu, Y., Luo, J., & Hu, D. (2020). Experiences of clinical first-line nurses treating patients with COVID-19: A qualitative study. *Journal of Nursing Management*, *28*(6), 1381–1390. https://doi.org/10.1111/jonm.13095

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, *9*(3), 455–471. https://doi.org/10.1007/BF02103658

Teeman, T. (2020). A coronavirus ICU nurse on 'dying alone behind sliding glass doors'. In *The Daily Beast*. https://www.thedailybeast.com/this-coronavirus-nurse-in-a-new-%0Ayork-icu-is-dedicated-to-a-job-that-also-terrifies-him?source=articles&via=twitter_page %0A

Teng, C.-I., Shyu, Y.-I. L., Chiou, W.-K., Fan, H.-C., & Lam, S. M. (2010). Interactive effects of nurse-experienced time pressure and burnout on patient safety: A cross-sectional survey. *International Journal of Nursing Studies*, *47*(11), 1442–1450. https://doi.org/10.1016/j.ijnurstu.2010.04.005

Tevington, P. (2011). Mandatory nurse-patient ratios. *Medsurg Nursing*, *20*(5), 265–268.

The Associated Press. (2021, August 10). *Hospitals face a shortage of nurses as COVID cases soar*. NPR. https://www.npr.org/2021/08/10/1026577164/hospitals-face-a-shortage-of-nurses-as-covid-cases-soar

Tomic, M., & Tomic, E. (2011). Existential fulfilment, workload and work engagement among nurses. *Journal of Research in Nursing*, *16*(5), 468–479. https://doi.org/10.1177/1744987110383353

Tong, L. (2018). Relationship between meaningful work and job performance in nurses. *International Journal of Nursing Practice*, *24*(2), e12620. https://doi.org/10.1111/ijn.12620

Tumi, N. S., Hasan, A. N., & Khalid, J. (2021). Impact of compensation, job enrichment and enlargement, and training on employee motivation. *Business Perspectives and Research*, 2278533721995353. https://doi.org/10.1177/2278533721995353

Vahey, D. C., Aiken, L. H., Sloane, D. M., Clarke, S. P., & Vargas, D. (2004). Nurse burnout and patient satisfaction. *Medical Care*, *42*(2 Suppl), II57–II66. PubMed. https://doi.org/10.1097/01.mlr.0000109126.50398.5a

van der Riet, P., Levett-Jones, T., & Aquino-Russell, C. (2018). The effectiveness of mindfulness meditation for nurses and nursing students: An integrated literature review. *Nurse Education Today*, *65*, 201–211. https://doi.org/10.1016/j.nedt.2018.03.018

van der Riet, P., Rossiter, R., Kirby, D., Dluzewska, T., & Harmon, C. (2015). Piloting a stress management and mindfulness program for undergraduate nursing students: Student feedback and lessons learned. *Nurse Education Today*, *35*(1), 44–49. https://doi.org/10.1016/j.nedt.2014.05.003

Vargas, C., Cañadas, G. A., Aguayo, R., Fernández, R., & de la Fuente, E. I. (2014). Which occupational risk factors are associated with burnout in nursing? A meta-analytic study. *International Journal of Clinical and Health Psychology*, *14*(1), 28–38. https://doi.org/10.1016/S1697-2600(14)70034-1

Vasli, P., & Dehghan-Nayeri, N. (2016). Emergency nurses' experience of crisis: A qualitative study. *Japan Journal of Nursing Science*, *13*(1), 55–64. https://doi.org/10.1111/jjns.12086

Velando-Soriano, A., Ortega-Campos, E., Gómez-Urquiza, J. L., Ramírez-Baena, L., De La Fuente, E. I., & Cañadas-De La Fuente, G. A. (2020). Impact of social support in

preventing burnout syndrome in nurses: A systematic review. *Japan Journal of Nursing Science*, *17*(1), e12269. https://doi.org/10.1111/jjns.12269

Wang, H., Xu, G., Liang, C., & Li, Z. (2021). Coping with job stress for hospital nurses during the Covid-19 crisis: The joint roles of micro-breaks and psychological detachment. *Journal of Nursing Management*, *n/a*(n/a). https://doi.org/10.1111/jonm.13431

Wendsche, J., Hacker, W., & Wegge, J. (2017). Understaffing and registered nurses' turnover: The moderating role of regular rest breaks. *German Journal of Human Resource Management*, *31*(3), 238–259. https://doi.org/10.1177/2397002216683880

Wheeler, H. H. (1997). Nurse occupational stress research 3: A model of stress for research. *British Journal of Nursing*, *6*(16), 944–949. https://doi.org/10.12968/bjon.1997.6.16.944

Witkoski, A., & Dickson, V. V. (2010). Hospital staff nurses' work hours, meal periods, and rest breaks: A review from an occupational health nurse perspective. *AAOHN Journal*, *58*(11), 489–497. https://doi.org/10.1177/216507991005801106

Woo, T., Ho, R., Tang, A., & Tam, W. (2020). Global prevalence of burnout symptoms among nurses: A systematic review and meta-analysis. *Journal of Psychiatric Research*, *123*, 9–20. https://doi.org/10.1016/j.jpsychires.2019.12.015

Wu, P., Fang, Y., Guan, Z., Fan, B., Kong, J., Yao, Z., Liu, X., Fuller, C. J., Susser, E., Lu, J., & Hoven, C. W. (2009). The psychological impact of the SARS epidemic on hospital employees in China: Exposure, risk perception, and altruistic acceptance of risk. *The Canadian Journal of Psychiatry*, *54*(5), 302–311. https://doi.org/10.1177/070674370905400504

Zeller, J. M., & Levin, P. F. (2013). Mindfulness interventions to reduce stress among nursing personnel: An occupational health perspective. *Workplace Health & Safety*, *61*(2), 85–89. https://doi.org/10.1177/216507991306100207

Zeytinoglu, I. U., Denton, M., Davies, S., Baumann, A., Blythe, J., & Boos, L. (2006). Retaining nurses in their employing hospitals and in the profession: Effects of job preference, unpaid overtime, importance of earnings and stress. *Health Policy*, *79*(1), 57–72. https://doi.org/10.1016/j.healthpol.2005.12.004

Zhang, M., Zhou, M., Tang, F., Wang, Y., Nie, H., Zhang, L., & You, G. (2020). Knowledge, attitude, and practice regarding COVID-19 among healthcare workers in Henan, China. *Journal of Hospital Infection*, *105*(2), 183–187. https://doi.org/10.1016/j.jhin.2020.04.012

Zhang, Y.-Y., Han, W.-L., Qin, W., Yin, H.-X., Zhang, C.-F., Kong, C., & Wang, Y.-L. (2018). Extent of compassion satisfaction, compassion fatigue and burnout in nursing: A

meta-analysis. *Journal of Nursing Management*, *26*(7), 810–819. https://doi.org/10.1111/jonm.12589

Zhou, Y., Asante, E. A., Zhuang, Y., Wang, J., Zhu, Y., & Shen, L. (2020). Surviving an infectious disease outbreak: How does nurse calling influence performance during the COVID-19 fight? *Journal of Nursing Management*, *n/a*(n/a). https://doi.org/10.1111/jonm.13181

Zhu, Y., Chen, T., Wang, J., Wang, M., Johnson, R. E., & Jin, Y. (2020). How critical activities within COVID-19 intensive care units increase nurses' daily occupational calling. *Journal of Applied Psychology*. https://doi.org/10.1037/apl0000853

# A META-ANALYTICAL EXAMINATION OF STS, BURNOUT, AND COMPASSION FATIGUE IN NURSES: IDENTIFYING EFFECTIVE COPING STRATEGIES

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## A Meta-Analytical Examination of STS, Burnout, and Compassion Fatigue in Nurses: Identifying Effective Coping Strategies

Nurses are often confronted with a wide range of stressful or traumatic events while on the job, including heavy workloads and watching patients suffer or die (Lambert et al., 2004). Accordingly, occupational stress is a well-established phenomenon in nursing (D. Johnston et al., 2016; Sharma et al., 2014), with many studies highlighting the negative impact of work-related stressors like workload, shift work, and aggression (Lim et al., 2010). The stress process involves appraising a situation as threatening, which, in turn, produces a stress response that can have implications for one's health and well-being (Gatchel & Kishino, 2012). The effects of occupational stress make nurses especially vulnerable to suicide, stress-induced mental health problems, and unhealthy lifestyles (Feskanich et al., 2002; Mark & Smith, 2012; Shan et al., 2018). Not only can occupational stress impact nurses' health and well-being, but also, more generally, the healthcare industry, as many nurses retire early or seek out less stressful and physically demanding careers (Minnick, 2000; Nooney et al., 2010). Thus, healthcare organizations face challenges associated with high nurse turnover, and, consequently, a nursing shortage is expected within the next decade (Coomber & Barriball, 2007; Haddad et al., 2020; Rosseter, 2019). Furthermore, occupational stress in nurses can lead to poor quality of patient care and higher administration costs for employers (Sarafis et al., 2016).

Exposure to traumatizing events, such as losing a patient, can result in serious strains in nurses, including STS, burnout, and compassion fatigue. To date, research attempting to understand the strategies employed by nurses to cope with these strains has been qualitative in nature, and as such, their effectiveness has not been examined meta-

analytically. Thus, research is needed to identify which coping strategies have the strongest empirical support to help healthcare organizations make evidence-based decisions regarding mitigating STS, burnout, and compassion fatigue in nurses and advance toward effective and actionable interventions. At a time when the COVID-19 pandemic is plaguing frontline nurses and other healthcare workers globally and could be contributing to further development of these strains in nurses, this research is especially warranted. As such, this study seeks to answer the following research questions using a meta-analytical approach:

1) Which coping strategies have the strongest empirical support for mitigating STS, burnout, and compassion fatigue in nurses?

2) Does individualism moderate the strength of the relationship between these coping strategies and STS, burnout, and compassion fatigue?

### STS, Burnout, and Compassion Fatigue: Implications and Risk Factors

STS refers to the resulting stress from helping or wanting to help someone who is suffering or traumatized (Figley, 1995) and can induce a variety of symptoms in those who experience it, including irritability, avoiding patients, trouble sleeping, intrusive thoughts, lower activity levels, emotional numbing, inability to recall information, and reliving trauma (Dominguez-Gomez & Rutledge, 2009). In emergency department nurses, STS is associated with absenteeism and increased sick days (Ratrout & Hamdan-Mansour, 2017). When unable to cope with STS effectively, nurses can experience self-reproach and guilt (Komachi et al., 2012). STS also influences nurses' consideration to change careers (Duffy et al., 2015), a problematic situation for the healthcare industry, which is already anticipating a nursing shortage.

Burnout is caused by prolonged exposure to emotional or psychological stress at work coupled with a lack of resources needed to cope with such stress and is an emotional reaction to work-related factors (Maslach et al., 2001; Maslach & Jackson, 1981). According to Maslach and Jackson (1981), three dimensions define the burnout construct: emotional exhaustion, depersonalization, and lack of personal accomplishment. Emotional exhaustion is the well-accepted core dimension of burnout (Adriaenssens et al., 2015) and is defined as lacking emotional and physical strength and having low energy. Depersonalization refers to the development of negative attitudes, such as cynicism, and behaviors. Lack of personal accomplishment is defined as lacking competence in both personal and work-related aspects of one's life and failing to accomplish goals (Maslach & Jackson, 1981). The implications for nurses who experience burnout range from musculoskeletal disorders, obesity, depression, insomnia, increased alcohol use, drug abuse, poorer quality of life, decreased quality of patient care, to increased interpersonal conflict and aggression (Lacovides et al., 1999; Moustaka & Theodoros, 2010; Poghosyan et al., 2010; Sorour & El-Maksoud, 2012; S.-Y. Wu et al., 2011).

Compassion fatigue has been described in the literature as the combined effects of STS, that is, the stress that ensues from helping or wanting to help someone who is suffering or traumatized (Figley, 1995) and burnout (Flarity et al., 2013; Stamm, 2010). Compassion fatigue is considered a contributing factor to the loss of compassion in healthcare workers (Sinclair et al., 2017). Furthermore, it is a consequence of working with traumatized individuals and is defined as a work-related stress response that occurs in healthcare providers with a high orientation towards empathy (Hunsaker et al., 2015).

Compassion fatigue is associated with symptoms that can be physical, behavioral, or psychological in nature (Sinclair et al., 2017). Physical symptoms include trouble sleeping, headaches, stomach aches, fatigue, and physical and emotional exhaustion (Huggard, 2011). Behavioral symptoms include anger and irritability, avoiding patients, issues in personal relationships, turnover, absenteeism, compromised patient care, and increased alcohol and drug use (Huggard, 2011). Moreover, a wide array of psychological symptoms can be experienced, including depression, developing a negative self-image, decreased ability to feel and show empathy, diminished sense of enjoyment, loss of hope, and difficulty separating work and personal lives (Huggard, 2011). Research has found support for the association between compassion fatigue and substance use in nurses, including smoking, using sleeping pills, having power drinks, and using anti-depressants as well as anti-anxiety drugs (Jarrad et al., 2018). Compassion fatigue is also associated with a greater tendency to change careers (Sung et al., 2012), an already-problematic phenomenon within the nursing field. Compassion fatigue can hinder healthcare workers' abilities to care for patients (Figley, 1995) and places them at higher risk for making a misdiagnosis, developing ineffective treatment plans, and abusing patients (Rudolph et al., 1997).

Risk factors for STS and compassion fatigue can be categorized as either personal or work-related factors (Ratrout & Hamdan-Mansour, 2017). Based on previous literature, the personal risk factors for STS include age (Hensel et al., 2015), gender, tenure, professional seniority (Dominguez-Gomez & Rutledge, 2009), trauma training, lack of social support, and personal trauma history (Hensel et al., 2015). Personal risk factors for compassion fatigue include gender (Mangoulia et al., 2015), work experience,

healthcare qualifications (Circenis & Millere, 2011; Dasan et al., 2015; Hegney et al., 2014; Mangoulia et al., 2015), STS (Meadors et al., 2010), empathy, and the loss of boundaries that separate the caregiver from the patient (Abendroth & Flannery, 2006; Cho & Jung, 2014; Robins et al., 2009). Work-related risk factors for STS, which are deemed more important than personal characteristics in the development of STS (Dworkin et al., 2014), include trauma case load, lack of organizational support (Townsend & Campbell, 2009), clinical supervision, and poor relationships with coworkers (Dworkin et al., 2014). Organizational risk factors include high emotional workloads (Ortega-Campos et al., 2020), patient contact, equipment, time, accountability, management, resources, department size, and quality of work relationships (Bellolio et al., 2014; Berger et al., 2015; Circenis & Millere, 2011; Dasan et al., 2015; Mangoulia et al., 2015; Yoder, 2010).

Sociodemographic variables are considered risk factors for the three dimensions of burnout in nurses. Children, age, and professional experience are related to higher levels of emotional exhaustion, while gender, marital status, and children have been found to be related to higher levels of depersonalization. Specifically, single and divorced nurses, male nurses, and nurses who do not have children are especially vulnerable to experiencing burnout (Cañadas-De la Fuente et al., 2018). However, personal variables like nurse age and gender are generally less relevant than organizational variables when understanding the extent of risk factors for burnout (Cañadas-De la Fuente et al., 2015). Occupational variables, such as work shift, emotional demands at work, seniority, and job conditions like length of breaks and time to complete tasks have a significant impact on the development of burnout in nurses (Bartram et al., 2012; Cabrera et al., 2005; Drach-

Zahavy & Marzuq, 2013; Naruse et al., 2012; Stimpfel et al., 2012). Research suggests that repetitive exposure to traumatized individuals and inevitable development of empathetic relationships with these individuals results in the development of STS and compassion fatigue in nurses (Beck, 2011; Ratrout & Hamdan-Mansour, 2017; Sinclair et al., 2017). Risk factors for compassion fatigue include gender (Mangoulia et al., 2015), work experience, healthcare qualifications (Circenis & Millere, 2011; Dasan et al., 2015; Hegney et al., 2014; Mangoulia et al., 2015), STS (Meadors et al., 2010), empathy, and blurring of caregiver boundaries (Abendroth & Flannery, 2006; Cho & Jung, 2014; Robins et al., 2009).

## Coping Strategies as Resources in the Stress Process

The JD-R theory proposed by Bakker and Demerouti (2007) maintains that employee well-being and performance are negatively impacted by prolonged exposure to workplace demands coupled with limited resources, which results in work-related strains. However, if employees have adequate and sufficient resources to manage the demands of the job, strains may be diminished (Bakker et al., 2005; Xanthopoulou et al., 2007). Job demands refer to any aspects of the job that require physical or psychological effort and are associated with certain physical or psychological costs. While job demands need not be inherently negative, they may become so if an individual has not recovered from the effort needed to meet the demands. Job resources are characteristics of the job that facilitate achieving work goals, reduce job demands and their associated psychological or physical costs, or enable employees to grow as individuals. An extension of the JD-R theory includes personal resources, or positive self-evaluations, as a predictor of various desirable outcomes, such as job performance and motivation (Bakker & Demerouti,

2007). Indeed, research on healthcare professionals and nurses have identified compassion satisfaction, self-efficacy, and optimism as personal resources (Bakker & Sanz-Vergel, 2013; Tremblay & Messervey, 2011). As such, both job and personal resources are necessary to deal with the demands of any job, but the resources utilized by employees may vary or be unique to certain occupations. Within nursing, for instance, job demands such as patient acuity can result in strains like burnout and compassion fatigue, should nurses not have the resources they need to manage and recover from such demands.

Stressful situations are some of the most fundamental human experiences that, if not managed effectively, can lead to major detriments in one's physical and mental well-being (Tweed & Conway, 2006). Thus, the coping strategies used to deal with stress have strong implications for well-being (i.e., Park & Adler, 2003; Terry & Hynes, 1998). According to Monat and Lazarus (1991), coping refers to the ability to overcome strenuous demands that are appraised as exceeding the amount of resources an individual has available to meet those demands. One way to combat the impending nursing shortage is for healthcare organizations to work towards retaining nurses by keeping them physically and psychologically healthy. Therefore, identifying effective coping strategies for managing common strains are of utmost importance to maintaining a healthy workforce of nurses that can provide quality patient care without sacrifice to their own well-being.

Coping has been shown to be a protective factor against STS, burnout, and compassion fatigue (H.-F. Lee et al., 2016; Mealer et al., 2014; Ratrout & Hamdan-Mansour, 2017; Turgoose & Maddox, 2017) and can be categorized into personal,

professional, and organizational strategies (Beck, 2011; Rourke, 2007), short- and long-term strategies (Maytum et al., 2004), and problem-solving or emotion-focused strategies (Folkman & Lazarus, 1985), which can either be active or avoidant, and positive or negative. Negative coping strategies, such as substance abuse or alcohol use, for instance, have been found to have worsened work-related and personal outcomes for nurses (Duffy et al., 2015; Von Rueden et al., 2010). Personal coping strategies include practices such as getting enough sleep, regular exercise, work-family balance, and enjoying leisure activities (Rourke, 2007). The most utilized methods for addressing STS typically involve approaches that are supportive, independent, and nontherapeutic (Molnar et al., 2017). Some research suggests that problem-focused and emotion-focused coping strategies and resilience are effective in reducing nurse burnout and its dimensions (Deldar et al., 2018; H.-F. Lee et al., 2016). Furthermore, researchers have proposed that self-care strategies, such as yoga, meditation, relaxation, work-life balance, exercise, and proper nutrition are most effective in guarding against the development of compassion fatigue or alleviating existing symptoms (Coetzee & Klopper, 2010; Neville & Cole, 2013; Sorenson et al., 2016; Zadeh et al., 2012).

Professional coping strategies include practices like identifying appropriate responses to difficult scenarios with patients and peer consultation (Rourke, 2007). Researchers have found that nurses utilize work-related coping strategies that include debriefing with coworkers and becoming self-aware of any triggers for compassion fatigue (Maytum et al., 2004). In pediatric health providers, for instance, developing supportive professional relationships served as an important coping strategy (Meadors & Lamson, 2008). A qualitative study examining compassion fatigue in nurses working

with chronically ill children found that nurses leveraged humor, maintaining a positive attitude, and creating a personal philosophy of patient care (Maytum et al., 2004). Another study using pediatric health providers reported using humor and viewing the strengths of their job when faced with traumatic events as coping strategies for compassion fatigue (Meadors & Lamson, 2008).

Lastly, organizational coping strategies include having comfortable spaces for employees to meet and having access to adequate resources on the job, such as supportive supervision, adequate time off from work, and a positive work environment that encourages employees to discuss their experiences on the job (Rourke, 2007). Mindfulness programs, for example, have been shown to reduce burnout in nurses (Suleiman-Martos et al., 2020). In emergency department nurses, managerial support has been found to significantly reduce compassion fatigue (Hunsaker et al., 2015). Additionally, educational programs aimed at teaching healthcare providers about recognizing and preventing compassion fatigue have also been shown to be effective (Meadors & Lamson, 2008; Weidlich & Ugarriza, 2015). As such, the use of positive, effective coping strategies can help nurses mitigate the effects of stress in their daily practices (Ratrout & Hamdan-Mansour, 2017). Because the literature has previously found self-care coping strategies to be the most effective for compassion fatigue, it is hypothesized that:

> **H1a-c**: Personal coping strategies will be more strongly and negatively correlated with a) STS, b) burnout, and c) compassion fatigue than professional coping strategies.

## The Role of Construct Measurement and Individualism

### STS and Compassion Fatigue Construct Measurement

There is an ongoing discussion in the literature related to the conceptualization and measurement of several closely related concepts including compassion fatigue, burnout, post-traumatic stress disorder (PTSD), vicarious traumatization, and STS (Beck, 2011; Cieslak et al., 2014). Specifically, STS and compassion fatigue are often used interchangeably in the nursing literature (Rourke, 2007), but the latent constructs tapped by the measures used in related investigations can differ (Bride et al., 2004; Salston & Figley, 2003). While both STS and compassion fatigue occur as a result of exposure to the suffering of others and can result in negative consequences related to job performance, occupational safety, and relationships with patients (Nimmo & Huggard, 2013), the measurements used to assess these experiences are distinct, suggesting there are differences in conceptualization as well.

Various instruments exist for measuring STS and compassion fatigue, although the latent constructs measured are often unclear. The Secondary Traumatic Stress Scale (STSS; Bride et al., 2004) measures frequency of STS symptoms and is composed of three subscales: intrusion, avoidance, and arousal. The STSS has demonstrated evidence of validity and internal reliability (Bride et al., 2004; Dominguez-Gomez & Rutledge, 2009; Perron & Hiltz, 2006) and is the only measure that exists for measuring STS independently (Beck, 2011). Common instruments used to measure compassion fatigue include the Compassion Fatigue Self-Test (CFST; Figley, 1995) and the Compassion Fatigue Scale-Revised (Gentry et al., 2002). The CFST assesses the risk of developing compassion fatigue and includes three subscales: compassion satisfaction, job burnout,

and compassion fatigue. This measure was later revised to be the Professional Quality of Life Scale (ProQOL; Stamm, 2005) due to psychometric problems associated with the original CFST and to challenge thinking surrounding compassion fatigue by focusing on the more positive aspects of providing care, such as compassion satisfaction (Stamm, 2005). The ProQOL also consists of three subscales, compassion satisfaction, burnout, and compassion fatigue, although the items were modified from the CFST and the measure is shorter. The CF-R was created to help individuals identify symptoms of compassion fatigue themselves but claims to measure STS and job burnout (Beck, 2011). This issue goes back to the conceptualization of compassion fatigue as the combined effects of STS and burnout in the literature (Flarity et al., 2013; Stamm, 2010).

Consequently, the lack of conceptual clarity has stifled research (Beck, 2011). To date, there is a paucity of research that uses quantitative techniques to examine the differences between STS and compassion fatigue; rather, the literature has mainly focused on systematically reviewing these constructs to assess differences (Beck, 2011; Sinclair et al., 2017; Sprang et al., 2019). Even so, these narrative reviews on STS often cite research that instead measure PTSD, stress, trauma, and/or compassion fatigue (Beck, 2011; Ratrout & Hamdan-Mansour, 2017). As a result, advancements in research, prevention, and intervention with STS and compassion fatigue have been impeded by these inconsistencies in conceptualization and measurement (Sprang et al., 2019). This study, then, considers these constructs distinct for the purpose of examining differences in effect sizes depending on the construct measurement used. Figure 1 depicts the hypothesized relationships in the current study. It is hypothesized that:

**H2a-b**: Construct measurement (STSS versus ProQOL) will moderate the direct relationships between coping strategies and a) STS and b) compassion fatigue.

**Differences in Coping Styles between Individualistic and Collectivistic Cultures**

While the concepts of burnout and compassion fatigue have been studied extensively using North American samples (Flickinger, 2019; Hotchkiss, 2018; Moore & Schellinger, 2018; O'Mahony et al., 2017; Smart et al., 2014), researchers have also explored these strains among healthcare workers in Asia (J. Wang et al., 2020; Yu et al., 2016), the Middle East (Alharbi et al., 2020b; Jarrad et al., 2018), Africa (H. D. Mason & Nel, 2012), and Europe (M. C. Delaney, 2018; Duarte & Pinto-Gouveia, 2017). Several studies have indicated that ethnic and cultural differences exist in how individuals cope with stress (Bjorck et al., 2001; Cross, 1995; Lam & Zane, 2004; P. T. P. Wong et al., 2006), thereby prompting the current study to investigate how cultural differences may moderate the strength of the relationship between coping strategies and STS, burnout, and compassion fatigue in nurses.

