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Examining the Impact of Resilience on Work Stress and Strains in Nurses

Julie J. Lanz

Florida International University, jlanz015@fiu.edu

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

EXAMINING THE IMPACT OF RESILIENCE ON WORK STRESS AND STRAINS
IN NURSES

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

PSYCHOLOGY

by

Julie Jean Lanz

2015

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

This dissertation, written by Julie Jean Lanz, and entitled Examining the Impact of Resilience on Work Stress and Strains in Nurses, 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.

Chockalingam Viswesvaran

Asia Eaton

Thomas Reio

Valentina Bruk-Lee, Major Professor

Date of Defense: May 27, 2015

The dissertation of Julie Jean Lanz is approved.

Dean Michael R. Heithaus
College of Arts and Sciences

Dean Lakshmi N. Reddi
University Graduate School

Florida International University, 2015

DEDICATION

I dedicate my dissertation to my husband, Chris. His support has been a comfort and a reminder that I can accomplish anything if I have the right tools and enough time.

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ABSTRACT OF THE DISSERTATION
EXAMINING THE IMPACT OF RESILIENCE ON WORK STRESS AND STRAINS
IN NURSES

by

Julie Jean Lanz

Florida International University, 2015

Miami, Florida

Professor Valentina Bruk-Lee, Major Professor

To address commonly cited organizational and personal outcomes in the nursing industry, it is important to identify factors that may mitigate the relationship between workplace stressors and strains such as turnover intentions, job satisfaction, burnout, and injuries. The purpose of the current study is to explore the role of trait resilience on the emotion-centered model of job stress in a sample of U.S. nurses. The study uses a multiwave design to examine the mitigating role of trait resilience on work strains in nurses. In a sample of 185 nurses and 97 multiwave pairs, resilience was found to be significantly related to job-related affect, turnover intentions, job satisfaction, emotional exhaustion, and personal accomplishment. Using multiple regression analyses, the relative effects of four common stressors affecting nurses were compared: interpersonal conflict at work, quantitative workload, emotional labor, and traumatic events. After accounting for the common workplace stressors that nurses experience, interpersonal conflict at work was the only significant predictor of emotional and behavioral strains among nurses. Moreover, resilience was found to moderate the relationship between interpersonal conflict at work and job-related negative affect such that nurses that were high on

resilience reported lower job-related negative affect. Given these significant relationships, resilience in the nursing industry should be further explored, as well as the potential for resilience training in the health care sector.

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I. INTRODUCTION

The nursing occupation is characterized by a significant number of stressors, which in turn lead to increased strains, including turnover (Cherniss, 1980), decreased job satisfaction (Aronson, 2005; Hayes, Bonner, & Pryor, 2010), injuries (Bigos et al., 1991; Spector, Coulter, Stockwell, & Matz, 2007), and burnout (Garrosa, Moreno-Jiménez, Rodríguez-Muñoz, & Rodríguez-Carvajal, 2011). Researchers have projected that there will be a significant shortage of between 300,000 and 1 million registered nurses in the U.S. by 2020 (Juraschek, Zhang, Ranganathan, & Lin, 2012). The shortage of nurses will produce a significant strain on the U.S. healthcare system, as it is predicted that registered nurses will play a growing role in the healthcare industry as the size of the aging population of baby boomers increases. It is also anticipated that there will be worldwide reports of shortages of nurses over the next decade. For example, in Canada it is predicted that by 2022, there will be a shortage of almost 60,000 nurses if no new policies are implemented (Canadian Nurses Association, 2009; Spurgeon, 2000). Some of the recommendations suggested by the Canadian Nurses Association to improve workplace conditions for nurses include supporting methods to improve nurse wellbeing and health, and focusing on workplace morale. The present dissertation proposes the positive impact of resilience as a trait that is related to workplace morale (e.g., job satisfaction), and mitigates the negative impact of stressors on nurse strains, leading to improved nurse wellbeing and health. As a result of the negative outcomes associated with commonly experienced stressors and the rising number of nurses leaving the healthcare industry, the need to investigate the situational, social, and personal characteristics that influence the stress process among nurses is critically important.

In the face of adversity and stress, individuals show a variety of different responses. Some individuals fare well, and thrive in the face of a difficult situation. Others struggle greatly in the same situation, but eventually regain their balance. Some are never the same. The questions that have directed resilience research over the last four decades have primarily asked, what characterizes the types of individuals that are able to thrive in the face of difficult situations? And how are they different from individuals that never recover? Across all stages of their lives, individuals are confronted with risk and adversity, and their ability to overcome these situations is determined by a pattern of functioning that leads to positive adaptation (Ong et al., 2009). Because of the stressful nature of the workplace, resilience has been put forth as an important trait for nurses to foster (Tusaie & Dyer, 2004). The impact of interventions on fostering resilience across different populations is discussed in detail in Chapter 2. Since the recent call for improving resilience among nurses, other nurse researchers have joined the cause, seeking to understand how resilience ameliorates burnout and attrition in health care workers such as mental health clinicians (e.g., Edward, 2005). Indeed, Edward sought to examine the role of resilience in an attempt to understand why some of her professional colleagues had:

“Not succumbed to the pressure of the workplace but rather, have continued to remain enthusiastic, empathic and skilled in their clinical approach to care, while others became burnt-out... These clinicians appeared to have an ability to move beyond the stressors of the moment time and time again” (p. 143).

However, there remains a lack of research examining the role resilience plays in the stress process for nurses. The purpose of the present study is to examine the impact of the trait of resilience on job stress using the emotion-centered model of job stress

(Spector, 1998), and its strain outcomes in a multiwave sample of nurses. Specifically, I will examine the most commonly reported stressors of nurses (interpersonal conflict at work, quantitative workload, emotional labor, and traumatic experiences), their job-related affective wellbeing, and their strain outcomes (turnover intentions, job satisfaction, burnout, and injuries).

The present chapter starts by reviewing the history of job stress models. The emotion-centered model of job stress is discussed next, including the major stressors that nurses report (traumatic experiences, interpersonal conflict at work, quantitative workload, and the emotional labor component of surface acting), strain outcomes (burnout, job satisfaction, turnover intentions), the safety outcome of workplace injuries, and their job-related affective wellbeing are discussed next. The relationship of resilience to the job stress process is also explored.

Emotion-Centered Model of Job Stress

History of the Model

The transactional approach to stress (Lazarus, 1966) proposes that stress is created during the transaction between an individual and their environment. According to Lazarus (1991), stress is defined as “any potential threat in the environment” (p. 42). Stress includes an individual’s expectations, perceptions, and coping responses to an event. The transactional approach to stress incorporates the two basic components: the individual and their environment. This approach is an expansion of early models of stress that conceptualized stress as a response to an environmental stressor (Selye, 1956), and stress as a stimulus, such as life events or changes acting as a stressor to which a person reacts (Holmes & Rahe, 1967). In the transactional model (Lazarus, 1966), stress arises

when there is a threat in the environment, and the individual perceives the event as a threat. Thus, the idea of appraisal (Lazarus, 1991; 1995) is important in the stress process because it highlights the necessity of both the perception and interpretation of an event. If an event is not perceived as a stressor, then it cannot have a psychological impact on an individual. For example, some nurses may perceive interpersonal conflict to be a stressor in their job, but another nurse may not perceive this as a stressor, and thus feels no negative outcomes as a result. Most research has focused on perceived stressors, rather than objective stressors (i.e., universal stressors such as earthquakes or September 11th). Objective stressors are not necessarily accurate as they tend to be measured via subjective judgment of other individuals, meaning they are objective in the sense that they do not come from the target of the study (Frese & Zapf, 1988).

The emotion-centered model of job stress (see Figure 1) is an updated model of occupational stress that theorizes a causal flow from environmental conditions such as job stressors to employee outcomes (i.e., strains) such as health and well-being (Spector, 1998; Spector & Goh, 2001). Emotions play a central role in the stress process because they serve an adaptive function to stressors by allowing individuals to respond to the situation, which has implications for survival (Plutchik, 1989). According to Spector and Goh (2001), after an individual perceives a stressor, they respond with emotional strain (e.g., frustration or anger). These emotions act as a response to the appraisal of the event, and mediate the relationship between stressors and behavioral and physical strains. Research has found broad support for the emotion-centered model of job stress. Many studies have found that stressors like interpersonal conflict and organizational constraints impact affective reactions such as anxiety (Jackson & Schuler, 1985; Jex & Beehr, 1991;

Spector, 1987). Placing resilience in the context of the emotion-centered model of job stress is a novel approach to examining its relationship to stressors and strains in a causal fashion. The components of the emotion-centered model are discussed in the following section including job stressors, job strains, and the mediating role of affect.

Job Stressors

Generally, a stressor is defined as a condition requiring an adaptive response from an individual (Beehr & Newman, 1978). A job stressor is defined as “any condition or situation that elicits a negative emotional response” (Spector & Goh, 2001, p. 196). Some of the common stressors that are studied in research include workload and role stressors (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964); however, recent research has expanded beyond environmental stressors to examine social stressors such as interpersonal conflict (De Dreu & Weingart, 2003) and emotional stressors such as surface acting and deep acting (Mann & Cowburn, 2005). Surface acting occurs when a person pretends to feel the appropriate emotions; deep acting occurs when a person attempts to actually feel the appropriate emotions. A social stressor is defined as a situation or social condition that an individual finds stressful. Urban and rural nurses and nursing students have reported similar stressors they experience in the workplace. These stressors include: 1) death and caring for dying patients, 2) interpersonal conflict with staff, 3) interpersonal conflict with patients and families, 4) fear of failure, 5) workload, 6) inadequate nursing staff, and 7) feeling unprepared to meet the emotional needs of patients (Glazer & Gyurak, 2008; Gray-Toft & Anderson, 1981a, b; LeSergent & Haney, 2005; Parkes, 1985). Therefore, the dissertation will focus on the following four stressors: Nursing stressors such as interpersonal conflict at work (ICAW), quantitative

workload (QW), emotional labor (EL), and traumatic events (TE) lead to job strains, which have harmful effects for patients, nurses, and health care organizations. Chapter 1 will discuss the history of these stressors, and Chapter 2 will examine the relationships between these stressors and strains in the nursing industry.

Conflict. Social interactions with other employees and patients are an important function of nurses' jobs. This includes exchanging ideas, cooperating, and maintaining a safe work environment. When social interactions become negative, conflict can arise and produce negative emotional, physical, and behavioral outcomes. Conflict at work is defined as an undesirable dynamic process between parties that arises from perceived disagreements and interference with the parties' goals, and results in negative emotional reactions (Barki & Hartwick, 2001).

Early research on conflict focused on creating taxonomies to distinguish among types of conflict (e.g., Barki & Hartwick, 2004; Jehn, 1994; Pinkley, 1990). The most commonly cited taxonomy is Pinkley's (1990) model of task and relationship conflict. Task conflict is defined by Jehn (1995) as "disagreements among group members about the content of the tasks being performed, including differences in viewpoints, ideas, and opinions" (p. 258). Relationship conflict considers the socio-emotional side of conflicts that arise from interpersonal disagreements that are not related to tasks. It "exists when there are interpersonal incompatibilities among group members, which typically includes tension, animosity, and annoyance among members within a group" (Jehn, 1995, p. 258). More recently, researchers have identified two types of conflict that occur in the workplace. Non-task organizational conflict examines a more organizational-level view of conflict. It "emerges from issues that are not related to a specific task, but are over

issues that are organizational in nature” (Brock-Lee, 2007, p. 31). Later academic debates and a meta-analysis on task and relationship conflict found that regardless of the type of conflict, it has negative outcomes for individual and team satisfaction and performance (De Dreu, 2008; De Dreu & Weingart, 2003).

Over the years, researchers have defined interpersonal conflict using one of three themes: disagreement (i.e., when individuals believe that their needs or interests diverge), negative emotions (i.e., jealousy and anger), or interference (i.e., behaviors such as arguing, debating, and aggression) (Pondy, 1967; Putnam & Poole, 1987; Thomas 1992; Wall & Callister, 1995). However, researchers have used different combinations of these definitions to define interpersonal conflict, leading to a fragmented view of the conflict literature. Recent work that clarifies the construct of interpersonal conflict has combined these themes to create a two-dimensional construct of interpersonal conflict (Barki & Hartwick, 2004). The first dimension includes three properties related to conflict: disagreement, negative affective states, and interference. The second dimension categorizes the target of conflict experienced in the workplace as both task and relationship conflict. Beyond defining conflict through its types, others researchers have defined conflict by its source such as supervisors or coworkers (Brock-Lee & Spector, 2006; Frone, 2000).

From a macro perspective by the U.S. government, conflict at work is subsumed under the typology of workplace violence that has been defined by OSHA. Originally, the California Occupational Safety and Health administration (Cal/OSHA) proposed a model with three types of workplace violence. Workplace violence is defined as “violent acts, including physical assaults and threats of assault, directed toward persons at work or on

duty” (NIOSH, 2006, p. 5). These three types are determined by the relationship of the perpetrator to the victim as well as the victim’s place of employment (Cal/OSHA, 1995; Howard, 1996). This model of workplace violence was later modified to four types of workplace violence that are commonly used today, splitting Type III apart into Type III and Type IV (IPRC, 2001). Type I (criminal intent) occurs when the perpetrator has no relationship to the organization or employee, and is likely committing a crime along with the violence (e.g., robbery, shoplifting). Type II (customer/client) occurs when the perpetrator has a relationship to the organization or employee, and tends to be perpetrated by customers, patients, students, inmates, or clients. Type III (worker-on-worker) occurs when the perpetrator is an employee, and threatens or attacks another employee while in the workplace. Type IV (personal relationship) tends to occur when the perpetrator has no relationship to the organization, but has a personal relationship with the victim (e.g., domestic violence or threats that occur while the victim is at work). Nearly all of the U.S. workforce (140 million people) may be exposed to workplace violence, and nursing is considered a high-risk industry for Type II workplace violence (violence from a customer, client, or patient). As such, nurses are at risk for a wide range of behaviors that may cause injury or death (NIOSH, 2006).

Workload. Workload is defined as how much work an employee performs (Spector & Jex, 1998), and has been discussed as a psychologically, physically, and socially demanding stressor (Dewe, 1987). Workload is a workplace stressor that can be measured objectively or subjectively (Jex, 1998). For example, objective workload can be measured by the number of hours worked in a week or the number of patients served. Objective workload is valuable because employee perceptions do not impact the

measurement of workload. Alternatively, subjective workload is measured by the employee's perception of how much work they perform.

It is important to make the distinction between subjective workload and objective workload. For example, two nurses may be given the same number of patients, but one may perceive that her workload is higher than her colleague's. It is valuable to measure workload subjectively because it acknowledges that perceptions of workload differ across people. Some nurses may feel overwhelmed by working 30 hours a week, and others may only feel that way after working 50 hours a week. A subjective measure of workload allows researchers to tap into perceptions of workload, which ultimately acts as a stressor for nurses. Workload is also cyclical, so an ER nurse working on Monday at 6 PM (after the weekend and the workday) may have a higher workload than one working on Wednesdays at 4 AM. It is also important to make the distinction between the work volume and the work difficulty.

According to the Caplan and Jones (1975) definition of workload, nursing workload is defined as "the amount of performance required to carry out those nursing activities in a specified time period" (Morris, MacNeela, Scott, Treacy, & Hyde, 2007). In the nursing industry, workload has been conceptualized and measured in a number of ways, such as patient dependency, nursing intensity, the severity of a patient's illness, the amount of time required to administer care to a patient, and even the complexity of patient care (Prescott, Soeken, Castorr, Thompson, & Phillips, 1991; Dijkstra & Dassen, 1996; Needham, 1997). It is evident that workload is a complex and common stressor in the nursing industry; this is discussed in detail in Chapter 2.

Emotional Labor. There has been a call to understand the impact of emotion work in the nursing industry (Bone, 2002). Emotional labor is a stressor defined as efforts by employees to display expected behaviors that conflict with their internal emotional state (Ashforth & Humphrey, 1993). According to Brotheridge and Grandey (2002), there are two frameworks of emotional labor that have been conceptualized by researchers: *job-focused emotional labor* and *employee-focused emotional labor*. Job-focused emotional labor refers to an occupation that has high emotional demands. Employee-focused emotional labor refers to the experience of an employee at managing their emotions while meeting their work demands (Brotheridge & Grandey, 2002; Hochschild, 1979). This framework of emotional labor by Brotheridge and Grandey that conceptualizes it as the quality of interactions with clients and the quantity of interactions with clients follows a similar model of emotional labor offered by Rafaeli and Sutton (1989). Rafaeli and Sutton proposed that emotional labor was influenced by two major factors: an individual's characteristics (e.g., enduring attributes and inner feelings about the job) as well as external factors that regulate one's emotional display (societal, organizational, and occupational).

There are two broad types of emotion work: the attempt to *evoke* feelings which are lacking, and to *suppress* feelings which are undesired. Along with the technical skills that nurses acquire are the soft and "invisible" skills that are difficult to describe, such as the interactions and expressions between the nurse and patient. The familiar nature of the nurse-patient relationship means that nurses must often display genuine empathic concern for patients as part of the process of interacting with and caring for them. However, the healthcare industry values and rewards the services they provide to patients (i.e., a

“service culture,” Grönroos, 2000). As a consequence of these two conflicting forces, there is a factor of “emotional labor” (Hochschild, 2003) that requires individuals to follow a set of workplace-prescribed displays of emotion, rather than displaying the emotions they actually feel.

The second framework of emotional labor is called *employee-focused emotional labor*, and it refers to the experience of an employee at managing their emotions while meeting their work demands (Brotheridge & Grandey, 2002; Hochschild, 1979). In the second framework, there are two main processes of emotional labor called surface acting and deep acting. Emotional labor can be performed via surface acting, when a person pretends to feel the appropriate emotions as determined by the situation, or via a deep acting, when a person tries to feel the appropriate emotions. When surface acting, a person carefully uses verbal and nonverbal cues (e.g., facial expressions, tone of voice, and gestures). For example, a nurse may actually feel frightened or frustrated with a patient, but must act compassionate and competent in their care. In the context of the workplace, this means that nurses manage how they display emotions to patients in order to meet the norms of the workplace – sometimes regardless of the emotions they may actually feel. Beyond surface acting, the need to meet the norms of emotional displays in the workplace can be so strong that nurses attempt to change their feelings in order to display emotions space (deep acting), rather than simply displaying them via surface acting.

According to the conservation of resources model by Hobfoll (1988), individuals are motivated to obtain, protect, and cultivate the resources that they value. These values can include everything from physical objects (e.g., car, house), conditions (e.g.,

friendships), personal characteristics (e.g., self-esteem, happiness), or energy (e.g., time, money, or food). When any of these resources are threatened, lost, or not gained, this event acts as a stressor. Therefore, because emotional labor is the expenditure of energy, when there is a balance between the job demands and a nurse's resources, burnout and job dissatisfaction can increase. Because surface acting requires individuals to expend energy to suppress true emotion (Cheung, Tang, & Tang, 2011), it has consistently been found to be related to job dissatisfaction, low core self-evaluations, burnout and negative affect (Beal, Trougakos, Weiss, & Green, 2006; Brotheridge & Grandey, 2002; Brotheridge & Lee, 2003; Grandey, 2003).

Recent research has incorporated both emotional labor frameworks in an attempt to explain burnout through the interaction of the job characteristics and individual differences (Brotheridge & Grandey, 2002). Brotheridge and Grandey (2002) found that surface acting was significantly and positively correlated with emotional exhaustion and depersonalization, and significantly and negatively correlated with personal accomplishment. Deep acting was significantly and positively correlated with personal accomplishment. They concluded that future research should consider both job- and employee-focused emotional labor, and under what conditions employees experience positive outcomes. Because resilience is strongly related to positive affect and emotions, it is important to consider nursing-specific emotional stressors such as emotional labor. In a profession where caring and emotions are so important and salient (Henderson, 2001), resilience is an essential skill for nurses to develop (Lauterbach & Becker, 1996).

Traumatic Events. Traumatic events include exposure to death, suicide, severe injuries, and physical and verbal aggression (Adriaenssens, de Gucht, & Maes, 2012).

These events tend to occur suddenly, and without expectation, and often have a detrimental impact on wellbeing (McCann & Pearlman, 1990). Health care workers in areas such as emergency departments tend to experience events that not only directly threaten their own wellbeing but also witness events that threaten the wellbeing of their patients while presenting no danger to the individual (Laposa & Alden, 2003). Exposure to traumatic events such as these can have negative consequences for individuals such as post-traumatic stress disorder and job dissatisfaction. For example, in a study of healthcare workers in the emergency department, Alden, Regambal, and Laposa (2008) found that if participants experienced a direct threat or witnessed a threat to patients, they reported similar levels of post-traumatic stress disorder; workers that experienced direct threats reported higher job dissatisfaction than those workers that do not. In a study of hospice nurses and their encounters with death, nurses reported that encounters with death and trauma were unremitting and creating and sustaining relationships with patients was difficult when the nurses experienced distress after the loss of a patient (Froggatt, 1998).

Job Strains

A strain is defined as a reaction to a stressor (Spector, 1998). Job strains can be psychological, behavioral, or physical in nature (Jex & Beehr, 1991). Psychological strains include attitudinal reactions to stress such as job satisfaction and burnout. Behavioral strains are behavioral responses to stressors from the job such as turnover, or its closely related construct, turnover intentions. Physical strains include illnesses such as heart disease (Greenglass, 1996; Julkunen, 1996) or shorter-term strains such as increased blood pressure (O'Leary, 1990). The present study seeks to examine the entire construct

of job strains by including behavioral strains (turnover intentions), psychological strains (job satisfaction and burnout), and physical strains (injuries); these are common outcomes of the emotion-centered model of job stress (Spector, 1998). Job strains such as turnover intentions, job satisfaction, burnout, and injuries are an important outcome for organizations because of their impact on nurses' wellbeing, the wellbeing of patients, and organizational costs (Dugan et al., 1996; U.S. Department of Labor OSHA, 2001; White, 2010).

Turnover Intentions. Turnover intentions are defined as the intention to leave one's job. As an early step in the withdrawal process, turnover intentions act as a behavioral strain precursor to turnover. Turnover intentions are studied more commonly in the literature because actual turnover can be difficult to measure, and because turnover intentions are a valuable proxy of turnover (Griffeth, Hom, & Gaertner, 2000; Hayes et al., 2006; Richer, Blanchard, & Vallerand, 2002). Turnover can have a detrimental impact on the workplace by forcing organizations to replace and train new employees, which has significant financial and time costs (Gray, Phillips, & Normand, 1996; Waldman, Kelly, Aurora, & Smith, 2004). Social stressors such as interpersonal conflict are negatively related to job outcomes such as job satisfaction and turnover intentions (Cooper & Marshall, 1976; Frone, 2000; Harris, Harvey, & Kacmar, 2009; Spector & Jex, 1998). Research on nurses has found that stressors often lead to increased levels of turnover intentions (Shields & Ward, 2001). Alternatively, Sinclair et al. (2009) found that positive experiences in the workplace retain more nurses and decrease turnover intentions.

Nurses' reasons for leaving the field early are found to be associated with the stressors mentioned previously (e.g., interpersonal conflict, high workload, emotional labor, and traumatic experiences). Turnover in the nursing industry has been a topic of interest for many researchers (Tai, Bame, & Robinson, 1998; Hayes et al., 2006; Hayes et al., 2012). It has a detrimental impact on the workplace because it forces hospitals and organizations to replace and train new employees, which has significant financial and time costs associated with it (Waldman, Kelly, Aurora, & Smith, 2004). Not only does nurse turnover affect organizations, it has a significant impact on meeting patient needs and providing quality care to patients (Gray, Phillips, & Normand, 1996; Shields & Ward, 2001). The reasons for the shortage of nurses in the United States can be considered a problem of both supply and demand (American Hospital Association, 2013). As baby boomers age, there is an increasing demand for nurses in nursing homes as well as hospitals (Hecker, 2001). On the supply side, the most experienced nurses are reaching the age of retirement, fewer people are choosing to be nurses, and of those that choose nursing as a career, more are leaving the field before reaching retirement age (Buerhaus, Donelan, Ulrich, Norman, & Dittus, 2006; Gordon, 2005; Hecker, 2001; Juraschek et al., 2012). Beyond demographic factors impacting the nursing profession, there are environmental factors in the workplace that explain why nurses are leaving the industry. According to Lafer (2005), "the stress, danger, exhaustion, and frustration that have become built into the normal daily routine of hospital nurses constitute [the] single biggest factor driving nurses out of the industry" (p. 36). Other researchers seeking to explain the high amounts of turnover in the nursing industry have repeated that there is a relationship between poor work conditions and turnover (Peterson, 2001; Vahey, Aiken,

Sloane, Clarke, & Vargas, 2004). Nurses reported that some features of poor working conditions include having an adequate staff, feeling supported by the administration, and having better relationships with physicians (Vahey et al., 2004).

There is evidence of the role of individual differences in nurse turnover intentions. In one study on 287 Belgian nurses, (De Gieter, Hofmans, & Pepermans, 2011), researchers examined the predictive value of job satisfaction and organizational commitment on turnover intentions. They found two distinct groups of nurses: a group in which job satisfaction was the only significant predictor of turnover intentions, and a group in which both job satisfaction and organizational commitment were important. Furthermore, they found that the latter group consisted of younger nurses with shorter tenure, and reported significantly stronger intentions to turn over than nurses whose only significant predictor was job satisfaction.

Job Satisfaction. Job satisfaction is defined as an individual's general evaluation of his or her job as satisfactory or not satisfactory (Locke, 1976). It is frequently examined as an employee outcome variable because of its negative correlations with work stressors (Jackson & Schuler, 1985), and this relationship has been supported in a longitudinal study of 109 recent college graduates (Spector & O'Connell, 1994).

Factors that have been found to be associated with job satisfaction in nurses can be grouped into three general clusters (extra-, inter-, and intrapersonal; Hayes et al., 2010). Extrapersonal factors are those beyond a nurse's control, such as organizational and federal policies, and resources. Interpersonal factors are defined as coworker and patient interactions, and include skills like fostering relationships, providing patient care, autonomy, and professional pride. Intrapersonal factors are the characteristics that an

individual brings to their job, such as coping strategies, age, and tenure. Given that nurse job satisfaction is a combination of elements such as the organization and individual attitudes, increasing job satisfaction should be a focus for nurses, teams, and nurse managers. Intra-personal factors related to job satisfaction such as positive and negative affectivity (Hayes et al., 2010) suggest that resilience may be a valuable trait for nurses to have, as resilience also related to positive and negative affectivity (Lee et al., 2013).

Burnout. Burnout occurs when individuals are unable to meet demands, when resources are lost, or they are unable to yield expected returns (Lee & Ashforth, 1996). It is composed of three dimensions: emotional exhaustion, depersonalization (distance from others), and diminished personal accomplishment (Maslach, 1982). Emotional exhaustion measures how exhausted one is, or emotionally extended as a function of their work. Depersonalization is defined as a detached feeling and approach toward recipients of a nurse's care. Personal accomplishment is the positively worded subscale of burnout, and is measured by feelings of achievement or competence at work.

Because of the emotional nature of their work, healthcare workers are at a higher risk of burnout, and in particular emotional exhaustion (Erickson & Grove, 2007). According to Lafer (2005, p. 36), "the stress, danger, exhaustion, and frustration that have become built into the normal daily routine of hospital nurses constitute [the] single biggest factor driving nurses out of the industry." Burnout also has a significant impact on nurse wellbeing and care. For example, burnout has been shown to be negatively associated with patient satisfaction (Vahey et al., 2004) as well as patient safety outcomes (Laschinger & Leiter, 2006).

No research has examined the relationship between resilience and burnout in a sample of nurses. Some researchers have advocated for additional research into this area (Strümpfer, 2003). However, research into the relationship between resilience and burnout has been studied in other health care workers. In a survey of Australian physicians, only 14% of physicians reported burnout using a single-item scale, and 10% were found to be highly resilient. In other words, resilience was found to be linked to low worker burnout (Cooke, Doust, & Steele, 2013).

Injuries. Nurses suffer from work-related injuries (Guidroz, Wang, & Perez, 2006; Stobbe, Plummer, Jensen, & Attfield, 1988) as a result of the physical nature of their job, such as lifting patients. According to OSHA, an injury is defined as an incident that results in loss of consciousness, medical treatment beyond first aid, time away from work, or results in death (U.S. Department of Labor OSHA, 2001). Injuries are commonly studied in high-risk occupations such as nursing (Ahlberg-Hultén, Theorell, & Sigala, 1995; Bigos et al., 1991; Spector, Coulter, Stockwell, & Matz, 2007). Nursing injuries occur often, and can be costly for organizations because of their impact on nurses, compromised patient wellbeing, and organizational costs (Dugan et al., 1996; U.S. Department of Labor OSHA, 2001; White, 2010).

The Role of Affect

The original model on the structure of emotion and affect was developed by Russell (1979, 1980). Russell proposed a two dimensional model of affect whereby affect is grouped into systematically interrelated emotions. These two dimensions include: pleasure to displeasure and the degree of arousal (Russell, 1980). Subsequent research by Watson, Clark, and Tellegen (1988) sought to further define and measure this two-

dimensional structure of mood. According to Watson et al. (1988), the terms positive affect and negative affect are often used to refer to an individual's mood. These two dimensions are opposites and are strongly negatively correlated with each other. Positive affect is defined as the extent to which an individual reports feeling active, alert, and enthusiastic. It is a state of concentration, pleasurable engagement, and high energy. Alternatively, negative affect is defined as the extent to which an individual reports feelings of anger, disgust, fear, nervousness, or contempt. Negative affect has also been found to be related to poor coping and stress (Clark & Watson, 1986), experiencing frequent unpleasant events (Warr, Barter, & Brownbridge, 1983).

However, measures of positive and negative affect such as the PANAS scale (Watson et al., 1988) were developed specifically to measure affect in a context-free environment. Context-specific affect, such as job-related affective well-being, measures affective responses that employees experience on the job (Van Katwyk, Fox, Spector, & Kelloway, 2000). This affective state of job-related affective wellbeing acts as the mediating variable between stressors and strains (Spector, 1998), and is associated with individual and organizational variables such as job satisfaction, turnover intentions, and interpersonal conflict (Van Katwyk et al., 2000).

Early stress research conceptualized of negative affect as an outcome of stress, or a strain. However, Spector (1998) proposed an emotion-centered model of the stress process. Indeed, the central role of emotions in the stressor-strain process has been well-documented. Emotions are a mechanism that individuals use to respond to their environment in ways that impact their survival (Plutchik, 1989). The emotion-centered model is consistent with the transactional theory of stress (Lazarus & Folkman, 1987)

which states that individuals must cognitively appraise an event as stressful in order to produce strain outcomes. In this model, affective responses act as a mediator to the stressor-strain process.

Negative attitudes have been found to be associated with psychological strains such as job dissatisfaction and turnover intentions (e.g., Maertz & Campion, 1998). Negative attitudes have also been found to be related to behavioral strains such as bullying (Zapf, Knorz, & Kulla, 1996) and withdrawal from work (Fox & Spector, 1999). Lastly, emotions significantly impact physical strain outcomes such as coronary heart disease (Booth-Kewley & Friedman, 1987), and immune system suppression (O'Leary, 1990). Because of the strong relationship between stressors and strains and the mediating role of affect, it is valuable to understand the personal characteristics that influence these associations, such as resilience. Other individual traits such as the Big Five personality traits and self-efficacy have been found to be related to how individuals perceive stress. In a study of 3,471 Danish adults, Ebstrup, Eplov, Pisinger, and Jørgensen (2011) found a positive relationship between neuroticism and perceived stress, and an indirect effect of this relationship through generalized self-efficacy. These researchers also found a negative relationship between extraversion and perceived stress, and an indirect effect of this relationship through generalized self-efficacy. Smaller relationships than neuroticism and extraversion were found between agreeableness (negative relationship, though this relationship became positive once generalized self-efficacy was added) and conscientiousness (negative relationship, and generalized self-efficacy had an indirect effect on perceived stress). The results of this study suggest that personality traits and self-efficacy play a significant role in influencing the different types of stressors

experienced by individuals, how they appraise these stressors, and even the frequency of reported stressors. For example, individuals that score high on neuroticism tend to have lower coping resources, and appraise situations as highly threatening. Alternatively, individuals that score high on the traits of extraversion, conscientiousness, and openness to experience are more likely to appraise situations as challenges rather than threats. Overall, generalized self-efficacy (believing in one's resources and ability to overcome obstacles) played a small but significant role in mediating the relationship between personality traits and perceived stress. Given that the traits of extraversion, conscientiousness, and neuroticism are significantly related to resilience (Campbell-Sills, Cohan, & Stein, 2006), individuals that approach threatening situations with negative emotions and poor coping skills are less likely to perceive stressors as challenges to be overcome, and are less likely to bounce back from these situations.

Positive Psychology and Resilience

Resilience is defined as a characteristic of positive psychology (Wagnild & Young, 1993) that facilitates “positive adaptation in the context of significant risk or adversity” (Ong, Bergeman, & Boker, 2009, p. 1777). Resilient individuals are able to adapt in the face of adversity, restore balance in their lives, and thereby avoid the detrimental effects of stress (Beardslee, 1989; Bebbington, Sturt, Tennant, & Hurry, 1984; Byrne, Love, Browne, Brown, Roberts, & Streiner, 1986; Masten & O'Connor, 1989). Individuals who are able to adapt successfully after a major life event (Fredrickson, Tugade, Waugh, & Larkin, 2003) are considered to be resilient. Specifically, resilience connotes a level of emotional strength that allows individuals to adapt to life's misfortunes (Wagnild & Young, 1990). The ability to adapt, or plasticity,

exists throughout a person's lifetime (Felten & Hall, 2001; Mandelco & Reery, 2000; Resnick, 2000; Sigal & Weinfeld, 2001; Wagnild & Young, 1993). Resilience has been compared to the elasticity in metals (Lazarus, 1993). For example, cast iron is brittle and tends to break under stress (not very resilient), but wrought iron is malleable and tends to bend it easily under stress, rather than breaking (resilient). The construct of resilience is similar in that it confers a similar resistance, albeit to environmental stressors. Because early resilience research has focused on extremely traumatic events, modest and everyday disruptions are rarely considered in research.

Traditional healthcare interventions have used a pathology-based model which attempts to diagnose and solve an individuals' problems. However, positive psychology focuses on individuals' strengths and developing strategies to build these strengths. According to Fletcher and Sarkar (2013), when adversity is defined only by its relationship to negative outcomes, it precludes the opportunity to examine the relationship between everyday stressors and positive outcomes, and how they are mitigated by resilience (Davis, Leucken, & Lemery-Chalfant, 2009).

Resilience is built on the Broaden and Build theory of positive psychology (Fredrickson, 1998). This Broaden and Build theory predicts that positive states of emotion broaden one's cognition and attention, which leads to an "upward spiral" toward high emotional wellbeing. According to the Broaden and Build theory (Fredrickson, 1998), some individuals use protective factors such as positive affect as a resource for "bouncing back" and even growing one's resources or protective factors. By using positive affect, they are able to find positive meaning from stressful situations (Tugade & Fredrickson, 2004). In other words, positive emotions play a vital role in helping resilient

people cope with stressful situations (Tugade & Fredrickson, 2004). According to one review, positive emotions are useful as they help buffer against stressful times (Folkman & Moskowitz, 2000). Some people are proficient at using positive emotions to their advantage (Feldman & Gross, 2001; Salovey, Hsee, & Mayer, 1993), and highly resilient individuals fit this profile (Tugade & Fredrickson, 2002; Tugade & Fredrickson, 2004). In stressful times, highly resilient individuals cultivate positive emotions through techniques like humor (Werner & Smith, 1992), optimistic thinking (Kumpfer, 1999), and relaxation techniques (Demos, 1989; Wolin & Wolin, 1993).

Resilience facilitates adaptation to stressors through the process of an individual identifying potential stressors, realistically appraising one's capacity for action, and then effectively solving a problem (Beardslee, 1989; Block & Block, 1980; Caplan, 1990; Rutter, 1985). Individuals adapt through a combination of cognitive, emotional, behavioral, and social skills. Cognitive skills include an individual's explanatory style, their coping strategies, and self-efficacy. Emotional skills include cultivating positive emotions and finding meaning in life. Social skills include using humor, reaching out to others (i.e., social support), and conflict management. Behavioral skills include self-regulation and activities aimed at decreasing the physiological stress response. These skills are discussed in detail in Chapter 2.

With the ongoing changes in regulations and work demands affecting nurses in the U.S. healthcare system, resilience is considered by some researchers to be an essential ingredient for nurse success (Hodges, Keeley, & Grier, 2005). It is important to identify the role resilience plays in the stress process for nurses. Nurses are exposed to extreme life and death scenarios every day, so being able to adapt to stressors like emotional

labor, workload, and interpersonal conflict is a valuable skill set for nurses to possess. Being resilient acts as a buffer to the relationship between stressors and negative affective responses to stressors (Ong, Bergeman, Bisconti, & Wallace, 2006), potentially reducing behavioral and physical strains such as turnover intentions, reduced job satisfaction, and injuries. This stress process is discussed in more detail in Chapter 2.

Purpose of the Dissertation

To address commonly cited organizational and personal outcomes in the nursing industry, it is important to identify factors that may mitigate the relationship between workplace stressors and strains in the nursing industry such as turnover intentions, job satisfaction, burnout, and injuries. The purpose of the present study was to examine the impact of resilience on the emotion-centered model of job stress in a multiwave study over a period of two weeks. Specifically, a sample of nurses in the United States from all types of units (emergency, psychiatric, geriatric, pediatrics, etc.) were surveyed to measure resilience across the nursing industry. At Time 1, nurses were asked to complete measures of common stressors they experienced as well as the trait of resilience. At Time 2, nurses were asked to complete measures of common strains they experienced.

Chapter II begins with a discussion of job stress in the nursing industry, including a discussion of their major reported stressors (interpersonal conflict at work, quantitative workload, emotional labor, and traumatic experiences). The significant strain outcomes of these stressors for nurses, patients, and healthcare organizations are also discussed. The mediating role of affect is further expanded, and the history of how the construct of resilience has been defined and studied is discussed. Research on resilience and its

relationship to job strains is then discussed, followed by a review of the moderating role of resilience in the job stress process.

Summary. In this study, I aim to make a number of key contributions to the resilience literature. First, I examined the impact of resilience on nurses in a multiwave study. Second, I identified resilience as a factor that mitigates the relationship between workplace stressors and its outcomes in the emotion-centered model of job stress. Overall, this study provided evidence for the value of trait resilience in the nursing industry, signifying its value in promoting resilience among employees.

II. LITERATURE REVIEW

Job Stress in the Nursing Industry

Nurses are affected by a number of workplace stressors that have an impact on their emotional and physical well-being and likelihood of turnover. Indeed, some researchers have considered the nursing industry to be rife with stress. According to Dewe (1987) nurses face,

“...the optimum environment for the manufacture of stress... many of the factors you would include would clearly be recognised by nursing staff as events which they encounter daily; these are: an enclosed atmosphere, working against the clock, excessive noise or undue quiet, sudden swings from intense to mundane tasks, no second chance, unpleasant sights and sounds, and standing for long hours”. (p. 15)

Nurses report a number of stressors they experience in the workplace, such as : 1) death and caring for dying patients, 2) interpersonal conflict with staff, 3) interpersonal conflict with patients and families, 4) fear of failure, 5) workload, 6) inadequate nursing staff in their organization, and 7) feeling unprepared to meet the emotional needs of patients (Glazer & Gyurak, 2008; Gray-Toft & Anderson, 1981a, b; LeSergent & Haney,

2005; Parkes, 1985). While many stressors among nurses have been reported to be organizational stressors such as workload, the social and emotional demands of being a nurse are an important factor, and range from conflict (Keenan & Newton, 1985) to emotional labor (Erickson & Grove, 2007).