Hofstede's (1980) cultural dimensions theory provides a framework for understanding cross-cultural values and behaviors and a starting point for examining differences in coping strategies across cultures. Cross-cultural research has largely focused on the individualism-collectivism dimension, often conceptualized as a spectrum, which refers to the extent to which individuals in a society function autonomously versus through group embeddedness (Schwartz, 1999). So, for example, the United States falls closer on the individualistic end of the spectrum as it scores a 91 out of 100 on Hofstede's (2021) individualism dimension. China, on the other hand, scores a 20 out of 100 on individualism. Using this framework, a country that scores closer to 0 is low on

individualism, and thus, high on collectivism. Individualistic cultures are characterized by an independent self-construal, behaviors aimed at achieving personal goals, and taking care of close family only (Dickson et al., 2003). Conversely, collectivistic cultures are characterized by an interdependent self-construal, closely knit social networks, and group cohesion (Dickson et al., 2003). Individualism is primarily found in Western cultures, including northern and western parts of Europe, North America, and Australia, while collectivism is found in eastern cultures like Asia, Africa, South America, and the Pacific Islands (Fernandez et al., 1997; Singelis, 1994). Several studies suggest that cultural orientation and self-construal play a role in how individuals respond to and cope with stress (Lam & Zane, 2004; Schaubroeck et al., 2000; Zaff et al., 2002). In fact, research has found that individuals with an independent self-construal exhibit more direct coping strategies compared to those with an interdependent self-construal (Cross, 1995).

Collectivistic coping norms are different from those found in individualistic societies (Yeh et al., 2006). Collectivistic individuals, for instance, may seek out help from family members to cope with stress given the strong emphasis on interrelations, while those with an individualistic orientation may cope with stress by taking direct action to resolve the problem or attempt to control their surrounding environment to meet their needs (Markus & Kitayama, 1991; Yeh et al., 2006). In fact, cross-cultural research examining workplace stressors in hospital nurses found that across four countries heavily influenced by Asian culture, where harmony is highly valued, nurses utilized self-control, social support, problem solving, and positive reappraisal to cope with workplace stressors (Lambert et al., 2004). In a study on coping strategies employed by Filipino nurses, researchers found culture to play a prominent role in dictating nurses' preferred coping

strategies, as the strategies identified were aligned to Asian cultural values and characteristics (J. B. Connor, 2016). Specifically, these nurses preferred collective and indirect forms of coping with workplace stressors, including seeking support from family and fellow Filipino friends, stepping away from stressful situations to maintain group harmony, and religious practices (J. B. Connor, 2016). Taken together, it is likely the effectiveness of certain coping strategies for managing burnout and compassion fatigue also vary cross-culturally, such that nurses in individualistic societies may prefer direct, personal and self-care strategies, for example, while nurses in collectivistic societies may prefer seeking support from family and friends. These types of discrepancies in coping strategies are important for informing stress intervention efforts that are tailored to nurses from different cultural backgrounds. Thus:

> **H3a-c**: Individualism (high versus low) will moderate the direct relationships between coping strategies and a) STS, b) burnout, and c) compassion fatigue.

## Method

### Identification and Selection of Studies

Systematic database searches and manual searches were utilized to gather as many quantitative studies on STS, burnout, and/or compassion fatigue in nurses as possible. The systematic database searches were conducted using PsycINFO and CINAHL Plus in 2021. There were no restrictions on publication year. In examining these databases, various distinct combinations of keywords related to *secondary traumatic stress* (STS), *burnout, compassion fatigue, nurses* (*nursing*), *coping strategies* (*coping, coping skills, protective factors*), and specific coping labels (i.e., *mindfulness, social support, self-care, resilience, exercise*, etc.) were used. Manual forward searches

of meta-analyses on STS, burnout, and compassion fatigue were conducted as well (Cavanagh et al., 2019b; Cieslak et al., 2014; Deldar et al., 2018; H.-F. Lee et al., 2016; Suleiman-Martos et al., 2020). In addition, 16 years of Society for Industrial and Organizational Psychology conference programs, 4 years of Nursing World Conference programs, 3 years of Canadian Association for Critical Care Nurses conference programs, and one year of Policy, Innovation and Advocacy Virtual Forum conference program were screened for relevant research. Finally, calls for unpublished studies were sent to the Occupational Health Psychology (OHP) listserv and Sigma Theta Tau International, a nursing listserv. Figure 1 shows the identification, screening, and included number of studies in a flow diagram. Table 4 provides more information on the final studies included in the analyses, including sample and study characteristics.

### *Inclusion/Exclusion Criteria for Studies*

The following inclusion criteria was employed when searching for eligible studies: 1) measurement of STS, burnout, and/or compassion fatigue and at least one coping strategy; 2) when measuring STS and compassion fatigue, studies must have used either the ProQOL scale (Stamm, 2010) or the STSS scale (Bride et al., 2004); 3) the relationship between STS, burnout, and/or compassion fatigue and coping strategy was tested, or relevant statistics were provided by the authors upon request; 4) studies reported Pearson's coefficient or other statistics (i.e., *t, F,* or chi-square statistics) that could be converted into Pearson's coefficient; and 5) studies collected data on nursing samples or provided appropriate statistics for nurse sub-groups if several occupations were included. The population of interest was determined a priori and consisted of nurses, regardless of work units or place of employment. No restrictions or criteria were

placed on the measurement of burnout, as the current research questions did not seek to address any issues of construct measurement with this variable. Therefore, any measurement of burnout included in studies were retained for analyses. Studies were limited to English-language publications only, including unpublished theses, dissertations, conference presentations, and other works, if available, to address publication bias (Rothstein et al., 2005). Book chapters, qualitative studies, and narrative reviews were excluded. Case studies and research examining the effectiveness of interventions or training programs were also excluded from analyses, as were studies using nursing student samples. However, if a paper indicated that nurses were enrolled in school but already employed as nurses (i.e., nurses seeking graduate education), these studies were retained.

The primary researcher determined whether each primary study was relevant to include in the analyses based on how the researcher conceptualized and measured the coping strategies and strains of interest. Personality traits, for example, were excluded from the current study as coping strategies. Only traits that are malleable and, as such, actionable, like resilience, mindfulness, and self-efficacy, were included. For burnout in particular, studies were included if either the subscales or an aggregate score, or both, were reported, as composite scores were calculated when no aggregate score was available in the text. When studies had deficient reporting of relevant data (i.e., statistics), the primary researchers were contacted via e-mail to obtain additional information and request any necessary data points. If data were received and fit the remaining inclusion criteria, these studies were retained for analyses. Otherwise, these studies were excluded. Additionally, when the same sample was used in more than one publication, the latest

publication was considered for analyses. After applying these criteria, the final analysis included a total of 72 independent samples, which included 70,653 nurses (see Figure 1). Overall, 119 effect sizes were included, of which burnout had 102 effect sizes and compassion fatigue had 17.

*[Insert Figure 1 Here]*

**Development of Categories for Predictor Variables**

Descriptive data variables were extracted and coded when available, including sample demographic information, measurement details (i.e., number of items used, measurement version), study details (i.e., country in which data were collected, sample type, sample size, study design), and effect size estimates. Following Rourke's (2007) three tiers of strategies for mitigating compassion fatigue, coping strategies were first coded and grouped based on whether the strategy was employed at personal (i.e., sleep, exercise, self-care), professional (i.e., group meetings, coworker and supervisor support, diversifying patient types based on acuity levels), or organizational levels (i.e., wellness programs, paid-time off). The final groupings consisted of personal coping strategies and professional coping strategies, as there were no final studies that fell into the organizational coping strategy category. Then, to better distinguish between which strategies are most effective in reducing the strains of interest in this study, the coping strategies were further grouped together, and this was the categorization used in the final analyses. These groups were created based on similarities between constructs, while still keeping in mind and adhering to Rourke's (2007) three-tier strategy previously discussed.

For example, social support is a broader category that allowed for the inclusion of constructs capturing support from sources outside of work, such as friends, family,

school, personal support, non-work-related support, emotional support, and supportive relationships. These were initially intended to be two distinct categories, but overlapping CIs supported collapsing these groups into one. The resilience category includes dispositional measures of resilience. Relaxation techniques is another broad category that captures state and trait mindfulness, recovery experiences, meditation, and mindful relaxation. Again, overlapping CIs when testing state versus trait mindfulness supported collapsing all mindfulness measures into one category. Similarly, overlapping CIs when testing all mindfulness measures versus recovery experiences, meditation, and mindful relaxation supported collapsing all constructs into the relaxation techniques category.

Coping approaches includes measures that captured rational and cognitive coping, positive coping, active coping, problem-focused coping, and approach coping. While it would have been valuable to further tease apart these various types of coping into more specific categories, there were an insufficient number of studies per coping type to be able to do so, and thus, were left grouped together. Self-efficacy included measures intended to capture dispositional self-efficacy. Self-care is a broader category that allowed for the inclusion of self-care practices, exercise, hobbies, traveling, and physical, emotional, and psychological self-care. Some nursing literature suggests that spirituality and religion play a meaningful role in the way in which nurses cope with work-related stressors and can be beneficial within the coping process for this population (Ekedahl & Wengström, 2010; Shinbara & Olson, 2010). As such, a religion category was also developed based on measures that capture spirituality, religion, and spiritual self-care. Overall, seven categories were developed and grouped under personal coping strategies based on Rourke's (2007) three-tier strategy. Professional support was the only category

that fell under professional coping strategies and captures support from various sources at work, including coworkers, supervisors and management, organizational support, subordinates, and work-family support. This was another instance where the original intention was to differentiate between supervisor, coworker, and organizational support with three distinct categories, but overlapping CIs supported collapsing these categories into one.

**Coding Procedures and Calculations for Predictor-Criterion Scores**

Some studies reported different sample sizes for their correlation tables compared to the study's overall sample size. In these instances, the sample size specifically reported for the correlation of interest was coded. When the correlation-specific sample size was provided as a range of numbers, the smallest number in the range was used to be most conservative. The latter only occurred in 3 separate studies, and the sample size ranges reported were small and close to the overall sample size.

In one study, two measures of the same predictor, mindfulness, were reported. These measures could not be combined to form an aggregate score because the mindfulness constructs were conceptually distinct. As such, the measure that appeared in most other studies included in analyses was retained, while the other measure was excluded from analysis. Composite correlations and reliabilities were only calculated when a study reported the dimensions of a measure (i.e., emotional exhaustion, depersonalization) without reporting the overall score for that measure (i.e., burnout). If a study reported both the dimensions of a measure in addition to the overall score for that measure, then the overall score was used for analysis. If only one or two dimensions were reported as an indicator of the latent variable, these were also coded for and included in

the analyses in the same manner (i.e., composite scores were calculated with all available information). This only occurred in 9 separate studies measuring burnout. Specific information regarding the reporting and use of subscales versus overall scores in the analyses are reported in Table 4.

Moreover, if studies did not reverse-score the professional efficacy and personal accomplishment dimensions of their respective burnout scales, this was done as part of the coding process to ensure that all effect sizes were in the same direction (i.e., negative) when appropriate. The reverse scoring of these dimensions only occurred when the study reported these results as *high* professional efficacy and personal accomplishment. Specifically, some studies reported professional efficacy or personal accomplishment as *reduced* or *low* professional efficacy and *reduced* or *low* personal accomplishment. In these instances, no reverse scoring was necessary.

**Coding Procedures for Moderator Variable**

The country where data were collected for each sample was coded to determine if and to what extent the estimated effect sizes varied depending on individualism. Hofstede's (2021) individualism index, which ranges from 0 to 100, was used to code each country as either high or low on individualism, using 0-50 as an indicator of low individualism and over 50 as an indicator of high individualism (see Harari et al., 2017). Then, countries high on individualism were coded as 2 and countries low on individualism were coded as 1. Studies that collected data from various countries and aggregated responses were only coded for individualism if all countries fell into the same category (i.e., high or low).

## Percent Agreement

The primary researcher coded all studies independently and a second coder, a graduate student, was used to code 15% of the studies to enhance confidence in the data analysis process. Any discrepancies were discussed and resolved prior to data analysis, although most discrepancies were generally minor typos or a misreading of correlation tables and in-text results. The percent agreement between both raters was 90.9% and was calculated based on coding of the primary variables of interest in this study.

*[Insert Table 4 Here]*

## Data Analysis

Meta-analyses are used to estimate how much of the observed variance can be attributed to statistical artifacts and assess the average magnitude of the relationships in question. They can also be used for estimating the mean true validity of a predictor-outcome relationship (Hunter & Schmidt, 1990). Typically, meta-analyses are carried out using either a fixed-effects or random-effects model approach, whereby a fixed-effects model assumes that all eligible studies are estimating a common effect size. A random-effects model, on the other hand, is often most useful when the studies being tested contain a wide variety of methods, samples, and settings (Pigott & Polanin, 2020). Given that the studies included in the current paper vary in terms of methodology, nursing unit and work setting, as well as geographic location of data collection, a random effects meta-analysis was conducted to test hypotheses using the Hunter and Schmidt (2004) psychometric meta-analytic procedure. These calculations were performed using Excel and R Shiny.

Pearson's correlation was used as the indicator for effect sizes. Specifically, sample size weighted-mean correlations were calculated for each predictor-criterion relationship. Artifact distributions consisting of coefficient alphas from each study were used to calculate corrected sample size-weighted mean correlations and to correct for measurement error. The population parameter is denoted by ρ, or rho, which is the sample correlation coefficient (Borenstein, 2009). Heterogeneity was examined using the percentage of variance in observed correlations accounted for by sampling error. If the percentage of variance in an observed correlation exceeds 75%, it is indicative of homogeneity and therefore suggests that the predictor-criterion relationship in question is not influenced by moderators (Schmidt & Hunter, 2015). As an additional method of assessing heterogeneity, *Q*, the weighted sum of squares on a standardized scale, was also calculated. This statistic was coupled with $I^2$, the ratio of true heterogeneity to total variation in observed effects, which is reported as a ratio scale of 0% to 100% with accompanying 95% CIs. According to Higgins et al. (2003), an $I^2$ value indicates the proportion of variance across studies that is not due to chance. Both are reported in this paper because, when reported independently, the degree of uncertainty regarding the extent of heterogeneity is high, as both tests have low power to detect heterogeneity and $I^2$ can have large CIs (Higgins & Thompson, 2002; Ioannidis et al., 2007). Some researchers recommend presenting $I^2$ in place of *Q*, so this paper will only examine $I^2$, as it is also not dependent on the number of studies in a meta-analysis and more readily assesses the impact of heterogeneity as opposed to its extent in the data (Higgins & Thompson, 2002).

Furthermore, 95% confidence intervals (CIs) based on the estimate of ρ (Viswesvaran et al., 2002) and 80% credibility intervals (CVs) were also calculated. These statistics provide the best estimate of the predictor-outcome relationships and the variability in these correlations, respectively. CIs are reported as a range of values that the mean effect size is expected to be included in and indicate the estimate of the variability of the corrected mean correlation (ρ) that results from sampling error. CVs represent the range in which the distribution of true score correlations would fall (Schmidt et al., 2017). CVs are calculated by using SDρ, that is, the corrected standard deviation of ρ, and are also reported as a range of values that help identify whether the predictor-criterion relationship is influenced by potential moderators.

Additionally, individualism was tested as a categorical moderator on the direct relationships between coping strategies and burnout and compassion fatigue. Moderator calculations involve grouping studies together based on their respective moderator level and repeating meta-analytic calculations within each level of the moderator. Differences in the point estimate at each level of the moderator, which in this case only included two levels (high versus low individualism), were evaluated to determine overlap in their 95% CIs. When CIs do not overlap, it suggests that individualism is assuming the role of moderator in the predictor-criterion relationship (Schmidt & Hunter, 2015).

### *Publication Bias*

Publication bias was addressed by adhering to Schmidt and Hunter's (2015) recommended methods and using cumulative meta-analysis procedures. Given that larger samples increase the likelihood of finding statistically significant results, these studies are also prone to suppressing null effects, like studies with smaller sample sizes where this

phenomenon is more likely to occur. Cumulative meta-analysis uses an iterative process by which studies are added to the meta-analysis using sample size order, starting with the largest sample and ending with the smallest (Kepes et al., 2012). The fifth iteration of this process shows results using the five studies with the largest sample sizes and allows for the calculation of an alternate effect size estimate that can be used as a comparison to determine whether publication bias exists in the current analysis. An additional method used in this study to check for publication bias involved identifying any positive drift across the values produced from the cumulative meta-analyses.

Furthermore, Rosenthal's (1979) fail-safe N was calculated to determine the number of studies needed to make the ρ-value non-significant, or in other words, to determine if the observed effect is robust. That is, if the value of the fail-safe N analysis yields a large number, such as 3,000, it indicates that 3,000 additional studies would need to be included in the analysis to nullify the effect, thus making a large fail-safe N more desirable. This approach has a few limitations, including focusing on statistical rather than substantive significance and assuming the mean effect size in these additional studies is zero (Borenstein, 2009). As such, the current study uses this test in combination with the cumulative meta-analysis procedures to help offset these limitations and provide more confidence in the interpretation of the results. All analyses were carried out only when there were sufficient studies available for inclusion ($k = 10$).

## Results

As previously noted, a total of 119 effect sizes from 64 published studies (92.8%) and 5 unpublished studies (dissertations and conference papers; 7.2%) between the years 1986 and 2021 were included in the analyses. Of these, 97.1% were cross-sectional and

2.9% were longitudinal. Sample sizes ranged from 30 to 34,771 with the average sample size being 981 (*SD* = 4103.1). Of the coded studies, 31.4% of them collected data from nurse samples in Asia, 27.1% from North American (U.S. and Canada), 22.9% from Europe, 7.1% from Australia/New Zealand, 7.1% from the Middle East, 2.9% from South and Central America, and 1.4% from Africa. Three studies included in the analyses collected data from two independent samples of nurses and distinguished the samples either by country or private versus public hospitals. The following results are based on the indicated number of studies that provided the relevant data: The response rate, reported in 39 studies, ranged from 4.1% to 94.9% with a mean of 66% (*SD* = 22.8%). The average age of nurses across 50 studies was 37.63 years (*SD* = 6.98). The average number of years in the nursing industry across 27 studies was 12.85 years (*SD* = 5.21). The average job tenure across 10 studies was 11.83 years (*SD* = 6.67). Across 35 studies, nurses worked in pediatrics (35.4%), mixed/other (19.4%), medical/surgical (11.6%), emergency (9.2%), ICU (8.1%), mental health/psychiatry (5.4%), OBGYN/maternity (2.8%), internal medicine (2.7%), operating room (1.6%), oncology (1.6%), critical care (1.4%), palliative care (0.4%), geriatrics (0.2%), and newborn/neonatal care (0.2%) units at the time of data collection (see Table 5).

*[Insert Table 5 Here]*

**STS Main Effects**

While the relationships between various coping strategies and STS were initially hypothesized, upon completing the literature search it was determined that there was an insufficient number of studies to be able to meta-analyze. Additionally, many studies measuring STS were intervention- or training-based research, and as such, were

automatically excluded. No analyses were thus performed examining STS as the outcome of interest, and there are no results to report in this section. Hypotheses 1a, 2a, and 3a were not tested.

**Burnout Main Effects**

***Personal Coping Strategies***

The results of the meta-analyses involving burnout, as well as the results of the heterogeneity tests, are reported in Table 6. The population correlation estimated for social support was ρ = -0.42, a medium-to-large effect, and 95% CIs ranged from -0.48 to -0.35, making this a non-zero relationship. The $I^2$ index shows the between-study variance was high (93.9%, 95% CI [91.8%, 95.4%]). Examination of the percent variance suggested the presence of moderators (11.09%). The population correlation estimated for resilience was medium-to-large, as ρ = -0.38, and CIs ranged from -0.47 to -0.29, making the relationship between resilience and burnout non-zero. The $I^2$ index shows the between-study variance was high (92.1%, 95% CI [88.7%, 94.5%]). Examination of the percent variance suggested the presence of moderators (10.12%).

For relaxation techniques, the population correlation estimated was also medium-to-large, as ρ = -0.38, and CIs ranged from -0.46 to -0.29, making this relationship non-zero. The $I^2$ index shows the between-study variance was high (85.5%, 95% CI [75.1%, 91.5%]). Examination of the percent variance suggested the presence of moderators (19.41%). In terms of coping approaches, the population correlation estimated was weaker at ρ = -0.21, and CIs ranged from -0.28 to -0.14, making the relationship non-zero. The $I^2$ index shows the between-study variance was high (81.8%, 95% CI [65.2%, 90.4%]. Examination of the percent variance suggested the presence of moderators

(20.7%). For self-care, the population correlation estimated was ρ = -0.14, a small effect. 95% CIs ranged from -0.23 to -0.04, making the relationship non-zero. The $I^2$ index shows the between-study variance was high (90.5%, 95% CI [83.0%, 94.7%]). Examination of the percent variance suggested the presence of moderators (12.81%).

The population correlations estimated for self-efficacy and religion were ρ = -0.16 (95% CI [-0.33 to 0]) and ρ = 0.23 (95% CI [-0.02 to 0.47]), respectively, and it cannot be concluded that the population correlations were non-zero, as the 95% CIs included zero. The analysis for self-efficacy is based on a pooled sample size of 2,424 and 7 independent samples. The analysis for religion is based on a pooled sample of 882 and only 4 independent samples. Therefore, these analyses warrant more research on how self-efficacy and religion are associated with burnout in nurses.

***Professional Coping Strategies***

For professional support, the population correlation estimated was ρ = -0.27, and the CIs ranged from –0.34 to -0.20, making this relationship non-zero. The $I^2$ index shows the between-study variance was high (98.6%, 95% CI [98.3%, 98.8%]). Examination of the percent variance suggested the presence of moderators (1.85%). Overall, Hypothesis 1b was partially supported, considering that not all personal coping strategies had estimates stronger than the population correlation estimated for professional support. Specifically, the estimates for coping approaches, self-efficacy, self-care, and religion were weaker, albeit some nonsignificant, compared to the population correlation estimated for professional support, whereas estimates for social support, resilience, and relaxation techniques were stronger.

## Compassion Fatigue Main Effects

### *Personal Coping Strategies*

This paper now turns to the results of the meta-analyses for compassion fatigue, reported in Table 7. The only meaningful relationship to compassion fatigue in these analyses is self-care. The population correlation estimated for self-care was $\rho = -0.08$, and the 95% CIs ranged from -0.16 to -0.01, making this relationship non-zero. The $I^2$ index shows the between-study variance was low (0%). Examination of the percent variance did not suggest the presence of moderators (232.97%). For relaxation techniques, religion, and social support, the population correlations estimated were $\rho = -0.19$ (95% CI [-0.39, 0.01]), $\rho = 0.21$ (95% CI [-0.05, 0.46]), and $\rho = -0.03$ (95% CI [-0.40 to 0.34]), respectively. As such, it cannot be concluded that these values were non-zero. Hypothesis 1c was not fully tested, as no professional coping strategy categories were included in the analyses using compassion fatigue as the outcome of interest.

## Moderator Analyses

### *Construct Measurement*

All proposed moderator analyses related to the construct measurement of STS and compassion fatigue were not carried out due to not having enough studies to include STS as a primary outcome of interest. As such, Hypotheses 2a-b could not be tested.

### *Individualism*

Moderator analyses were carried out for five (social support, resilience, relaxation techniques, coping approaches, and professional support) of the eight coping strategy categories with burnout as the outcome. Moderator analyses were conducted when a minimum of $k = 3$ independent samples per level (i.e., high and low individualism) were

available in the data using each strain as the criterion. When burnout was used as the outcome variable, moderator analyses were conducted on five coping strategy categories. With compassion fatigue, however, no moderator analyses were conducted.

Overall, CIs for these moderator analyses did not overlap, indicating a significant difference in point estimates between high and low individualism countries (see Table 6). When using burnout as the criterion, the point estimates for social support and resilience were larger for high individualism countries ($\rho$ = -0.49, $\rho$ = -0.47, respectively) than for low individualism countries ($\rho$ = -0.29, $\rho$ = -0.30, respectively). For professional support, the point estimate was larger for low individualism countries compared to high individualism countries ($\rho$ = -0.63, $\rho$ = -0.20, respectively). The point estimate for relaxation techniques was slightly larger in high individualism countries compared to low individualism countries ($\rho$ = -0.40, $\rho$ = -0.37, respectively), but due to overlap in the 95% CIs, it cannot be concluded that these relationships differed. Similarly, for the coping approaches category, the point estimate was just barely larger for high individualism countries compared to low individualism countries ($\rho$ = -0.22, $\rho$ = -0.20, respectively) but the 95% CIs overlapped, so it cannot be concluded that these relationships differed. Taken together, Hypothesis 3b was partially supported given that a country's level of individualism moderated the direct relationships between social support, professional support, and resilience and burnout. Hypothesis 3c was not tested, as there was an insufficient number of studies in each coping strategy category with compassion fatigue as the outcome to conduct moderator analyses.

*[Insert Table 6 Here]*

*[Insert Table 7 Here]*

## Publication Bias

Results from the cumulative meta-analysis for burnout are reported in Table 8 and those for compassion fatigue are reported in Table 9. Apart from religion, evaluation of the values in both Table 8 and 9 were not indicative of positive drift. Signs of positive drift in the religion-burnout and religion-compassion fatigue analyses are indicative of publication bias, given that as smaller sample sizes were added to the iterations, the point estimates shifted in a more positive direction. In other words, the smaller samples had larger effect sizes than the larger samples, a finding consistent with publication bias (McDaniel, 2009). Examination of the corrected correlations using the five effects with the greatest precision ($\rho_5$) for those analyses with 10 or more independent samples, however, revealed no evidence of publication bias.

Rosenthal's (1979) fail-safe *N* was also calculated for each analysis containing 10 or more studies. As such, fail-safe *N*'s were only calculated for the social support, resilience, relaxation techniques, and professional support categories predicting burnout. Fail-safe *N* values were 5202, 2627, 1255, and 15574, respectively. For professional support, for example, the fail-safe *N* value indicates that 15,574 more studies would be needed to nullify the observed effects. Overall, there is little evidence to suggest that publication bias played a significant role in the results of this study.