Interpersonal Conflict

From a macro perspective by the U.S. government, conflict at work is subsumed under the typology of workplace violence that has been put forth by OSHA. Originally, the California Occupational Safety and Health administration (Cal/OSHA) proposed a model with three types of workplace violence. Workplace violence is defined as “violent acts, including physical assaults and threats of assault, directed toward persons at work or on duty” (NIOSH, 2006, p. 5). Type II (customer/client) occurs when the perpetrator has a relationship to the organization or employee, and tends to be perpetrated by customers, patients, students, inmates, or clients. Type III (worker-on-worker) occurs when the perpetrator is an employee, and threatens or attacks another employee while in the workplace. Nursing is considered a high-risk industry for Type II workplace violence (violence from a customer, client, or patient). As such, nurses are at risk for a wide range of behaviors that may cause injury or death (NIOSH, 2006).

Workplace mistreatment has been conceptualized in the literature under different labels such as interpersonal conflict, workplace harassment, bullying, verbal aggression, violence, social undermining, incivility, and abuse (Bowling & Beehr, 2006; Hershcovis, 2011; NIOSH, 2006). Nurses are at the highest risk of experiencing Type II violence (from patients and their family members) as well as Type III violence (from other employees; NIOSH, 2006). Physical aggression (i.e., violence) tends to be perpetrated

more by patients (e.g., in psychiatric care units), and verbal aggression tends to be perpetrated more by coworkers than patients (Spector et al., 2007; Lin & Liu, 2005).

In a study of nurses at a Veteran's Health Administration hospital in the southeast U.S., 25% of nurses reported experiencing violence over the last year, and over 50% reported experiencing verbal aggression (Spector et al., 2007). However, some of the most negative conflicts for nurses occur with coworkers, physicians, and other hospital staff (Sinclair et al., 2009), and are defined as interpersonal conflict. Interpersonal conflict in the workplace ranges from minor coworker disagreements to physical assault, and can be overt or covert. It is associated with job strains such as anxiety, depression, decreased job satisfaction, increased turnover intentions, and even decreased job performance (Spector & Jex, 1998). Interpersonal conflict functions as a psychosocial hazard, and is especially prevalent in the nursing industry. Given that both violence and verbal aggression are common in hospital settings (Spector et al., 2007) and to some extent are unavoidable, it is important to find methods to help nurses mitigate the negative outcomes that arise from such situations.

Conflict among nurses has been found to be a persistent problem, and one that is on the rise (Almost, 2006). Some have gone as far as to describe nurses as "eating their young" (e.g., Baltimore, 2006), a reference to the way experienced nurses treat new nurses, and even the way more tenured staff treat experienced nurses. In a recent literature review of conflict among nurses, interpersonal conflict is considered a routine feature of the workplace (Brinkert, 2010). According to Brinkert, communication is a central component to conflict because it can act as the cause of conflict, acts as a reflection of the conflict, and is the method through which conflict can be resolved –

whether that be resolved productively or destructively. Because of the prevalence of interpersonal conflict in the nursing industry, the dissertation will focus specifically on interpersonal conflict.

A concept analysis of the nurse conflict literature was performed in order to clarify the nature of conflict among nurses (Almost, 2006). A concept analysis (e.g., Rodgers, 1989) of this construct is valuable because it identifies the attributes of nurse conflict, its antecedents, and its outcomes. Almost (2006) found that the antecedents of perceived conflict in the nursing industry include individual characteristics in values and demographics, interpersonal factors (e.g., poor communication), and organizational factors such as restructuring. The outcomes of conflict on nurses affected individuals, their teams, and the organization. For example, nurses who were not satisfied with their job were more likely to leave, had more negative emotions, and more psychosomatic complaints than nurses who were satisfied with their job. On the team level, conflict was related to hostility, avoidance, and negatively perceiving others. Interestingly, positive outcomes were also noted, but only under moderate levels of conflict. Nurses with moderate levels of conflict reported high levels of team cohesiveness and strong relationships because they generated more solutions. Being able to resolve issues leaves nurses feeling more competent and able to adapt, which strengthens relationships. At the organizational level, conflict reduces productivity and coordination.

Strain Outcomes of Interpersonal Conflict. As mentioned above, nurses that experience interpersonal conflict report low levels of job satisfaction, and high levels of turnover intentions, negative emotions, and physical symptoms (Almost, 2006). Exposure in the workplace to verbal aggression and violence by coworkers as well as the public

(e.g., customers) has been associated with poor emotional and behavioral outcomes (LeBlanc & Kelloway, 2002). Both violence and verbal aggression are common in hospital settings, and are related to outcomes of physical strains, anxiety, and depression (Spector et al., 2007). In this study by Spector et al. (2007) of nurses at a Veteran's Health Administration hospital, 25% of nurses reported experiencing violence over the last year, and over 50% reported experiencing verbal aggression. Furthermore, perceived violence climate was found to be associated with physical strains (e.g., headaches and upset stomachs) as well as psychological strains (e.g., depression and anxiety). Conflict with other nurses has also been identified as a significant predictor of burnout in hospice nurses (Payne, 2001).

Workload

Workload has been identified as a major stressor for both urban (Dewe, 1987; Gottlieb, Kelloway, & Martin-Matthews, 1996) and rural nurses (Bigbee, 1991; Hodgson, 1982). In a study of rural nurses, 46% of nurses reported issues with their workload (LeSergent & Haney, 2005).

Nursing workload has been conceptualized in a number of different and often inconsistent ways over the years. Specifically, it has been defined as nursing "intensity," patient "dependency," the complexity of patient care, and the amount of time spent in patient care (see Morris et al., 2007). Workload is often used as a method of quantifying the amount of work a nurse carries out in the job in both direct and indirect patient care (Needham, 1997). In the Morris et al. (2007) analysis of nursing workload, the authors combined the different definitions of nursing workload into the following five factors:

skill complexity, patient dependency, the severity of a patient's illness, amount of time taken, and the direct and indirect patient care activities.

In a study on nurse workload and mortality, workload was determined to be more complex than the single factor of the absolute number of patients under a nurse's care. The demands of each patient can vary widely in intensive care units, suggesting that using patient count is not an accurate measure of workload (Kiekkas et al., 2008). However the impact of nurse workload on mortality in ICU patients was not found to be statistically significant, though the authors noted that it was important from a clinical standpoint. For the patients under the care of nurses that reported a median workload and a high workload, there was a 39% and a 74% (respective) increase in mortality rates compared to nurses that reported a low workload.

Strain Outcomes of Workload. A study of 357 direct care nurses and caregivers in Belgium found that workload predicts job strains such as burnout, job satisfaction, and turnover intentions (Van Bogaert, Clarke, Willems, & Mondelaers, 2012). Workload has also been found to be related to musculoskeletal injury rates among care aides and licensed practical nurses (Cohen, Village, Ostry, Ratner, & Cvitkovich, 2004).

Research has found that the stressor workload is related to negative job outcomes such as burnout (Lee & Ashforth, 1996). This relationship is theorized to occur because a high workload likely yields a level of uncertainty about whether an employee can get the work assignment completed (Beehr & Bhagat, 1985). A study of 357 direct care nurses and caregivers in Belgium found that workload is positively related to job outcomes such

as burnout, and turnover intentions, and negatively related to job satisfaction in nurses (Van Bogaert et al., 2012).

Emotional Labor

It has often been stated that “people jobs” such as nursing are emotionally taxing (Maslach & Jackson, 1984) because their jobs require them to care for the physical and emotional wellbeing of their patients. But nurses have a choice on the level of emotional caring they provide for patients, depending on the level of emotional regulation they choose (Henderson, 2001). Emotional labor is especially relevant in the nursing industry, though the degree to which nurses are detached or engaged appears to be a matter of individual preference (Henderson, 2001). For example, Henderson interviewed U.K. nurses about their experiences in emotional labor and its relevance in nursing, and found varying responses. The majority of nurses reported that emotional engagement was highly valued as an effective nursing technique in patient care. However, a small group of nurses highlighted the importance of some degree of detachment when caring for patients as a way to protect them emotionally. Other nurses report that being detached is not always a function of the individual nurse’s emotional needs, but in actuality runs along a continuum that changes according to the situation. For example, some patients, such as children, may need more emotional engagement than adults require. One community health nurse described this interaction between the nurse and patient as:

"That sort of dancing between you and a patient or client where you’re feeding off each other and it’s backwards and forwards and you’re picking up cues from each other. You know it’s that real, almost like a tango or something, you learn each other’s moves — that can’t occur [if you’re not emotionally engaged]." (p. 132)

The author concluded that the majority of nurses emotionally engage as a way to improve their practice. A minority of nurses mentioned the importance of being detached as a way to balance the well-being of the patient and the well-being of the nurse. Learning to balance may be especially important for nurses that experience very emotionally demanding circumstances, whether that is the result of the length of time of care or the intensity of care required.

Further, there has been a call to understand the role of emotions in communicating among healthcare professionals. Over thirty five years ago, Hochschild (1979) defined “emotion work” as the attempt to manage or shape emotions according to social rules that define what emotions should be felt and expressed by individuals. Jobs that are emotionally taxing require employees use emotional labor strategies to regulate their emotions as part of their professional position (Brotheridge & Lee, 2003). Individuals in the healthcare industry are often faced with life-changing events such as birth, death, the uncertainty of treatments, and the inevitability of mortality. Indeed, it has been noted that “people jobs” such as nursing are emotionally taxing (Maslach & Jackson, 1984). As a consequence of these experiences, nurses face considerable emotional demands in the workplace, and how they handle these demands has an impact on their burnout and turnover (Erickson & Grove, 2007). As a part of their job, nurses experience a variety of emotions such as anxiety or anger, despair, hope, joy, distress, and compassion. Emotions play a central role in creating meaning in the workplace because of their role in communicating with patients and coworkers (Maynard, 1992). For nurses and other healthcare professionals, healthcare and emotions are bound to each other.

In a qualitative study on emotional labor in nurses, Smith and Gray (2000) noted that nurses reported emotional labor to be a key factor in nurses' function of helping patients to feel safe and comfortable. However, other research has found that emotional labor can be detrimental for individuals. For example, Hochschild (1983) argued that the inherent false nature of workplace-prescribed displays of emotion can be deleterious to workers. In fact, one study found that emotional demands from patient interaction were a moderate to high source of stress in 27% of nurses (McGrath, Reid, & Boore, 2003). In one study of mental health nurses, emotional labor was found to be a frequent feature in their patient interactions (Mann & Cowburn, 2005). These researchers found that only 18% of patient interactions were reported to have a low level of emotional labor, 67% reported a medium level, and 15% of patient interactions involved a high level of emotional labor.

One study of urban direct care nurses in the Midwestern United States found that individual and unit-level display rules interact to predict deep and surface acting (Diefendorff, Erickson, Grandey, & Dahling, 2011), and that there were differences in expected emotional displays depending on the unit type. For example, nurses working in psychiatry, the emergency room, and preadmission for surgery reported higher levels of emotionality than nurses working in positions that monitor patient care and childbirth education. The authors posited that nurses with lower levels of emotionality likely did not encounter highly emotional situations with patients.

The emotions nurses feel are important as well as how they deal with these emotions (e.g., perform emotional labor; Erickson & Grove, 2007). These researchers found a link between young nurses under 30, high levels of negative feelings at work, and

burnout. They also found a link between nurses over 30, low levels of positive feelings at work, and burnout. They concluded that the wellbeing of young nurses is more sensitive to negative feelings at work than nurses older than 30, whose wellbeing is more sensitive to positive feelings at work.

Strain Outcomes of Emotional Labor. It is evident that nurses experience strong positive and negative emotions, and use these emotions to refine and enrich themselves and their interactions with patients. For example, communicating emotions is a way for nurses to cope with workplace stressors such as workload and change (Brunton, 2005). However, some researchers have argued that emotional labor, or the control of individuals' feelings and expressions, can be a stressful and alienating experience for nurses. For example, increased reports of emotional labor have been found to lead to the burnout facet of emotional exhaustion (Brotheridge & Grandey, 2002). Emotional labor has also been found to reduce job satisfaction (Bulan, Erickson, & Wharton, 1997; Parkinson, 1991; Pugliesi & Shook, 1997).

Traumatic Events

Traumatic events include exposure to death, suicide, severe injuries, and physical and verbal aggression (Adriaenssens et al., 2012). Exposure to events such as these can have negative consequences for individuals. For example, in one study of emergency room, intensive care, and general nursing, researchers found that all groups of nurses reported high levels of anxiety as a result of the experience of uncontrollable traumatic events over their nursing career (Kerasiotis & Motta, 2004). Traumatic events are an important component of both nursing work and resilience because these events are one of the required variables for resilience to occur. It is important to measure the frequency of

traumatic experiences in this dissertation because it is a sample of nurses from all types of units. Traumatic events in the workplace are common for nurses, especially emergency care and psychiatric nurses. A traumatic of event is defined as “a situation that is so extreme, so severe and so powerful that it threatens to overwhelm a person’s ability to cope, resulting in unusually strong emotional, cognitive, or behavioral reactions in the person experiencing it” (Adriaenssens et al., 2012, p. 1412). In two studies on American nurses, a quarter of nurses (Gates, Gillespie, & Succop, 2011) and a third of emergency nurses (Dominguez-Gomez & Rutledge, 2009) met the clinical cut-off for PTSD. A study on internal and surgical ward nurses only found that 14% of nurses met the clinical cut-off for PTSD (Mealer, Shelton, Berg, Rothbaum, & Moss, 2007). The frequency of exposure to traumatic events was found to be significantly positively correlated with psychological distress, somatic complains, as well as sleep problems (Adriaenssens et al., 2012). In a study on the prevalence of stress in Canadian psychiatric nurses, registered psychiatric nurses reported high levels of emotional exhaustion as well as high levels of personal accomplishment (Robinson, Clements, & Land, 2003). These authors suggest that workplace conditions can be altered to reduce emotional exhaustion such as social support from coworkers, building nurse strengths, and changing workplace hours.

In one study of hospice nurses and their encounters with death, nurses reported that encounters with death and trauma were unremitting (Froggatt, 1998). Creating and sustaining relationships with patients was difficult when the nurses experienced distress after the loss of the patient. One nurse described this as emotionally draining: “You can go through a death three or four times in the matter of about three days, so if you do that two or three times a week it drains you, it really drains you” (p. 334). These emotionally

taxing jobs require that employees use emotional labor strategies to regulate their emotions as part of their position as a professional (Brotheridge & Lee, 2003).

Strain Outcomes of Traumatic Events. The frequency of exposure to traumatic events has been found to be significantly positively correlated with psychological distress, somatic complaints, sleep problems (Adriaenssens et al., 2012), and job dissatisfaction (Alden et al., 2008). In one study of emergency room, intensive care, and general floor nurses, researchers found that all groups of nurses reported high levels of anxiety as a consequence of the experience of uncontrollable traumatic events over their nursing career (Kerasiotis & Motta, 2004). As mentioned above, a study on burnout in psychiatric nurses found that they reported similar levels of vicarious trauma (trauma experienced by patients) to other mental health care practitioners. Specifically, 21% of nurses who provided care for trauma clients reported having persistent thoughts about trauma experienced by their clients. Fifty five percent even met one of the criteria for post-traumatic stress disorder. This relationship is important because 48% of the nurses noted that these symptoms interfered with their lives. These nurses also reported high levels of emotional exhaustion and personal accomplishment (Robinson et al., 2003). One cross-sectional study on nurses across work units (e.g., pediatrics, maternal-newborn, and rehabilitation) found that nurses working in the emergency department, critical care, and psychiatry reported some of the lowest levels of job satisfaction (Boyle, Miller, Gajewski, Hart, & Dunton, 2010). Some researchers have suggested that the exposure to traumatic events may increase turnover intentions as well (Adriaenssens et al., 2012). However, the impact of traumatic events on turnover intentions is unknown, so this relationship is exploratory.

Hypothesis 1a-d (H1): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in turnover intentions.

Hypothesis 2a-d (H2): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in job satisfaction.

Hypothesis 3a-d (H3): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in emotional exhaustion

H4a-d (H4): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in depersonalization.

H5a-d (H5): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in personal accomplishment.

Hypothesis 6a-c (H6): Interpersonal conflict at work, quantitative workload, and traumatic events will predict unique variance in injuries.

The Mediating Role of Affect

In the emotion-centered model of the stress process (Spector, 1998), emotions act as the mechanism that individuals use to respond to their environment in ways that impact their survival (Plutchik, 1989). Context-specific affect, such as job-related affective well-being, measures affective responses that are experienced on the job (Van Katwyk et al., 2000). Job-related affective wellbeing acts as the mediating variable between stressors and strains (Spector, 1998), and is associated with individual and

organizational variables such as job satisfaction, turnover intentions, and interpersonal conflict (Van Katwyk et al., 2000).

The nature of affect has been defined through two research traditions: whether affect is bipolar (in that positive and negative affect are inversely related), or if it is bivariate (in that positive and negative affect are uncorrelated, or orthogonal, with each other (Reich, Zautra, & Davis, 2003). Recent models of affect have sought to incorporate elements of old psychological outcomes like negative affect with newer positive psychological outcomes like positive affect. Researchers have proposed the Dynamic Model of Affect (DMA), which incorporates both emotions separately into the stress process (Zautra, Smith, Affleck, & Tennen, 2001). According to the DMA, whether affect is bipolar or bivariate depends on the context of the event, or if it is stressful or not. In a low stress situation, individuals are able to process multiple sources of information (such as emotional inputs) in response to the event. In these cases, positive and negative affect do not provide much overlapping information, so they are uncorrelated. In a high stress situation, individuals need to process information quickly in response to an uncertain event. In these cases, individuals tend to process negative information in lieu of positive information, leading to an inverse relationship between negative and positive affect (Zautra, Affleck, Tennen, Reich, & Davis, 2005). In other words, when nurses are not under stress, they feel positive and negative emotions separately. When they are under stress, negative emotions increase as positive emotions decrease. However, it is also possible for stressed nurses to experience positive emotions, thereby decreasing their negative emotions. The DMA explains an individual's ability to resist stress and negative emotions through the use of positive emotions.

In the case of nurses, emotions (e.g., happy, sad, frustrated, or angry) are an immediate emotional strain that act as a mediator between job stressors and behavioral and physical strains. For example, if a nurse reports feeling sad as a response to high levels of interpersonal conflict, then they are likely to report higher levels of job dissatisfaction. On the basis of the previous literature, the following relationships are hypothesized:

Hypothesis 7a-d (H7a-d): Job-related negative affect will mediate the relationship between interpersonal conflict and turnover intentions, job satisfaction, burnout, and injuries.

Hypothesis 8a-d (H8a-d): Job-related negative affect will mediate the relationship between quantitative workload and turnover intentions, job satisfaction, burnout, and injuries.

Hypothesis 9a-d (H9a-d): Job-related negative affect will mediate the relationship between surface acting and turnover intentions, job satisfaction, and burnout.

Hypothesis 10a-d (H10a-d): Job-related negative affect will mediate the relationship between traumatic events and turnover intentions, job satisfaction, burnout, and injuries.

The History of Resilience

Early Research on Resilience

The process through which resilience enables adaptation is by: 1) identifying a stressful event, 2) realistically appraising if one is able to take action, and 3) effectively solving the problem (Beardslee, 1989; Block & Block, 1980). Using the same process

successfully over time installs a sense of competence or mastery in individuals in spite of stressors because it acts as evidence that such a skill is available for the person to utilize. This process allows them to confidently confront new events, rather than feeling fearful or unable to cope with the situation (Caplan, 1990; Druss & Douglas, 1988). For example, a study on individuals who had experienced horrific burns found that they exhibited resilience through the acts of redefining goals and feeling determined (Holaday & McPhearson, 1997). These perceptions of control over one's life can be powerful for individuals. Burn victims that were given age-appropriate control over their treatment were discharged earlier from the hospital, healed faster, and had better social adjustment to those without control over their treatments. When goals are accomplished through one's own actions, it indicates a sense of personal power which increases hope, which further increases determination. As a consequence of this, individuals feel in control, engaged, and able to adapt to situations (Gillespie, Chaboyer, & Wallis, 2007a).

Research on resilience started in children (Garmezy, 1993; Rutter, 1987, 1993) and later moved on to clinical samples (Wagnild, 2009). In particular, studies focused on children and how they respond to extreme life stressors such as violence, maltreatment and abuse, parental psychopathology, and living in group or residential care systems. Studies on adults have examined how they respond to major adversities such as cancer and heart attacks (e.g., Druss & Douglas, 1988).