*[Insert Table 8 Here]*

*[Insert Table 9 Here]*

## Discussion

This study used 69 independent studies and a meta-analytical approach to identify which coping strategies had the strongest empirical support for mitigating burnout and

compassion fatigue, and whether individualism moderated the strength of these relationships. While the current study was unable to answer the original research questions related to STS, it still makes several important contributions related to burnout and compassion fatigue within the nursing and occupational stress literature. First, previous meta-analyses on this topic have focused on meta-analyzing just one coping strategy (Deldar et al., 2018; Suleiman-Martos et al., 2020) or strain (H.-F. Lee et al., 2016), thus making it difficult to compare the effectiveness of different coping strategies across strains and draw conclusions about recommendations for practice. One important contribution this study makes, therefore, is the ability to compare the effectiveness of the examined coping strategies with two critical strains frequently experienced by nurses. In doing so, practitioners and healthcare organizations can collaborate to leverage those with the strongest empirical support for mitigating burnout and/or compassion fatigue and incorporate them into current wellness initiatives or when considering new initiatives. Second, previous meta-analyses in related areas have been limited to certain geographical locations (Deldar et al., 2018), specific nursing units (Ortega-Campos et al., 2020), or have exclusively focused on controlled trials or controlled clinical trial studies (H.-F. Lee et al., 2016). The current study tackles a few of these limitations; not only does it cover 35 years' worth of cross-sectional and longitudinal research in this area, but also includes studies from various countries, nursing units, and workplaces.

Much of the existing research has placed an emphasis on identifying the prevalence of strains like burnout (see Gómez-Urquiza et al., 2017; Pradas-Hernández et al., 2018; Woo et al., 2020) and compassion fatigue (see Algamdi, 2021; Xie et al., 2021; Zhang et al., 2018) across various nursing groups, rather than seeking to identify the

effectiveness of various coping strategies using meta-analytical techniques. Even less is known about how cultural norms may influence these relationships. The use of individualism as a moderator in this meta-analysis helps to better understand the role cultural norms play in the way in which nurses cope with stress at work and can inform the types of coping strategies that are recommended for different populations of nurses. While some research has suggested that STS, burnout, and compassion fatigue constitute a homogenous group of strains that have shared risk factors and result from prolonged secondary exposure to suffering (Voss Horrell et al., 2011), the results of this meta-analysis suggest that, despite these similarities, some coping strategies may have differing effects on burnout and compassion fatigue. Specifically, in the current study, the social support and relaxation techniques categories were not significant coping strategies for compassion fatigue but were effective at reducing burnout. Thus, based on current available research, what has the strongest empirical support for treating burnout may not necessarily have the same effect on compassion fatigue, so it cannot be assumed that any coping strategy is a one-size-fits-all.

**The Effectiveness of Personal and Professional Coping Strategies on Burnout**

In line with JD-R theory and adding further support to this established theoretical framework, the results from this meta-analysis suggest that having adequate personal resources (i.e., social support, self-care strategies, relaxation techniques) diminish the experience of strains (i.e., burnout and compassion fatigue) resulting from job demands and occupational stress (Bakker & Demerouti, 2007). Specifically, findings indicate that social support had the strongest empirical support for helping nurses cope with burnout. Resilience, relaxation techniques, professional support, coping approaches, and self-care

also had moderate effect sizes and strong empirical support for helping nurses cope with burnout, although the effect sizes for coping approaches and self-care were small. Self-efficacy and religion did not show empirical support for serving as effective strategies for mitigating burnout. Bakker and Demerouti (2017) have argued that personal resources, in tandem with job resources, can reduce strains caused by job stressors, thereby suggesting that these various coping strategies may be used in combination to most effectively manage feelings of burnout and/or compassion fatigue.

It comes as no surprise that social and professional support have a strong ability to help nurses cope with burnout. CIs did not overlap for these two categories, suggesting that the source of support is also critical when thinking about how to best leverage this as a coping strategy. Social support is well-established in the occupational health psychology literature as a resource that positively contributes to various work-related outcomes and well-being (Baruch-Feldman et al., 2002; Kent de Grey et al., 2018; Kim et al., 2013; Marcinkus et al., 2007; Viswesvaran et al., 1999; Z. Wang, 2014). Among nurses, social support has been shown to successfully reduce burnout (Hamama et al., 2019), confirming the results from this study. Social support received from family members, a construct embedded within the social support category used in the current study, has been shown to be more strongly and negatively associated to burnout than work-related social support (Baruch-Feldman et al., 2002), which is also aligned with the results from this study, as the effect was stronger for social support than professional support. Family members tend to have more intimate familiarity with the individual that can facilitate effective and targeted support when experiencing burnout (Baruch-Feldman et al., 2002). Regarding professional support, coworkers and supervisors may have a

vested interest in providing support at work, as workplace goals are often shared and must be accomplished as a team. Past research has also noted the importance of coworker and social support in aiding nurses with their experiences of burnout (Eastburg et al., 1994; Hamaideh, 2011; Woodhead et al., 2016).

Resilience had the second strongest effect size for reducing burnout in nurses and is referred to as the emotional strength that individuals must have in order to successfully avoid negative consequences resulting from stress (Masten & O'Connor, 1989; Ong et al., 2006). In nurses, resilience has been keyed a dynamic process in which the individual has the ability to be adaptable and rise above adversity (Aburn et al., 2016). Much of the research on resilience has sought to understand how it can benefit healthcare workers in general, given their frequent encounters with multiple workplace stressors and exposure to high levels of stress on the job, as well as the general demanding nature of work (Hart et al., 2014). Resilience is an established mechanism by which burnout can be reduced in nurses (Y. Guo et al., 2018) and can also help with other psychological and behavioral workplace outcomes (Labrague & de los Santos, 2020; Lanz & Bruk-Lee, 2017).

In this study, the relaxation techniques category consisted of variables like state and trait mindfulness, recovery experiences, meditation, and mindful relaxation and had a moderate effect size when tested with burnout. State mindfulness is a type of intentional mental training that involves removing all distractions from the mind and focusing on remaining present (Baer, 2003). Mindfulness is closely associated to meditation, which is defined as any practice that facilitates inner peace within an individual. Recovery experiences consist of four key characteristics: psychological detachment, relaxation, engaging in mastery-related activities, and control of free time (Sonnentag & Fritz,

2007). It is worth noting that CIs for relaxation techniques overlapped significantly with those of resilience, and as such, it cannot be said that the relationships between these two coping strategies and burnout differed in a meaningful way. While comparing between personal coping strategies was not hypothesized, it is an interesting result worth highlighting simply to discuss the idea that both relaxation techniques and resilience may have the same level of efficacy in helping nurses mitigate burnout. This is useful for practitioners to keep in mind when thinking about potential intervention or training programs aimed at reducing burnout in nurses. Mindfulness and resilience have been shown to be significantly and positively related to each other across various samples, including healthcare professionals (Kaplan et al., 2017; Kemper et al., 2015; Pidgeon & Keye, 2014). In fact, research seems to suggest that mindfulness is predictive of resilience, and that many of the variables associated with resilience are also associated with mindfulness (Keye & Pidgeon, 2013; Van Breda, 2001), which may help to explain why the current findings resulted in the same population estimate for both relaxation techniques, a category consisting of a majority of mindfulness correlates.

The coping approaches category, although significantly related to burnout, had a weak population estimate. This could be due to the various forms of coping included in the category that could benefit from being teased apart and compared if there were enough studies to do so. It is also likely that these forms of coping, such as rational or cognitive coping and problem-focused coping, simply do not have strong relationships with burnout, thus resulting in this study's findings. Indeed, nearly all original effect sizes included in this category were weak (Ben-Zur & Michael, 2007; Boyle et al., 1991; Chen et al., 2020; Ding et al., 2015; Garrosa et al., 2010; Li et al., 2014; Van der Colff &

Rothmann, 2009; S. Wu et al., 2007), which may speak to the measurement of these constructs. While it is difficult to draw concrete conclusions based on eight studies, it is possible, however, that if these coping strategies had been broken up into distinct categories, the findings would be different. Problem-focused coping, for example, has a significant relationship with burnout in critical care nurses (Boyle et al., 1991). As another example, practical coping has been found to be related to the personal accomplishment dimension of burnout, but not emotional exhaustion or depersonalization in pediatric oncology healthcare professionals (Liakopoulou et al., 2008), so these relationships may also depend on the level at which burnout is examined; overall, or at the dimension level.

Self-care was the final coping strategy category that was significantly related to burnout, although the population estimate was the weakest in terms of significant effect sizes. However, like the coping approaches category, most of the effect sizes included in the analyses for self-care were weak correlations, which helps to explain these results. A full body of literature exists on self-care interventions for nurses, such as yoga (Alexander et al., 2015) and psychoeducational interventions (Kravits et al., 2010), all of which suggest that these are effective at reducing burnout, so it is not to say that self-care is entirely ineffective at treating burnout, considering the weak effect in the current study. In fact, these self-care practices may increase in effectiveness if combined with other coping strategies, such as social support and relaxation techniques.

Self-efficacy did not yield significant results when tested using burnout as the criterion, despite being identified as a personal resource within JD-R theory (Bakker & Sanz-Vergel, 2013; Tremblay & Messervey, 2011). Religion was another personal coping

strategy category that did not have a significant relationship with burnout. Some research suggests that religiosity and spirituality can serve as a protective factor that helps nurses cope with stress, as it provides something to turn to in times of difficulty (Ekedahl & Wengström, 2010; Shinbara & Olson, 2010), and can enable nurses to successfully cope with burnout and compassion fatigue (De Diego-Cordero et al., 2021; Yoder, 2010). However, findings from the current study do not provide strong empirical support for religion and spirituality serving as effective coping strategies for burnout in nurses. This may be due to a couple of factors, including the limited number of studies included in these analyses and sample characteristics. Nurses have reported sometimes feeling uncomfortable engaging in spiritual care practices with patients, which they may perceive to be part of their own religion and spirituality practices, for reasons like respecting the patient's own beliefs or fearing employment consequences.(Chan, 2010) and more generally, research suggests that religion is losing its influence on society (Inglehart & Norris, 2004).

### The Effectiveness of Personal Coping Strategies on Burnout and Compassion Fatigue

While there was an intention to test personal, professional, and organizational coping strategies for both outcomes of interest, the literature search coupled with the study's inclusion criteria only yielded enough studies to meta-analyze coping strategies at the personal level with compassion fatigue as the criterion. Based on the findings, self-care had the only significant relationship to compassion fatigue, suggesting that this may be an effective coping strategy for nurses to leverage against this strain. This is aligned with current empirical research showing that exercising and self-care can have a positive

impact on compassion fatigue in nurses (Alkema et al., 2008; Hinderer et al., 2014) and is also aligned with the tenets of JD-R theory (Bakker & Demerouti, 2007). Relaxation techniques, social support, and religion, however, did not have meaningful relationships with compassion fatigue in this study. This is an interesting finding, as relaxation techniques and social support were both significantly related to burnout. These discrepancies raise important points that are noted here about what constitutes each coping strategy category for each strain examined in this study. For example, the relaxation techniques category that was used when burnout was the criterion included several studies measuring mindfulness, recovery experiences, meditation, and mindful relaxation, whereas the same category used to test compassion fatigue as the outcome variable did not include mindful relaxation. Thus, some variability exists in the coping strategy categories that were used in their respective analyses with burnout and compassion fatigue. Coupled with the limited number of studies used in the analyses with compassion fatigue as the outcome, this could have influenced the overall findings. Religion did not appear to be significantly related to either strain, making it the coping strategy with the weakest empirical support for reducing burnout and compassion fatigue in nurses. In this case, the same exact studies were included in both religion categories, but the number of studies included in the analyses was small, which could have played a role in the non-significant findings.

These non-significant findings are unlikely to be related to the pooled sample sizes, given their moderate sizes, but rather, it is possible that more research is needed in this area to better understand whether these findings can be replicated or further supported. Part of the problem in meta-analyzing compassion fatigue stems from the lack

of clarity around whether a study is really measuring compassion fatigue or STS, so perhaps the first step is teasing apart these constructs, clearly making these distinctions in the literature consistently, and later meta-analyzing these relationships to see whether the results are similar.

**The Moderating Role of Individualism**

It has been posited in the past that culture has a moderating influence on the selection of coping strategies an individual might use to combat stress (Bailey & Dua, 1999). Thus, it can be further argued that the effectiveness of such coping strategies will vary depending on culture as well. Individualism was tested as a moderator on five relationships in this meta-analysis, all with burnout as the criterion. While overlapping CIs were found for relaxation techniques and coping approaches at high and low levels of individualism, three coping strategy categories tested did yield significant moderating results.

When examining the moderating effect of individualism on the direct relationship between social support and burnout, social support had a stronger effect when individualism was high. It is well-known that humans have an innate desire for connection with others, and therefore, support from others, given that humans are social creatures, thus justifying the finding that individualism moderated the direct relationship between social support and burnout at both high and low levels. Nonetheless, it is noteworthy that social support had a stronger effect when individualism was high. Collectivistic societies place an emphasis on interdependence on others from one's ingroup (P. T. P. Wong & Wong, 2006), and some research has found that nurses from collectivistic cultures tend to lean on support from others, particularly their family

members, to cope with stress (J. B. Connor, 2016). However, collectivistic societies value harmony (P. T. P. Wong & Wong, 2006), and as such, may try to resolve challenges, like burnout, internally rather than seeking help from others, which could disrupt these balanced relationships.

The moderating effect of individualism on the relationship between resilience and burnout yielded similar findings: for countries high on individualism, the population estimate was stronger. Some factors should be considered when thinking about how resilience interacts with culture, as the way in which resilience is expressed varies across cultural contexts. Emotional restraint and somatization are two ways in which people from some collectivistic societies process negative feelings, as communication of negative emotions is generally frowned upon (Lipowski, 1988; Zur, 1996). In individualistic societies, the opposite is true; emotions are expressed primarily through language (Zur, 1996). But research suggests that these might all be ways in which resilience is expressed across cultures (Buse et al., 2013). Most of the scales measuring resilience that were included in the analyses were developed based on a Western perspective of resilience (K. M. Connor & Davidson, 2003; Luthans et al., 2007; Wagnild & Young, 1993), which could result in higher scores for people from individualistic societies. Generally speaking, people from collectivistic societies tend to have high levels of resilience and consistently show low levels of negative affectivity and mood disorders (Chiao & Blizinsky, 2010). Resilience is even considered a defining characteristic of the Chinese culture, a highly collectivistic society (Shek, 2004). In the current study, although individualism was a significant moderator such that there was a difference in effect size between high and low individualism, the direct relationship remained

significant at both levels, making it likely that resilience is an effective coping strategy across cultures but may be expressed differently depending on cultural norms.

Individualism was a significant moderator on the direct relationship between professional support and burnout, indicating a higher mean effect size at low levels than studies from countries high on individualism. One potential explanation for this finding is through the understanding of self-concepts across cultural contexts. Collectivistic societies tend to make group membership a salient part of their identities, as they rely on group characteristics to define who they are (S. S. K. Lam et al., 2002; Rockstuhl et al., 2020). Indeed, establishing a strong group identity is an essential factor in receiving support from that group (Haslam et al., 2012), which in this case comes from the healthcare organization, peers, and supervisors. Therefore, if nurses from such collectivistic cultures have a salient organizational identity, professional support is likely to have a strong positive impact on burnout, as the current findings suggest. Given that individualism had a stronger effect on the relationship between social support and burnout at high levels, but a stronger effect at low levels when examining professional support as the predictor, it is possible that further research is warranted on not just the source of support, but the function of the support in relation to burnout. In other words, do nurses from individualistic societies place a greater emphasis on emotional support from friends and family, for example, and nurses from collectivistic societies value technical support from coworkers more? Examining these relationships at both the function level and source level of social support may provide greater insight into how individualism may influence such relationships.

## Practical Implications

With the current surge in cases of the COVID-19 Omicron variant globally at the time of this writing, it would appear that nurses will face yet another challenging year in the workplace throughout 2022, which undoubtedly comes with further exacerbated occupational stressors and strains (Labrague & de los Santos, 2020). Even without an ongoing pandemic overwhelming healthcare systems, the nursing profession is generally a stressful career that often leads to the development of STS, burnout, and compassion fatigue (Algamdi, 2021; Beck, 2011; Salyers et al., 2017). In turn, many nurses find themselves considering switching careers (Leiter & Maslach, 2009b; Zeytinoglu et al., 2006b), paying less attention to their own self-care needs (Alkema et al., 2008), and quality of patient care suffers (Salyers et al., 2017). Nurses need to be taken care of in the same way they take care of their own patients, and it can no longer be ignored that nurses' health and well-being is suffering at the expense of quality patient care. Healthcare organizations must equip their employees with the necessary resources to facilitate physical and psychological well-being in a proactive manner, such that nurses can be well-prepared when faced with adversity on the job.

One of the main goals of this paper was to leverage quantitative, empirical, meta-analytical research to help inform best practices for nurses experiencing occupational strains, especially given today's current climate. Occupational strains do not occur overnight, but rather, are the culminated result of repeated stress and the inability to cope successfully. As such, the road to recovery can be a long journey, and while nurses can and should play an active role in their own self-care processes, they have a lot to gain from organizational efforts aimed at promoting wellness. Findings from this study

provide several practical implications for nurses working through feelings of burnout and compassion fatigue, as well as healthcare organizations seeking to help their employees find a balance between taking care of others and themselves. While the results from this study found many personal coping strategies to be most beneficial in reducing strains, several opportunities exist for these strategies to be facilitated through organizational supports, given that providing nurses with access to resources on the job can help to facilitate positive outcomes related to well-being (Nahrgang et al., 2011). The great news is that the best thing anyone can do for nurses costs little to nothing and some of the most effective coping strategies can always be combined to optimize health and well-being. The results of this meta-analysis suggest that by simply offering support, whether it be from family, friends, coworkers, supervisors, or at the organizational level, this appears to improve nurses' burnout levels. Further, self-care strategies show the strongest empirical support for reducing compassion fatigue in nurses.

Social support is instrumental to creating a healthy workplace for nurses. Research on the type of support bedside nurses need recommends establishing a culture of teaching and learning, timely and detailed feedback on performance, and effective planning and organization of workloads (Henderson & Eaton, 2013). Support from supervisors can be expressed by providing technical support, showing empathy, recognizing work contributions, and creating opportunities for growth and development (Rafferty & Griffin, 2004). Coworkers can also provide support via allocating tangible resources, assisting with tasks, mentoring, and sharing knowledge (Ducharme & Martin, 2000; Ensher et al., 2001; Rousseau & Aubé, 2010). Coworker support has been shown to facilitate the development of resilience in nurses (Hart et al., 2014b), which presents an

opportunity for nurses to not only help one another in real time through these various actions, but also simultaneously assist with the development of a malleable trait, a powerful tool that can internally support healthy responses to external challenges when support from others may be limited. As part of an organizational effort, coworker support can be encouraged by employers through the implementation of training programs aimed at developing interpersonal and problem-solving skills (Polat & Terzi, 2021), to ensure that nurses can resolve conflicts in healthy and positive ways that do not jeopardize their workplace relationships and the ability to receive support from their peers.

While the current study did not test organizational-level coping strategies, there is a clear need for healthcare organizations to create opportunities for nurses to engage in self-care practices via wellness programs. Wellness programs can be fitness-specific or comprehensive (i.e., include a fitness and educational component) and have been shown to decrease absenteeism, suggesting that employees who participate in such programs are healthier than those who do not, as well as increase job satisfaction (Parks & Steelman, 2008). Therefore, healthcare organizations can consider a wide array of programs that can benefit nurses' mental health and well-being. Nurses often report high levels of infrequent exercise and poor eating habits because of workplace stress (Nahm et al., 2012), so creating fitness-oriented wellness programs that encourage nurses to stay active or even provide discounts to external fitness centers (Parks & Steelman, 2008) may be effective for coping with burnout. Some research suggests that for compassion fatigue, workshops and education-based programs may be more effective than fitness-oriented activities (Neville & Cole, 2013), which may be useful in understanding which aspects of self-care are most crucial to mitigating compassion fatigue (i.e., arts and crafts, traveling,

hobbies, physical and psychological self-care, etc.) and targeting those at the organizational level. Mindfulness-based interventions have been shown to benefit nurses in several ways, including improving well-being by reducing stress, burnout, and anxiety (Foureur et al., 2013; Lan et al., 2014; Suleiman-Martos et al., 2020), and improving performance at work (Guillaumie et al., 2017). Moreover, resilience training can help nurses cope with workplace stressors using positive techniques and has been shown to be successful in reducing burnout (Babanataj et al., 2019; Lanz, 2020).

In the wake of the COVID-19 pandemic and its detrimental effects on nurses working directly with COVID-19 patients, healthcare organizations should consider adapting programs intended for oncology units, where patient deaths have been ever-present, and implementing them in COVID-specific units. These programs can include support groups, stress management sessions (i.e., journaling and relaxation techniques), coaching on self-care practices, skill building to enhance compassionate patient care, and individual counseling to assist with experiences of burnout (Medland et al., 2004). Part of effectively coping with strains like burnout and compassion fatigue involve the availability of grief counseling and creating practices that empower nurses to grieve the loss of a patient in a healthy manner, such as leaving flowers on a patient's bed after they have passed, participating in culturally sensitive rituals or practices of dying patients, sending cards to the patient's family, and reflecting on their patients and sharing these memories with the patient's family (Medland et al., 2004). Creating a culture of shared responsibility on a unit when a nurse experiences a patient death by rearranging workloads to allow for mourning privately, preparing bodies with a partner, and simply coming together to acknowledge the loss of life as a team can also assist with the grieving

process (Medland et al., 2004).

SIOP's 2021 workplace trends report indicates that implementing diversity, equity, and inclusion strategies and measuring progress is in the top three trends, preceded by employee health, well-being, and safety (Stark, 2021). With the growing interest in these topics across industries and organizations, understanding how cultural contexts influence work-related behaviors and attitudes is a necessary step in facilitating health and well-being among the nursing population. This study sheds some light onto both popular workplace trends by examining how individualism may interact with various coping strategies and their effectiveness in reducing burnout in nurses. Thus, when preparing nurses with the resources they need to successfully cope with the various strains they experience, healthcare organizations should take into consideration how current practices may differ in effectiveness across different groups of nurses, and ensure that diversity, equity, and inclusion initiatives are at the forefront of their occupational health strategies by leveraging resources and strategies that work for all.

## Limitations

This study is not without its limitations, which are discussed in more detail here. First, while every attempt was made to include as many effect sizes as possible, some of the analyses conducted were based on a small number of studies, particularly the overall analyses using compassion fatigue as the outcome of interest and most of the moderator analyses. Thus, some caution should be taken when interpreting these findings, given that they may still be affected by second-order sampling error that remains in the sample size-weighted mean correlation. However, it is important to note that despite this limitation, the smallest pooled sample across all analyses was 387, and all the pooled samples for the

moderator analyses ranged from $N$ = 1,372 to $N$ = 44,347, which are generally considered large values in standard cross-sectional and longitudinal research. Most studies included in the analyses were cross-sectional, so causality cannot be inferred from the findings, as more longitudinal designs would have been necessary to do so. Moreover, it can be argued that calculating composite scores for burnout made up of different subscales (i.e., some were calculated using two subscales of the measure, whereas others included all three) is a limitation of the burnout-related results. However, the instances in which a composite score was calculated without the scores for all three dimensions were few, and did not all occur within one analysis, thus making it unlikely that these calculations significantly impacted the results. Relatedly, this study did not examine associations between coping strategies and burnout at the dimension levels, which could have provided better insight into how each coping strategy may differentially influence emotional exhaustion compared to depersonalization, for example. This was not possible in this paper due to the low number of studies included in the analyses for burnout that reported scores for each dimension, but this research has helped pave the way for future research to explore this idea in more detail.

Relying on correlations that mainly come from published studies can raise concerns about the file drawer effect, and thus, that true effect sizes were overestimated (Rosenthal, 1979). In the current study, unpublished data in published research were included in analyses to help offset the potential for publication bias. Another limitation was the inability to test the relationships between coping strategies and STS. Most of the studies found measuring STS were intervention-based or qualitative research, thereby not meeting our inclusion criteria and limiting the analyses and discussion to burnout and

compassion fatigue only. Relatedly, the paucity of non-intervention-based research on STS led to the inability to conduct moderator analyses to help clarify the construct measurement of STS and compassion fatigue. The current study was also unable to evaluate individualism as a moderator on all tested relationships due to small *k* values at high, low, or both levels of the moderator. Moreover, the way in which the moderator was set up for this study did not consider the demographic makeup of the study samples when coding a country as low or high on individualism (i.e., should a study conducted in the U.S. with a largely Asian sample be coded as low individualism?). However, most studies included in these analyses that reported breakdowns of race had samples that reflected the general population of the country where data collection occurred (i.e., studies conducted in the U.S. had a largely Caucasian sample). Lastly, interpretations of $I^2$ suggest "severe" heterogeneity across analyses, meaning that heterogeneity accounted for a notable amount of variability in point estimates. However, the CIs were not wide enough to make this assumption confidently and a common criticism of $I^2$ is its imprecision, similar to other tests of heterogeneity (Ioannidis et al., 2007).

## Future Directions

This meta-analysis offers several directions for future research to explore related to identifying effective coping strategies for work-related strains in nurses. First, negative coping strategies such as alcohol and drug abuse were not considered in this paper, although future research could potentially examine the most harmful forms of coping and their impact on strains like STS, burnout, and compassion fatigue in nurses using meta-analytical techniques. An alternative idea is to meta-analytically assess both positive and negative coping strategies in one paper to quantitatively compare findings.

Moreover, it is possible that including intervention or training research related to coping strategies in future iterations of this meta-analysis can yield a stronger relationship with burnout and is certainly an interesting area for future research to explore, given that the current meta-analysis did not include these types of studies in the analyses. In terms of self-care, for example, qualitative research has identified meaningful work, maintaining a positive attitude and interpersonal relationships, and connecting with an energy source as self-care strategies used by nurses to cope with burnout (H. Wei et al., 2020), so expanding the criteria for what should be included in a category like self-care is another consideration. It may also be important for researchers to examine coping strategies in relation to the dimension levels of burnout, which could provide a deeper understanding that helps inform how wellness training programs and interventions are developed and what aspects of a strain they target, therefore ensuring the most success in mitigating the negative effects of such strains.

Future research may also use a meta-analysis to examine the construct measurement of STS and compassion fatigue, given that the question of whether the nursing literature has been muddied by inconsistent usage and measurement of these constructs remains an important concern for empirical research that can and should be tested meta-analytically by including intervention or experimental studies to increase the amount of data available for testing. Furthermore, one question that arose from the moderator analyses is related to the differentiation between source of support and function of support. Future research should distinguish between source and function by testing these categories separately and using individualism as a moderator to better understand these relationships. While some potential explanations were posited regarding

the moderator findings, more cross-cultural research is warranted in the nursing field regarding how nurses may differentially select and use coping strategies depending on cultural contexts, and there are several layers to consider here. One layer is considering and distinguishing between the individual's own cultural orientation and the society to which they belong to, as it can very likely be the case that nurses come from collectivistic backgrounds but live in an individualistic society (i.e., immigrants), or vice versa, which could influence the ways in which they choose to cope with stress. Another layer is to identify how the coping strategy was conceptualized and measured, as coping strategies may be expressed differently across cultures and impact findings if the wrong measurement is used to capture the behavior or attitude. Furthermore, it is possible that the effectiveness of any given coping strategy is dependent on the workplace culture and whether it is a hostile work environment or a healthy workplace. Self-care, for instance, may not be as effective of a coping strategy under hostile work conditions, although it may help alleviate job strains under more supportive conditions. Lastly, some research suggests that differences exist in how nurses cope with stress based on gender and job tenure (J. Lee & Cho, 2016), as well as gender and age (Caruso et al., 2017), so using other moderator variables, such as tenure, age, gender, and nursing unit can provide further insight into how these coping strategies may vary in effectiveness.

## Conclusion

This study used meta-analytical techniques to identify the effectiveness of various personal and professional coping strategies for burnout and compassion fatigue in nurses and examined individualism as a moderator on these direct relationships. The findings from this study suggest that social support has the strongest empirical support for

reducing burnout and self-care has the strongest empirical support for reducing compassion fatigue in nurses. Furthermore, individualism moderated the relationships between social support, resilience and professional support, and burnout. Nurses can often overlook prioritizing their own well-being, as their profession places a high emphasis on caring for others, and self-care may seem like yet another box that needs to be checked off but no time to do so. As such, opportunities exist for healthcare organizations, who are at the forefront of health and wellness, to support their workforce by presenting their employees with opportunities to put themselves first. It is imperative that healthcare organizations understand the severity of the challenges nurses face on the job and the detrimental consequences that can occur, and proactively provide resources to facilitate nurse well-being. The onus of taking care of oneself should not fall on nurses' shoulders alone; organizations can play a pivotal role in the way in which wellness is promoted at work, and it starts with understanding and leveraging best practices.

**Figure 1**
Article inclusion flow diagram.

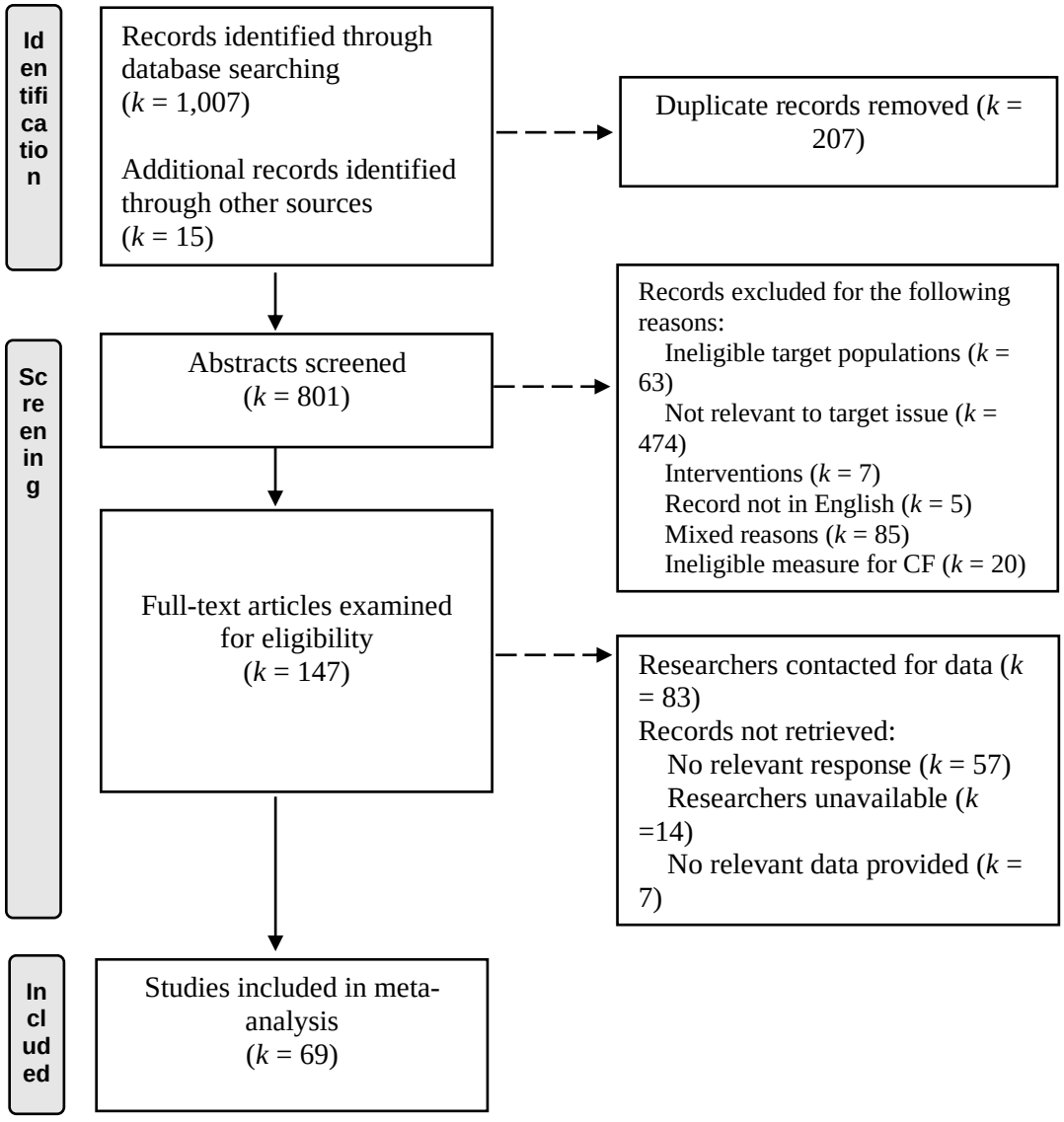

**Table 4**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Adriaenssens et al. (2017) | Belgium | Cross-Sectional, Peer-Reviewed | *N* = 318<br>59.1% female<br>45.7 years | • Leiden Quality of Work Questionnaire (Social Support from Supervisor/Management, Social Support from FLNM Colleagues)<br>• Questionnaire on the Experience and Assessment of Work (Social Support from Team Members) | MBI-HSS (Burnout) |
| Barr (2017) | Australia | Cross-Sectional, Peer-Reviewed | *N* = 140<br>98% female | • Social Provisions Scale (Social Support) | ProQOL-5 (Burnout, Compassion Fatigue) |
| Ben-Zur & Michael (2007) | Israel | Cross-Sectional, Peer-Reviewed | *N* = 55<br>100% female | • COPE Scale (Problem-Focused Coping) | aMBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Bobbio et al. (2012) | Italy | Cross-Sectional, Peer-Reviewed | *N* = 273<br>70% female<br>44.51 years | • Survey of Perceived Organizational Support | MBI-GS (Emotional Exhaustion, Cynicism, Professional Accomplishment) |
| Boyle et al. (1991) | U.S. | Cross-Sectional, Peer-Reviewed | *N* = 103<br>28.8 years | • House and Wells Social Support Scale (Social Support, Work Support, Non-Work Support)<br>• Ways of Coping Checklist (Problem-Focused Coping) | SBS-HP (Burnout) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Broksch et al. (2019) | U.S. | Cross-Sectional, Conference Paper | *N* = 751<br>49.02 years | • RS-14 | Copenhagen Work Burnout Inventory (Burnout) |
| Cao et al. (2016), | China | Cross-Sectional, Peer-Reviewed | *N* = 456<br>95.4% female<br>34.12 years | • Survey of Perceived Organizational Support | MBI (Emotional Exhaustion, Cynicism, Professional Efficacy) |
| Card et al. (2019) | U.S. | Cross-Sectional, Peer-Reviewed | *N* = 2,837<br>96.2% female | • Social Support and Personal Coping Survey (Personal Support, Professional Support)<br>• Hobby Inventory (Active Hobbies, Distractive Hobbies, Creative Hobbies) | MBI (Burnout) |
| Chen et al. (2020) | China | Cross-Sectional, Peer-Reviewed | *N* = 1,029<br>93.4% female<br>27 years | • Coping Strategies Questionnaire<br>• Social Support Rating Scale<br>• General Self-Efficacy Scale | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Converso et al. (2019) | Italy | Cross-Sectional, Peer-Reviewed | *N* = 94<br>53.56 years | • Job Content Questionnaire<br>• Connor-Davidson Resilience Scale<br>• Self-Efficacy* | MBI (Emotional Exhaustion, Depersonalization) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| de Wijn & van der Doef (2020) | Netherlands | Cross-Sectional, Peer-Reviewed | *N* = 692<br>75.6% female<br>42.4 years | • Leiden Quality of Work Life Questionnaire for Nurses (Social Support from Colleagues, Social Support from Supervisor)<br>• Recovery Experiences Questionnaire (Relaxation) | MBI-HSS (Emotional Exhaustion) |
| Ding et al. (2015) | China | Cross-Sectional, Peer-Reviewed | *N* = 1,496<br>97.8% female<br>32.05 years | • Psychological Capital Questionnaire (Resilience)<br>• Trait Coping Style Questionnaire (Positive Coping) | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Duarte et al. (2016) | Portugal | Cross-Sectional, Peer-Reviewed | *N* = 280<br>81.1% female<br>37.66 years | • Self-Compassion Scale (Mindfulness) | ProQOL-5 (Burnout, Compassion Fatigue) |
| Dwyer et al. (2019) | U.S. | Cross-Sectional, Peer-Reviewed | *N* = 136<br>95.6% female<br>28.3 years | • Conditions for Workplace Effectiveness Questionnaire II (Structural Empowerment) | MBI-GS (Emotional Exhaustion) |
| Ersoy-Kart (2009) | Turkey | Cross-Sectional, Peer-Reviewed | *N* = 47 (private sector)<br>32 years<br><br>*N* = 53 (public sector)<br>53 years | • Multidimensional Scale of Perceived Social Support | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Firth et al. (1986) | Australia | Cross-Sectional, Peer-Reviewed | *N* = 185 | • Relationship Questionnaire (Perceived Availability of Support from Supervisor)* | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Flickinger (2019) | U.S. | Cross-Sectional, Dissertation | *N* = 59<br>91.5% female<br>45.98 years | • Self-Care Assessment Worksheet (Physical Self-Care, Psychological Self-Care, Emotional Self-Care, Spiritual Self-Care, Workplace/Professional Self-Care,<br>• Resiliency Scale v.3.33 | ProQOL-5 (Burnout, Compassion Fatigue) |
| Gabel Shemueli et al. (2016) | Spain, Uruguay | Cross-Sectional, Peer-Reviewed | *N* = 502 (Spain)<br>91.2% female<br>44 years<br><br>*N* = 53 (Uruguay)<br>94.6% female<br>40.3 years | • Social Support Scale | SMBM (Burnout) |
| Gallagher & Gormley (2009) | U.S. | Cross-Sectional, Peer-Reviewed | *N* = 30 | • Feel Supported* | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| García et al. (2016) | Spain | Cross-Sectional, Peer-Reviewed | *N* = 100<br>89.58% female<br>40.58 years | • Job Content Questionnaire (Support) | MBI (Burnout) |
| Garrosa et al. (2010) | Portugal | Longitudinal, Peer-Reviewed | *N* = 98<br>81.6% female<br>36.1 years | • Nurse Burnout Scale (Commitment, Challenge, Control, Social Support, Active Coping, | NBS (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Gensimore et al. (2020) | U.S. | Cross-Sectional, Peer-Reviewed | *N* = 501<br>90.7% female<br>39.3 years | • Connor-Davidson Resilience Scale | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Gilardi et al. (2020) | Italy | Cross-Sectional, Peer-Reviewed | *N* = 356<br>88% female<br>44.32 years | • HSE Indicator Tool (Colleague Social Support, Supervisor Social Support)<br>• Nurses' Communication Perceived Self-Efficacy Scale | MBI (Emotional Exhaustion, Depersonalization) |
| Goong et al. (2016) | Korea | Cross-Sectional, Peer-Reviewed | *N* = 286<br>32.55 years | • Role-Related Social Support Scale (Social Support from Work, Social Support from Family, Social Support from School, Overall) | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Goussinksy & Livne (2019) | Israel | Cross-Sectional, Peer-Reviewed | *N* = 217<br>88.6% female | • Supervisor Support Scale<br>• Emotion Work-Related Self-Efficacy Scale | aMBI (Emotional Exhaustion, Depersonalization) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Goussinsky (2020) | Israel | Cross-Sectional, Peer-Reviewed | *N* = 105<br>84% female<br>37.7 years | • Coworker Support Sub-Scale<br>• Occupational Coping Self-Efficacy Questionnaire for Nurses | aMBI (Emotional Exhaustion, Depersonalization) |
| Guo et al. (2018) | China | Cross-Sectional, Peer-Reviewed | *N* = 1,061<br>97.7% female<br>29.34 years | • Connor-Davidson Resilience Scale | MBI-GS (Emotional Exhaustion, Cynicism, Professional Efficacy) |
| Guo et al. (2019) | Australia | Cross-Sectional, Peer-Reviewed | *N* = 100<br>85% female<br>46.05 years | • Connor-Davidson Resilience Scale | MBI-GS (Burnout) |
| Haizlip et al. (2020) | U.S. | Cross-Sectional, Peer-Reviewed | *N* = 324<br>94% female<br>39.12 years | • Eisenberger Social Support Scale (Organization, Supervisor, Peer, Subordinate, | ProQOL (Burnout) |
| Hamaideh (2011) | Jordan | Cross-Sectional, Peer-Reviewed | *N* = 181<br>44.2% female<br>30.94 years | • Social Support Scale | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Hamama et al. (2019) | Israel | Cross-Sectional, Peer-Reviewed | *N* = 156<br>94% female<br>43.68 years | • Multidimensional Scale of Perceived Social Support | MBI (Burnout) |
| Heard (2010) | U.S. | Cross-Sectional, Dissertation | *N* = 179<br>86% female | • Mindfulness Attention Awareness Scale | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Hinderer et al. (2014) | U.S. | Cross-Sectional, Peer-Reviewed | *N* = 128<br>62.5% female<br>37 years | • Behavioral Instrument (Supports, Exercise, Hobbies, Religion, Meditation, Travel, Professional Counseling, Coworker Relationships)* | ProQOL (Burnout, Compassion Fatigue) |
| Kent et al. (2019) | U.K. | Cross-Sectional, Peer-Reviewed | *N* = 142<br>87.32% female<br>47.98 years | • Mindfulness Attention Awareness Scale | ProQOL (Burnout, Compassion Fatigue) |
| Kitaoka-Higashiguchi (2005) | Japan | Cross-Sectional, Peer-Reviewed | *N* = 183<br>97.8% female<br>35.3 years | • National Institute for Occupational Safety and Health Questionnaire (Supervisor Support, Coworker Support, | MBI-GS (Emotional Exhaustion, Cynicism, Professional Efficacy) |
| Kutluturkan et al. (2016) | Turkey | Cross-Sectional, Peer-Reviewed | *N* = 140<br>90% female | • Resilience Scale for Adults | MBI (Burnout) |
| Kwak et al. (2010) | South Korea | Cross-Sectional, Peer-Reviewed | *N* = 496 | • Revised Nursing Work Index (Organizational Support) | MBI (Emotional Exhaustion) |
| Lanz & Bruk (2017) | U.S. | Longitudinal, Peer-Reviewed | *N* = 96<br>88.7% female<br>46.5 years | • Resilience Scale | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Laschinger et al. (2006) | Canada | Cross-Sectional, Peer-Reviewed | *N* = 202<br>94.6% female<br>47.54 years | • Survey of Perceived Organizational Support | MBI-GS (Emotional Exhaustion, Personal Accomplishment) |
| Li et al. (2014) | China | Cross-Sectional, Peer-Reviewed | *N* = 1,559<br>96.2% female | • The Simplified Coping Style Questionnaire (Acting Coping) | MBI-GS (Emotional Exhaustion, Cynicism, Professional Efficacy) |
| Liu & Aungsuroch (2019) | China | Cross-Sectional, Peer-Reviewed | *N* = 444<br>99.3% female<br>30.47 years | • Perceived Social Support Scale<br>• General Self-Efficacy Scale | MBI (Burnout) |
| Lorenz & Guirardello (2014) | Brazil | Cross-Sectional, Peer-Reviewed | *N* = 168<br>88.4% female<br>36.3 years | • Nursing Work Index Revised (Organizational Support) | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Lowe et al. (2020) | U.S. | Cross-Sectional, Peer-Reviewed | *N* = 73<br>97% female<br>52 years | • Eisenberger Perceived Organizational Support Scale<br>• Health and Safety Executive Management Standards Tool (Peer Support) | MBI (Emotional Exhaustion) |
| Luquette (2017) | U.S. | Cross-Sectional, Dissertation | *N* = 77 | • Medical Outcomes Study Social Support Instrument | ProQOL-5 (Compassion Fatigue) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Manzano García & Ayala Calvo (2021) | Spain | Cross-Sectional, Peer-Reviewed | *N* = 771<br>90% female<br>42.38 years | • Social Support* | CESQT (Burnout) |
| Ogińska-Bulik & Michalska (2020) | Poland | Cross-Sectional, Peer-Reviewed | *N* = 72<br>46.01 years | • Resilience Measurement Scale | OLBI (Burnout) |
| Pisanti et al. (2011) | Italy, The Netherlands | Cross-Sectional, Peer-Reviewed | *N* = 609 (Italy)<br>75% female<br>37.2 years<br><br>*N* = 884 (The Netherlands)<br>86% female<br>38.3 years | • Leiden Quality of Work Life Questionnaire for Nurses (Social Support from Supervisors, Social Support from Colleagues, | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Polat et al. (2020) | Turkey | Cross-Sectional, Peer-Reviewed | *N* = 379<br>74.1% female | • Spiritual Orientation Scale | ProQOL R-IV (Burnout, Compassion Fatigue) |
| Salvarani et al. (2019) | Italy | Cross-Sectional, Peer-Reviewed | *N* = 97<br>61.86% female<br>38 years | • Five-Facet Mindfulness Questionnaire (Acting with Awareness, Nonjudging, Nonreactivity, Describing) | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Smart et al. (2014) | U.S. | Cross-Sectional, Peer-Reviewed | *N* = 69 | • Weekly Aerobic Physical Activity Hours* | ProQOL-5 (Burnout, Compassion Fatigue) |
| Spooner-Lane (2004) | Australia | Cross-Sectional, Dissertation | *N* = 273<br>86.08% female | • Work Support Scale (Emotional Coworker Support, Instrumental Coworker Support, Supervisor Support, | MBI-HSS (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Stewart et al. (1994) | Canada | Cross-Sectional, Peer-Reviewed | *N* = 101<br>100% female | • Norbeck Social Support Questionnaire (Work-Related Support, Overall) | Staff Burnout Scale for Health Professionals (Burnout) |
| Sukut et al. (2021) | Turkey | Cross-Sectional, Peer-Reviewed | *N* = 100<br>82.4% female<br>32.46 years | • Connor-Davidson Resilience Scale | ProQOL R-IV (Burnout, Compassion Fatigue) |
| Tahghighi et al. (2019) | Australia | Cross-Sectional, Peer-Reviewed | *N* = 958 | • Connor-Davidson Resilience Scale | ProQOL-5 (Burnout, Compassion Fatigue) |
| Van der Colff & Rothmann (2009) | South Africa | Cross-Sectional, Peer-Reviewed | *N* = 818<br>97.4% female<br>40 years | • The Coping Orientation for Problem Experienced Questionnaire (Approach Coping, Seeking Emotional or Social Support, Turning to Religion, | MBI-HSS (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Van der Heijden et al. (2017), | Belgium, Germany, Finland, France, Italy, Netherlands, Poland, Slovakia | Cross-Sectional, Peer-Reviewed | *N* = 34,771 | • Social Support from Immediate Supervisor*<br>• Social Support from Near Colleagues* | Copenhagen Psychosocial Questionnaire (Burnout) |
| Vander Elst et al. (2016) | Belgium | Cross-Sectional, Peer-Reviewed | *N* = 675<br>93.8% female<br>40.03 years | • Short Inventory to Monitor Psychological Hazards (Social Support) | UBOS-A (Burnout) |
| Wang et al. (2020) | China | Cross-Sectional, Peer-Reviewed | *N* = 1,044<br>91% female | • Lifestyle Questionnaire (Exercise Frequency)* | ProQOL-CN-5 (Burnout) |
| Wu et al. (2007) | China | Cross-Sectional, Peer-Reviewed | *N* = 495<br>100% female<br>29 years | • Personal Resources Questionnaire (Self-Care, Social Support, Rational/Cognitive Coping, | MBI-GS (Emotional Exhaustion, Cynicism, Professional Efficacy) |
| Xian et al. (2020) | China | Cross-Sectional, Peer-Reviewed | *N* = 366<br>0% female<br>29.28 years | • Nurses Job Demand and Work Resource Scale (Social Support) | MBI-GS (Emotional Exhaustion, Cynicism, Professional Efficacy) |
| Xie et al. (2021) | China | Cross-Sectional, Peer-Reviewed | *N* = 805<br>89.8% female<br>28.3 years | • Mindful Attention Awareness Scale | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |

**Table 4 (continued)**
Study characteristics

| Authors, (year) | Country | Study Type, Paper Type | Participants (*N*, gender, mean age) | Predictor Measure (Subscale) | Outcome Measure (Overall or Subscales Used) |
|---|---|---|---|---|---|
| Xu & Song (2016) | Korea | Cross-Sectional, Peer-Reviewed | *N* = 320<br>100% female<br>32.6 years | • Role-Related Social Support Scale (Social Support from Work, Social Support from Family) | MBI (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |
| Yang & Chen (2020) | China | Cross-Sectional, Peer-Reviewed | *N* = 6,673<br>99.31% female<br>30.4 years | • Work-Family Support Scale | MBI-GS (Burnout) |
| Yıldırım et al. (2021) | Turkey | Cross-Sectional, Peer-Reviewed | *N* = 316<br>67.1% female<br>33.44 years | • Spirituality and Spiritual Care Rating Scale | ProQOL (Burnout, Compassion Fatigue) |
| Yu et al. (2021) | China | Cross-Sectional, Peer-Reviewed | *N* = 186<br>93% female<br>28.33 years | • Self-Compassion Scale (Mindfulness) | ProQOL (Burnout, Compassion Fatigue) |
| Zhao et al. (2019) | China | Cross-Sectional, Peer-Reviewed | *N* = 763<br>97.9% female<br>29.15 years | • Short Inventory of Mindfulness Capability (Acting with Awareness, Describing, Non-Judging of Experiences) | MBI-HSS (Emotional Exhaustion, Depersonalization, Personal Accomplishment) |

*Note*. Measure names with a * indicates that the measure was developed by the authors of the study for the purposes of data collection; MBI-GS = Maslach Burnout Inventory – General Survey; MBI-HSS = Maslach Burnout Inventory – Human Services Survey; ProQOL = Professional Quality of Life scale; ProQOL-5 = Professional Quality of Life Scale Version 5; ProQOL-CN-5 = Chinese Version of the Professional Quality of Life Scale Version 5; aMBI = Abbreviated Version of the Maslach Burnout Inventory; UBOS-A = General Version of the Utrecht Burnout Scale; OLBI = Oldenburg Burnout Inventory; CESQT = Spanish Burnout Inventory; SMBM = Shirom-Melamed Burnout Measure; SBS-HP = Staff Burnout Scale for Health Professionals.

**Table 5**
Distribution of Nurse Samples by Department

| **Department** | **N (%)** |
|---|---|
| Pediatrics | 7,119 (35.4%) |
| Mixed/Other | 3,897 (19.4%) |
| Medical/Surgical | 2,331 (11.6%) |
| Emergency | 1,851 (9.2%) |
| ICU | 1,631 (8.1%) |
| Mental Health/Psychiatry | 1095 (5.4%) |
| OBGYN/Maternity | 565 (2.8%) |
| Internal Medicine | 550 (2.7%) |
| Operating Room | 328 (1.6%) |
| Oncology | 325 (1.6%) |
| Critical Care | 275 (1.4%) |
| Palliative Care | 75 (0.4%) |
| Geriatrics | 50 (0.2%) |
| Newborn/Neonatal Care | 37 (0.2%) |

*Note.* $N$ = 20,129. Mixed/Other = clusters of departments that could not be teased apart, departments that did not fall into any categories above, and categories reported as 'other' in original study.