Early definitions of resilience have included a combination of factors such as self-esteem, morale, positive affect. Researchers had defined resilience by positive outcomes associated with adaptive abilities in the face of adversity (Wagnild & Young, 1993). One study defined resilience as young males that grew up in a rough neighborhood and had

never been arrested (Schott, 1998). However, these measures are now considered evidence, or outcomes of resilience, rather than an individual difference. One recent study sought to expand the construct of control to include an individual's behaviors, including their personality and coping skills (Ferris, Sinclair, & Kline, 2005). The Ferris et al. study was unique because researchers did not measure the trait of resilience; they defined resilience as a composite of individuals' commitment to change, physical activity, nutritional practices, and satisfaction with leisure activities, social support, and personal relationships.

An examination of the research on resilience reveals that researchers have provided a number of different interpretations of the construct of resilience over the years, and even how recent research has defined resilience indicate that the construct remains elusive. For example, Leontopoulou (2006) defined resilience as individuals that have high adversity and high adaptation. Schott (1998) defined indicators of resilience as graduation from high school and not participating in crime. Kumpfer's (1999) review of resilience gave a statistically broad definition of resilience. It was defined as "virtually all internal and external variables or transactional and moderating or mediating variables capable of affecting the youth's life adaptations" (p. 182). Indeed, the lack of a coherent definition in the early resilience literature continues to be a challenge for researchers, with some suggesting that it hinders evaluations of resilience such as meta-analyses (Davydov, Stewart, Ritchie, & Chandieu, 2010). Given the lack of uniformity across studies, this dissertation will focus on studies that utilize valid and reliable measures of resilience such as the Resilience Scale (Wagnild & Young, 1993) and the Connor Davidson Resilience Scale (CD-RISC, Connor & Davidson, 2003).

Recent Research on Resilience

The capacity for individuals to move on and grow despite (or perhaps because of) stressful situations is not a function of luck or chance, but a function of the trait of resilience. Early images of resilience defined people that overcame these situations as having something special or extraordinary about them that allowed them to adapt. Some researchers have even referred to resilient individuals as having an uncommon amount of optimism and courage (Druss & Douglas, 1988). However, it appears that these early conclusions were incorrect. Resilience is an ordinary mechanism of human development (Masten, 2001). According to Masten, “resilience appears to be a common phenomenon that results in most cases from the operation of basic human adaptational systems” (p. 227). When this protective system of resilience is compromised, the risk of adversity increases. Resilience “connotes inner strength, competence, optimism, flexibility, and the ability to cope effectively when faced with adversity” (Wagnild, 2009, p. 105). The ability to overcome difficult situations provides a valuable framework for ameliorating negative consequences that arise from stress in the workplace.

Recent reviews of the literature on resilience have indicated a focus by researchers on the personal characteristics that make up resilience (Lee et al., 2013), though research on resilience and job outcomes has been expanding (e.g., Matos, Neushotz, Griffin, & Fitzpatrick, 2010). The variables that make up resilience are categorized as personal characteristics. Research has converged upon two major areas of personal characteristics that are related to resilience (Lee et al., 2013). These personal characteristics include demographic attributes and psychological attributes, which are

split into protective and risk factors. Some researchers have gone so far as to propose that these personal characteristics act as antecedents to resilience (Kumpfer, 1999).

Over the years, there have been a number of inconsistencies among researchers using the terms protective and risk factors of resilience (Luthar, Cicchetti, & Becker, 2000). In early research on resilience, for example, the term “protective” referred to the moderating effects of an attribute (e.g., parental warmth) whereby individuals with that attribute were unaffected by adversity, versus an individual without that attribute who was affected (Garmezy, Masten, & Tellegen, 1984; Masten et al., 1988). Several other researchers defined “protective factors” by their direct beneficial effects. For example, Werner and Smith (1982, 1992) used protective variables to distinguish between high-functioning children that were at risk from low-functioning children that developed serious problems. Given this ongoing confusion over the term “protective factors” as a main effect or interactive process, reviews of resilience have sought to define protective and risk factors more clearly (Kumpfer, 1999; Lee et al., 2013; Luthar et al., 2000). Kumpfer (1999) proposed “a dynamic framework that allows for interactions between the resilient person and his/her high-risk environment” (p. 180). In this dynamic framework, the environmental precursors, or antecedents, of resilience are referred to as risk and protective factors.

In a meta-analysis of the two validated measures of resilience, the Resilience Scale (Wagnild & Young, 1993) and the CD-RISC (Connor & Davidson, 2003), researchers examined the effects of risk and protective factors of resilience. They found that protective and risk factors exhibit different patterns of effect sizes with resilience (Lee et al., 2013). These researchers found that the largest effects were between resilience

and protective factors (life satisfaction, optimism, positive affect, self-efficacy, self-esteem, and social support). There were medium effects between resilience and risk factors (anxiety, depression, negative affect, perceived stress, and PTSD), and small effects between resilience and demographic factors. Given the propensity for resilience to be most strongly related to positive psychology constructs such as optimism and positive affect, resilience interventions that incorporate elements of positive psychology are likely to be successful.

Other variables that have been identified as being significantly related to resilience are the personality traits of extraversion, conscientiousness, and neuroticism (Campbell-Sills, Cohan, & Stein, 2006). Extraversion is likely related to resilience because both variables encompass the benefits associated with social support and positive affect, contributing to an individual's ability to bounce back. The tendency to seek out support from others acts as a protective factor when an adverse event occurs (Rutter, 1985). Conscientiousness is likely related to resilience through the mediating behavior task-oriented coping, which encourages recovery from adverse events through problem-solving (Penley, Tomaka, & Wiebe, 2002; Zeidner & Saklofske, 1996). Neuroticism is likely negatively related to resilience because it encompasses the tendency for individuals to engage in poor coping strategies and negative emotions (Campbell-Sills, Cohan, & Stein, 2006).

Literature on child and adult resilience (Bonnano, 2004; Luthar & Brown, 2007; Masten, 2001; Ryff & Singer, 2000) highlight the importance of measuring the personality assets that contribute to resilience, such as positive self-concepts, ego resilience, and hardiness) as well as environmental resources (e.g., nurturing family

bonds, quality community relationships, and access to supportive relationships).

Hardiness is a personality trait (Kobasa, Maddi, & Kahn, 1982) that helps buffer the exposure to extreme stressors, and it has been conceptualized as one of the pathways to resilience (Bonnano, 2008). In other words, personality traits such as hardiness and ego-resilience act to support the short-term adaptation to adversity (such as daily stress; Ong et al., 2009).

Demographic attributes. Demographic attributes that have been found to be most often associated with resilience are age and gender (Lee et al., 2013), though previous research on the relationship between demographics and resilience has been mixed. Some studies have found a negative relationship between age and resilience (Beutel, Glaesmer, Decker, Fischbeck, & Braehler, 2009; Lamond et al., 2008). Other researchers have found no significant relationship between age and resilience (Campbell-Sills, Forde, & Stein, 2009; Gillespie, Chaboyer, Wallis, & Grimbeek, 2007b; Gillespie, Chaboyer, & Wallis, 2009). Research on the demographic variable of gender has also provided mixed results, with some studies finding that females report higher levels of resilience (Davidson et al., 2005; McGloin & Widom, 2001) and other studies finding that males report higher levels of resilience (Campbell-Sills et al., 2009; Stein, Campbell-Sills, & Gelernter, 2009). These mixed results may be the result of the use of small and homogenous samples, however.

Psychological attributes. Psychological attributes associated with resilience can be broken down into two major categories: protective factors and risk factors (Lee et al., 2013). When protective factors are possessed by individuals, they lead to higher likelihood of adaptation after a disruptive event. Alternatively, when risk factors are

possessed, they lead to a lower likelihood of adaptation. Protective factors are defined as characteristics that are positively related to resilience, and may help adaptation (Lee et al., 2013). These factors include optimism (Lamond et al., 2008), life satisfaction (Beutel et al., 2009), self-efficacy (Gillespie, Chaboyer, Wallis, & Grimbeck, 2007a), positive affect (Burns & Anstey, 2010), self-esteem (Baek, Lee, Joo, Lee, & Choi, 2010), and social support (Brown, 2008). Another review on the resilience literature indicates that hope and coping are also defining attributes of resilience (Gillespie, Chaboyer, & Wallis, 2007a). Risk factors are characteristics that are negatively related to resilience, and enhance the likelihood of maladaptation (Lee et al., 2013). These factors include depressive symptoms (Baek et al., 2010), anxiety (Norman, Cissell, Means-Christensen, & Stein, 2006), and stress (Bruwer, Emsley, Kidd, Lochner, & Seedat, 2008).

While the vast majority of research on resilience has examined behavioral and psychological factors, an expanding area of interest is the genetic component of resilience. The loss of the serotonin transporter (5HTT) has been associated with abnormal coping with stress (depression-related behavior) in mice (Wellman et al., 2007). In a study on 423 undergraduate college students (Stein, Campbell-Sills, & Gelernter, 2009), researchers compared a self-report measure of resilience (the CDRISC-10) to DNA from blood samples, and found a relationship between resilience scores and the serotonin transporter promoter polymorphism called 5HTTLPR. Specifically, if participants had one or two copies of the “s” allele of 5HTTLPR, they reported significantly lower levels of resilience than participants who have no copies of the “s” allele.

There has been a shift in resilience research from factors that promote resilience to examining the process of resilience (Luthar, Cicchetti, & Bekker, 2000). However, the lack of consensus about the relationship between resilience and its protective and risk factors has led the field in different directions. Some practitioner models of resilience have considered positive affect to be a predictor (i.e., protective factor) of resilience (e.g., Kumpfer, 1999; McAllister & Lowe, 2011). Other models have considered resilience is a predictor of positive affect (e.g., Fredrickson et al., 2003; Shin, Taylor, & Seo, 2012). In a longitudinal study on resilience in pre- and post-9/11 students found that positive emotions fully mediated the relationship between resilience and depressive symptoms, suggesting that resilient people buffer strains through the use of positive emotions (Fredrickson et al., 2003). The reason previous models of resilience are so dissimilar is because these conceptualizations of resilience are only capturing part of the broad human experience. Individuals do not experience one singular stressful event, use positive emotions to overcome it, and then feel better forever. They experience multiple events every single day and the subsequent emotions that occur. The ongoing evolution of an individual's interaction with their environment is tempered by previous experiences. For example, a history of failed attempts to "cheer up" after a hard day can prompt a person to believe that they "just don't have what it takes". But the alternative is also true: a history of success provides an individual with proof that such a thing is possible ("I've done this before, I know I can do it again").

Resilience and Strains

The last decade has seen a growing interest in identifying how resilience can impact healthcare workers (Edward, 2005; Gillespie et al., 2007a,b; McAllister & Lowe,

2011; Warelw & Edward, 2007). Resilience has been found to be related to important well-being outcomes such as physical health (Black & Ford-Gilboe, 2004; Humphreys, 2003; Monteith & Ford-Gilboe, 2002) and emotional health (Broyles, 2005; Humphreys, 2003; March, 2004; Nygren et al., 2005; Rew, Taylor-Seehafer, Thomas, & Yockey, 2001). Resilience has also been found to be related to important organizational outcomes such as job performance (Fletcher, 2011). For example, in a study on minority faculty members, resilience was significantly related to academic productivity (defined by grants, peer-reviewed publications, and academic promotion; Cora-Bramble, Zhang, & Castillo-Page, 2010).

In a thesis study examining a pharmaceutical organization undergoing significant changes, Sylvester (2009) examined pharmaceutical managers' resilience and its impact on their managerial skills in driving sales, and their sales team performance. Managerial skills for the team leader included developing talent, delivering accountability and results, having business acumen, and leading a team. Results indicated that managerial skills fully mediated the relationship between managers' resilience and job performance (as measured by their sales team performance). Indeed, an exploratory factor analysis indicated that characteristics of resilience (resilient engagement and fostering creative action) load onto a separate construct than managerial skills, providing support for resilience and managerial skills as different constructs. This result was also supported by near-zero to small correlation coefficients between the constructs.

The first study to examine resilience in the health care industry was a qualitative study on six Australian mental health clinicians found that they garnered resilience through a number of experiences such as supportive coworkers, hope, and a sense of self

(Edward, 2005). The author called for future research to examine the impact of promoting resilience among clinicians as a way to reduce burnout and promoting retention and wellbeing.

Turnover Intentions. In a longitudinal study of employees and managers, Shin and colleagues (2012) extended the conservation of resources theory (Hobfoll, 1988) by asserting that resilience reduces strains that are associated with organizational changes (e.g., altering work routines; Herold & Fedor, 2008). These authors found that resilience acts as a resource to the organizational change process as a determinant of important organizational outcomes such as positive affect, subsequent normative commitment to change, and voluntary turnover. Resilience was not significantly related to turnover in this study, possibly because of the fact that turnover was measured 22 months after the initial self-report of resilience. Given that stressors such as workload are related to the likelihood of turnover (e.g., Tai, Bame, & Robinson, 1998), if nurses are able to buffer the negative effects of workplace stressors with resilience, then it is possible that they are less likely to experience negative outcomes such as turnover intentions.

Hypothesis 11 (H11): Resilience will be negatively correlated with turnover intentions.

Job Satisfaction. In a review of nurse job satisfaction, there are three contributors to nurse job satisfaction (intrapersonal, interpersonal, and extrapersonal; Hayes et al., 2010). Of these contributors, the intrapersonal factors are the most relevant to resilience in nurses. These are characteristics that an individual brings to his or her job, such as positive and negative affectivity, coping strategies, age, and tenure (Hayes et al., 2010).

Job satisfaction is a complex phenomenon that is influenced by a combination of these factors, and is essential to retaining nurses.

In one of the few studies on resilience and job strains, researchers sought to examine the relationship between resilience and job satisfaction in nurses, and found that over 10% of the variance in job satisfaction could be explained by resilience (Matos et al., 2010). Despite research on the relationship between resilience and its antecedents and outcomes in health care workers, no research has examined the role of resilience in the stressor-strain process.

Hypothesis 12 (H12): Resilience will be positively correlated with job satisfaction.

Burnout. Given the affective relationship between the burnout facet of emotional exhaustion and resilience, it is plausible to predict a relationship between resilience and burnout. No research has examined the relationship between resilience and burnout in a sample of nurses, though researchers have advocated for more research into the area (e.g., Strümpfer, 2003). Specifically, resilience has been proposed as a means of overcoming burnout and stress for nurses (Edward & Hercelinskyj, 2007). In a survey of Australian physicians, only 14% of physicians reported burnout using a single-item scale, and 10% were found to be highly resilient. Resilience was found to be linked to lower burnout (Cooke et al., 2013).

Hypothesis 13 (H13): Resilience will be negatively correlated with burnout.

Injuries. Approximately 44,000 injuries occur in the healthcare and social services industry (U.S. Department of Labor, Bureau of Labor Statistics [BLS], 2013). Common injuries for nurses include exposure to blood borne pathogens, chemical

hazards, as well as physical injuries associated with patient care (Ramsay et al., 2006). According to the American Nurses Association, in 2011 42% of nurses reported receiving job injuries, and registered nurses reported 22,150 nonfatal injuries requiring time away from work (BLS, 2012). There are estimates that back injuries in nurses alone cost \$16 billion annually in worker's compensation benefits, and up to \$10 billion from workplace absences, restricted workloads, medical treatment, and turnover costs (White, 2010). Researchers have also found a strong link between nursing workers and musculoskeletal injuries. This relationship has specifically been found in nurses that care for patients who are physically dependent upon care such as critical care nurses (Goldman, Jarrard, Kim, Loomis, & Atkins, 2000).

Research on negative affectivity has found that individuals high on negative affect are more likely to receive injuries in the workplace (Frone, 1998; Iverson & Erwin, 1997). This relationship is relevant because many nurses are considered to have high physical and musculoskeletal demands given their work environment (e.g., lifting patients). Researchers have also found that higher physical demands contribute to increased conflict between coworkers and supervisors (De Raeve, Jansen, van den Brandt, Vasse, & Kant, 2008). However, little research has been done examining the relationships between interpersonal conflict, negative affect, injuries, and negative affect on the job. The known relationships of resilience to positive outcomes and the exploratory nature of resilience within the emotion-centered model are explored next.

Given that resilience has mostly been studied in the context of affective outcomes, examining the relationship between resilience and injury scores is exploratory in nature.

Hypothesis 14 (H14): Resilience will be negatively correlated with injuries.

The Moderating Role of Resilience

Researchers argue that highly resilient individuals use positive affect to facilitate adaptation to stress (Fredrickson et al., 2003; Ong et al., 2006; Tugade & Fredrickson, 2007). In a longitudinal study on 138 undergraduates, Fredrickson and Joiner (2002) found that positive emotions predicted an increase in positive emotions in the future through broadened thinking such as developing new ideas and relationships. Resilience may offer a resistance to stressors because it is considered part of a protective process that increases the likelihood of producing positive outcomes and protects against risk factors (Lee et al., 2013).

The protective factors that make up resilience (e.g., coping skills and positive affect) are an effective way for individuals to mitigate the negative effects of adverse events. In a sample of educational professionals, coping resources moderated the relationship between stress and interpersonal strain, physical strain, and psychological strains (Thomas, Matherne, Buboltz, & Doyle, 2012). Thomas et al. (2012) found that coping skills play an indirect role in reducing employee strain, though only certain types of coping skills (social support and self-care) differentially predicted interpersonal and physical strain, respectively. Positive affect plays a vital role in helping resilient people cope with stressful situations (Ong et al., 2006; Tugade & Fredrickson, 2004). According to one review, positive emotions are useful as they help buffer against stressful times (Folkman & Moskowitz, 2000).

Longitudinal studies on resilience have supported its moderating role in the stressor-emotion relationship. According to a recent diary study, trait resilience was

found to moderate the relationship between daily stress and negative emotion (Ong et al., 2006). In other words, resilient individuals use this trait as an adaptive response to stress, thereby reducing their negative emotions. The moderating effect of resilience has been supported in a study on undergraduates (Campbell-Sills et al., 2006), where resilience moderated the relationship between childhood trauma and psychiatric symptoms. Examining the moderating role of resilience in the emotion-centered model of job stress and strain is a novel way of evaluating the impact of resilience on the stressor-strain process. The following is predicted:

Hypothesis 15 (H15): Resilience will moderate the relationship between interpersonal conflict and job-related negative affect such that nurses who are high on resilience will experience lower job-related negative affect.

Hypothesis 16 (H16): Resilience will moderate the relationship between quantitative workload and job-related negative affect such that nurses who are high on resilience will experience lower job-related negative affect.

Hypothesis 17 (H17): Resilience will moderate the relationship between emotional labor and job-related negative affect such that nurses who are high on resilience will experience lower job-related negative affect.

Hypothesis 18 (H18): Resilience will moderate the relationship between traumatic events and job-related negative affect such that nurses who are high on resilience will experience lower job-related negative affect.

III. METHOD

Participants

A sample of 185 working nurses in the U.S. were sent an electronic request to complete a two-part survey to participate in a study on the impact of resilience on stressors in the workplace. The first part of the survey measured predictors of nurse strain, individual differences, and demographics, and then two weeks later nurses were sent a follow-up survey of nurse strains they had experienced over the last two weeks. Specifically, a sample of working nurses of all ages in the United States from all types of units (emergency, psychiatric, geriatric, pediatrics, etc.) were surveyed to measure resilience across the nursing industry.

Using G*Power, an *a priori* power analysis was conducted to determine the minimum sample size of nurses required to detect an effect of a point biserial correlation model, and it was determined that given a medium effect size of .3 (Cohen, 1969) and an alpha level of .05, a sample size of 111 nurses is required, but in order to achieve 100 pairs between Time 1 and Time 2, 185 nurses were surveyed. The focal sample of nurses from the U.S. was recruited using Qualtrics Panels. Qualtrics Panels is an online service that gathers nurse participants from a nationwide sample of working nurses from all types of units in the U.S. to respond to electronic surveys. Of the original 185 nurses, 20 participants were removed for not responding correctly to at least one of the two filter items (e.g., “Please respond Agree”), or for having suspicious data (e.g., their age and tenure as a nurse were incompatible, such as reporting being 100 years old and having a tenure of 100 years). This group of participants was not surveyed for Time 2 responses.