**Table 6**

Meta-Analysis of Coping Strategies-Burnout Correlations

| **Personal Strategies** | ***k*** | ***N*** | ***r*** | **ρ** | **$\sigma_\rho$** | **%Var** | **80% $CV_L$** | **80% $CV_U$** | **95% $CI_L$** | **95% $CI_U$** | **$\rho_5$** | ***Q*** | ***$I^2$*** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Social Support | 23 | 10,100 | -0.34 | -0.42 | 0.14 | 11.09% | -0.60 | -0.23 | -0.48 | -0.35 | -0.44 | 309.97 | 93.9% |
| Low Ind. | 11 | 3,635 | -0.24 | -0.29 | 0.11 | 23.75% | -0.43 | -0.15 | -0.37 | -0.21 | -0.28 | - | - |
| High Ind. | 12 | 6,465 | -0.40 | -0.49 | 0.10 | 13.94% | -0.62 | -0.35 | -0.55 | -0.42 | -0.49 | - | - |
| Resilience | 15 | 5,743 | -0.32 | -0.38 | 0.16 | 10.12% | -0.59 | -0.17 | -0.47 | -0.29 | -0.38 | 177.7 | 92.1% |
| Low Ind. | 5 | 2,895 | -0.25 | -0.30 | - | 100.80% | - | - | -0.34 | -0.26 | - | - | - |
| High Ind. | 10 | 2,848 | -0.39 | -0.47 | 0.20 | 8.29% | -0.72 | -0.21 | -0.60 | -0.34 | -0.49 | - | - |
| Relaxation Techniques | 10 | 3406 | -0.31 | -0.38 | 0.12 | 19.41% | -0.54 | -0.22 | -0.46 | -0.29 | -0.36 | 61.96 | 85.5% |
| Low Ind. | 4 | 2034 | -0.30 | -0.37 | 0.08 | 27.23% | -0.47 | -0.27 | -0.46 | -0.27 | - | - | - |
| High Ind. | 6 | 1372 | -0.32 | -0.40 | 0.17 | 16.30% | -0.61 | -0.18 | -0.54 | -0.25 | - | - | - |
| Coping Approaches | 8 | 5653 | -0.16 | -0.21 | 0.09 | 20.70% | -0.32 | -0.09 | -0.28 | -0.14 | - | 38.38 | 81.8% |
| Low Ind. | 4 | 3118 | -0.16 | -0.20 | 0.13 | 11.09% | -0.36 | -0.04 | -0.33 | -0.07 | - | - | - |
| High Ind. | 4 | 2535 | -0.17 | -0.22 | - | 190.31% | - | - | -0.25 | -0.18 | - | - | - |
| Self-Efficacy | 7 | 2,424 | -0.14 | -0.16 | 0.21 | 7.76% | -0.44 | 0.11 | -0.33 | 0.00 | - | - | - |
| Self-Care | 7 | 4,766 | -0.11 | -0.14 | 0.12 | 12.81% | -0.29 | 0.02 | -0.23 | -0.04 | - | 61.31 | 90.5% |
| Religion | 4 | 882 | 0.18 | 0.23 | 0.23 | 10.85% | -0.07 | 0.52 | -0.02 | 0.47 | - | - | - |
| **Professional Strategies** | ***k*** | ***N*** | ***r*** | **ρ** | **$\sigma_\rho$** | **%Var** | **80% $CV_L$** | **80% $CV_U$** | **95% $CI_L$** | **95% $CI_U$** | **$\rho_5$** | ***Q*** | ***$I^2$*** |
| Professional Support | 29 | 52,929 | -0.22 | -0.27 | 0.19 | 1.85% | -0.52 | -0.02 | -0.34 | -0.20 | -0.27 | 1936.36 | 98.6% |
| Low Ind. | 7 | 8,582 | -0.53 | -0.63 | 0.14 | 2.71% | -0.82 | -0.45 | -0.75 | -0.52 | - | - | - |
| High Ind. | 22 | 44,347 | -0.17 | -0.20 | 0.10 | 5.98% | -0.33 | -0.07 | -0.24 | -0.16 | -0.19 | - | - |

*Note*. Ind. = individualism; *k* = number of independent samples used in analysis; *N* = pooled sample size; *r* = observed sample-size weighted correlation; ρ = sample size-weighted corrected correlation; $\sigma_\rho$ = sample size-weighted standard deviation of corrected correlations; %Var = percent variance accounted for in correlations by sampling error; 80% CV = 80% credibility intervals ($_U$ = upper, $_L$ = lower); 95% CI = 95% confidence intervals ($_U$ = upper, $_L$ = lower); $\rho_5$ = corrected correlation using the five effects with the greatest precision. *$p < .05$

**Table 7**

Meta-Analysis of Coping Strategies-Compassion Fatigue Correlations

| **Personal Strategies** | **k** | ***N*** | ***r*** | **ρ** | **$\sigma_\rho$** | **%Var** | **80% $CV_L$** | **80% $CV_U$** | **95% $CI_L$** | **95% $CI_U$** | **$\rho_5$** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Relaxation Techniques | 5 | 870 | -0.15 | -0.19 | 0.21 | 15.66% | -0.46 | 0.08 | -0.39 | 0.01 | - |
| Self-Care | 4 | 387 | -0.07 | -0.08 | - | 232.97% | - | - | -0.16 | -0.01 | - |
| Social Support | 4 | 479 | -0.02 | -0.03 | 0.36 | 8.17% | -0.49 | 0.44 | -0.40 | 0.34 | - |
| Religion | 4 | 882 | 0.17 | 0.21 | 0.25 | 8.78% | -0.11 | 0.53 | -0.05 | 0.46 | - |

*Note*. *k* = number of independent samples used in analysis; *N* = pooled sample size; *r* = observed sample-size weighted correlation; ρ = sample size-weighted corrected correlation; $\sigma_\rho$ = sample size-weighted standard deviation of corrected correlations; %Var = percent variance accounted for in correlations by sampling error; 80% CV = 80% credibility intervals ($_U$ = upper, $_L$ = lower); 95% CI = 95% confidence intervals ($_U$ = upper, $_L$ = lower); $\rho_5$ = corrected correlation using the five effects with the greatest precision.

**Table 8**

Results of cumulative meta-analyses for burnout

| # | RES | RT | CA | REL | SE | SC | PS | SS |
|---|---|---|---|---|---|---|---|---|
| 1 | -0.26 | -0.46 | -0.24 | 0.08 | 0.04 | -0.10 | -0.16 | -0.55 |
| 2 | -0.29 | -0.35 | -0.25 | 0.29 | -0.09 | -0.10 | -0.25 | -0.44 |
| 3 | -0.41 | -0.34 | -0.19 | 0.24 | -0.18 | -0.13 | -0.27 | -0.41 |
| 4 | -0.39 | -0.35 | -0.19 | 0.23 | -0.17 | -0.14 | -0.27 | -0.43 |
| 5 | -0.38 | -0.36 | -0.21 | | -0.16 | -0.15 | -0.27 | -0.44 |
| 6 | -0.38 | -0.35 | -0.21 | | -0.16 | -0.14 | -0.27 | -0.44 |
| 7 | -0.38 | -0.37 | -0.21 | | -0.16 | -0.14 | -0.27 | -0.43 |
| 8 | -0.39 | -0.38 | -0.21 | | | | -0.27 | -0.43 |
| 9 | -0.39 | -0.38 | | | | | -0.27 | -0.43 |
| 10 | -0.38 | -0.38 | | | | | -0.27 | -0.43 |
| 11 | -0.39 | | | | | | -0.27 | -0.43 |
| 12 | -0.38 | | | | | | -0.27 | -0.42 |
| 13 | -0.38 | | | | | | -0.27 | -0.42 |
| 14 | -0.38 | | | | | | -0.27 | -0.42 |
| 15 | -0.38 | | | | | | -0.27 | -0.42 |
| 16 | | | | | | | -0.27 | -0.42 |
| 17 | | | | | | | -0.27 | -0.42 |
| 18 | | | | | | | -0.27 | -0.42 |
| 19 | | | | | | | -0.27 | -0.42 |
| 20 | | | | | | | -0.27 | -0.42 |
| 21 | | | | | | | -0.27 | -0.42 |
| 22 | | | | | | | -0.27 | -0.42 |
| 23 | | | | | | | -0.27 | -0.42 |
| 24 | | | | | | | -0.27 | |
| 25 | | | | | | | -0.27 | |
| 26 | | | | | | | -0.27 | |
| 27 | | | | | | | -0.27 | |
| 28 | | | | | | | -0.27 | |
| 29 | | | | | | | -0.27 | |

*Note.* # = number of studies included in iteration; RES = resilience; RT = relaxation techniques; CA = coping approaches; REL = religion; SE = self-efficacy; SC = self-care; PS = professional support; SS = social support.

**Table 9**

Results of cumulative meta-analyses for compassion fatigue

| # | RT | REL | SC | SS |
|---|---|---|---|---|
| 1 | -0.17 | 0.04 | -0.12 | -0.26 |
| 2 | -0.14 | 0.27 | -0.13 | 0.14 |
| 3 | -0.27 | 0.24 | -0.09 | 0.05 |
| 4 | -0.20 | 0.21 | -0.08 | -0.03 |
| 5 | -0.19 | | | |

*Note.* # = number of studies included in iteration; RT = relaxation techniques; REL = religion; SC = self-care; SS = social support.

References

Abendroth, M., & Flannery, J. (2006). Predicting the risk of compassion fatigue: A study of hospice nurses. *Journal of Hospice & Palliative Nursing*, *8*(6). https://journals.lww.com/jhpn/Fulltext/2006/11000/Predicting_the_Risk_of_Compassion_Fatigue__A_Study.7.aspx

Aburn, G., Gott, M., & Hoare, K. (2016). What is resilience? An integrative review of the empirical literature. *Journal of Advanced Nursing*, *72*(5), 980–1000. https://doi.org/10.1111/jan.12888

Adriaenssens, J., de Gucht, V., & Maes, S. (2015). Determinants and prevalence of burnout in emergency nurses: A systematic review of 25 years of research. *International Journal of Nursing Studies*, *52*(2), 649–661. https://doi.org/10.1016/j.ijnurstu.2014.11.004

Al Barmawi, M. A., Subih, M., Salameh, O., Sayyah Yousef Sayyah, N., Shoqirat, N., & Abdel-Azeez Eid Abu Jebbeh, R. (2019). Coping strategies as moderating factors to compassion fatigue among critical care nurses. *Brain and Behavior*, *9*(4), e01264. https://doi.org/10.1002/brb3.1264

Alexander, G. K., Rollins, K., Walker, D., Wong, L., & Pennings, J. (2015). Yoga for self-care and burnout among nurses. *Workplace Health & Safety*, *63*(10), 462–470. https://doi.org/10.1177/2165079915596102

Algamdi, M. (2021). Prevalence of oncology nurses' compassion satisfaction and compassion fatigue: Systematic review and meta-analysis. *Nursing Open*, *n/a*(n/a). https://doi.org/10.1002/nop2.1070

Alharbi, J., Jackson, D., & Usher, K. (2020). Personal characteristics, coping strategies, and resilience impact on compassion fatigue in critical care nurses: A cross-sectional study. *Nursing & Health Sciences*, *22*(1), 20–27. https://doi.org/10.1111/nhs.12650

Alkema, K., Linton, J. M., & Davies, R. (2008). A study of the relationship between self-care, compassion satisfaction, compassion fatigue, and burnout among hospice professionals. *Journal of Social Work in End-of-Life & Palliative Care*, *4*(2), 101–119. https://doi.org/10.1080/15524250802353934

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice*, *10*(2), 125–143. https://doi.org/10.1093/clipsy.bpg015

Bailey, F. J., & Dua, J. (1999). Individualism—Collectivism, coping styles, and stress in international and Anglo-Australian students: A comparative study. *Australian Psychologist*, *34*(3), 177–182. https://doi.org/10.1080/00050069908257451

Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309–328. https://doi.org/10.1108/02683940710733115

Bakker, A. B., & Sanz-Vergel, A. I. (2013). Weekly work engagement and flourishing: The role of hindrance and challenge job demands. *Journal of Vocational Behavior*, *83*(3), 397–409. https://doi.org/10.1016/j.jvb.2013.06.008

Bartram, T., Casimir, G., Djurkovic, N., Leggat, S. G., & Stanton, P. (2012). Do perceived high performance work systems influence the relationship between emotional labour, burnout and intention to leave? A study of Australian nurses. *Journal of Advanced Nursing*, *68*(7), 1567–1578. https://doi.org/10.1111/j.1365-2648.2012.05968.x

Baruch-Feldman, C., Brondolo, E., Ben-Dayan, D., & Schwartz, J. (2002). Sources of social support and burnout, job satisfaction, and productivity. *Journal of Occupational Health Psychology*, *7*(1), 84–93. https://doi.org/10.1037//1076-8998.7.1.84

Beck, C. T. (2011). Secondary traumatic stress in nurses: A systematic review. *Archives of Psychiatric Nursing*, *25*(1), 1–10. https://doi.org/10.1016/j.apnu.2010.05.005

Bellolio, M. F., Cabrera, D., Sadosty, A. T., Hess, E. P., Campbell, R. L., Lohse, C. M., & Sunga, K. L. (2014). Compassion fatigue is similar in emergency medicine residents compared to other medical and surgical specialties. *The Western Journal of Emergency Medicine*, *15*(6), 629–635. https://doi.org/10.5811/westjem.2014.5.21624

Ben-Zur, H., & Michael, K. (2007). Burnout, social support, and coping at work among social workers, psychologists, and nurses. *Social Work in Health Care*, *45*(4), 63–82. https://doi.org/10.1300/J010v45n04_04

Berger, J., Polivka, B., Smoot, E. A., & Owens, H. (2015). Compassion fatigue in pediatric nurses. *Journal of Pediatric Nursing*, *30*(6), e11–e17. https://doi.org/10.1016/j.pedn.2015.02.005

Boey, K. W. (1998). Coping and family relationships in stress resistance: A study of job satisfaction of nurses in Singapore. *International Journal of Nursing Studies*, *35*(6), 353–361. https://doi.org/10.1016/S0020-7489(98)00052-2

Borenstein, Michael. (2009). *Introduction to meta-analysis*. John Wiley & Sons. https://doi.org/10.1002/9780470743386

Boyle, A., Grap, M. J., Younger, J., & Thomby, D. (1991). Personality hardiness, ways of coping, social support and burnout in critical care nurses. *Journal of Advanced Nursing*, *16*(7), 850–857. https://doi.org/10.1111/j.1365-2648.1991.tb01767.x

Branch, C., & Klinkenberg, D. (2015). Compassion fatigue among pediatric healthcare providers. *MCN: The American Journal of Maternal/Child Nursing*, *40*(3). https://journals.lww.com/mcnjournal/Fulltext/2015/05000/Compassion_Fatigue_Among_Pediatric_Healthcare.6.aspx

Bride, B. E., & Kintzle, S. (2011). Secondary traumatic stress, job satisfaction, and occupational commitment in substance abuse counselors. *Traumatology*, *17*(1), 22–28. https://doi.org/10.1177/1534765610395617

Bride, B. E., Robinson, M. M., Yegidis, B., & Figley, C. R. (2004). Development and validation of secondary traumatic stress scale. *Research on Social Work Practice*, *14*(1), 27–35. https://doi.org/10.1177/1049731503254106

Buse, N. A., Bernacchio, C., & Burker, E. J. (2013). Cultural variation in resilience as a response to traumatic experience. *Journal of Rehabilitation*, *79*(2), 15–23. SciTech Premium Collection; Social Science Premium Collection.

Cabrera, G. L. S., López, R. P., Salinas, T. S., Ochoa, T. J. G., Marín, C. I. A., & Haro, G. L. (2005). *Burnout syndrome among Mexican hospital nursery staff*. *43*(1), 11–15.

Cañadas-De la Fuente, G. A., Ortega, E., Ramirez-Baena, L., De la Fuente-Solana, E. I., Vargas, C., & Gómez-Urquiza, J. L. (2018). Gender, marital status, and children as risk factors for burnout in nurses: A meta-analytic study. *International Journal of Environmental Research and Public Health*, *15*(10). https://doi.org/10.3390/ijerph15102102

Cañadas-De la Fuente, G. A., Vargas, C., San Luis, C., García, I., Cañadas, G. R., & De la Fuente, E. I. (2015). Risk factors and prevalence of burnout syndrome in the nursing profession. *International Journal of Nursing Studies*, *52*(1), 240–249. https://doi.org/10.1016/j.ijnurstu.2014.07.001

Caruso, R., Miazza, D., Berzolari, F. G., Grugnetti, A. M., Lichosik, D., & Arrigoni, C. (2017). Gender differences among cancer nurses' stress perception and coping: An Italian single centre observational study. *Giornale Italiano Di Medicina Del Lavoro Ed Ergonomia*, *39*(2), 93–99.

Cavanagh, N., Cockett, G., Heinrich, C., Doig, L., Fiest, K., Guichon, J. R., Page, S., Mitchell, I., & Doig, C. J. (2019). Compassion fatigue in healthcare providers: A systematic review and meta-analysis. *Nursing Ethics*, *27*(3), 639–665. https://doi.org/10.1177/0969733019889400

Chan, M. F. (2010). Factors affecting nursing staff in practising spiritual care. *Journal of Clinical Nursing*, *19*(15–16), 2128–2136. https://doi.org/10.1111/j.1365-2702.2008.02690.x

Chen, J., Li, J., Cao, B., Wang, F., Luo, L., & Xu, J. (2020). Mediating effects of self-efficacy, coping, burnout, and social support between job stress and mental health among young Chinese nurses. *Journal of Advanced Nursing*, *76*(1), 163–173. https://doi.org/10.1111/jan.14208

Chiao, J. Y., & Blizinsky, K. D. (2010). Culture–gene coevolution of individualism–collectivism and the serotonin transporter gene. *Proceedings of the Royal Society B: Biological Sciences*, *277*(1681), 529–537. https://doi.org/10.1098/rspb.2009.1650

Cho, H. J., & Jung, M. S. (2014). Effect of empathy, resilience, self-care on compassion fatigue in oncology nurses. *Jkana*, *20*(4), 373–382. https://doi.org/10.11111/jkana.2014.20.4.373

Cieslak, R., Shoji, K., Douglas, A., Melville, E., Luszczynska, A., & Benight, C. C. (2014). A meta-analysis of the relationship between job burnout and secondary traumatic stress among workers with indirect exposure to trauma. *Psychological Services*, *11*(1), 75–86. https://doi.org/10.1037/a0033798

Circenis, K., & Millere, I. (2011). Compassion fatigue, burnout and contributory factors among nurses in Latvia. *Procedia - Social and Behavioral Sciences*, *30*, 2042–2046. https://doi.org/10.1016/j.sbspro.2011.10.395

Coetzee, S. K., & Klopper, H. C. (2010). Compassion fatigue within nursing practice: A concept analysis. *Nursing & Health Sciences*, *12*(2), 235–243. https://doi.org/10.1111/j.1442-2018.2010.00526.x

Connor, J. B. (2016). Cultural influence on coping strategies of Filipino nurses. *Workplace Health & Safety*, *64*(5), 195–201. https://doi.org/10.1177/2165079916630553

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

Coomber, B., & Barriball, L. K. (2007). Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: A review of the research literature. *International Journal of Nursing Studies*, *44*(2), 297–314. https://doi.org/10.1016/j.ijnurstu.2006.02.004

Dasan, S., Gohil, P., Cornelius, V., & Taylor, C. (2015). Prevalence, causes and consequences of compassion satisfaction and compassion fatigue in emergency care: A mixed-methods study of UK NHS Consultants. *Emergency Medicine Journal*, *32*(8), 588–594. https://doi.org/10.1136/emermed-2014-203671

De Diego-Cordero, R., Iglesias-Romo, M., Badanta, B., Lucchetti, G., & Vega-Escaño, J. (2021). Burnout and spirituality among nurses: A scoping review. *EXPLORE*. https://doi.org/10.1016/j.explore.2021.08.001

Delaney, M. C. (2018). Caring for the caregivers: Evaluation of the effect of an eight-week pilot mindful self-compassion (MSC) training program on nurses' compassion fatigue and resilience. *PLOS ONE*, *13*(11), e0207261. https://doi.org/10.1371/journal.pone.0207261

Deldar, K., Froutan, R., Dalvand, S., Gheshlagh, R. G., & Mazloum, S. R. (2018). The relationship between resiliency and burnout in Iranian nurses: A systematic review and meta-analysis. *Open Access Macedonian Journal of Medical Sciences*, *6*(11), 2250–2256. PubMed. https://doi.org/10.3889/oamjms.2018.428

Dickson, M. W., Den Hartog, D. N., & Mitchelson, J. K. (2003). Research on leadership in a cross-cultural context: Making progress, and raising new questions. *The Leadership Quarterly*, *14*(6), 729–768. https://doi.org/10.1016/j.leaqua.2003.09.002

Ding, Y., Yang, Y., Yang, X., Zhang, T., Qiu, X., He, X., Wang, W., Wang, L., & Sui, H. (2015). The mediating role of coping style in the relationship between psychological capital and burnout among Chinese nurses. *PloS One*, *10*(4), e0122128.

Dominguez-Gomez, E., & Rutledge, D. N. (2009). Prevalence of secondary traumatic stress among emergency nurses. *Journal of Emergency Nursing*, *35*(3), 199–204. https://doi.org/10.1016/j.jen.2008.05.003

Drach-Zahavy, A., & Marzuq, N. (2013). The weekend matters: Exploring when and how nurses best recover from work stress. *Journal of Advanced Nursing*, *69*(3), 578–589. https://doi.org/10.1111/j.1365-2648.2012.06033.x

Duarte, J., & Pinto-Gouveia, J. (2017). The role of psychological factors in oncology nurses' burnout and compassion fatigue symptoms. *European Journal of Oncology Nursing*, *28*, 114–121. https://doi.org/10.1016/j.ejon.2017.04.002

Ducharme, L. J., & Martin, J. K. (2000). Unrewarding work, coworker support, and job satisfaction: A test of the buffering hypothesis. *Work and Occupations*, *27*(2), 223–243. https://doi.org/10.1177/0730888400027002005

Duffy, E., Avalos, G., & Dowling, M. (2015). Secondary traumatic stress among emergency nurses: A cross-sectional study. *International Emergency Nursing*, *23*(2), 53–58. https://doi.org/10.1016/j.ienj.2014.05.001

Dworkin, E. R., Sorell, N. R., & Allen, N. E. (2014). Individual- and setting-level correlates of secondary traumatic stress in rape crisis center staff. *Journal of Interpersonal Violence*, *31*(4), 743–752. https://doi.org/10.1177/0886260514556111

Eastburg, M. C., Williamson, M., Gorsuch, R., & Ridley, C. (1994). Social support, personality, and burnout in nurses. *Journal of Applied Social Psychology*, *24*(14), 1233–1250. https://doi.org/10.1111/j.1559-1816.1994.tb00556.x

Ekedahl, M. A., & Wengström, Y. (2010). Caritas, spirituality and religiosity in nurses' coping. *European Journal of Cancer Care*, *19*(4), 530–537. https://doi.org/10.1111/j.1365-2354.2009.01089.x

Ensher, E. A., Thomas, C., & Murphy, S. E. (2001). Comparison of traditional, step-ahead, and peer mentoring on protégés' support, satisfaction, and perceptions of career success: A social exchange perspective. *Journal of Business and Psychology*, *15*, 419–438. https://doi.org/10.1023/A:1007870600459

Fernandez, D. R., Carlson, D. S., Stepina, L. P., & Nicholson, J. D. (1997). Hofstede's country classification 25 years later. *The Journal of Social Psychology*, *137*(1), 43–54. https://doi.org/10.1080/00224549709595412

Feskanich, D., Hastrup, J. L., Marshall, J. R., Colditz, G. A., Stampfer, M. J., Willett, W. C., & Kawachi, I. (2002). Stress and suicide in the Nurses' Health Study. *Journal of Epidemiology and Community Health*, *56*(2), 95–98. https://doi.org/10.1136/jech.56.2.95

Figley, C. R. (1995). Compassion fatigue: Toward a new understanding of the costs of caring. In B. H. Stamm (Ed.), *Secondary traumatic stress: Self-care issues for clinicians, researchers, and educators* (pp. 3–28). The Sidran Press.

Flarity, K., Gentry, J. E., & Mesnikoff, N. (2013). The effectiveness of an educational program on preventing and treating compassion fatigue in emergency nurses. *Advanced Emergency Nursing Journal*, *35*(3). https://journals.lww.com/aenjournal/Fulltext/2013/07000/The_Effectiveness_of_an_Educational_Program_on.8.aspx

Flickinger, C. (2019). The relationship of self-care, resilience, and secondary traumatic stress in nurses [N.P., University of Phoenix]. In *ProQuest Dissertations and Theses* (2240035159). ProQuest Dissertations & Theses A&I; ProQuest Dissertations & Theses Global. https://www.proquest.com/dissertations-theses/relationship-self-care-resilience-secondary/docview/2240035159/se-2?accountid=10901

Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology*, *48*(1), 150–170. https://doi.org/10.1037//0022-3514.48.1.150

Foureur, M., Besley, K., Burton, G., Yu, N., & Crisp, J. (2013). Enhancing the resilience of nurses and midwives: Pilot of a mindfulness based program for increased health, sense of coherence and decreased depression, anxiety and stress. *Contemporary Nurse*, *45*(1), 114–125. https://doi.org/10.5172/conu.2013.45.1.114

Garrosa, E., Rainho, C., Moreno-Jiménez, B., & Monteiro, M. J. (2010). The relationship between job stressors, hardy personality, coping resources and burnout in a sample of nurses: A correlational study at two time points. *International Journal of Nursing Studies*, *47*(2), 205–215. https://doi.org/10.1016/j.ijnurstu.2009.05.014

Gentry, J. E., Baranowsky, A. B., & Dunning, K. (2002). ARP: The Accelerated Recovery Program (ARP) for compassion fatigue. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 123–137). Brunner-Rutledge.

Gómez-Urquiza, J. L., De la Fuente-Solana, E. I., Albendín-García, L., Vargas-Pecino, C., Ortega-Campos, E. M., & Cañadas-De la Fuente, G. A. (2017). Prevalence of burnout syndrome in emergency nurses: A meta-analysis. *Critical Care Nurse*, *37*(5), e1–e9. https://doi.org/10.4037/ccn2017508

Guillaumie, L., Boiral, O., & Champagne, J. (2017). A mixed-methods systematic review of the effects of mindfulness on nurses. *Journal of Advanced Nursing*, *73*(5), 1017–1034. https://doi.org/10.1111/jan.13176

Guo, Y., Luo, Y., Lam, L., Cross, W., Plummer, V., & Zhang, J. (2018). Burnout and its association with resilience in nurses: A cross-sectional study. *Journal of Clinical Nursing*, *27*(1–2), 441–449. https://doi.org/10.1111/jocn.13952

Hamaideh, S. H. (2011). Burnout, social support, and job satisfaction among Jordanian mental health nurses. *Issues in Mental Health Nursing*, *32*(4), 234–242. https://doi.org/10.3109/01612840.2010.546494

Hamama, L., Hamama-Raz, Y., Stokar, Y. N., Pat-Horenczyk, R., Brom, D., & Bron-Harlev, E. (2019). Burnout and perceived social support: The mediating role of secondary traumatization in nurses vs. Physicians. *Journal of Advanced Nursing*, *75*(11), 2742–2752. https://doi.org/10.1111/jan.14122

Harari, M. B., Manapragada, A., & Viswesvaran, C. (2017). Who thinks they're a big fish in a small pond and why does it matter? A meta-analysis of perceived overqualification. *Journal of Vocational Behavior*, *102*, 28–47. https://doi.org/10.1016/j.jvb.2017.06.002

Haslam, S. A., Reicher, S. D., & Levine, M. (2012). When other people are heaven, when other people are hell: How social identity determines the nature and impact of social support. *The Social Cure: Identity, Health and Well-Being.*, 157–174.

Healy, S., & Tyrrell, M. (2011). Stress in emergency departments: Experiences of nurses and doctors: Sonya Healy and Mark Tyrrell review accounts of acute stress among healthcare professionals and show how it can be anticipated, reduced and managed. *Emergency Nurse*, *4*, 31. Gale Health and Wellness.

Hegney, D. G., Craigie, M., Hemsworth, D., Osseiran-Moisson, R., Aoun, S., Francis, K., & Drury, V. (2014). Compassion satisfaction, compassion fatigue, anxiety, depression and stress in registered nurses in Australia: Study 1 results. *Journal of Nursing Management*, *22*(4), 506–518. https://doi.org/10.1111/jonm.12160

Henderson, A., & Eaton, E. (2013). Assisting nurses to facilitate student and new graduate learning in practice settings: What 'support' do nurses at the bedside need? *Nurse Education in Practice*, *13*(3), 197–201. https://doi.org/10.1016/j.nepr.2012.09.005

Hensel, J. M., Ruiz, C., Finney, C., & Dewa, C. S. (2015). Meta-analysis of risk factors for secondary traumatic stress in therapeutic work with trauma victims. *Journal of Traumatic Stress*, *28*(2), 83–91. https://doi.org/10.1002/jts.21998

Higgins, J. P. T., & Thompson, S. G. (2002). Quantifying heterogeneity in a meta-analysis. *Statistics in Medicine*, *21*(11), 1539–1558. https://doi.org/10.1002/sim.1186

Higgins, J. P. T., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analyses. *BMJ*, *327*(7414), 557. https://doi.org/10.1136/bmj.327.7414.557

Hinderer, K. A., VonRueden, K. T., Friedmann, E., McQuillan, K. A., Gilmore, R., Kramer, B., & Murray, M. (2014). Burnout, compassion fatigue, compassion satisfaction, and secondary traumatic stress in trauma nurses. *Journal of Trauma Nursing | JTN*, *21*(4). https://journals.lww.com/journaloftraumanursing/Fulltext/2014/07000/Burnout,_Compassion_Fatigue,_Compassion.6.aspx

Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. SAGE Publications.

Hofstede, G. (2021). *Hofstede insights*. Hofstede Insights. https://www.hofstede-insights.com/

Hooper, C., Craig, J., Janvrin, D. R., Wetsel, M. A., & Reimels, E. (2010). Compassion satisfaction, burnout, and compassion fatigue among emergency nurses compared with nurses in other selected inpatient specialties. *Journal of Emergency Nursing*, *36*(5), 420–427. https://doi.org/10.1016/j.jen.2009.11.027

Hotchkiss, J. T. (2018). Mindful self-care and secondary traumatic stress mediate a relationship between compassion satisfaction and burnout risk among hospice care professionals. *American Journal of Hospice and Palliative Medicine®*, *35*(8), 1099–1108. https://doi.org/10.1177/1049909118756657

Huggard, P. (2011). Caring for the carers: Compassion fatigue and disenfranchised grief. *Science with Feeling: Animal and People*, *28*, 67–71.

Hunsaker, S., Chen, H.-C., Maughan, D., & Heaston, S. (2015). Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *Journal of Nursing Scholarship*, *47*(2), 186–194. https://doi.org/10.1111/jnu.12122

Hunter, J. E., & Schmidt, F. L. (1990). *Methods of meta-analysis: Correcting error and bias in research findings*. SAGE Publications.

Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis: Correcting error and bias in research findings* (2nd Edition). Sage.

Inglehart, R., & Norris, P. (2004). *Sacred and Secular: Religion and Politics Worldwide. Cambridge Studies in Social Theory, Religion, and Politics.* Cambridge University Press Cambridge.

Ioannidis, J. P. A., Patsopoulos, N. A., & Evangelou, E. (2007). Uncertainty in heterogeneity estimates in meta-analyses. *BMJ*, *335*(7626), 914. https://doi.org/10.1136/bmj.39343.408449.80

Jarrad, R., Hammad, S., Shawashi, T., & Mahmoud, N. (2018). Compassion fatigue and substance use among nurses. *Annals of General Psychiatry*, *17*(1), 13. https://doi.org/10.1186/s12991-018-0183-5

Kaplan, J. B., Bergman, A. L., Christopher, M., Bowen, S., & Hunsinger, M. (2017). Role of resilience in mindfulness training for first responders. *Mindfulness*, *8*(5), 1373–1380. https://doi.org/10.1007/s12671-017-0713-2

Kellogg, M. B., Knight, M., Dowling, J. S., & Crawford, S. L. (2018). Secondary traumatic stress in pediatric nurses. *Journal of Pediatric Nursing*, *43*, 97–103. https://doi.org/10.1016/j.pedn.2018.08.016

Kemper, K. J., Mo, X., & Khayat, R. (2015). Are mindfulness and self-compassion associated with sleep and resilience in health professionals? *The Journal of Alternative and Complementary Medicine*, *21*(8), 496–503. https://doi.org/10.1089/acm.2014.0281

Kent de Grey, R. G., Uchino, B. N., Trettevik, R., Cronan, S., & Hogan, J. N. (2018). Social support and sleep: A meta-analysis. *Health Psychology*, *37*(8), 787–798. https://doi.org/10.1037/hea0000628

Kepes, S., Banks, G. C., McDaniel, M., & Whetzel, D. L. (2012). Publication bias in the organizational sciences. *Organizational Research Methods*, *15*(4), 624–662. https://doi.org/10.1177/1094428112452760

Keye, M. D., & Pidgeon, A. M. (2013). Investigation of the relationship between resilience, mindfulness, and academic self-efficacy. *Open Journal of Social Sciences*, *1*(6), 1–4.

Kim, Y.-J., Van Dyne, L., Kamdar, D., & Johnson, R. E. (2013). Why and when do motives matter? An integrative model of motives, role cognitions, and social support as predictors of OCB. *Organizational Behavior and Human Decision Processes*, *121*(2), 231–245. https://doi.org/10.1016/j.obhdp.2013.03.004

Komachi, M. H., Kamibeppu, K., Nishi, D., & Matsuoka, Y. (2012). Secondary traumatic stress and associated factors among Japanese nurses working in hospitals. *International Journal of Nursing Practice*, *18*(2), 155–163. https://doi.org/10.1111/j.1440-172X.2012.02014.x

Kravits, K., McAllister-Black, R., Grant, M., & Kirk, C. (2010). Self-care strategies for nurses: A psycho-educational intervention for stress reduction and the prevention of burnout. *Applied Nursing Research*, *23*(3), 130–138. https://doi.org/10.1016/j.apnr.2008.08.002

Labrague, L. J., & de los Santos, J. A. A. (2020). Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses. *Journal of Nursing Management*, *n/a*(n/a). https://doi.org/10.1111/jonm.13168

Labrague, L. J., & de los Santos, J. A. A. (2021). Resilience as a mediator between compassion fatigue, nurses' work outcomes, and quality of care during the COVID-19 pandemic. *Applied Nursing Research*, *61*, 151476. https://doi.org/10.1016/j.apnr.2021.151476

Lacovides, A., Fountoulakis, K. N., Moysidou, C., & Ierodiakonou, C. (1999). Burnout in nursing staff: Is there a relationship between depression and burnout? *The International Journal of Psychiatry in Medicine*, *29*(4), 421–433. https://doi.org/10.2190/5YHH-4CVF-99M4-MJ28

Lam, A. G., & Zane, N. W. S. (2004). Ethnic differences in coping with interpersonal stressors: A test of self-construals as cultural mediators. *Journal of Cross-Cultural Psychology*, *35*(4), 446–459. https://doi.org/10.1177/0022022104266108

Lam, S. S. K., Schaubroeck, J., & Aryee, S. (2002). Relationship between organizational justice and employee work outcomes: A cross-national study. *Journal of Organizational Behavior*, *23*(1), 1–18. https://doi.org/10.1002/job.131

Lambert, V. A., Lambert, C. E., Itano, J., Inouye, J., Kim, S., Kuniviktikul, W., Sitthimongkol, Y., Pongthavornkamol, K., Gasemgitvattana, S., & Ito, M. (2004). Cross-cultural comparison of workplace stressors, ways of coping and demographic characteristics as predictors of physical and mental health among hospital nurses in Japan, Thailand, South Korea and the USA (Hawaii). *International Journal of Nursing Studies*, *41*(6), 671–684. https://doi.org/10.1016/j.ijnurstu.2004.02.003

Lan, H. K., Subramanian, P., Rahmat, N., & Kar, P. C. (2014). The effects of mindfulness training program on reducing stress and promoting well-being among nurses in critical care units. *The Australian Journal of Advanced Nursing*, *31*(3), 22–31. https://search.informit.org/doi/10.3316/ielapa.285671898965330

Lanz, J. J. (2020). Evidence-based resilience intervention on nursing students: A randomized controlled pilot trial. *International Journal of Applied Positive Psychology*, *5*(3), 217–230. https://doi.org/10.1007/s41042-020-00034-8

Lee, H.-F., Kuo, C.-C., Chien, T.-W., & Wang, Y.-R. (2016). A meta-analysis of the effects of coping strategies on reducing nurse burnout. *Applied Nursing Research*, *31*, 100–110. https://doi.org/10.1016/j.apnr.2016.01.001

Lee, J., & Cho, Y. H. (2016). Gender differences in job stress and stress coping strategies among Korean nurses. *International Journal of Bio-Science and Bio-Technology*, *8*(3), 143–148.

Leiter, M. P., & Maslach, C. (2009). Nurse turnover: The mediating role of burnout. *Journal of Nursing Management*, *17*(3), 331–339. https://doi.org/10.1111/j.1365-2834.2009.01004.x

Li, X., Guan, L., Chang, H., & Zhang, B. (2014). Core self-evaluation and burnout among nurses: The mediating role of coping styles. *PloS One*, *9*(12), e115799.

Liakopoulou, M., Panaretaki, I., Papadakis, V., Katsika, A., Sarafidou, J., Laskari, H., Anastasopoulos, I., Vessalas, G., Bouhoutsou, D., Papaevangelou, V., Polychronopoulou, S., & Haidas, S. (2008). Burnout, staff support, and coping in pediatric oncology. *Supportive Care in Cancer*, *16*(2), 143–150. https://doi.org/10.1007/s00520-007-0297-9

Lim, J., Bogossian, F., & Ahern, K. (2010). Stress and coping in Australian nurses: A systematic review. *International Nursing Review*, *57*(1), 22–31. https://doi.org/10.1111/j.1466-7657.2009.00765.x

Lipowski, Z. J. (1988). Somatization: The concept and its clinical application. *The American Journal of Psychiatry*, *145*(11), 1358–1368. https://doi.org/10.1176/ajp.145.11.1358

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance satisfaction. *Personnel Psychology*, *60*(3), 541–572. https://doi.org/10.1111/j.1744-6570.2007.00083.x

Mangoulia, P., Koukia, E., Alevizopoulos, G., Fildissis, G., & Katostaras, T. (2015). Prevalence of secondary traumatic stress among psychiatric nurses in Greece. *Archives of Psychiatric Nursing*, *29*(5), 333–338. https://doi.org/10.1016/j.apnu.2015.06.001

Marcinkus, W. C., Whelan-Berry, K. S., & Gordon, J. R. (2007). The relationship of social support to the work-family balance and work outcomes of midlife women. *Women in Management Review*, *22*(2), 86–111. https://doi.org/10.1108/09649420710732060

Mark, G., & Smith, A. P. (2012). Occupational stress, job characteristics, coping, and the mental health of nurses. *British Journal of Health Psychology*, *17*(3), 505–521. https://doi.org/10.1111/j.2044-8287.2011.02051.x

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, *98*(2), 224–253. https://doi.org/10.1037/0033-295X.98.2.224

Maslach, C., & Jackson, S. (1981). Burnout in health professions: A social psychological analysis. In G. Sanders & J. Susl (Eds.), *Social Psychology of Health and Illness* (pp. 227–251).

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, *52*(1), 397–422. https://doi.org/10.1146/annurev.psych.52.1.397

Mason, H. D., & Nel, J. A. (2012). Compassion fatigue, burnout, and compassion satisfaction: Prevalence among nursing students. *Journal of Psychology in Africa*, *22*(3), 451–455. https://doi.org/10.1080/14330237.2012.10820554

Masten, A. S., & O'Connor, M. J. (1989). Vulnerability, stress, and resilience in the early development of a high risk child. *Journal of the American Academy of Child & Adolescent Psychiatry*, *28*(2), 274–278. https://doi.org/10.1097/00004583-198903000-00021

Maytum, J. C., Heiman, M. B., & Garwick, A. W. (2004). Compassion fatigue and burnout in nurses who work with children with chronic conditions and their families. *Journal of Pediatric Health Care*, *18*(4), 171–179. https://doi.org/10.1016/j.pedhc.2003.12.005

McDaniel, M. A. (2009). *Cumulative meta-analysis as a publication bias method*. 1–14. http://www.people.vcu.edu/~mamcdani/Publications/Cumulative%20meta-analysis%20as%20a%20publication%20bias%20method%20Final%20SIOP%202009.pdf

Meadors, P., & Lamson, A. (2008). Compassion fatigue and secondary traumatization: Provider self care on intensive care units for children. *Journal of Pediatric Health Care*, *22*(1), 24–34. https://doi.org/10.1016/j.pedhc.2007.01.006

Meadors, P., Lamson, A., Swanson, M., White, M., & Sira, N. (2010). Secondary traumatization in pediatric healthcare providers: Compassion fatigue, burnout, and secondary traumatic stress. *OMEGA - Journal of Death and Dying*, *60*(2), 103–128. https://doi.org/10.2190/OM.60.2.a

Mealer, M. L., Conrad, D., Evans, J., Jooste, K., Solyntjes, J., Rothbaum, B., & Moss, M. (2014). Feasibility and acceptability of a resilience training program for intensive care unit nurses. *American Journal of Critical Care*, *23*(6), e97–e105. https://doi.org/10.4037/ajcc2014747

Medland, J., Howard-Ruben, J., & Whitaker, E. (2004). Fostering psychosocial wellness in oncology nurses: Addressing burnout and social support in the workplace. *Oncology Nursing Forum*, *31*(1), 47–54. Academic Search Complete.

Minnick, A. F. (2000). Retirement, the nursing workforce, and the year 2005. *Nursing Outlook*, *48*(5), 211–217. https://doi.org/10.1067/mno.2000.108852

Molnar, B. E., Sprang, G., Killian, K. D., Gottfried, R., Emery, V., & Bride, B. E. (2017). Advancing science and practice for vicarious traumatization/secondary traumatic stress: A research agenda. *Traumatology*, *23*(2), 129–142. https://doi.org/10.1037/trm0000122

Monat, A., & Lazarus, R. S. (1991). Stress and coping– Some current issues and controversies. In A. Monat & R. S. Lazarus (Eds.), *Stress and coping: An anthology* (pp. 1–15). Columbia University Press.

Moore, B. M., & Schellinger, K. (2018). An examination of the moderating effect of proactive coping in NICU nurses. *The Journal of Perinatal & Neonatal Nursing*, *32*(3). https://journals.lww.com/jpnnjournal/Fulltext/2018/07000/An_Examination_of_the_Moderating_Effect_of.15.aspx

Moustaka, E., & Theodoros, C. (2010). Sources and effects of work-related stress in nursing. *Health Science Journal*, *4*(4), 210–216.

Nahm, E.-S., Warren, J., Zhu, S., An, M., & Brown, J. (2012). Nurses' self-care behaviors related to weight and stress. *Anniversary Issue: 60 Years of Leading the Field*, *60*(5), e23–e31. https://doi.org/10.1016/j.outlook.2012.04.005

Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology*, *96*, 71–94. https://doi.org/10.1037/a0021484

Naruse, T., Taguchi, A., Kuwahara, Y., Nagata, S., Watai, I., & Murashima, S. (2012). Relationship between perceived time pressure during visits and burnout among home visiting nurses in Japan. *Japan Journal of Nursing Science*, *9*(2), 185–194. https://doi.org/10.1111/j.1742-7924.2011.00201.x

Neville, K., & Cole, D. A. (2013). The relationships among health promotion behaviors, compassion fatigue, burnout, and compassion satisfaction in nurses practicing in a community medical center. *JONA: The Journal of Nursing Administration*, *43*(6). https://journals.lww.com/jonajournal/Fulltext/2013/06000/The_Relationships_Among_Health_Promotion.11.aspx

Nimmo, A., & Huggard, P. (2013). A systematic review of the measurement of compassion fatigue, vicarious trauma, and secondary traumatic stress in physicians. *Australasian Journal of Disaster and Trauma Studies*, *2013–1*, 37–44.

Nooney, J. G., Unruh, L., & Yore, M. M. (2010). Should I stay or should I go? Career change and labor force separation among registered nurses in the U.S. *Social Science & Medicine*, *70*(12), 1874–1881. https://doi.org/10.1016/j.socscimed.2010.02.037

O'Mahony, S., Ziadni, M., Hoerger, M., Levine, S., Baron, A., & Gerhart, J. (2017). Compassion fatigue among palliative care clinicians: Findings on personality factors and years of service. *American Journal of Hospice and Palliative Medicine®*, *35*(2), 343–347. https://doi.org/10.1177/1049909117701695

Ong, A. D., Bergeman, C. S., Bisconti, T. L., & Wallace, K. A. (2006). Psychological resilience, positive emotions, and successful adaptation to stress in later life. *Journal of Personality and Social Psychology*, *91*(4), 730–749. https://doi.org/10.1037/0022-3514.91.4.730

Ortega-Campos, E., Vargas-Román, K., Velando-Soriano, A., Suleiman-Martos, N., Cañadas-de la Fuente, G. A., Albendín-García, L., & Gómez-Urquiza, J. L. (2020). Compassion fatigue, compassion satisfaction, and burnout in oncology nurses: A systematic review and meta-analysis. *Sustainability*, *12*(72), 1–12. https://doi.org/10.3390/su12010072

Park, C. L., & Adler, N. E. (2003). Coping style as a predictor of health and well-being across the first year of medical school. *Health Psychology*, *22*(6), 627–631. https://doi.org/10.1037/0278-6133.22.6.627

Parks, K. M., & Steelman, L. A. (2008). Organizational wellness programs: A meta-analysis. *Journal of Occupational Health Psychology*, *13*(1), 58–68. https://doi.org/10.1037/1076-8998.13.1.58

Perron, B. E., & Hiltz, B. S. (2006). Burnout and secondary trauma among forensic interviews of abused children. *Child and Adolescent Social Work Journal*, *23*(2), 216–234. https://doi.org/10.1007/s10560-005-0044-3

Pidgeon, A. M., & Keye, M. (2014). Relationship between resilience, mindfulness, and pyschological well-being in university students. *International Journal of Liberal Arts and Social Science*, *2*(5), 27–32.

Pigott, T. D., & Polanin, J. R. (2020). Methodological guidance paper: High-quality meta-analysis in a systematic review. *Review of Educational Research*, *90*(1), 24–46. https://doi.org/10.3102/0034654319877153

Poghosyan, L., Clarke, S. P., Finlayson, M., & Aiken, L. H. (2010). Nurse burnout and quality of care: Cross-national investigation in six countries. *Research in Nursing & Health*, *33*(4), 288–298. https://doi.org/10.1002/nur.20383

Polat, Ş., & Terzi, B. (2021). Relationships between perceived support types and the job satisfaction levels of nurses. *Perspectives in Psychiatric Care*, *57*(3), 1202–1211. https://doi.org/10.1111/ppc.12675

Pradas-Hernández, L., Ariza, T., Gómez-Urquiza, J. L., Albendín-García, L., De la Fuente, E. I., & Cañadas-De la Fuente, G. A. (2018). Prevalence of burnout in paediatric nurses: A systematic review and meta-analysis. *PLOS ONE*, *13*(4), e0195039. https://doi.org/10.1371/journal.pone.0195039

Rafferty, A. E., & Griffin, M. A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *Leadership Quarterly*, *15*, 329–354. https://doi.org/10.1016/j.leaqua.2004.02.009

Ratrout, H. F., & Hamdan-Mansour, A. M. (2017). Factors associated with secondary traumatic stress among emergency nurses: An integrative review. *Open Journal of Nursing*, *7*, 1209–1226.

Robins, P. M., Meltzer, L., & Zelikovsky, N. (2009). The experience of secondary traumatic stress upon care providers working within a children's hospital. *Journal of Pediatric Nursing*, *24*(4), 270–279. https://doi.org/10.1016/j.pedn.2008.03.007

Rockstuhl, T., Eisenberger, R., Shore, L. M., Kurtessis, J. N., Ford, M. T., Buffardi, L. C., & Mesdaghinia, S. (2020). Perceived organizational support (POS) across 54 nations: A cross-cultural meta-analysis of POS effects. *Journal of International Business Studies*, *51*(6), 933–962. https://doi.org/10.1057/s41267-020-00311-3

Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin*, *86*(3), 638–641. https://doi.org/10.1037/0033-2909.86.3.638

Rothstein, H. R., Sutton, A. J., & Borenstein, M. (Eds.). (2005). *Publication bias in meta-analysis: Prevention, assessment and adjustments*. John Wiley & Sons, Ltd.

Rourke, M. T. (2007). Compassion fatigue in pediatric palliative care providers. *Pediatric Clinics of North America*, *54*(5), 631–644. https://doi.org/10.1016/j.pcl.2007.07.004

Rousseau, V., & Aubé, C. (2010). Social support at work and affective commitment to the organization: The moderating effect of job resource adequacy and ambient conditions. *Journal of Social Psychology*, *150*(4), 321–340. https://doi.org/10.1080/00224540903365380

Rudolph, J. M., Stamm, B. H., & Stamm, H. E. (1997). Compassion fatigue: A concern for mental health policy, providers, & administration. *Poster Presented at the 13th Annual Meeting of the International Society for Traumatic Stress Studies*, Montreal, PQ, CA.