Of the 165 respondents, the majority of participants were female (90.9%) and Caucasian (78.8%). Participants' ages ranged from 21 to 82 years, with an average age of 46.22 years ($SD = 12.9$). The tenure of nurses ranged from 0 to 42 years, with an average of 10.1 years ($SD = 9.64$). Nurses across a wide variety of units were represented, including outpatient clinics and labs (27.8%), rehabilitation/skilled care (26.8%), emergency care (13.4%), critical care (7.2%), medical/surgery (10.3%), maternal/newborn (6.2%), psychiatry (4.1%), and step-down (2.1%); 2.1% did not respond (see Boyle et al., 2010).

Measures

Workload. The five-item quantitative workload inventory (QWI; Spector & Jex, 1998) measures the amount of work an employee performs ($\alpha = .83$). Items such as “How often does your job require you to work very hard?” were measured on a 1-5 scale ranging from “less than once per month or never” to “several times per day”. High scores indicated a high workload.

Interpersonal Conflict. The four-item Interpersonal Conflict at Work Scale (ICAWS; Spector & Jex, 1998) measures conflict with others at work ($\alpha = .86$). Items such as “how often do you get into arguments with others at work?” were measured on a 1-5 scale ranging from “never” to “very often”. High scores indicated more frequent interpersonal conflict.

Emotional Labor. Emotional labor is a multifaceted construct of the amount of emotional regulation an individual has to put forth ($\alpha = .83$). The 15-item Emotional Labor Scale (ELS; Brotheridge & Lee, 2003) measures five facets of EL: frequency, intensity, variety, surface acting ($\alpha = .68$), and deep acting. Participants were asked how

frequently they “express intense emotions” or “pretend to have emotions that I don't really have”. Items were measured on a 1-5 scale ranging from “never” to “always”.

Traumatic Events. The two-item Traumatic Events Scale (Adriaenssens, de Gucht, & Maes, 2012) measured nurses' traumatic events. One item asked “How many times were you confronted with a work-related traumatic event in the past 6 months?” and a second item asked “Which work-related event had the highest impact? Please describe this event.”

Resilience. The 14-item Resilience Scale (Wagnild, 2011) measures an individual's level of resilience ($\alpha = .97$). Items such as “I feel that I can handle many things at a time” were asked on a 1-7 Likert scale, ranging from “strongly disagree” to “strongly agree”. High scores indicated high levels of resilience.

Brief Resilient Coping Scale (BRCS). The four-item Brief Resilient Coping Scale (BRCS; Sinclair & Wallston, 2004) measures an individual's tendencies to adaptively cope with stress ($\alpha = .86$). Participants were asked how well statements (e.g., “I believe that I can grow in positive ways by dealing with difficult situations”) described them on a scale of 1 to 5, ranging from “does not describe me at all” to “describes me very well”. High scores indicated high levels of resilient coping.

Job-Related Affect. The 30-item Job-related Affective Wellbeing Scale (JAWS; Van Katwyk et al., 2000) was used to measure nurses' affective mood at work ($\alpha = .95$). Participants were asked how often their job made them experience emotional states such as “annoyed” or “enthusiastic” over the past two weeks. Participants responded on a 1 to 5 scale, ranging from “never” to “extremely often or always.” Higher scores indicated higher levels of positive affect in regard to the workplace. A 15-item subscale on the

JAWS, job-related negative affect (JRNA), was used to measure negative moods at work ($\alpha = .92$) such that a high score indicated high negative affect in regard to the workplace.

Job Satisfaction. The three-item job satisfaction subscale of the Michigan Organizational Assessment Questionnaire (MOAQ; Cammann, Fichman, Jenkins, & Klesh, 1983) measured employees' general satisfaction with their job ($\alpha = .92$). Items such as "in general, I like working here" assessed employees' contentment with their job. Participants rated each response on a scale of 1 to 5, ranging from "strongly disagree" to "strongly agree." High scores indicated high levels of job satisfaction.

Turnover Intentions. The three-item turnover intentions subscale of the Michigan Organizational Assessment Questionnaire (MOAQ; Cammann, Fichman, Jenkins, & Klesh, 1983) measured employees' intent to leave their job ($\alpha = .95$). Items such as "it is very possible that I will look for a new job next year," were used to assess employees' intentions of staying at their current organization. Participants rated each response on a scale of 1 to 5, ranging from "strongly disagree" to "strongly agree." High scores indicated an intent to leave the job.

Burnout. The 22-item Maslach Burnout Inventory – Human Services Survey (MBI) (Maslach, Jackson, & Leiter, 1996) measured three facets of burnout: emotional exhaustion ($\alpha = .93$), depersonalization ($\alpha = .80$), and reduced personal accomplishment ($\alpha = .82$). Items such as "I feel depressed at work" were measured on a 0-6 scale ranging from "never" to "every day". High scores indicated high levels of burnout.

Injuries. Physical injuries were measured using the 9-item Standardized Nordic Questionnaire (Kuorinka et al., 1987). Nurses were shown a picture of nine locations on the body (such as the neck or lower back) and were asked to indicate whether they had

experienced any injuries in these areas within the past two weeks. High scores indicated a high number of physical injuries.

Procedure

This is a multiwave design whereby 185 nurses were surveyed at two time points, two weeks apart. Nurses currently working in the United States were recruited using Qualtrics Panels, an online survey platform service that secures participants for researchers. Nurses were contacted via email and provided with a link to the Time 1 Qualtrics survey. Of the 347 interested participants that opened the survey link, 185 nurses completed the survey for a response rate of 53%. At Time 1, nurses were asked to complete measures of common stressors they experience as well as the trait of resilience, and demographic information. Of the 185 nurses, 20 participants were removed for not responding correctly to at least one of the two attention filter items (e.g., “Please respond Agree”), or for having suspicious data (e.g., their age and tenure as a nurse were incompatible). At Time 2, the remaining 165 nurses were asked to complete measures of common strains they experienced. Of the 121 participants that opened this survey link, 100 participants completed the survey for a response rate of 61%. In this multiwave study, it was anticipated that 100 pairs would be achieved between Time 1 and Time 2, and a final sample size of 97 pairs was achieved. Three participants were unable to be linked to their Time 1 responses.

One group of nurses (N = 140) were compensated \$10 for each survey they completed at Time 1 and Time 2, and a second group of nurses (N = 45) were compensated \$8 for each survey they completed at Time 1 and Time 2. The present study

was funded by a pilot grant by NIOSH through the University of South Florida Sunshine and Education Research Center.

IV. RESULTS

All variables were tested for normality. Traumatic events (2.54, $SE = .25$) and injuries (2.09, $SE = .25$) were both positively skewed. Traumatic events (7.27, $SE = .49$) and injuries (4.71, $SE = .49$) were both kurtotic, as was the Likert scale of interpersonal conflict at work (4.03, $SE = .49$). Means, standard deviations, and correlations were calculated using SPSS.

Regression Analyses

A summary table of hypothesis support is provided (see Table 1). Hypothesis 1a-d predicted that interpersonal conflict at work, quantitative workload, surface acting, and traumatic events would predict unique variance in turnover intentions. Multiple regression was used to test if these stressors significantly predicted participants' ratings of turnover intentions, $R^2 = .13$, $F(4,90) = 3.33$, $p = .01$. Only interpersonal conflict at work explained a significant amount of variance in turnover intentions in this sample of nurses ($\beta = .35$, $p = .00$); thus, only hypothesis 1a was supported.

Hypothesis 2a-d predicted that interpersonal conflict at work, quantitative workload, surface acting, and traumatic events would predict unique variance in job satisfaction. Multiple regression was used to test if these stressors significantly predicted participants' ratings of job satisfaction, $R^2 = .20$, $F(4,90) = 5.53$, $p = .00$. Interpersonal conflict at work explained a significant amount of variance in job satisfaction in this sample of nurses ($\beta = -.40$, $p = .00$); hypothesis 2a was supported and hypotheses 2b-d were not supported.

Multiple regression was used to test hypothesis 3a-d that interpersonal conflict at work, quantitative workload, surface acting, and traumatic events would predict unique

variance in the burnout facet of emotional exhaustion. The model of stressors predicting emotional exhaustion was significant, $R^2 = .22$, $F(4,90) = 6.34$, $p = .00$. Interpersonal conflict at work explained a significant amount of variance in emotional exhaustion in this sample of nurses ($\beta = .36$, $p = .00$). Quantitative workload was approaching significance ($\beta = .19$, $p = .06$); surface acting and traumatic events did not predict emotional exhaustion. H3a was supported; H3b-d were not supported.

Hypothesis 4a-d examined how these four stressors predicted depersonalization and the model was significant, $R^2 = .26$, $F(4,90) = 7.87$, $p = .00$. Interpersonal conflict at work explained a significant amount of variance in depersonalization ($\beta = .44$, $p = .00$); workload, surface acting, and traumatic events were not significant. H4a was supported, and H4b-d were not supported.

The model predicting personal accomplishment was also significant, $R^2 = .12$, $F(4,90) = 3.12$, $p = .02$. Interpersonal conflict at work explained a significant amount of variance in personal accomplishment ($\beta = -.34$, $p = .00$), though none of the other stressors were significant predictors. H5a was supported; H5b-d were not supported.

Hypothesis 6a-c predicted that interpersonal conflict at work, quantitative workload, and traumatic events would predict unique variance in injuries. This model was significant, $R^2 = .09$, $F(3,90) = 3.11$, $p = .03$. Only quantitative workload explained a significant amount of variance in injuries in this sample of nurses ($\beta = .25$, $p = .02$).

Hypothesis 6b was supported; 6a and 6c were not.

Mediation Analyses

Interpersonal Conflict at Work as a Stressor

Hypothesis 7a-d predicted that job-related negative affect (JRNA) would mediate the relationship between interpersonal conflict at work and turnover intentions, job satisfaction, burnout, and injuries. In other words, frequent interpersonal conflict and other stressors should lead to more negative job-related affect. In keeping with recent scholarship (MacKinnon, Lockwood, & Williams, 2004), mediation analyses were tested using a bootstrapping method for deriving indirect effects and standard errors. Bootstrapped confidence intervals were bias-corrected and accelerated at 95% confidence intervals (CIs) around the effects using model 4 of the SPSS macro called PROCESS developed by Preacher and Hayes (2004; see Preacher & Hayes, 2008).

In regard to interpersonal conflict at work and turnover intentions, the overall model was significant and accounted for 44.59% of the variance in turnover intentions, $p = .00$ (see Figure 3). Solid lines indicate significant paths ($p < .05$), and dotted lines indicate nonsignificant direct effects ($p > .05$). Job-related negative affect fully mediated this relationship; the bootstrapped indirect effect (IE) of interpersonal conflict on turnover intentions through (JRNA) was significant (LLCI = .32; ULCI = .93). A significant amount of the variance between interpersonal conflict and turnover intentions is carried through job-related negative affect. (JRNA) is scored such that a higher score indicates more negative emotions in regard to the workplace. In this model, the more interpersonal conflict at work a nurse felt, the higher he or she reported his or her negative job-related negative affect to be, which in turn affected their intentions to leave their job. Hypothesis 7a was supported.

Hypothesis 7b predicted that JRNA would mediate the relationship between interpersonal conflict and job satisfaction; this model was significant and accounted for 38.58% of the variance in job satisfaction, $p = .00$ (see Figure 4). Job-related negative affect fully mediated this relationship; the bootstrapped IE of interpersonal conflict on job satisfaction through JRNA was significant (LLCI = $-.58$; ULCI = $-.16$). A significant amount of the variance between interpersonal conflict and job satisfaction is carried through JRNA. The more workplace interpersonal conflict a nurse reported, the higher their reported negative job-related affect. Having high levels of negative emotions in regard to their job was then related to lower job satisfaction. Hypothesis 7b was supported.

Hypothesis 7c was a three-part analysis of the impact of interpersonal conflict at work on burnout. In regard to interpersonal conflict at work and the burnout facet of emotional exhaustion, the model was significant and accounted for 64.55% of the variance in emotional exhaustion, $p = .00$ (see Figure 5). Job-related negative affect fully mediated this relationship; the bootstrapped IE of interpersonal conflict on emotional exhaustion through JRNA was significant (LLCI = $.44$; ULCI = 1.11). A significant amount of the variance between interpersonal conflict and emotional exhaustion is carried through JRNA. Nurses that report high levels conflict then report feeling more discouraged and frustrated, and as a consequence of these emotions, feel more emotionally drained from their work.

Secondly, JRNA only partially mediated the relationship between interpersonal conflict at work and the facet of depersonalization; the overall model accounted for 53.86% of the variance in depersonalization, $p = .00$ (see Figure 6). The bootstrapped IE

of interpersonal conflict on depersonalization through JRNA was significant (LLCI = .29; ULCI = .81). A significant amount of the variance between interpersonal conflict and depersonalization is carried through job-related negative affect, though a significant direct relationship between workplace interpersonal conflict and depersonalization remained. Nurses that experience conflict in the workplace then experience negative emotions due to their work, and these negative emotions are in turn related to nurses feeling disconnected and calloused toward others.

Lastly, JRNA fully mediated the relationship between interpersonal conflict at work and personal accomplishment, accounting for 10.03% of the variance in personal accomplishment, $p = .01$ (see Figure 7). The bootstrapped IE of interpersonal conflict on personal accomplishment through JRNA was not significant (LLCI = -.41; ULCI = .03). Nurses under high levels of conflict that experience negative affect due to their work are more likely to report low levels of personal accomplishment, or report being unable to deal with patient problems. Hypothesis 7c was partially supported.

As shown in Figure 8, JRNA did not mediate the relationship between interpersonal conflict at work and injuries (H7d was not supported). The overall model was not significant and accounted for 5.72% of the variance in injuries, $p = .06$.

Quantitative Workload as a Stressor

Hypothesis 8a-d predicted that JRNA would mediate the relationship between quantitative workload and turnover intentions, job satisfaction, burnout, and injuries. In regard to quantitative workload and turnover intentions (H8a), the overall model was significant and accounted for 44.64% of the variance in turnover intentions, $p = .00$ (see Figure 9). Job-related negative affect fully mediated this relationship; the bootstrapped

indirect effect (IE) of quantitative workload on turnover intentions through job-related negative affect was significant (LLCI = .13; ULCI = .58). Nurses that experienced high levels of workload (e.g., frequently working hard or working fast) tended to experience more negative emotions, which led to higher turnover intentions. Hypothesis 8a was supported.

Hypothesis 8b predicted that JRNA would mediate the relationship between quantitative workload and job satisfaction; the overall model was significant and accounted for 37.19% of the variance in job satisfaction, $p = .00$ (see Figure 10). Job-related negative affect fully mediated this relationship; the bootstrapped IE of quantitative workload on job satisfaction through JRNA was significant (LLCI = -.39; ULCI = -.08). Nurses under high levels of workload reported more frequent negative emotions, which negatively affected their job satisfaction. Hypothesis 8b was supported.

Hypothesis 8c was a three-part analysis of the impact of quantitative workload on burnout. A mediated relationship between quantitative workload and the burnout facets of emotional exhaustion, depersonalization, and personal accomplishment through JRNA (H8c) was supported, as indicated by the 95% CIs which did not include zero (see Figures 11-13). In all of these cases, the models were significant and accounted for 65.02%, 51.81%, and 10.80%, respectively ($p = .00$). As indicated by the unstandardized B weights shown in these figures, this variance was explained by indirect relationships between quantitative workload and the burnout facets of emotional exhaustion, depersonalization, and personal accomplishment through the mediating effects of JRNA. In other words, nurses that experienced a high frequency of workload reported experiencing more negative emotions such as feeling fatigued and discouraged, which

then led to high levels of burnout. Hypothesis 8c was supported. Lastly, hypothesis 8d examined the mediating role of JRNA in the relationship between workload and injuries. The model was significant and accounted for 9.97% of the variance in injuries, $p = .01$ (see Figure 14). Though there were significant direct effects of quantitative workload on both negative job-related emotions as well as injuries, JRNA did not mediate the relationship between workload and injuries. The bootstrapped IE was not significant (LLCI = -.00; ULCI = .38). Hypothesis 8d was not supported.

Surface Acting as a Stressor

Hypothesis 9a-d predicted that JRNA would mediate the relationship between surface acting and turnover intentions, job satisfaction, burnout, and injuries. In regard to surface acting and turnover intentions (H9a), the overall model was significant and accounted for 45.32% of the variance in turnover intentions, $p = .00$ (see Figure 15). JRNA did not mediate this relationship; the bootstrapped indirect effect (IE) was not significant (LLCI = -.14; ULCI = .36). Hypothesis 9a was not supported.

Hypothesis 9b predicted that JRNA would mediate the relationship between surface acting and job satisfaction. The model was significant and accounted for 37.21% of the variance in job satisfaction, $p = .00$ (see Figure 16). However, negative emotions did not mediate this relationship and the bootstrapped indirect effect was not significant (LLCI = -.23; ULCI = .09). Hypothesis 9b was not supported.

Hypothesis 9c was a three-part analysis of the impact of surface acting on burnout through the mediating effects of JRNA. A mediated relationship between surface acting and the outcomes of emotional exhaustion, depersonalization, and personal accomplishment through JRNA was not supported, as indicated by the 95% CIs which

included zero (see Figures 17-19). In all of these cases, the models were significant and accounted for 64.73%, 51.51%, and 9.15%, respectively ($p = .00$). As indicated by the unstandardized B weights shown in these figures, this variance was explained by direct relationships between JRNA and the outcomes of emotional exhaustion, depersonalization, and personal accomplishment. Hypothesis 9c was not supported. It appears that other process variables may be more relevant in understanding the relationships between surface acting and burnout.

As shown in Figure 20, JRNA did not mediate the relationship between surface acting and injuries (H9d was not supported). The overall model was significant and accounted for 6.38% of the variance in injuries, $p = .05$; there was a nonsignificant amount of variance carried by bootstrapped indirect effect of the emotional labor facet of surface acting on injuries (LLCI = $-.08$; ULCI = $.20$).

Traumatic Events as a Stressor

Hypothesis 10a-d predicted that JRNA would mediate the relationship between traumatic events and turnover intentions, job satisfaction, burnout, and injuries. In examining traumatic events and turnover intentions, the overall model was significant and accounted for 44.76% of the variance in turnover intentions, $p = .00$ (see Figure 21). JRNA did mediate this relationship; the bootstrapped IE of traumatic events on turnover intentions was significant (LLCI = $.00$; ULCI = $.02$). Hypothesis 10a was supported.

As shown in Figure 22, JRNA did not mediate the relationship between traumatic events and job satisfaction (H10b was not supported). The model was significant and accounted for 37.16% of the variance in job satisfaction, $p = .00$; there was a significant

amount of variance carried by bootstrapped indirect effect of the traumatic events on job satisfaction (LLCI = -.01; ULCI = -.00).

Hypothesis 10c was a three-part analysis of the impact of traumatic events on burnout. In regard to traumatic events and burnout facet of emotional exhaustion, the model was of JRNA mediating the relationship between traumatic events and emotional exhaustion was significant and accounted for 63.85% of the variance, $p = .00$ (see Figure 23). The bootstrapped indirect effect (IE) of traumatic events on emotional exhaustion was significant (LLCI = .00; ULCI = .03), suggesting that a significant amount of the variance between traumatic events and emotional exhaustion is carried through negative emotions related to the job.

Secondly, in regard to the impact of traumatic events on the facet of depersonalization, the model was significant and accounted for 51.20% of the variance in depersonalization, $p = .00$ (see Figure 24). The bootstrapped indirect effect (IE) of traumatic events on depersonalization was significant (LLCI = .00; ULCI = .02), suggesting that a significant amount of the variance between traumatic events and depersonalization is carried through JRNA.

Finally, examining the impact of traumatic events on personal accomplishment through JRNA revealed that the model was significant and accounted for 9.16% of the variance in personal accomplishment, $p = .01$ (see Figure 25). The bootstrapped indirect effect (IE) of traumatic events on personal accomplishment through negative emotions related to the job was not significant (LLCI = -.01; ULCI = .00). This suggests that a non-significant amount of the variance between traumatic events and personal

accomplishment is carried through job-related affect. Hypothesis 10c was partially supported.