Sabo, B. M. (2006). Compassion fatigue and nursing work: Can we accurately capture the consequences of caring work? *International Journal of Nursing Practice*, *12*(3), 136–142. https://doi.org/10.1111/j.1440-172X.2006.00562.x

Salston, M., & Figley, C. R. (2003). Secondary traumatic stress effects of working with survivors of criminal victimization. *Journal of Traumatic Stress*, *16*(2), 167–174. https://doi.org/10.1023/A:1022899207206

Salyers, M. P., Bonfils, K. A., Luther, L., Firmin, R. L., White, D. A., Adams, E. L., & Rollins, A. L. (2017). The relationship between professional burnout and quality and safety in healthcare: A meta-analysis. *Journal of General Internal Medicine*, *32*(4), 475–482. https://doi.org/10.1007/s11606-016-3886-9

Sarafis, P., Rousaki, E., Tsounis, A., Malliarou, M., Lahana, L., Bamidis, P., Niakas, D., & Papastavrou, E. (2016). The impact of occupational stress on nurses' caring behaviors and their health related quality of life. *BMC Nursing*, *15*(1), 1–9. https://doi.org/10.1186/s12912-016-0178-y

Schaubroeck, J., Lam, S. S. K., & Xie, J. L. (2000). Collective efficacy versus self-efficacy in coping responses to stressors and control: A cross-cultural study. *Journal of Applied Psychology*, *85*(4), 512–525. https://doi.org/10.1037/0021-9010.85.4.512

Schmidt, F. L., & Hunter, J. E. (2015). *Methods of meta-analysis: Correcting error and bias in research findings* (Third Edition). https://doi.org/10.4135/9781483398105

Schmidt, F. L., Viswesvaran, C., Ones, D. S., & Le, H. (2017). A failed challenge to validity generalization: Addressing a fundamental misunderstanding of the nature of VG. *Industrial and Organizational Psychology*, *10*(3), 488–495. Cambridge Core. https://doi.org/10.1017/iop.2017.47

Schwartz, S. H. (1999). A theory of cultural values and some implications for work. *Applied Psychology: An International Review*, *48*(1), 23–47. https://doi.org/10.1111/j.1464-0597.1999.tb00047.x

Shan, Z., Li, Y., Zong, G., Guo, Y., Li, J., Manson, J. E., Hu, F. B., Willett, W. C., Schernhammer, E. S., & Bhupathiraju, S. N. (2018). Rotating night shift work and adherence to unhealthy lifestyle in predicting risk of type 2 diabetes: Results from two large US cohorts of female nurses. *BMJ*, *363*, k4641. https://doi.org/10.1136/bmj.k4641

Shek, D. T. L. (2004). Chinese cultural beliefs about adversity: Its relationship to psychological well-being, school adjustment and problem behaviour in Hong Kong adolescents with and without economic disadvantage. *Childhood*, *11*(1), 63–80. https://doi.org/10.1177/0907568204040185

Shinbara, C. G., & Olson, L. (2010). When nurses grieve: Spirituality's role in coping. *Journal of Christian Nursing*, *27*(1). https://journals.lww.com/journalofchristiannursing/Fulltext/2010/01000/When_Nurses_Grieve__Spirituality_s_Role_in_Coping.13.aspx

Sinclair, S., Raffin-Bouchal, S., Venturato, L., Mijovic-Kondejewski, J., & Smith-MacDonald, L. (2017). Compassion fatigue: A meta-narrative review of the healthcare literature. *International Journal of Nursing Studies*, *69*, 9–24. https://doi.org/10.1016/j.ijnurstu.2017.01.003

Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*, *20*(5), 580–591. https://doi.org/10.1177/0146167294205014

Slocum-Gori, S., Hemsworth, D., Chan, W. W. Y., Carson, A., & Kazanjian, A. (2011). Understanding compassion satisfaction, compassion fatigue and burnout: A survey of the hospice palliative care workforce. *Palliative Medicine*, *27*(2), 172–178. https://doi.org/10.1177/0269216311431311

Sonnentag, S., & Fritz, C. (2007). The Recovery Experience Questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology*, *12*(3), 204–221. https://doi.org/10.1037/1076-8998.12.3.204

Sorenson, C., Bolick, B., Wright, K., & Hamilton, R. (2016). Understanding compassion fatigue in healthcare providers: A review of current literature. *Journal of Nursing Scholarship*, *48*(5), 456–465. https://doi.org/10.1111/jnu.12229

Sorour, A. S., & El-Maksoud, M. M. A. (2012). Relationship between musculoskeletal disorders, job demands, and burnout among emergency nurses. *Advanced Emergency Nursing Journal*, *34*(3). https://journals.lww.com/aenjournal/Fulltext/2012/07000/Relationship_Between_Musculoskeletal_Disorders,.11.aspx

Sprang, G., Ford, J., Kerig, P., & Bride, B. (2019). Defining secondary traumatic stress and developing targeted assessments and interventions: Lessons learned from research and leading experts. *Traumatology*, *25*(2), 72–81. https://doi.org/10.1037/trm0000180

Stamm, B. H. (2005). *The ProQOL manual*. Compassionfatigue.org. http://compassionfatigue.org/pages/ProQOLManualOct05.pdf

Stamm, B. H. (2010). *The concise ProQOL manual (2nd ed.)*. https://d1wqtxts1xzle7.cloudfront.net/62440629/ProQOL_Concise_2ndEd_12-201020200322-88687-17klwvb.pdf?1584892611=&response-content-disposition=inline%3B+filename%3DThe_Concise_ProQOL_Manual.pdf&Expires=1601061429&Signature=Y69CaK2QgTODxrM5MPjoH3PAOIWxc3p1

Stark, A. (2021). Top 10 work trends for 2021. In *Society for Industrial and Organizational Psychology*. https://www.siop.org/Research-Publications/Items-of-Interest/ArtMID/19366/ArticleID/4914/Top-10-Work-Trends-for-2021

Stimpfel, A. W., Sloane, D. M., & Aiken, L. H. (2012). The longer the shifts for hospital nurses, the higher the levels of burnout and patient dissatisfaction. *Health Affairs, 31*(11), 2501–2509. https://doi.org/10.1377/hlthaff.2011.1377

Suleiman-Martos, N., Gomez-Urquiza, J. L., Aguayo-Estremera, R., Cañadas-De La Fuente, G. A., De La Fuente-Solana, E. I., & Albendín-García, L. (2020). The effect of mindfulness training on burnout syndrome in nursing: A systematic review and meta-analysis. *Journal of Advanced Nursing*, *76*(5), 1124–1140. https://doi.org/10.1111/jan.14318

Sung, K., Seo, Y., & Kim, J. H. (2012). Relationships between compassion fatigue, burnout, and turnover intention in Korean hospital nurses. *Jkan*, *42*(7), 1087–1094. https://doi.org/10.4040/jkan.2012.42.7.1087

Terry, D. J., & Hynes, G. J. (1998). Adjustment to a low-control situation: Reexamining the role of coping responses. *Journal of Personality and Social Psychology*, *74*(4), 1078–1092. https://doi.org/10.1037/0022-3514.74.4.1078

Townsend, S. M., & Campbell, R. (2009). Organizational correlates of secondary traumatic stress and burnout among sexual assault nurse examiners. *Journal of Forensic Nursing*, *5*(2), 97–106. https://doi.org/10.1111/j.1939-3938.2009.01040.x

Tremblay, M. A., & Messervey, D. (2011). The Job Demands-Resources model: Further evidence for the buffering effect of personal resources. *SA Journal of Industrial Psychology*, *37*(2), 1–10.

Turgoose, D., & Maddox, L. (2017). Predictors of compassion fatigue in mental health professionals: A narrative review. *Traumatology, 23*(2), 172–185. https://doi.org/10.1037/trm0000116

Tweed, R. G., & Conway, L. G. (2006). Coping strategies and culturally influenced beliefs about the world. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of Multicultural Perspectives on Stress and Coping* (pp. 133–153). Springer.

Tyson, P. D., & Pongruengphant, R. (1996). Avoidance as a coping strategy for nurses in Thailand. *Psychological Reports, 79*(2), 592–594. https://doi.org/10.2466/pr0.1996.79.2.592

Valent, P. (2002). Diagnosis and treatment of helper stresses, traumas, and illnesses. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 17–38). Routledge.

Van Breda, A. D. (2001). Resilience theory: A literature review. *Pretoria, South Africa: South African Military Health Service*.

Van der Colff, J. J., & Rothmann, S. (2009). Occupational stress, sense of coherence, coping, burnout and work engagement of registered nurses in South Africa. *SA Journal of Industrial Psychology*, *35*(1), 1–10.

Viswesvaran, C., Sanchez, J. I., & Fisher, J. (1999). The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior*, *54*(2), 314–334. https://doi.org/10.1006/jvbe.1998.1661

Viswesvaran, C., Schmidt, F. L., & Ones, D. S. (2002). The moderating influence of job performance dimensions on convergence of supervisory and peer ratings of job performance: Unconfounding construct-level convergence and rating difficulty. *Journal of Applied Psychology*, *87*(2), 345–354. https://doi.org/10.1037/0021-9010.87.2.345

Von Rueden, K. T., Hinderer, K. A., McQuillan, K. A., Murray, M., Logan, T., Kramer, B., Gilmore, R., & Friedmann, E. (2010). Secondary traumatic stress in trauma nurses: Prevalence and exposure, coping, and personal/environmental characteristics. *Journal of Trauma Nursing*, *17*(4). https://journals.lww.com/journaloftraumanursing/Fulltext/2010/10000/Secondary_Traumatic_Stress_in_Trauma_Nurses__.9.aspx

Voss Horrell, S. C., Holohan, D. R., Didion, L. M., & Vance, G. T. (2011). Treating traumatized OEF/OIF veterans: How does trauma treatment affect the clinician? *Professional Psychology: Research and Practice*, *42*(1), 79–86. https://doi.org/10.1037/a0022297

Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the resilience scale. *Journal of Nursing Measurement*, *1*(2), 165–178.

Wang, H. (1998). A meta-analysis of the relationship between social support and well-being. *Kaohsiung J Med Sci*, *14*(11), 717–726. PubMed.

Wang, J., Okoli, C. T. C., He, H., Feng, F., Li, J., Zhuang, L., & Lin, M. (2020). Factors associated with compassion satisfaction, burnout, and secondary traumatic stress among Chinese nurses in tertiary hospitals: A cross-sectional study. *International Journal of Nursing Studies*, *102*, 103472. https://doi.org/10.1016/j.ijnurstu.2019.103472

Wayment, H. A., Huffman, A. H., & Eiler, B. A. (2019). A brief "quiet ego" workplace intervention to reduce compassion fatigue and improve health in hospital healthcare workers. *Applied Nursing Research*, *49*, 80–85. https://doi.org/10.1016/j.apnr.2019.05.002

Wei, H., Kifner, H., Dawes, M. E., Wei, T. L., & Boyd, J. M. (2020). Self-care strategies to combat burnout among pediatric critical care nurses and physicians. *Critical Care Nurse*, *40*(2), 44–53. https://doi.org/10.4037/ccn2020621

Weidlich, C. P., & Ugarriza, D. N. (2015). A pilot study examining the impact of care provider support program on resiliency, coping, and compassion fatigue in military health care providers. *Military Medicine*, *180*(3), 290–295. https://doi.org/10.7205/MILMED-D-14-00216

Wong, P. T. P., & Wong, L. C. J. (Eds.). (2006). *Handbook of multicultural perspectives on stress and coping.* Springer.

Woo, T., Ho, R., Tang, A., & Tam, W. (2020). Global prevalence of burnout symptoms among nurses: A systematic review and meta-analysis. *Journal of Psychiatric Research*, *123*, 9–20. https://doi.org/10.1016/j.jpsychires.2019.12.015

Woodhead, E. L., Northrop, L., & Edelstein, B. (2016). Stress, social support, and burnout among long-term care nursing staff. *Journal of Applied Gerontology*, *35*(1), 84–105. https://doi.org/10.1177/0733464814542465

Wu, H., Sun, W., & Wang, L. (2012). Factors associated with occupational stress among Chinese female emergency nurses. *Emergency Medicine Journal*, *29*(7), 554. https://doi.org/10.1136/emj.2010.094391

Wu, S., Zhu, W., Wang, Z., Wang, M., & Lan, Y. (2007). Relationship between burnout and occupational stress among nurses in China. *Journal of Advanced Nursing*, *59*(3), 233–239. https://doi.org/10.1111/j.1365-2648.2007.04301.x

Wu, S.-Y., Li, H.-Y., Wang, X.-R., Yang, S.-J., & Qiu, H. (2011). A comparison of the effect of work stress on burnout and quality of life between female nurses and female doctors. *Archives of Environmental & Occupational Health*, *66*(4), 193–200. https://doi.org/10.1080/19338244.2010.539639

Xiao, H., Yoon, J. Y., & Bowers, B. (2017). Quality of life of nursing home residents in China: A mediation analysis. *Nursing & Health Sciences*, *19*(2), 149–156. https://doi.org/10.1111/nhs.12288

Xie, W., Chen, L., Feng, F., Okoli, C. T. C., Tang, P., Zeng, L., Jin, M., Zhang, Y., & Wang, J. (2021). The prevalence of compassion satisfaction and compassion fatigue among nurses: A systematic review and meta-analysis. *International Journal of Nursing Studies*, *120*, 103973. https://doi.org/10.1016/j.ijnurstu.2021.103973

Yeh, C. J., Arora, A. K., & Wu, K. A. (2006). A new theoretical model of collectivistic coping. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of Multicultural Perspectives on Stress and Coping* (pp. 55–72). Springer.

Yoder, E. A. (2010). Compassion fatigue in nurses. *Applied Nursing Research*, *23*(4), 191–197. https://doi.org/10.1016/j.apnr.2008.09.003

Yu, H., Jiang, A., & Shen, J. (2016). Prevalence and predictors of compassion fatigue, burnout and compassion satisfaction among oncology nurses: A cross-sectional survey.

*International Journal of Nursing Studies*, *57*, 28–38. https://doi.org/10.1016/j.ijnurstu.2016.01.012

Zadeh, S., Gamba, N., Hudson, C., & Wiener, L. (2012). Taking care of care providers: A wellness program for pediatric nurses. *Journal of Pediatric Oncology Nursing*, *29*(5), 294–299. https://doi.org/10.1177/1043454212451793

Zaff, J. F., Blount, R. L., Phillips, L., & Cohen, L. (2002). The role of ethnic identity and self-construal in coping among African American and Caucasian American Seventh graders: An exploratory analysis of within-group variance. *Adolescence*, *37*(148), 751–773. Social Science Premium Collection.

Zeytinoglu, I. U., Denton, M., Davies, S., Baumann, A., Blythe, J., & Boos, L. (2006). Retaining nurses in their employing hospitals and in the profession: Effects of job preference, unpaid overtime, importance of earnings and stress. *Health Policy*, *79*(1), 57–72. https://doi.org/10.1016/j.healthpol.2005.12.004

Zhang, Y.-Y., Han, W.-L., Qin, W., Yin, H.-X., Zhang, C.-F., Kong, C., & Wang, Y.-L. (2018). Extent of compassion satisfaction, compassion fatigue and burnout in nursing: A meta-analysis. *Journal of Nursing Management*, *26*(7), 810–819. https://doi.org/10.1111/jonm.12589

Zur, J. (1996). From PTSD to voices in context: From an "experience-far" to an "experience-near" understanding of responses to war and atrocity across cultures. *International Journal of Social Psychiatry*, *42*(4), 305–317. https://doi.org/10.1177/002076409604200405

# COLLECTED PAPERS CONCLUSION

The ideas that led to development of this dissertation were inspired by current events surrounding the COVID-19 pandemic, the detrimental impact it has had and continues to have on nurses and healthcare workers in general, and the urgent need to investigate these experiences more thoroughly and identify ways to help nurses around the world cope with occupational stressors and strains. As such, this collected papers dissertation consisted of two studies and utilized a mixed-methods approach. The first study used a qualitative design to answer four research questions: 1) What are the lived experiences of nurses working during the COVID-19 pandemic? 2) How have these experiences influenced nurses' professional and personal lives? 3) What resources have been leveraged and what has been most effective? and 4) What should healthcare organizations do to prepare for future health crises? The second study built upon the first by employing meta-analytical techniques, thus using established quantitative research, to determine which coping strategies have the strongest empirical support for mitigating burnout and compassion fatigue in nurses, and examine whether cultural orientation, namely, individualism, moderates the strength of these relationships. An overall discussion, including practical implications and directions for future research, are discussed in the paragraphs below.

## Discussion

The first paper in this dissertation sought to document and describe the lived experiences of nurses' working in one of the epicenters of the COVID-19 outbreak: South Florida. This study was paramount to understanding how the pandemic has shaped the lives of nurses and identifying actionable plans to better care for our nurses moving

forward. Seven themes were identified via reflexive thematic analysis, including challenges related to working conditions, changes to quality of patient care, the impact of COVID-19 on physical and mental health, the nursing shortage, experiences of post-traumatic growth, coping with workplace experiences, and insight into current frustrations that can help point toward next steps for the healthcare industry.

Several stressors and strains were experienced by the nurses who participated in the study; the changing nature of work (i.e., steps to enter a COVID-19 patient's room, increased workloads) and resourcing, such as inadequate staffing and PPE shortages, were the two overarching occupational stressors experienced. Even prior to the onset of COVID-19, these stressors were familiar to nurses, as research on past disease outbreaks have identified the same challenges (K. K. Lam & Hung, 2013; Shiao et al., 2007), as have periods of normalcy in the workplace (Adib-Hajbaghery et al., 2012; Hayward et al., 2016). Without proper recovery from stressful job demands, strains can become chronic (Sonnentag & Fritz, 2015). What helped participants cope was receiving social support from their personal and professional networks, engaging in self-care strategies like exercise and getting enough rest, and reminding themselves of the meaning behind the work they do. These findings were aligned with the results of the meta-analysis, as social and professional support had a significant negative relationship with burnout, and self-care had a significant negative relationship with burnout and compassion fatigue. Having strong relationships with their networks helps nurses focus on their belief systems, put workplace stressors into perspective, and ultimately, cope with their work environments (Hart et al., 2014b). Further, self-care strategies have been shown to be effective in enhancing problem solving skills and increasing nurses' abilities to focus on

patient needs (Raingruber & Robinson, 2007). Research has also found that nurses with a sense of calling for their career have had better job performance and quality of patient care outcomes during the pandemic (Zhou et al., 2020; Zhu et al., 2020). Despite the challenges and emotional turmoil discussed by participants, a lot of post-traumatic growth was evident in these conversations, which appears to be a common occurrence with nurses during this time (R. Chen et al., 2021). Post-traumatic growth occurred in the form of developing resilience, continuing education, remembering that nurses' work was meaningful, and increased expression of safety voice at work.

Participants had several suggestions for improving their workplaces moving forward, including greater awareness of the day-to-day challenges nurses face on the job and timely, meaningful action taken by the organization to improve working conditions. Nurse supervisors tend to perceive characteristics of the work environment, such as appropriate nurse-patient ratios and distributive justice, more favorably than their employees (Carson et al., 1998), which can lead to inaccurate assessments of workplace experiences, including safety practices (Hurtado et al., 2017). Recommendations could also be made based on the insight nurses provided on their workplace experiences during the pandemic, such as providing adequate staffing and PPE, having strong support systems in place (i.e., coworkers and supervisors), and being given opportunities to engage in self-care practices (i.e., meaningful wellness initiatives and counseling services). Nurses also called for fair compensation, a concern most often associated with less tenured nurses (Ernst et al., 2004), many of which were participants in the current study.

It is well-known that nursing is a stressful occupation (D. Johnston et al., 2016; Sharma et al., 2014), and the COVID-19 pandemic has exacerbated many of the workplace stressors nurses encounter. Nearly all who participated in the qualitative portion of this dissertation reported experiencing some form of a strain, such as burnout and compassion fatigue, thereby providing further support for the high prevalence of these strains (Woo et al., 2020; Y.-Y. Zhang et al., 2018) among nurses globally. Indeed, many questions remained. How can we best serve our nursing population? What resources do they need? What works best for reducing the prevalence of commonly experienced strains? Prior research in these areas could help to guide our understanding of how to best move forward on a larger scale.

While the qualitative study in this dissertation provided insights into the experiences and coping strategies of nurses amid the pandemic, the meta-analysis allowed for the examination of existing research and coping strategies used to alleviate two critical strain outcomes. Therefore, the second study in this collected papers dissertation used 69 independent studies and a meta-analytical approach to identify which coping strategies had the strongest empirical support for mitigating burnout and compassion fatigue in nurses, and whether individualism moderated the strength of these relationships, as some cross-cultural coping research suggests that differences exist in how individuals cope based on their cultural orientation (A. G. Lam & Zane, 2004; Schaubroeck et al., 2000; Zaff et al., 2002). This meta-analysis was unable to answer the original research questions related to STS, but important results emerged from the tested relationships between coping strategies and burnout and compassion fatigue. Specifically, social support had the strongest empirical support for helping nurses cope with burnout,

and self-care had the strongest empirical support for helping nurses cope with compassion fatigue. Nurses often leverage social support to deal with occupational stress and their detrimental consequences on well-being, in addition to other positive coping strategies such as socializing with colleagues, exercising, and engaging in activities at home and with family (Happell et al., 2013; Isa et al., 2019). While social support had the strongest effect size with burnout, several other coping strategies yielded significant negative relationships with this strain, including resilience, relaxation techniques (i.e., mindfulness and meditation), coping approaches (i.e., positive coping, active coping), self-care, and professional support. Self-efficacy and religion did not have significant relationships with burnout. Relaxation techniques, social support, and religion did not have significant relationships with compassion fatigue.

Individualism was tested as a moderator on five relationships in the meta-analysis, all with burnout as the criterion. Three coping strategy categories tested yielded significant moderating results: social and professional support, and resilience. Both social support and resilience had a stronger effects when individualism was high. Professional support, on the other hand, had a stronger effect when individualism was low. Given that collectivistic societies value harmony (P. T. P. Wong & Wong, 2006), issues like burnout may be resolved independently rather than seeking help from others, which could disrupt these balanced relationships. These findings are aligned with the narratives described by the participants from the qualitative study, who indicated social support was critical to their well-being while working through the pandemic, as they leaned on the support from their friends and family. Further, collectivistic societies tend to make group membership a salient part of their identities, as they rely on group characteristics to define who they

are (S. S. K. Lam et al., 2002; Rockstuhl et al., 2020). If nurses from such collectivistic cultures have a salient organizational identity, professional support is likely to have a strong positive impact on burnout, as the findings from the meta-analysis suggest. Given that individualism had a stronger effect on the relationship between social support and burnout at high levels, but low levels when examining professional support as the predictor, it is possible that further research is warranted on not just the source of support, but the function of the support in relation to burnout. Some research on this topic using students from four different countries suggests that collectivistic societies place a greater emphasis on the importance and availability of emotional support, whereas individualistic societies have a stronger preference for the availability of technical support (Pines et al., 2002). Nurses who participated in the qualitative study, all of which belong to an individualistic society, seemed to emphasize the importance of technical support from their coworkers, such as sharing knowledge, training one another, and gathering supplies or medications for busy nurses, which seems to be aligned with this cross-cultural research. Finally, when thinking about resilience, it is important to consider that this may be expressed differently across cultures while most measurements used to capture this construct are based on Western perspectives of resilience (K. M. Connor & Davidson, 2003; Luthans et al., 2007; Wagnild & Young, 1993), which could result in higher scores for people from individualistic societies.

## Practical Implications

This collected papers dissertation offers several practical implications for healthcare organizations and working nurses to use as a guiding framework for future practices and policies aimed at improving nurse health and well-being, and creating

healthy workplaces for nurses to thrive in. First and foremost, wellness needs to be prioritized more strongly by nurses' respective employers, even though facilitating health and well-being can be facilitated at individual and organizational levels. It may seem as though the experience of strains such as burnout and compassion fatigue are the byproduct of inadequate self-care, thereby placing the onus on nurses to do more: practice mindfulness, relax, eat healthy, exercise more, get plenty of sleep. When nurses work extended shifts for several consecutive days without pause, there is no room or energy to do such things. The most effective way to combat these strains starts with examining the workplace, its culture, and its leadership, in addition to its resources and demands, as these are the characteristics that are most likely to contribute to strains in nurses (Najimi et al., 2012). Based on the findings from the qualitative portion of this dissertation, it is evident that the onset of the COVID-19 pandemic has accelerated the development of job strains in nurses, and that healthcare organizations have done little to make a meaningful impact on the prevalence of such experiences. Particularly in the U.S., job strains are perceived as simply a function of working—not being burnt out equates to not working hard enough.

It has become apparent that workplaces must embrace agility and adapt to the changing nature of work by creating workplace environments centered around compassion to ensure that well-being is at the forefront of its goals and initiatives. Strengthening a company's culture involves aligning the mission, values, and actions of all members of the organization from the top-down and ensuring that any barriers to achieving this are identified and removed through inclusive discussion involving employees at all levels (Hofmeyer et al., 2020). A critical piece of creating a

compassionate culture involves having compassionate leadership. Compassionate leadership can manifest itself in several ways, including advocating on behalf of nurses, making oneself available to their team, being open when working with diverse groups, being sensitive, flexible, and accommodating to nurses' childcare responsibilities, and creating opportunities for growth and development (Papadopoulos et al., 2021).

Creating positive employee experiences can contribute to employee engagement which, in turn, facilitates retention of a healthy workforce (Gandhi & Robison, 2021). As an example, healthcare organizations should consider offering nurses weekend breaks as recovery periods, rather than mid-week breaks, which are beneficial to decreasing emotional exhaustion and increasing vigor in nurses (Drach-Zahavy & Marzuq, 2013). Rest breaks help alleviate nurses from their workplace demands (Wendsche et al., 2017). Even micro-breaks can be effective in minimizing the effects of stress on work engagement in nurses (H. Wang et al., 2021). Hofmeyer et al. (2020) recommend promoting flexibility in how nurses work to accommodate nurses' personal responsibilities and reduce burnout while simultaneously increasing engagement. Furthermore, expressing the importance of sleep by promoting work-life balance and creating opportunities for nurses to get adequate amounts of rest, in a high-stress profession like nursing, can be beneficial for reducing absenteeism and improving job performance, workplace safety, decision-making, and interpersonal relationships (Barnes et al., 2016; Gordon et al., 2017; Hafner et al., 2017; Harrison & Horne, 1999). Indeed, many participants from the qualitative study expressed trouble sleeping due to work-related stress and anxiety.

Research has consistently found that access to job resources leads to positive well-being outcomes (Nahrgang et al., 2011). Improving staffing levels, for example, can lead to lower patient failure-to-rescue and mortality rates, as well as shorter hospital stays for patients (Lang et al., 2004). Social support can serve as another job resource for nurses, and there are various ways that different groups of individuals can provide nurses with support, including friends and family. Offering nurses support both on and off the job can come in various forms, including technical and emotional support, rewards and recognition, ongoing feedback, career development opportunities, providing tangible resources, and mentoring and knowledge-sharing (Ducharme & Martin, 2000; Ensher et al., 2001; Henderson & Eaton, 2013; Rafferty & Griffin, 2004; Rousseau & Aubé, 2010) are all valuable ways through which support can be provided to nurses to show that they are appreciated for their efforts and are respected by their leaders (Hofmeyer et al., 2020).