The model investigating the impact of traumatic events on injuries through JRNA was significant and accounted for 7.80% of the variance in injuries, $p = .02$ (see Figure 26). JRNA did not mediate this relationship; the bootstrapped IE was not significant (LLCI = -.00; ULCI = .02). A non-significant amount of the variance between traumatic events and injuries is carried through JRNA; hypothesis 10d was not supported.

Nurses were also asked to provide a qualitative example of which traumatic event had the highest impact on them over the last six months. The death of a favorite patient or a child, often unexpectedly, were some of the most commonly reported events (e.g., “Unable to save the life of a tornado victim [who] suffered multiple traumas.”). Other events included violent acts by patients (e.g., “I was grabbed by a demented patient and could not get free as he was very strong. I was quite scared. I had to scream for help. At least it was only my arms.” or “[A] psych patient escaped, and grabbed the gun of a police officer who was standing nearby, and ran outside.”). Conflict and incivility among coworkers was also reflected in these comments (e.g., “Trying to calm down a co-worker that was crying and angry at something another nurse had said snidely to her, it ended up involving pretty much the whole floor, but did get defused.”). Organizational events were also represented (e.g., “Missing equipment on crash cart during emergency.”). It is evident that nurses experience a variety of traumatic events in their job from a variety of sources (the organization, other nurses, and in particular patients and their families).

Correlation Analyses

Pearson product correlations examined hypotheses 9-12 using the brief resilient coping scale (Sinclair & Wallston, 2004). The resilience scale (Wagnild, 2011) yielded no significant relationships with the strains of interest (see Table 2 for results), and the reason for these differences between scales is discussed in further detail in the Discussion section.

It was predicted that resilience would be negatively correlated with turnover intentions (H11), burnout (H13), and injuries (H14), as well as positively correlated with job satisfaction (H12). Hypothesis 11 was supported; there was a significant negative correlation between resilience and turnover intentions ($r = -.26, p = .01$). Nurses that were more resilient are less likely to indicate their intentions of leaving their job. Hypothesis 12 was supported; there was a significant positive correlation between resilience and job satisfaction ($r = .28, p = .00$). Highly resilient nurses reported being more satisfied with their jobs. Hypothesis 13 was partially supported; there was a significant negative correlation between resilience and emotional exhaustion ($r = -.26, p = .01$), no significant correlation between resilience and depersonalization ($r = -.12, p = .23$), and a significant positive correlation between resilience and personal accomplishment ($r = .20, p = .05$). Resilient nurses were less likely to report emotional exhaustion, and more likely to report personal accomplishment. Hypothesis 14 was not supported; resilience was not negatively correlated with injuries ($r = .20, p = .06$), though the relationship was approaching significance. Given the strong relationships between resilience and affect (Lee et al., 2013), it is unsurprising that resilience is not related to physical outcomes, which are more distally related to stressors than affective reactions.

Moderation Analyses

To address how resilience moderates the stressor-negative affect process, moderated hierarchical regressions were calculated using SPSS to measure the buffering effect of resilience (as measured by the resilience scale) on the relationship between stressors and job-related negative affect. All variables were centered because not all scales utilized a 1-5 Likert-type scale (Dalal & Zickar, 2012) in order to improve the interpretability of the results by providing meaningful zero points. Variables were centered by subtracting mean scores from individual scores (Aiken & West, 1991).

Hypothesis 15 predicted that resilience would moderate the relationship between interpersonal conflict at work and JRNA such that nurses who were high on resilience would experience lower job-related negative affect. The results indicated that Hypothesis 15 was supported (see Table 3), $F(3,93) = 12.71, p = .00$. Unstandardized simple slopes were examined using the Interaction! V1.7.2211 program by Daniel Soper to measure 1 SD above the mean of resilience ($b = .22, SE_b = .10, \text{one-tailed } p = .01$), the mean score of resilience ($b = .42, SE_b = .07, \text{one-tailed } p = .00$), and 1 SD below the mean of resilience ($b = .61, SE_b = .12, \text{one-tailed } p = .00$; see Figure 27). The relationship between interpersonal conflict at work and JRNA was impacted at all three levels, suggesting that under high levels of interpersonal conflict at work, nurses that were highly resilient were less likely to experience job-related negative affect. Alternatively, nurses that were low in resilience were more likely to experience JRNA when they experienced high levels of interpersonal conflict.

Hypothesis 16 predicted that resilience would act as a buffer on the relationship between quantitative workload and JRNA; nurses who were high on resilience were

expected to experience lower JRNA. Hypothesis 16 was not supported, $F(3,93) = 3.55, p = .02$; see Table 4. In other words, the relationship between quantitative workload and job-related negative affect was not buffered by resilience.

Further, Hypothesis 17 examined the moderating role of resilience on the relationship between emotional labor (surface acting) and JRNA. Highly resilient nurses were expected to report lower amounts of negative emotions about their job after engaging in high levels of surface acting, such as having to hide their true emotions. The results indicate that H17 was not supported, $F(3,93) = .59, p = .62$; see Table 5 and Figure 29. No level of resilience buffers, or moderates, the relationship between surface acting and negative affect for nurses.

Hypothesis 18 predicted that resilience would moderate the relationship between traumatic events and job-related negative affect. Nurses who were high on resilience were expected to experience lower JRNA than those that were low on resilience. However, Hypothesis 18 was not supported, $F(3,91) = 1.26, p = .29$; see Table 6 and Figure 30. The pattern of results indicates that resilient nurses that reported a high frequency of traumatic events were not more or less likely to experience JRNA than nurses that were not very resilient.

V. DISCUSSION

Given that health care costs continue to rise, organizations are seeking methods to reduce health care costs, such as employee assistance programs and stress interventions. The timeliness and importance of resilience for nurses comes at a time when the U.S. healthcare system is changing, and wellness and prevention is a top consideration for HR leaders. Nurses face a variety of workplace stressors that impact their emotional and physical well-being, as well as their behavioral outcomes. In the face of these situations, resilience acts as a personal trait that provides individuals the capacity to move on and grow despite (or perhaps because of) stressful situations.

In order to address common organizational and personal outcomes in the nursing industry, this study identified resilience as a factor that mitigates the relationship between stressors and strains in the nursing industry such as turnover intentions, job satisfaction, burnout, and injuries. Specifically, there were two goals of this study. The first was to examine the mediating role of emotions in the relationship between common nursing stressors and strains. The second goal of this study was to determine impact of resilience on the emotion-centered model of job stress in a multiwave study over a period of two weeks, and to examine the buffering effect of resilience on reducing negative emotions felt as a consequence of workplace stressors.

Summary of Results and Contributions

Hypotheses 1-6 examined four common nursing stressors, including interpersonal conflict at work, quantitative workload, emotional labor (surface acting), and the frequency of traumatic events experienced over the last six months. In regard to stressors predicting turnover intentions, the regression model was significant, though the only

significant predictor of turnover intentions was interpersonal conflict at work. The same pattern of results was found for hypothesis 2, such that the only significant predictor of job satisfaction was interpersonal conflict at work. Hypotheses 3-5 predicted that stressors would be positively related to the burnout facets of emotional exhaustion (H3) and depersonalization (H4), and negatively related to the facet of personal accomplishment (H5). Again, the same pattern of results emerged such that interpersonal conflict at work was the only significant positive predictor of emotional exhaustion and depersonalization, and the only significant negative predictor of personal accomplishment. The importance of social stressors such as interpersonal conflict, workplace abuse, and incivility among nurses is commonly discussed in the nursing literature, but it has rarely been compared in relation to other stressors that nurses experience (Sinclair et al., 2009). Given that interpersonal conflict at work among nurses was the strongest predictor above all other stressors in this study, it is valuable to recognize the relative value of interpersonal relationships among nurses when compared to other stressors.

There is limited research examining the relative impact of interpersonal conflict and other stressors on outcomes in the healthcare industry (Sinclair et al., 2009). This dissertation expands upon this study by comparing the relative effects of four common stressors among nurses: interpersonal conflict at work, quantitative workload, emotional labor, and traumatic events. Interestingly, after accounting for common workplace stressors that nurses experience such as interpersonal conflict at work, quantitative workload, surface acting, and traumatic events, interpersonal conflict at work was the only significant predictor of the emotional and behavioral outcomes among nurses. This

suggests that interpersonal conflict remains one of the most important components of the stress process for nurses.

This is consistent with qualitative research by Sinclair et al. (2009) which found that work demands such as quantitative workload and interpersonal conflict with doctors, coworkers, and other hospital staff are some of the most frequently reported stressors for nurses. One nurse noted that while this conflict may be manageable under regular circumstances, when the staff lacks the proper tools to react properly, the situation can quickly spiral out of control. These results are not surprising, given that nurses are reported to “eat their young,” a reference to the lack of support and frequency of conflict found among nurses and in particular new nurses (Baltimore, 2006). Because conflict among nurses is a standard feature of the workplace, understanding the impact of workplace incivility and abuse among healthcare workers is a growing concern given that the number of U.S. healthcare workers is projected to grow by 30% between 2010 and 2020, about twice as much as other industries (The Center for Health Workforce Studies [CWHHS], 2012).

It is also likely that conflict plays such a large role because of the myriad sources of conflict nurses experience from 1) other nurses, 2) physicians and other staff, and 3) patients and families (see Brinkert, 2010 for review). For example, nurses face horizontal aggression due to the lack of communication and goal expectation with other nurses, verbal abuse and bullying among peers, and even conflicts among different generations of nurses. Not only do nurses experience interpersonal conflict from their peers, they also face difficulties working with other health care professionals such as physicians due to the challenges of taking others’ perspectives, their differing professional judgments, and

the tensions caused by differing status. Lastly, patients and their families represent a source of conflict for nurses. For example, there can be cross-generational issues in patient care. In particular, pediatric care offers many opportunities for conflict when parents do not meet nurses' expectations. End-of-life decisions can also be a particular point of contention among nurses, physicians, and patients who have differing opinions about whether to withhold therapy, which can lead to deteriorating communications.

The direct and indirect costs of unmanaged conflict among nurses can affect not only healthcare providers but the organization and patients (see Gerardi, 2004 for review). For example, some of the direct costs of conflict include: lost productivity, litigation costs, disability claims, costs of turnover, sabotage to facilities, regulatory fines, and increased costs of care for patients with preventable outcomes. Some of the indirect costs of conflict include: a reduction in team morale, worsened organizational and health care professional reputation, increased emotional costs and disruptive behaviors, and even lost opportunities for patient satisfaction and expanding programs and services. It is important to recognize the high frequency and high cost of interpersonal conflict among nurses. Being able to manage conflict in the health care industry is an essential component to improving health services for patients while also improving relationships among providers within healthcare organizations.

Lastly, hypothesis 6 predicted that these four stressors would be significantly related to injuries two weeks later at Time 2. In this model, the only significant predictor of injuries was quantitative workload. A number of studies indicate that injuries are strongly dependent upon the physical workload that nurses experience in the workplace. For example, Cohen et al. (2004) found that there was a significant relationship between

workload (as measured by staffing ratios) and injuries among nurses such as an increased reporting of physical pain that lasted more than a week on any part of the body and musculoskeletal injuries. In this study, the majority of musculoskeletal injuries were reported in the lower back (32%), shoulders (21%), and neck (19%), though 49% of nurses reported receiving no injuries over the two week period.

In units where there are inadequate nurse/patient ratios, it is difficult for staff to provide more than a basic level of care for patients. In nursing homes in particular, this can lead to malnutrition among patients, morbidity, compromised infection control, and an increase in patient mortality (see Cohen et al., 2004). Thus, not only does a high workload affect nurse wellbeing, it also affects patient wellbeing. Similar results have been found for those U.S. nurses who work demanding schedules such as working longer than 12 hours, more than 40 hours per week, and “off hours” such as weekends and nights (Lipscomb, Trinkoff, Geiger-Brown, & Brady, 2002; Trinkoff, Le, Geiger-Brown, Lipscomb, & Lang, 2006). Nurses that reported demanding work schedules were more likely to report musculoskeletal injuries in their neck, shoulder, and back. Not only that, but the more demanding their schedules were (as measured by components such as the more days they worked, the longer the days, and the fewer the breaks), the higher the likelihood nurses had of receiving a musculoskeletal disorder. Given this previous research, finding that quantitative workload was the only significant predictor of physical strains among nurses is not unexpected. For example, the Bureau of Labor Statistics (BLS, 2014) found that nurses reported 11,430 nonfatal occupational injuries that required a median of 8 days away from work in 2013. This adds to the growing amount of research being done on nurse injuries, and highlights the importance of reducing

physical workplace injuries by providing readily accessible patient lifting and transfer devices and safe needle devices (American Nurses Association, 2011).

Hypothesis 7-10 predicted mediation models using the emotion-centered job stress model (Spector, 1998). The emotion-centered model of job stress theorizes that job conditions (i.e., job stressors such as interpersonal conflict at work, quantitative workload, emotional labor - surface acting, and traumatic events) have an immediate impact on emotional strains (also known as job-related negative affect), which then lead to physical and behavioral strains such as turnover intentions, job satisfaction, burnout, and injuries. In this occupational stress model, emotions play a central role in the stressor-strain process. This study first examined the job stressor of interpersonal conflict at work and its behavioral, emotional, and physical outcomes (H7). Job-related negative affect fully mediated the relationships between interpersonal conflict and turnover intentions, job satisfaction, emotional exhaustion, and personal accomplishment. Interpersonal conflict at work and depersonalization were partially mediated by JRNA. Interpersonal conflict at work and injuries were not mediated by job-related negative affect. Overall, these results indicate that interpersonal conflict had a significant mediated relationship with most behavioral and emotional outcomes through the variable of job-related negative affect. However, this relationship did not hold for the physical outcome of injuries. Overall, this provides support for the emotion-centered model of job stress (Spector, 1998) in regard to most strains. Emotions play a central role for nurses that experience stress in the workplace such that those who experience high frequencies of stressors such as conflict then experience negative emotions, which impacts their behavioral and emotional strains. However, the nonsignificant relationship with the

physical outcome of injuries is likely due to the physical circumstances surrounding the job, such as lifting patients and working long hours, rather than the social environment.

Hypothesis 8 examined the mediating effects of JRNA on the relationship between quantitative workload and its behavioral, emotional, and physical outcomes. Job-related negative affect fully mediated the relationships between quantitative workload and turnover intentions, job satisfaction, and all three of the facets of burnout. The relationship between the job stressor of quantitative workload and the physical strain injuries was not mediated by job-related negative affect. Similar to the stressor of interpersonal conflict, quantitative workload had significant indirect relationships with most behavioral and emotional outcomes, as mediated by job-related negative affect. This again provides support of the emotion-centered model of job stress for two of the most commonly reported negative events among U.S. nurses, work demands such as workload and interpersonal conflict (Sinclair et al., 2009). Though there was a significant direct effect of quantitative workload on musculoskeletal injuries ($r = .26, p = .01$), negative job-related emotions did not mediate this relationship.

In regard to the stressor of surface acting and its behavioral, emotional, and physical outcomes (H9), job-related negative affect did not mediate any of the relationships between surface acting and turnover intentions, job satisfaction, the three burnout facets, or musculoskeletal injuries. It is possible that the nonsignificant results of surface acting are due to the role of emotional display rules. Emotional display rules are defined as the occupational or organizational expectations placed upon employees as part of their job (Ashforth & Humphrey, 1993). They define the appropriate ways that employees may exhibit emotions to attain organizational objectives (e.g., patient

satisfaction). For example, nurses are often socialized in their unit and are expected to exhibit positive emotions such as compassion toward their patients. Recent research by Diefendorff et al. (2011) examined display rules at the individual- and unit level, and found that its impact on job satisfaction and burnout is quite complex. To explain in further detail, individual-level display rules and unit-level display rules functioned independently of each other in their impact on job satisfaction. However, for burnout, individual-level display rules, surface acting, and deep acting mediated the relationship between unit-level display rules and burnout. The authors suggested the reason for these complex relationships is due to internal and external evaluations of the individual and job. For example, the experience of burnout and emotion regulation functions more as an internal process than a shared norm in the unit. In regard to job satisfaction, the context of the social environment on the job plays an important role in how a job is evaluated (Salancik & Pfeffer, 1978). Nurses that work in a unit with high levels of shared display rules that also report high levels of negative affectivity are more likely to exhibit surface acting, while nurses high in positive affectivity are likely to exhibit deep acting. Both display rules and individual evaluations of the job appear to play an important role in the relationship between emotional labor and job strains. Given the complex relationships between emotional labor, display rules, affectivity, and job strains, it is possible that this study of individual nurses was unable to capture the finer distinctions among nursing units.

Nurses experience two types of stress in the workplace: systemic stress and traumatic stress (Bergen & Fisher, 2003). Systemic stress is found in most organizational environments, and includes stressors such as a high workload, work-family conflict,

interpersonal conflict, few opportunities for advancement, low autonomy, and high role ambiguity. Traumatic stress is common in the nursing industry, where nurses face serious health problems in patients, ambiguous ethical situations, and traumatic events such as violent patients. Examining both systemic stress and traumatic stress in the nursing industry are complex issues, likely magnified by the type of unit in which the nurse works. Little research has conceptualized of job conditions such as traumatic events in the nursing industry as a stressor in the emotion-centered model of job stress, so considering traumatic events as a job stressor across nurse units was an exploratory approach.

Examining traumatic events as a stressor in the emotion-centered model of job stress in this study was partially supported. Some support was found for the stressor of traumatic events (H10) such that JRNA mediated the relationships between traumatic events and turnover intentions, emotional exhaustion, and depersonalization. This relationship was not supported for the strain outcomes of job satisfaction, personal accomplishment, or injuries. Nurses that experienced traumatic events such as the death of a favorite patient reported significantly more negative emotions related to the job, which affected their intentions of leaving their job as well as increased their levels of burnout. Nurses across all units appear to be susceptible to traumatic events, though some units such as emergency nurses may be especially vulnerable. This is especially important in the health care industry, where workers are repeatedly exposed to traumatic incidents. This study highlights the importance of health care organizations acknowledging and investing in facilities such as counseling and cognitive-behavioral interventions that can help nurses and other workers move beyond workplace trauma.

It is possible that the nonsignificant results are due to the fact that some units are more likely to experience traumatic events than others. For example, nurses in perioperative unit, psychiatric and critical care experience highly demanding work situations such as motor vehicle accidents, hostile and violent patients, abuse, and even the tragic death of children. Given that this study examined a variety of units that do not necessarily experience traumatic events, it is possible that the nonsignificant results were due to responses from nurses who worked in less traumatic units such as assisted living, geriatrics, pediatrics, and orthopedics. For example, across all units the only significant direct relationship between frequency of traumatic events and job strains was a significant negative correlation with depersonalization ($r = .20, p = .05$), suggesting that nurses who experience frequent traumatic events such as the death of a patient or a particularly upsetting motor vehicle accident are more likely to respond by disengaging from their emotions, and feeling more callous toward their patients.

Lastly, it is important to note that across all of the mediation hypotheses, the strain outcome of injuries was only supported as an outcome of interpersonal conflict at work through the mediating role of JRNA. A recent meta-analysis has found that small effects for distal-related factors (e.g., job attitudes) of safety indicators (injuries and accidents). However, more proximal-related factors of safety such as safety motivation, knowledge, compliance, and participation exhibited strong effects with safety outcomes (Christian, Bradley, Wallace, & Burke, 2009). Given that this study focuses heavily on emotions, it is likely that emotions and injuries are too distally related to have large significant relationships in the emotion-centered model of job stress. It is also possible that the short time frame of injuries (2 weeks) was not enough time to measure injury

frequency, especially given the low base rate of responses ($M = 1.23$, $SD = 1.82$). Future research should examine these relationships over a longer period of time as well as examining the effects of safety factors such as safety motivation and safety climate.

Hypotheses 11-14 examined the relationships between resilience and strains using the brief resilient coping scale, and found that there was a significant negative correlation between resilience and turnover intentions; nurses that are high in resilience are less likely to report intentions to leave their job (H11). It is possible that nurses that are highly resilient cope with stressful work environments through various methods such as finding creative ways to cope with undesirable situations, and using these situations as a way of growing rather than feeling or acting negatively after the events occur. This may include behaviors such as seeking out support from fellow coworkers or family members, communicating issues with management, or even trading patients rather than taking more drastic actions such as finding a new job. There was also a significant positive correlation between resilience and job satisfaction; nurses that were more resilient reported higher job satisfaction (H12). This provides support for Fredrickson's (1998, 2001) Broaden and Build model of positive emotions. Fredrickson proposed that positive emotions such as happiness could expand individuals' thought-action repertoires, which then build their psychological, social, cognitive, and personal resources. In other words, highly resilient nurses use positive emotions such as joy and pride to expand the momentary array of positive thoughts and actions they have, which leads to increased job satisfaction and reduced turnover intentions. Fredrickson suggested that the Broaden and Build model could have long-term benefits for individuals because this model acts as a cycle of building resources, which in turn leads to building more resources. Indeed, research has

supported resilience as a significant predictor of positive emotions and reduced strains in a sample of U.S. college students before and after the September 11th terrorist attacks (Fredrickson et al., 2003). This study supports Fredrickson's theory; resilient nurses use positive emotions to cope with stressors they experience, which lead to more positive outcomes such as job satisfaction.

In regard to the relationship between resilience and burnout (H13), nurses that are more resilient reported lower emotional exhaustion and higher personal accomplishment; there was no relationship between resilience and depersonalization. Resilient individuals are able to replenish their resources with positive emotions, and it is reasonable that people that are not resilient are more susceptible to emotional exhaustion, or the depletion of emotional resources. Highly resilient individuals also use these positive resources to evaluate themselves positively, in particular in regard to interactions with their patients (i.e., personal accomplishment). For example, highly resilient nurses are less likely to feel frustrated by their job, and are able to deal with work-related emotions in a positive manner. Indeed, meta-analysis of the relationship between protective factors such as positive emotions yielded large effects compared to risk factors such as negative affect and anxiety (Lee et al., 2013). Given that depersonalization focuses on the development of a negative and callous attitude toward patients, it is surprising that resilience and depersonalization were not significantly related. Given that highly resilient individuals use task-oriented coping skills (Campbell-Sills et al., 2006) to deal with difficult situations, they may be less likely to use other, poorer coping strategies such as avoidance coping. Lastly, there was no significant relationship between resilience and reported injuries over the last two weeks (H14). Given the strong relationships between resilience

and emotional and behavioral strains, it is possible that resilience is only distally related to physical strains such as injuries as discussed previously.

Unexpectedly, the resilience scale (Wagnild, 2011) yielded no significant correlations with the strains of interest. In order to understand why two similar scales yielded dissimilar results, I examined the theoretical development of the two scales. The brief resilient coping scale (Sinclair & Wallston, 2004) states that “the distinguishing feature of resilient coping is its ability to promote positive adaptation despite high stress” (p. 95). Further, the authors note that individuals that are resilient use cognitive appraisal skills to solve problems in stressful situations. Thus, the main focus of this scale appears to be on coping behaviors (e.g., “I look for creative ways to alter difficult situations”). Alternatively, Wagnild and Young (1990) note that resilient individuals have emotional stamina, and are able to adapt after experiencing misfortunes. The definition of resilience according to Wagnild has evolved over the decades from that of a personality trait (Wagnild & Young, 1990, 1993) to a complex interaction between genetics and the environment (Wagnild, 2011). However, the general definition of resilience remains the same across both authors: positively adapting to negative life events.

Comparing the items across the two scales, Sinclair and Wallston’s scale (2004) focuses heavily on belief in control over a situation and coping behaviors. Wagnild’s (2011) scale focuses on the trait characteristics of resilience (e.g., “I am friends with myself”). The two resilience scales were significantly correlated, though the relationship was weak ($r = .22, p = .03$). Examining the factor structure suggests that the BRCS had good model fit, $\chi^2 (2) = 2.06, p = .36, CFI = .99, TLI = .99, RMSEA = .02, PCLOSE = .44, SRMR = .02$. The RS had poor model fit, $\chi^2 (77) = 158.22, p = .00, CFI = .94, TLI =$

.93, RMSEA = .10, PCLOSE = .00, SRMR = .04. Given that both resilience scales have the same theoretical definition, it is likely that the differences are due to the way the items are worded, and in particular the brief resilient coping scale's focus on coping behaviors.

Thus, the question becomes: what is the relationship between resilience and coping? Coping has been defined as "personality in action under stress" (Bolger, 1990, p. 525). Later research has since distinguished between personality and coping as separate constructs. For example, Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth (2001) define coping as a volitional and conscious effort to control the environment under stressful conditions – a similar definition to resilience. Campbell-Sills, Cohan, and Stein (2006) examined the relationship between personality, resilience, and coping in a sample of young adults and found that task-oriented coping (e.g., problem solving) is a significant positive predictor of resilience above and beyond the personality traits of neuroticism and extraversion. Thus, utilizing the brief resilient coping scale appears to be a valuable method of measuring resilience because it captures both traits such as optimism as well as coping behaviors. It is important to note that resilience remains a shifting construct in the research literature, and this has hindered research into its impact on wellbeing across populations (e.g., Davydov et al., 2010). However, this also provides avenues for future research into examining various measures of resilience to determine how they differentially relate to emotional, behavioral, and physical strains.

Lastly, similar to Ong et al.'s (2006) diary study which found that resilience moderates the stressor-negative affect relationship, this study examined the moderating role of resilience between workplace stressors and JRNA in a sample of nurses (H15-18).

Of the four stressors (interpersonal conflict at work, quantitative workload, surface acting, and traumatic events), resilience moderated the relationships between interpersonal conflict at work and JRNA (H15) as well as quantitative workload and JRNA (H16). Overall, it appears that the two commonly reported stressors by Sinclair et al. (2009), interpersonal conflict at work and workload, play a large role in nurses' emotional wellbeing in the workplace in this sample. These two demands were the most frequently reported among a sample of 438 Oregon nurses (Sinclair et al., 2009), and these results were duplicated in this study.

Highly resilient individuals appear to have more control over positive emotional experiences they have, and this control allows them to bounce back from stressful events by using positive emotions as a vehicle or resource for coping (Ong et al., 2006). If nurses are able to adapt to stressors they experience by using positive emotions, which then lead to fewer negative emotions, then they will be less likely to experience negative strains typically associated with workplace stressors.

Surprisingly, surface acting and traumatic events were not significant stressors for nurses in the emotion-centered model of job stress, but as mentioned previously, it is possible that these nonsignificant results were due to the fact that nurses across all units were surveyed, rather than those that work in highly stressful environments such as psychiatric units and emergency departments where regulating emotions due to traumatic events may be relied upon more heavily. Given that interpersonal conflict at work and workload are two of the most prevalent stressors in the nursing industry, it could be that resilient nurses have the most experience at expanding their positive resources (i.e., using the Broaden and Build model to bounce back and grow further resources) in regard to

these stressors, and are able to bounce back from these systemic stressors more easily than they are from more traumatic stressors such as traumatic events and surface acting. As mentioned previously, resilience is an evolutionary construct that develops over one's lifetime; individuals do not experience one single stressful event, use resources such as positive emotions to overcome the event, and then feel better forever. Nurses experience multiple stressful events every day, and their interaction with these events is tempered by their previous experiences such that the more frequent some stressors are, the more opportunities nurses have to successfully overcome stressors (e.g., "I've done this before, I can do it again"). It could be that resilience only moderates the stressor-strain relationships for stressors that nurses commonly experience in their job, which may differ depending on the unit in which they work.

Overall, the results of this study suggest that resilience is a valuable trait for nurses to develop over time in order to reduce the strains they experience on the job due to commonly reported workplace stressors. Given that resilience buffered the majority of these stressor-strain relationships, it may have value for some training and selection purposes. These interventions are discussed in more detail in the following section.

Limitations and Future Research

Overall, while interpersonal conflict and quantitative workload appear to be supported as stressors in the emotion-centered model of job stress, traumatic events and emotional labor were not. These results were surprising, given that both have been reported by nurses to be significant stressors in their workplace (Glazer & Gyurak, 2008; Gray-Toft & Anderson, 1981a, b; LeSergent & Haney, 2005; Parkes, 1985). However, examining correlational analyses indicates that surface acting was not significantly

related to any job strains, and traumatic events were only significantly related to the burnout facet of depersonalization ($r = .20, p = .05$). Future research should examine specific samples of nurses such as critical care or psychiatry nurses (Diefendorff et al., 2011) to see if surface acting and traumatic events act as stressors across different samples of nurses. For example, it is possible that a more nuanced view of traumatic events is needed to determine when traumatic events become a stressor for nurses. Perhaps there is a threshold of a certain frequency of traumatic events nurses need to experience before it becomes a stressor. This study found that the majority of nurses reported experiencing zero traumatic events over the past six months (14.4%) or one event (11.3%). Despite the magnitude of the traumas nurses experienced, it is possible that infrequent traumatic events simply do not meet that threshold.

Because this study utilized a random sample of nurses across units and job types, future research should also examine the role of emotional display rules at the unit level and their impact on emotional labor and job strains in the workplace. Given the complex relationships between emotional labor, display rules, affectivity, and job strains, it is likely that surveying individual nurses across units did not capture the relationship between surface acting as a stressors and job strains. It is also possible that nonsignificant results were due to the low internal consistency of the surface acting scale. Due to the exploratory nature of surface acting and traumatic events as stressors in the emotion-centered model of job stress, future research should also examine other types of emotional strains that nurses experience beyond emotional labor and traumatic events. Additionally, it would be valuable to expand upon this current study by examining other types of conflict that nurses experience such as task, relationship, and non-task

organizational conflict to determine if resilience is able to buffer more than just the negative effects of interpersonal conflict at work for health care workers.

A two-week time period was used in an attempt to draw causal conclusions about the relationship between stressors and strains, as well as the moderating role of resilience. Collecting data at two time points was also done to mitigate the effects of common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, the nonsignificant results of injuries that nurses have experience on the job may likely be due to the short time frame used. While using a short time frame allows for a more accurate recollection of injuries by respondents (Kuorinka et al., 1987), future research should consider utilizing a longer time frame to assess if injuries become a significant strain in the emotion-centered model of job stress.

A final sample size of 97 pairs was achieved in this study, which was slightly smaller than the sample size of 111 in the suggested power analysis. In the future, utilizing a larger sample of nurses would be valuable to increase the power of this study. However, the value added by implementing a multiwave study is a new contribution to the literature on resilience in the health care industry.

It is interesting that one measure of resilience was nonsignificant, while a second resilience scale was significant. This is possibly because one of the scales was measuring behaviors and the other was measuring traits. Future research should continue to examine the various resilience scales in relationship to stressors and strains, in particular comparing these results to the well-validated and commonly used Connor-Davidson Resilience Scale (Connor & Davidson, 2003).

In the future, research should also consider examining the role of personality traits and behaviors related to resilience. For example, previous research has found significant relationships among the big 5 personality factors, coping skills, and trait resilience (e.g., Campbell-Sills, Cohan, & Stein, 2006; Lü, Wang, & Zhang, 2014). Future research should expand resilience's nomological network to other individual differences such as locus of control, trait gratitude, positive affect, and communication styles as well as environmental characteristics such as perceived organizational support and perceived supervisor support. Furthermore, little research has examined predictors of resilience over long time periods.

Understanding how resilience develops over the lifetime in relation to intrapersonal characteristics has yet to be examined, and could shed light onto which characteristics most help individuals develop trait resilience in adulthood. Additionally, understanding additional contributions made by intrapersonal and interpersonal characteristics will allow for more targeted organizational interventions aimed at improving resilience in the workplace for nurses as well as other stressful jobs. For example, implementing methods of increasing positive affect (such as exercise and gratitude activities), managing conflict, and improving communication could be valuable ways of increasing resilience in the nursing industry, specifically.

Given the impact of resilience on individuals that report high levels of physical stressors and non-physical stressors (e.g., Sinclair & Wallston, 2004), it is likely that resilience interventions could be a valuable resource for nurses and healthcare organizations. The amount of long-term stress health care professionals experience as a result of demanding jobs requires practitioners to find beneficial strategies that will

enhance their levels of resilience (Skovholt, 2011). Resilience interventions may be especially important for young nurses, who are more sensitive to negative feelings at work, and are seeking ways to ameliorate the negative outcomes of a stressful work environment.

I am currently piloting a resilience intervention on a sample of nurses with a consulting organization located in Miami. This intervention seeks to increase resilience through five main techniques 1) self-regulation through breathing activities, 2) realistic thinking strategies (do not use words like *never* or *always*), 3) positive emotions (through a short gratitude activity), 4) identifying your strengths such as courage or wisdom, and 5) increasing social support through awareness of workplace aggression and effective communication methods. Measuring the impact of these types of resilience interventions on nurses' strains (emotional, behavioral, and perhaps physical) should be examined in future research.

Implications and Conclusions

The capacity for individuals to move on and grow despite (or perhaps because of) stressful and difficult situations is not a function of luck or chance, but a function of the trait of resilience. This research could have direct implications for resilience intervention designs by suggesting the potential benefits of maximizing traits and behaviors related to resilience such as focusing on positive emotions as a means of promoting the development of resilience. In addition, given the propensity for resilience to be most strongly related to positive psychology constructs such as optimism and positive affect (Lee et al., 2013), resilience interventions that incorporate elements of positive psychology are likely to be successful.

In a recent Aon Hewitt (2013) survey of 800 employers in multiple industries, 76% of organizations reported that having employees participate in health and wellbeing programs is their top health care outcome. While 85% of organizations currently have a health and wellness improvement programs, it is predicted that within three to five years, upwards of 99% of organizations will offer health and wellness improvement programs. Given this trend, it is important to measure, develop, and test new programs that meet the needs of health care organizations.

The propensity for resilience to increase through repeated mastery provides a rich area for practitioners to develop wellbeing interventions aimed at increasing resilience. For example, the U.S. Army Medical Department (2013) provides a resilience intervention aimed at developing performance skills in soldiers, their family members, and army civilians. Participants are taught to be self-aware of their thoughts and emotions, to create strong relationships with others, to communicate positively, methods of self-regulation, and how to remain optimistic in the face of stress. The U.S. Army has also invested in the Master Resilience Training program for commanding officers in order to support and foster a climate that improves their soldiers' resilience and psychological health (Lester, Harms, Herian, Krasikova, & Beal, 2011). Other resilience interventions have been successful at increasing protective factors of resilience (e.g., improving conflict management and social skills) and reducing risk factors (Leve, Fisher, & Chamberlain, 2009) for children in foster care. In another resilience intervention on 57 college students (30 intervention participants, 27 control), Steinhardt and Dolbier (2008) found that after the four-week resilience intervention, participants reported greater resilience, higher levels of problem-solving coping skills, self-esteem, positive affect, and

self-leadership, and lower levels of avoidant coping skills, negative affect, depressive symptoms, and perceived stress. These findings were replicated in another study of university students by the same authors (Dolbier, Jaggars, & Steinhardt, 2010), and resilience and self-leadership were found to be positively correlated with stress-related growth. These interventions focused on establishing social support, taking responsibility for one's behavior, and changing beliefs and interpretations about triggering events. However, it is important to note that resilience interventions are highly specific to the population in which they focus, given the differing stressors that individuals and groups experience. For this reason, resilience interventions for nurses should focus on integrating key components of other interventions that relate to stressors that nurses experience.

The goal of such resilience interventions for nurses is to improve important outcomes such as turnover intentions (Elitharp, 2006; Hoopes, 2012), burnout, and job satisfaction (Elitharp, 2006, Matos, Neushotz, Griffin, & Fitzpatrick, 2010). Given that outcomes such as turnover can harm an organization's ability to provide quality care and meet patient needs (Tai, Bame, & Robinson, 1998), promoting resilience in the workplace could provide positive outcomes for organizations as well as nurses. Indeed, research has found that resilience is related to important organizational outcomes such as support for change, turnover, (Shin et al., 2012), positive work attitudes (Youssef & Luthans, 2007), and less psychological distress (Utsey, Giesbrecht, Hook, & Stanard, 2008).

However, resilience interventions in the healthcare industry remain unexplored. Resilience in health care workers is a burgeoning area of research. Indeed, one of the first studies on resilience in health care workers was undertaken by a nurse researcher in

Australia who observed how some of her professional colleagues in psychiatric crisis care somehow managed to stay upbeat and skilled in their approach to patient care, while others found their work exhausting and felt burnt out (Edward, 2005). Edward noticed that the upbeat practitioners managed to stay upbeat despite multiple stressors, and attributed this difference to resilience. In this qualitative study, six participants responded to in-depth interviews about their experiences of being resilient as a health care clinician. One significant statement reported by a nurse was the importance of teamwork: “I think on a personal level [resilience] is about building up your credibility and confidence in a team” (p. 146). Edward found eight themes that emerged as ways to increase resilience in health care clinicians: having non-work related tasks to reduce anxiety, professional development opportunities, having insight into the work one does, using creativity, humor and flexibility, having a sense of faith and morality, clinical experience, support from the workplace, and in the crisis care industry it was important to keep work separate from home. Respondents also noted that taking care of oneself physically by eating right, exercising, sleeping, and having hobbies provided opportunities for greater resilience to work stressors. The results suggest that resilience is developed as a result of a caring team environment, and that when it is developed around staff, produces hope and faith (for the wellbeing of patients), provides better insights into the self, gives one a sense of oneself, and enhances self-care. Interestingly, Edward suggests that resilience interventions could be used by nurses as a means to support and improve clients’ resilience through skills like coping strategies, transforming negative experiences into positive ones, and focusing on individuals’ strengths (Edward & Warelow, 2005; Warelow & Edward, 2007). It is evident that resilience is valuable not only for nurses, but patients as well.

Given the prevalence of conflict in the nursing industry and because some of the most negative conflicts for nurses occur with their coworkers, physicians, and other hospital staff (Sinclair et al., 2009), resilience interventions can be useful mechanisms to increase the protective factors associated with resilience such as optimism, positive affect, self-esteem, self-efficacy, and social support (Lee et al., 2013). According to Sinclair et al. (2009), in order to reduce negative outcomes like turnover among nurses, health care organizations should seek methods to increase positive experiences, rather than reduce negative experiences such as interpersonal conflict. One method of reducing negative outcomes is through resilience interventions, which can teach nurses new behaviors and attitudes such as breathing techniques and more effective communication skills. For example, as Cryer, McCraty, and Childre (2003) explain, when individuals are stressed, the amygdala is in a constant state of fight or flight without time to recover. When the amygdala experiences a negative event (e.g., if a coworker does not hold a door open for a nurse), later on when the same coworker sends an email, the nurse may misinterpret the email to be threatening because his or her brain has matched the previous event to the current event. Activities aimed at breaking this feedback loop include practicing breathing techniques aimed at reducing the heart rate.

This exploratory study examined both the mediating role of negative emotions between common stressors and strains found in the nursing industry as well as the buffering effects of resilience on the emotion-centered model of job stress provided valuable insight into the nature of resilience in the nursing industry, as well as the mitigating role it plays in stressors and strains in the workplace. Given the relationships between resilience, job satisfaction, turnover intentions, and burnout, resilience appears

to be important for both emotional and behavioral job-related outcomes common among nurses. This is likely due to the socioemotional factors inherent in resilience (such as social support and positive affect; Let et al., 2013). This places an impetus on researchers to further examine the mechanism through which resilience impacts nurse and patient outcomes, given the prevalence of both turnover and burnout in the nursing industry (Shields & Ward, 2001).

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APPENDIX A – Measures and Scale Items

Quantitative Workload Inventory – Spector & Jex, 1998

Instructions: Indicate how often each of the following occurs in your job.

1 = Less than once per month or never; 2 = Once or twice per month; 3 = Once or twice per week; 4 = Once or twice per day; 5 = Several times per day

- ____ How often does your job require you to work very fast?
- ____ How often does your job require you to work very hard?
- ____ How often does your job leave you with little time to get things done?
- ____ How often is there a great deal to be done?
- ____ How often do you have to do more work than you can do well?

Interpersonal Conflict at Work Scale – Spector & Jex, 1998

Instructions: Indicate how often each of the following occurs in your job.