Mindfulness, which was captured under the relaxation techniques category in the meta-analysis and found to only be a significant coping strategy against burnout, can be used as a self-regulation strategy for nurses who are considered at-risk for experiencing strains at work, such as nurses under 30 years old and recent graduates (Aycock & Boyle, 2009). It can also be implemented as a training or intervention by healthcare organizations as part of workplace health promotion programs (Zeller & Levin, 2013). Resilience, found to be a meaningful coping strategy for alleviating burnout through the meta-analysis, has also been shown to be a malleable coping strategy nurses can develop to manage stressful situations at work using positive approaches (Babanataj et al., 2019), and may be effective at reducing burnout in the short-term (Lanz, 2020), making it another effective training program healthcare organizations can leverage and include in

their health promotion programs. It is important to note that while these strategies can be employed at the individual level, it is difficult to do so without the support of the employer, as nurses need organizational resources to cope with job stress. Mindfulness, for example, is difficult to practice without understanding its technique or having the flexibility and time to engage in it on and off the job. Healthcare organizations can help promote these strategies by equipping their nurses with knowledge, providing flexible work arrangements, and creating compassionate cultures that inherently promote well-being.

## Future Research

This collected papers dissertation has hopefully opened new doors for future research to pursue to continue creating healthy workplaces, promote health and well-being among nurses, and better prepare the healthcare field for unprecedented health crises like the COVID-19 pandemic. In terms of better understanding how this pandemic has impacted the nursing population, there are several opportunities to explore in future research. Collecting data from a broader group of nursing units or healthcare workers (i.e., physicians) from not only South Florida, but other cities and/or states where COVID-19 cases are extremely high, around the United States can be beneficial to gaining further insight into their lived experiences during this time and identify overlapping actionable areas. While the qualitative study in this dissertation did not seek to examine differences in the lived experiences of nurses and other healthcare workers by gender, this may be an important avenue for future research to consider. Emerging research on COVID-19 has suggested that women face greater hardships related to their careers and the workplace compared to men (Carli, 2020), so it would be interesting to

better understand how gender and work intersect within the COVID-19 context. Future COVID-19-related research should also examine workplace safety during the pandemic and leverage a qualitative study design, as qualitative data in this area is currently lacking but can provide a lot of insight into how the extensive safety precautions being taken during the pandemic have impacted workplace safety behaviors and attitudes for nurses, and even for healthcare practitioners in general. Lastly, the current qualitative study identified another research need: bridging the gap between education and practice within the nursing field, especially for nurses who have started their careers amidst the pandemic. Longitudinal research in this area may be useful to track strain levels in novice versus more tenured nurses, to better understand how starting a nursing career during a highly stressful period impacts work-related outcomes such as quality of patient care, turnover intentions, and career-change considerations.

More generally, future research could potentially examine the more negative forms of coping, such as drug and alcohol abuse, and their impact on strains like STS, burnout, and compassion fatigue in nurses using meta-analytical techniques to bring more awareness to the harm that these types of counterproductive coping strategies can do to nurses. In a profession like nursing, where patient safety is so critical to success, stressing the importance of healthy forms of coping to mitigate strains like burnout or compassion fatigue is necessary, and any empirical research that can be used to educate nurses on wellness is a step in the right direction. Other strain outcomes, like anxiety and depression, can also be explored in this same line of research. Alternatively, future researchers can leverage meta-analyses to test both positive and negative coping strategies in one study to quantitatively compare findings. Future research is also strongly

encouraged to explore the construct measurement between STS and compassion fatigue, as the current meta-analysis was unable to do so. This type of moderator analysis may be possible by allowing for the inclusion of intervention or experimental research on these two strains. Alternatively, perhaps expanding the literature on STS and compassion fatigue to allow for this type of meta-analysis to be conducted in the future is another route for future research to pursue. A meta-analysis that examines the construct measurement of STS and compassion fatigue can help to conceptually clarify these constructs in the nursing literature and facilitate not only cleaner distinctions, but more precise measurements, in future research between these two strains. In terms of moderator analyses for future meta-analysis on coping strategies and strains in nurses, the source and function of constructs like social support should be considered during testing and examined separately, if possible. Other moderators such as gender and nursing unit may provide further insight into how coping strategies may be differentially utilized by nurses depending on these characteristics. Furthermore, given the current pandemic and its impact on nurses, there is a clear need for more cross-cultural research on the types of coping strategies they may employ to deal with work-related strains, as coping may look different across the world despite these shared lived experiences.

## Concluding Remarks

This collected papers dissertation used a mixed-methods approach to dive deeper into the workplace experiences of nurses within the context of COVID-19 and identify efficacious ways to mitigate burnout and compassion fatigue. Using a qualitative study design, the first paper in this dissertation described the lived experiences of nurses working during the COVID-19 pandemic, and helped to document the various stressors,

strains, serendipitous outcomes, coping strategies, and current workplace needs as told by nurses in South Florida. Using meta-analytical techniques, the second paper in this dissertation examined the effectiveness of various personal and professional coping strategies for burnout and compassion fatigue in nurses and examined individualism as a moderator on these direct relationships. The nursing profession is a selfless career wherein nurses put the lives and needs of those they care for ahead of their own, but this type of prioritization of others often comes at the cost of their own well-being. Given the current circumstances related to the threat of COVID-19, it is more important than ever before to document nurses' workplace experiences and leverage existing research to help inform the coping strategies that are recommended to nurses to help reduce work-related strains, which can be done within personal and professional contexts. It is essential for healthcare organizations to play their part in facilitating nurse wellness by equipping them with adequate resources and creating health workplace cultures, so they may continue to progress in their careers and provide quality patient care to those they look after.

References

Adib-Hajbaghery, M., Khamechian, M., & Alavi, N. M. (2012). Nurses' perception of occupational stress and its influencing factors: A qualitative study. *Iranian Journal of Nursing and Midwifery Research*, *17*(5), 352–359. PubMed.

Aycock, N., & Boyle, D. (2009). Interventions to manage compassion fatigue in oncology nursing. *Clinical Journal of Oncology Nursing*, *13*(2), 183–191.

Babanataj, R., Mazdarani, S., Hesamzadeh, A., Gorji, M. H., & Cherati, J. Y. (2019). Resilience training: Effects on occupational stress and resilience of critical care nurses. *International Journal of Nursing Practice*, *25*(1), e12697. https://doi.org/10.1111/ijn.12697

Barnes, C. M., Jiang, K., & Lepak, D. P. (2016). Sabotaging the benefits of our own human capital: Work unit characteristics and sleep. *Journal of Applied Psychology*, *101*(2), 209–221. https://doi.org/10.1037/apl0000042

Carli, L. L. (2020). Women, gender equality and COVID-19. *Gender in Management: An International Journal*, *35*(7/8), 647–655. https://doi.org/10.1108/GM-07-2020-0236

Carson, P., Carson, K., Yallapragada, R., & Roe, C. (1998). Nursing supervisors' view through rose-colored glasses: An overestimation of employees' positive attitudes. *Health Care Superv*, *16*(4), 68–74. PubMed. https://doi.org/10.1097/00126450-199806000-00011

Chen, R., Sun, C., Chen, J.-J., Jen, H.-J., Kang, X. L., Kao, C.-C., & Chou, K.-R. (2021). A large-scale survey on trauma, burnout, and posttraumatic growth among nurses during the COVID-19 pandemic. *International Journal of Mental Health Nursing*, *30*(1), 102–116. https://doi.org/10.1111/inm.12796

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

Drach-Zahavy, A., & Marzuq, N. (2013). The weekend matters: Exploring when and how nurses best recover from work stress. *Journal of Advanced Nursing*, *69*(3), 578–589. https://doi.org/10.1111/j.1365-2648.2012.06033.x

Ducharme, L. J., & Martin, J. K. (2000). Unrewarding work, coworker support, and job satisfaction: A test of the buffering hypothesis. *Work and Occupations*, *27*(2), 223–243. https://doi.org/10.1177/0730888400027002005

Ensher, E. A., Thomas, C., & Murphy, S. E. (2001). Comparison of traditional, step-ahead, and peer mentoring on protégés' support, satisfaction, and perceptions of career success: A social exchange perspective. *Journal of Business and Psychology*, *15*, 419–438. https://doi.org/10.1023/A:1007870600459

Ernst, M. E., Franco, M., Messmer, P. R., & Gonzalez, J. L. (2004). Nurses' job satisfaction, stress, and recognition in a pediatric setting. *Pediatric Nursing*, *30*(3), 219–228. Gale Academic OneFile.

Gordon, A. M., Mendes, W. B., & Prather, A. A. (2017). The social side of sleep: Elucidating the links between sleep and social processes. *Current Directions in Psychological Science*, *26*(5), 470–475. https://doi.org/10.1177/0963721417712269

Hafner, M., Stepanek, M., Taylor, J., Troxel, W. M., & van Stolk, C. (2017). Why sleep matters- the economic costs of insufficient sleep: A cross-country comparative analysis. *Rand Health Quarterly*, *6*(4), 11–11. PubMed.

Happell, B., Reid-Searl, K., Dwyer, T., Caperchione, C. M., Gaskin, C. J., & Burke, K. J. (2013). How nurses cope with occupational stress outside their workplaces. *Collegian*, *20*(3), 195–199. https://doi.org/10.1016/j.colegn.2012.08.003

Harrison, Y., & Horne, J. A. (1999). One night of sleep loss impairs innovative thinking and flexible decision making. *Organizational Behavior and Human Decision Processes*, *78*(2), 128–145. https://doi.org/10.1006/obhd.1999.2827

Hart, P. L., Brannan, J. D., & De Chesnay, M. (2014). Resilience in nurses: An integrative review. *Journal of Nursing Management*, *22*(6), 720–734. https://doi.org/10.1111/j.1365-2834.2012.01485.x

Hayward, D., Bungay, V., Wolff, A. C., & MacDonald, V. (2016). A qualitative study of experienced nurses' voluntary turnover: Learning from their perspectives. *Journal of Clinical Nursing*, *25*(9–10), 1336–1345. https://doi.org/10.1111/jocn.13210

Henderson, A., & Eaton, E. (2013). Assisting nurses to facilitate student and new graduate learning in practice settings: What 'support' do nurses at the bedside need? *Nurse Education in Practice*, *13*(3), 197–201. https://doi.org/10.1016/j.nepr.2012.09.005

Hofmeyer, A., Taylor, R., & Kennedy, K. (2020). Fostering compassion and reducing burnout: How can health system leaders respond in the Covid-19 pandemic and beyond? *Nurse Education Today*, *94*, 104502–104502. PubMed. https://doi.org/10.1016/j.nedt.2020.104502

Hurtado, D. A., Kim, S.-S., Subramanian, S. V., Dennerlein, J. T., Christiani, D. C., Hashimoto, D. M., & Sorensen, G. (2017). Nurses' but not supervisors' safety practices are linked with job satisfaction. *Journal of Nursing Management*, *25*(7), 491–497. https://doi.org/10.1111/jonm.12484

Isa, K. Q., Ibrahim, M. A., Abdul-Manan, H.-H., Mohd-Salleh, Z.-A. H., Abdul-Mumin, K. H., & Rahman, H. A. (2019). Strategies used to cope with stress by emergency and critical care nurses. *British Journal of Nursing*, *28*(1), 38–42. https://doi.org/10.12968/bjon.2019.28.1.38

Johnston, D., Bell, C., Jones, M., Farquharson, B., Allan, J., Schofield, P., Ricketts, I., & Johnston, M. (2016). Stressors, Appraisal of Stressors, Experienced Stress and Cardiac Response: A Real-Time, Real-Life Investigation of Work Stress in Nurses. *Annals of Behavioral Medicine*, *50*(2), 187–197. https://doi.org/10.1007/s12160-015-9746-8

Lam, A. G., & Zane, N. W. S. (2004). Ethnic differences in coping with interpersonal stressors: A test of self-construals as cultural mediators. *Journal of Cross-Cultural Psychology*, *35*(4), 446–459. https://doi.org/10.1177/0022022104266108

Lam, K. K., & Hung, S. Y. M. (2013). Perceptions of emergency nurses during the human swine influenza outbreak: A qualitative study. *International Emergency Nursing*, *21*(4), 240–246. https://doi.org/10.1016/j.ienj.2012.08.008

Lam, S. S. K., Schaubroeck, J., & Aryee, S. (2002). Relationship between organizational justice and employee work outcomes: A cross-national study. *Journal of Organizational Behavior*, *23*(1), 1–18. https://doi.org/10.1002/job.131

Lang, T. A., Hodge, M., Olson, V., Romano, P. S., & Kravitz, R. L. (2004). Nurse-patient ratios: A systematic review on the effects of nurse staffing on patient, nurse employee, and hospital outcomes. *JONA: The Journal of Nursing Administration*, *34*(7). https://journals.lww.com/jonajournal/Fulltext/2004/07000/Nurse_Patient_Ratios__A_Systematic_Review_on_the.5.aspx

Lanz, J. J. (2020). Evidence-based resilience intervention on nursing students: A randomized controlled pilot trial. *International Journal of Applied Positive Psychology*, *5*(3), 217–230. https://doi.org/10.1007/s41042-020-00034-8

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance satisfaction. *Personnel Psychology*, *60*(3), 541–572. https://doi.org/10.1111/j.1744-6570.2007.00083.x

Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology*, *96*, 71–94. https://doi.org/10.1037/a0021484

Najimi, A., Goudarzi, A. M., & Sharifirad, G. (2012). Causes of job stress in nurses: A cross-sectional study. *Iranian Journal of Nursing and Midwifery Research*, *17*(4), 301–305. PubMed.

Papadopoulos, I., Lazzarino, R., Koulouglioti, C., Aagard, M., Akman, Ö., Alpers, L.-M., Apostolara, P., Araneda-Bernal, J., Biglete-Pangilinan, S., Eldar-Regev, O., González-Gil, M. T., Kouta, C., Krepinska, R., Lesińska-Sawicka, M., Liskova, M., Lopez-Diaz, A. L., Malliarou, M., Martín-García, Á., Muñoz-Solinas, M., … Zorba, A. (2021). The importance of being a compassionate leader: The views of nursing and midwifery managers from around the world. *Journal of Transcultural Nursing*, *32*(6), 765–777. https://doi.org/10.1177/10436596211008214

Pines, A. M., Ben-Ari, A., Utasi, A., & Larson, D. (2002). A cross-cultural investigation of social support and burnout. *European Psychologist*, *7*(4), 256–264. https://doi.org/10.1027/1016-9040.7.4.256

Rafferty, A. E., & Griffin, M. A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *Leadership Quarterly*, *15*, 329–354. https://doi.org/10.1016/j.leaqua.2004.02.009

Raingruber, B., & Robinson, C. (2007). The effectiveness of tai chi, yoga, meditation, and reiki healing sessions in promoting health and enhancing problem solving abilities of registered nurses. *Issues in Mental Health Nursing*, *28*(10), 1141–1155. https://doi.org/10.1080/01612840701581255

Rockstuhl, T., Eisenberger, R., Shore, L. M., Kurtessis, J. N., Ford, M. T., Buffardi, L. C., & Mesdaghinia, S. (2020). Perceived organizational support (POS) across 54 nations: A cross-cultural meta-analysis of POS effects. *Journal of International Business Studies, 51*(6), 933–962. https://doi.org/10.1057/s41267-020-00311-3

Rousseau, V., & Aubé, C. (2010). Social support at work and affective commitment to the organization: The moderating effect of job resource adequacy and ambient conditions. *Journal of Social Psychology*, *150*(4), 321–340. https://doi.org/10.1080/00224540903365380

Schaubroeck, J., Lam, S. S. K., & Xie, J. L. (2000). Collective efficacy versus self-efficacy in coping responses to stressors and control: A cross-cultural study. *Journal of Applied Psychology*, *85*(4), 512–525. https://doi.org/10.1037/0021-9010.85.4.512

Sharma, P., Davey, A., Davey, S., Shukla, A., Shrivastava, K., & Bansal, R. (2014). Occupational stress among staff nurses: Controlling the risk to health. *Indian Journal of Occupational and Environmental Medicine*, *18*(2), 52–56. https://doi.org/10.4103/0019-5278.146890

Shiao, J. S.-C., Koh, D., Lo, L.-H., Lim, M.-K., & Guo, Y. L. (2007). Factors predicting nurses' consideration of leaving their job during the SARS outbreak. *Nursing Ethics*, *14*(1), 5–17. https://doi.org/10.1177/0969733007071350

Sonnentag, S., & Fritz, C. (2015). Recovery from job stress: The stressor-detachment model as an integrative framework. *Journal of Organizational Behavior*, *36*(S1), S72–S103. https://doi.org/10.1002/job.1924

Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the resilience scale. *Journal of Nursing Measurement*, *1*(2), 165–178.

Wang, H., Xu, G., Liang, C., & Li, Z. (2021). Coping with job stress for hospital nurses during the Covid-19 crisis: The joint roles of micro-breaks and psychological detachment. *Journal of Nursing Management*, *n/a*(n/a). https://doi.org/10.1111/jonm.13431

Wendsche, J., Hacker, W., & Wegge, J. (2017). Understaffing and registered nurses' turnover: The moderating role of regular rest breaks. *German Journal of Human Resource Management*, *31*(3), 238–259. https://doi.org/10.1177/2397002216683880

Wong, P. T. P., & Wong, L. C. J. (Eds.). (2006). *Handbook of multicultural perspectives on stress and coping.* Springer.

Woo, T., Ho, R., Tang, A., & Tam, W. (2020). Global prevalence of burnout symptoms among nurses: A systematic review and meta-analysis. *Journal of Psychiatric Research*, *123*, 9–20. https://doi.org/10.1016/j.jpsychires.2019.12.015

Zaff, J. F., Blount, R. L., Phillips, L., & Cohen, L. (2002). The role of ethnic identity and self-construal in coping among African American and Caucasian American Seventh graders: An exploratory analysis of within-group variance. *Adolescence*, *37*(148), 751–773. Social Science Premium Collection.

Zeller, J. M., & Levin, P. F. (2013). Mindfulness interventions to reduce stress among nursing personnel: An occupational health perspective. *Workplace Health & Safety*, *61*(2), 85–89. https://doi.org/10.1177/216507991306100207

Zhang, Y.-Y., Han, W.-L., Qin, W., Yin, H.-X., Zhang, C.-F., Kong, C., & Wang, Y.-L. (2018). Extent of compassion satisfaction, compassion fatigue and burnout in nursing: A meta-analysis. *Journal of Nursing Management*, *26*(7), 810–819. https://doi.org/10.1111/jonm.12589

Zhou, Y., Asante, E. A., Zhuang, Y., Wang, J., Zhu, Y., & Shen, L. (2020). Surviving an infectious disease outbreak: How does nurse calling influence performance during the COVID-19 fight? *Journal of Nursing Management*, *n/a*(n/a). https://doi.org/10.1111/jonm.13181

Zhu, Y., Chen, T., Wang, J., Wang, M., Johnson, R. E., & Jin, Y. (2020). How critical activities within COVID-19 intensive care units increase nurses' daily occupational calling. *Journal of Applied Psychology*. https://doi.org/10.1037/apl0000853

Appendix

**Study One Recruitment Script**

Calling all nurses!

As part of my dissertation research, I am recruiting 20 nurses working in South Florida during the COVID-19 pandemic. The purpose of this study is to better understand your personal and work experiences related to working during the current pandemic. This research will help tell the story of your lived experiences as a nurse during this time, and the conclusions drawn from this study will help to inform policies, practices, and initiatives in healthcare organizations.

Participation involves completing a one-on-one interview that should take approximately 60 minutes via a video conferencing software. Participation and responses will be confidential. Participants will be compensated $40 via e-gift card for their participation.

Please see below the eligibility requirements for participation:

1. Be at least 18 years or older
2. Be employed full-time in a hospital as a registered nurse (RN) within South Florida
3. Must work in one of the following units: emergency room, medical ICU, surgical ICU, and/or COVID-specific
4. Must have worked directly with COVID-19 patients

You can help me by:

- Forwarding the eligibility/contact info survey link at the end of this message to anyone that you think would be eligible to participate
- Clicking on the link in this message if you think you are eligible to participate
- Sharing this message on your own social media
- Doing all the above!

If you are interested and would like to be assessed for eligibility, please take the brief survey below by clicking on the link. If you qualify to participate and there are still spots available, you will be contacted via cell or e-mail to schedule an interview.
XXX

Thank you for your interest in my study!

Please contact me at XXX with any questions or comments.

**Study One Interview Script**

My name is Natalie and I am a doctoral candidate at Florida International University, and this study is part of my dissertation project. Thank you for taking some time out of your busy schedule to speak with me about your experiences as a nurse during the COVID-19 pandemic. I'm going to keep my camera on during the interview, but of course, you are welcome to do whatever makes you feel most comfortable—it's entirely up to you.

Before we get started, I'm going to send you a link over chat to an online consent form and brief demographics survey for you to fill out. Please read through the consent form carefully. At the end of the survey, there will be a question that asks for a pseudonym—this is a fictitious name or a nickname that I will use to refer to you throughout this interview to respect your privacy and anonymize your interview, so just be sure it is something you can remember. We'll set aside some time now for you to complete this survey, so take your time and let me know when you've completed it.

Thank you for completing the survey!

Please note that the audio portion of this interview will be recorded for transcription purposes, as stated in the consent form. I want to reassure you that the records of this study will be kept private and will be protected to the fullest extent provided by law. In any sort of report we might publish, we will not include any information that will make it possible to identify you. Research records will be stored securely, and only the researcher team will have access to the records. If there is anything that you say in this interview

that was uncomfortable, you have the right to let me know that you want it removed and I am legally required to do so. You can always contact me afterwards and let me know if there is anything you want excluded from your interview.

I also want to provide you with information on the Crisis Text hotline, which serves anyone in any type of crisis 24/7. You can text "HELLO" to 741741 to speak with a crisis counselor who can provide support and information.

Now we can actually get started! I am going to ask you a series of questions related to your work, so just try to answer them as openly and honestly as possible.

***General***

1. Why did you choose nursing as a career?
2. What are your thoughts regarding being a nurse working during the COVID-19 pandemic?
    a. What are your colleagues' attitudes regarding working during the pandemic?
3. Can you tell me about the experiences you've had while caring for patients diagnosed with COVID-19?

***Work***

4. How did you feel when you started caring for patients diagnosed with COVID-19?

    a. How do you feel now?
    b. What problems have you faced while caring for these patients?
5. What has changed while providing care during the pandemic compared to working in your department prior to the pandemic?
6. How have local, state, and/or federal policies impacted your work during the pandemic?
7. What has been your biggest challenge in your current role during this crisis?
    a. What difference would it have made if you were in a different role?
    b. What do you think is needed to effectively address this challenge?

***Impact***

8. What, if anything, has changed in your personal life as a result of working with COVID-19 patients?
9. What, if anything, has changed in your professional life as a result of working with COVID-19 patients?
10. What, if anything, has changed regarding your perception of nursing as a profession?

***Resources***

11. How has your employer helped you during this time?
    a. Has your employer offered any wellness resources or implemented any policies, practices, or initiatives to help you during this time?
12. How have your colleagues helped you during this time?

13. How have your friends and family helped you during this time?
14. What other support or resources do you still need or would have wanted to receive?

***Coping***

15. What has helped you cope with working with patients diagnosed with COVID-19?

***Final***

1. What long-term impact do you think COVID-19 will have on the nursing field?
2. Do you have any other thoughts you would like to share?
3. What made you want to participate in this study?

This concludes the interview. Once again, thank you so much for your participation in this study, and for all your hard work.

# VITA

## NATALIE ARMENTEROS

Born, Miami, Florida

| | |
|---|---|
| 2013-2016 | B.A., Psychology<br>Florida International University<br>Miami, Florida |
| 2017-2020 | M.S., Industrial-Organizational Psychology<br>Florida International University<br>Miami, Florida |
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## PUBLICATIONS AND PRESENTATIONS

Armenteros, N., Manapragada Tedone, A., Bruk-Lee, V., Heron, L. M., & Thompson, A. (2021, April). Speak up! Traumatic events, burnout, and safety voice in nurses. Poster presented at the Society for Industrial-Organizational Psychology Conference. New Orleans, LA.

Armenteros, N., Hatem, A., Heron, L. M., & Viswesvaran, C. (2021, April). Applicant reactions to personal and professional social media screenings. Poster presented at the Society for Industrial-Organizational Psychology Conference. New Orleans, LA.

Armenteros, N., & Bruk-Lee, V. (2020, June). A moderated mediation examination of workplace isolation. Poster presented at the Society for Industrial-Organizational Psychology Conference. Austin, TX.

Manapragada Tedone, A., Armenteros, N., Bruk-Lee, V., Heron, L. M., & Thompson, A. (2020, June). Investigations into factors that build positive safety capacity: Examining safety motives as mediators in a model of workplace safety. Symposium presented at the Society for Industrial-Organizational Psychology Conference. Austin, TX.

Armenteros, N., & Bruk-Lee, V. (2019, November). You're not you when you're not supported: The effects of coworker versus supervisor social support on workplace isolation and affective commitment. Poster presented at The Work, Stress, and Health Conference. Philadelphia, PA.

Armenteros, N. (2019, August). Women, leadership, and equality in the workforce. Presented at
Transportation Security Administration's Women's Equality Day. Miami, FL.

Armenteros, N. (2019, April). The differential effects of coworker and supervisor social support on workplace isolation and OCBs. Poster presented at Florida International University's Graduate Student Appreciation Week Scholarly Forum. Miami, FL.

Armenteros, N. & Nicholas, T. (2017, May). Developing a core survey for gateway courses: Identifying factors associated with student success. Presented at Florida Association for Institutional Research Conference. Howey-in-the-Hills, FL.

Armenteros, N., Reeb-Sutherland, B. C., & Gutierrez, A. (2015, March). Eyeblink conditioning in children with Autism Spectrum Disorder. Poster presented at Florida International University's Undergraduate Research Conference. Miami, FL.