1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Quite Often; 5 = Very Often

- ____ How often do you get into arguments with others at work?
- ____ How often do other people yell at you at work?
- ____ How often are people rude to you at work?
- ____ How often do other people do nasty things to you at work?

Traumatic Events Scale – Adriaenssens et al., 2012

How many times were you confronted with a work-related traumatic event in the past 6 months? 1 ----- 100

Which work-related event had the highest impact? Please describe this event. ____

Emotional Labor Scale – Brotheridge & Lee, 2003

A typical interaction I have with a patient takes about ____ minutes.

Instructions: On an average day at work, how frequently do you...

1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Often; 5 = Always

- ____ Display specific emotions required by your job
- ____ Show some strong emotions
- ____ Make an effort to actually feel the emotions that I need to display to others
- ____ Adopt certain emotions required as part of your job
- ____ Display many different kinds of emotions
- ____ Express particular emotions needed for your job
- ____ Hide my true feelings about a situation
- ____ Express intense emotions
- ____ Really try to feel the emotions I have to show as part of my job
- ____ Express many different emotions
- ____ Resist expressing my true feelings
- ____ Display many different emotions when interacting with others
- ____ Pretend to have emotions that I don't really have
- ____ Try to actually experience the emotions that I must show

Brief Resilient Coping Scale – Sinclair & Wallston, 2004

Instructions: Consider how well the following statements describe your behavior and actions on a scale from 1 to 5, where 1 means the statement does not describe you at all and 5 means it describes you very well.

1 = Does not describe me at all; 3 = Describes me somewhat well; 5 = Describes me very well

- ____ I look for creative ways to alter difficult situations.
- ____ Regardless of what happens to me, I believe I can control my reaction to it
- ____ I believe I can grow in positive ways by dealing with difficult situations.
- ____ I actively look for ways to replace the losses I encounter in life.

Job-related Affective Wellbeing Scale – Van Katwyk et al., 2000

Instructions: Below are a number of statements that describe different emotions that a job can make a person feel. Please indicate the amount to which any part of your job (e.g., the work, coworkers, supervisor, clients, pay) has made you feel that emotion in the past two weeks.

1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Quite Often; 5 = Extremely Often or Always

- ___ At ease
- ___ Angry
- ___ Annoyed
- ___ Anxious
- ___ Bored
- ___ Cheerful
- ___ Calm
- ___ Confused
- ___ Content
- ___ Depressed
- ___ Disgusted
- ___ Discouraged
- ___ Elated
- ___ Energetic
- ___ Excited
- ___ Ecstatic
- ___ Enthusiastic
- ___ Frightened
- ___ Frustrated
- ___ Furious
- ___ Gloomy
- ___ Fatigued
- ___ Happy
- ___ Intimidated
- ___ Inspired
- ___ Miserable
- ___ Pleased
- ___ Proud
- ___ Satisfied
- ___ Relaxed

Job Satisfaction – Cammann et al., 1983

Instructions: Indicate how much you agree with each statement.

1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor Disagree; 4 = Agree; 5 = Strongly Agree

_____ In general, I don't like my job.

_____ All in all, I am satisfied with my job.

_____ In general, I like working here.

Turnover Intentions – Cammann et al., 1983

Instructions: Indicate how much you agree with each statement.

1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor Disagree; 4 = Agree; 5 = Strongly Agree

_____ I often think of leaving this organization or job.

_____ It is very possible that I will look for a new job next year.

_____ Recently, I often think of changing my current job.

Standardized Nordic Questionnaire – Kuorinka et al., 1987

Instructions: In the above picture, you can see the approximate position of the parts of the body in which you might have had an injury (if any). Please answer by selecting the approximate box - you may choose as many as you like. You may be in doubt as to how to answer, but please do your best anyway. If you have not had trouble in any part of your body due to an injury at work, select None.

Have you at any time during the last two weeks had trouble due to an injury at work (ache, pain, discomfort) in: (select all that apply)

- Neck
- Shoulders
- Upper Back
- Elbows
- Wrists/Hands
- Lower Back
- One or both hips/thighs
- One or both knees
- One or both ankles/feet
- None

Table 1. Summary Table of Hypothesis Support

Hypothesis	Results
Regression Analyses	
Hypothesis 1a-d (H1): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in turnover intentions.	H1a was supported. H1b-d were not supported.
Hypothesis 2a-d (H2): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in be negatively related to job satisfaction.	H2a was supported. H2b-d were not supported.
Hypothesis 3a-d (H3): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in emotional exhaustion.	H3a was supported. H3b-d were not supported.
H4a-d (H4): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in depersonalization.	H4a was supported. H4b-d were not supported.
H5a-d (H5): Interpersonal conflict at work, quantitative workload, surface acting, and traumatic events will predict unique variance in personal accomplishment.	H5a was supported. H5b-d were not supported.
Hypothesis 6a-c (H6): Interpersonal conflict at work, quantitative workload, and traumatic events will predict unique variance in injuries.	H6b was supported. H6a and 6c were not supported.
Hypothesis 7a-d (H7): Job-related negative affect will mediate the relationship between interpersonal conflict and turnover intentions, job satisfaction, burnout, and injuries (see Figures 3-8).	H7a was supported. H7b was supported. H7c was partially supported. (EE - full mediation) (DP - partial mediation) (PA - full mediation) H7d was supported.

Mediation Analyses

Hypothesis 8a-d (H8): Job-related negative affect will mediate the relationship between quantitative workload and turnover intentions, job satisfaction, burnout, and injuries (see Figures 9-14).	H8a was supported. H8b was supported. H8c was supported. (EE - full mediation) (DP - full mediation) (PA - full mediation)
Hypothesis 9a-d (H9): Job-related negative affect will mediate the relationship between surface acting and turnover intentions, job satisfaction, burnout, and injuries (see Figures 15-20).	H8d was not supported. H9a was not supported. H9b was not supported. H9c was not supported. (EE - no mediation) (DP - no mediation) (PA - no mediation)
Hypothesis 10a-d (H10): Job-related negative affect will mediate the relationship between traumatic events and turnover intentions, job satisfaction, burnout, and injuries (see Figures 21-26).	H9d was not supported. H10a was supported. H10b was not supported. H10c was partially supported. (EE – full mediation) (DP – full mediation) (PA – no mediation) H10d was not supported.

Correlation Analyses

Hypothesis 11 (H11): Resilience will be negatively correlated with turnover intentions.	H11 was supported.
Hypothesis 12 (H12): Resilience will be positively correlated with job satisfaction.	H12 was supported.
Hypothesis 13 (H13): Resilience will be negatively correlated with burnout.	H13 was partially supported. (EE – supported) (DP – not supported) (PA –supported)
Hypothesis 14 (H14): Resilience will be negatively correlated with injuries.	H14 was not supported.

Moderation Analyses

Hypothesis 15 (H15): Resilience will moderate the relationship between interpersonal conflict and job-related negative affect such that nurses who are high on resilience will experience lower job-related negative affect (see Figure 27).

H15 was supported.

Hypothesis 16 (H16): Resilience will moderate the relationship between quantitative workload and job-related negative affect such that nurses who are high on resilience will experience lower job-related negative affect (see Figure 28).

H16 was not supported.

Hypothesis 17 (H17): Resilience will moderate the relationship between emotional labor and job-related negative affect such that nurses who are high on resilience will experience lower job-related negative affect (see Figure 29).

H17 was not supported.

Hypothesis 18 (H18): Resilience will moderate the relationship between traumatic events and job-related negative affect such that nurses who are high on resilience will experience lower job-related negative affect (see Figure 30).

H18 was not supported.

Table 2. Means, Standard Deviations, and Correlations among Study Variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Interpersonal conflict	2.00	.81	-												
2. Quantitative workload	4.21	.74	.38**	-											
3. Surface acting	2.96	.75	.19	.17	-										
4. Traumatic events	12.07	17.89	.36**	.16	.29**	-									
5. Resilience scale	6.14	.87	.09	.14	.11	.13	-								
6. Brief resilient coping scale	4.15	.71	.03	.13	.24*	.26*	.22*	-							
7. Job-related negative affect	2.22	.62	.50**	.31**	.09	.18	.10	-.25*	-						
8. Turnover intentions	2.44	1.24	.35**	.17	-.03	.07	.02	-.26*	.66**	-					
9. Job satisfaction	4.00	.90	-.44**	-.22*	-.02	-.19	-.01	.28**	-.67**	-.82**	-				
10. Emotional exhaustion	3.33	1.45	.44**	.32**	.01	.16	.08	-.26*	.80**	.80**	-.73**	-			
11. Depersonalization	2.34	1.19	.50**	.29**	.02	.20*	.01	-.12	.71**	.53**	-.58**	.69**	-		
12. Personal accomplishment	5.56	.95	-.31**	.02	-.04	-.17	-.02	.20*	-.44**	-.38**	.52**	-.34**	-.38**	-	
13. Injuries	1.23	1.82	.10	.26**	.10	.20	.20*	.20	.23*	.16	-.30**	.30**	.32**	-.09	-

Note: * $p \leq .05$, ** $p < .01$

Table 3. Hierarchical Regression Model of Resilience Moderating the Relationship between Interpersonal Conflict at Work (ICAW) and Job-Related Negative Affect

Variable	β	R^2	ΔR^2	F
Step 1		.25	.25**	15.84
Interpersonal Conflict at Work (ICAW)	.55**			
Resilience	.06			
Step 2		.29	.04*	12.71
ICAW x Resilience	-.24*			

Note. ** $p < .01$ * $p < .05$

Table 4. Hierarchical Regression Model of Resilience Moderating the Relationship between Quantitative Workload (QW) and Job-Related Negative Affect

Variable	β	R^2	ΔR^2	F
Step 1		.10	.10**	5.13
Quantitative Workload (QW)	.30**			
Resilience	.06			
Step 2		.10	.00	3.55
QW x Resilience	-.07			

Note. ** $p < .01$ * $p < .05$

Table 5. Hierarchical Regression Model of Resilience Moderating the Relationship between Surface Acting and Job-Related Negative Affect

	Variable	β	R^2	ΔR^2	F
Step 1			.02	.02	0.81
	Surface Acting	.08			
	Resilience	.09			
Step 2			.02	.00	0.59
	Surface Acting x Resilience	.05			

Note. ** $p < .01$ * $p < .05$

Table 6. Hierarchical Regression Model of Resilience Moderating the Relationship between Traumatic Events and Job-Related Negative Affect

	Variable	β	R^2	ΔR^2	F
Step 1			.04	.04	1.86
	Traumatic Events	.17			
	Resilience	.07			
Step 2			.04	.00	1.26
	Traumatic Events x Resilience	.04			

Note. ** $p < .01$ * $p < .05$

Figure 1. *The Emotion-Centered Model of Job Stress*



Figure 2. *The Proposed Role of Resilience in the Emotion-Centered Model of Job Stress*

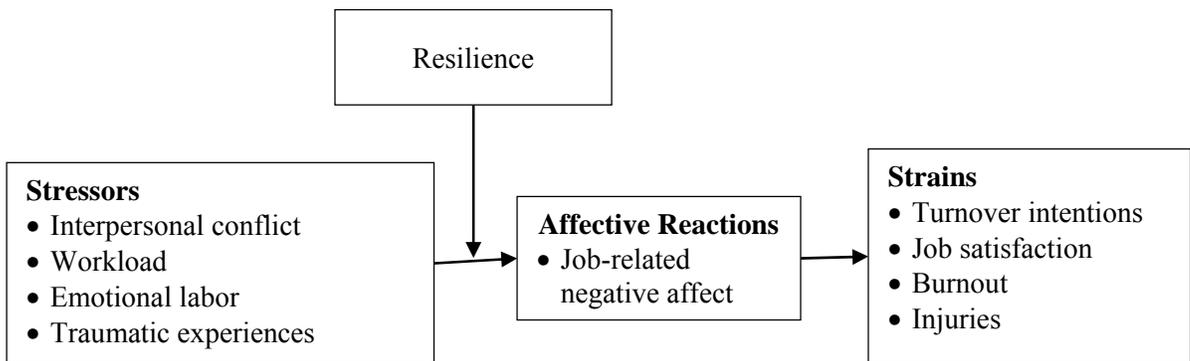
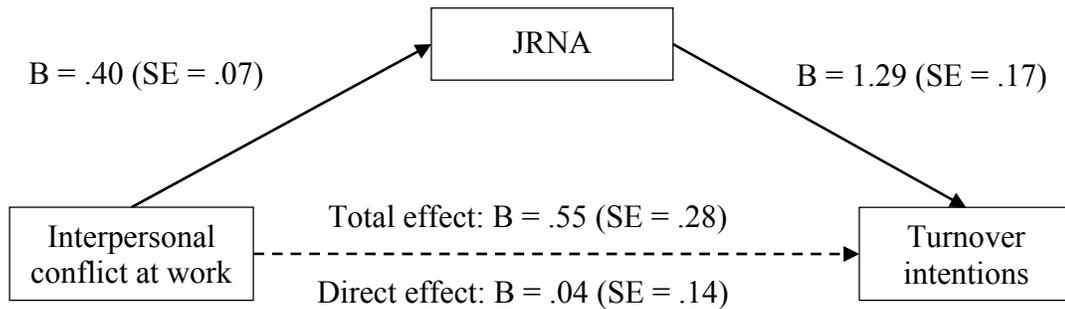
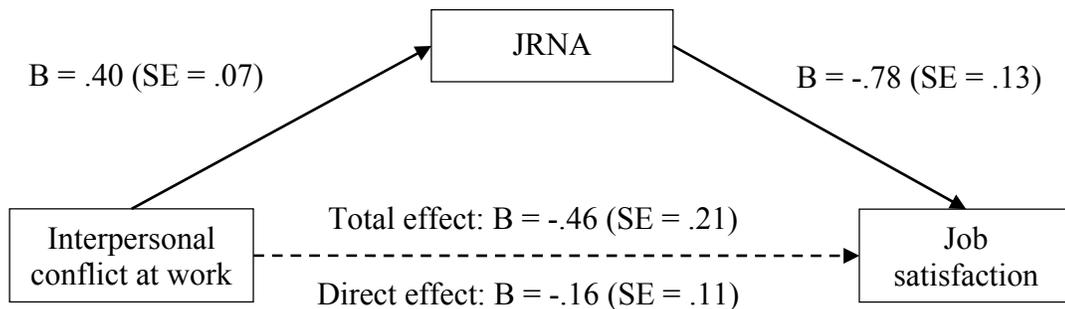


Figure 3. *Mediation between Interpersonal Conflict at Work and Turnover Intentions by Job-Related Negative Affect (JRNA)*



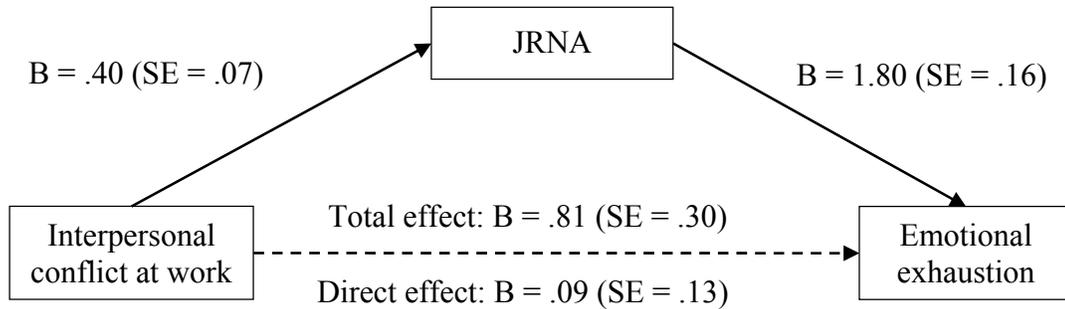
Bootstrapped indirect effect – JRNA = .51 (SE = .15) $p < .05$ (95% CI: L = .32; U = .93)

Figure 4. *Mediation between Interpersonal Conflict at Work and Job Satisfaction by Job-Related Negative Affect (JRNA)*



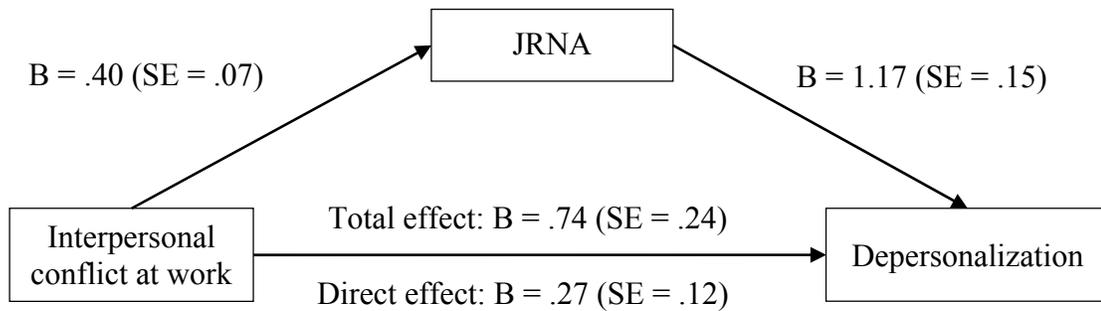
Bootstrapped indirect effect – JRNA = -.31 (SE = .11) $p < .05$ (95% CI: L = -.58; U = -.16)

Figure 5. *Mediation between Interpersonal Conflict at Work and Emotional Exhaustion by Job-Related Negative Affect (JRNA)*



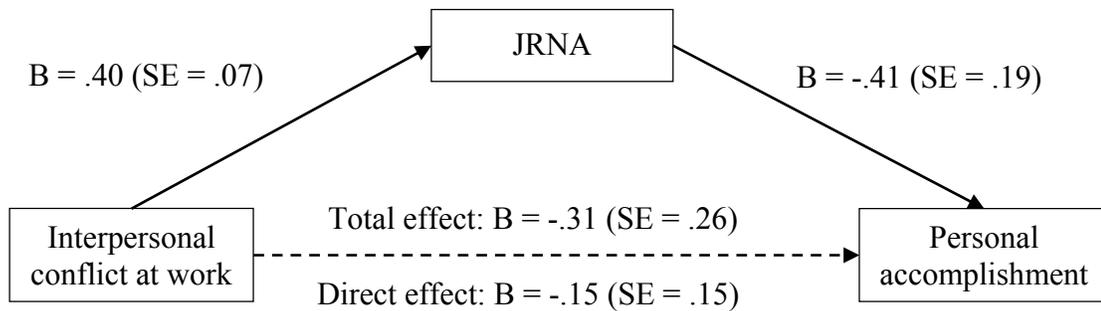
Bootstrapped indirect effect – JRNA = .71 (SE = .17) $p < .05$ (95% CI: L = .44; U = 1.11)

Figure 6. *Mediation between Interpersonal Conflict at Work and Depersonalization by Job-Related Negative Affect (JRNA)*



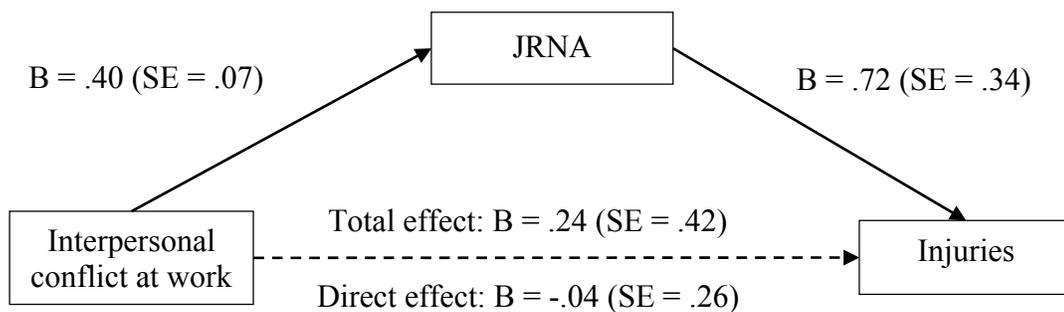
Bootstrapped indirect effect – JRNA = .46 (SE = .12) $p < .05$ (95% CI: L = .29; U = .81)

Figure 7. *Mediation between Interpersonal Conflict at Work and Personal Accomplishment by Job-Related Negative Affect (JRNA)*



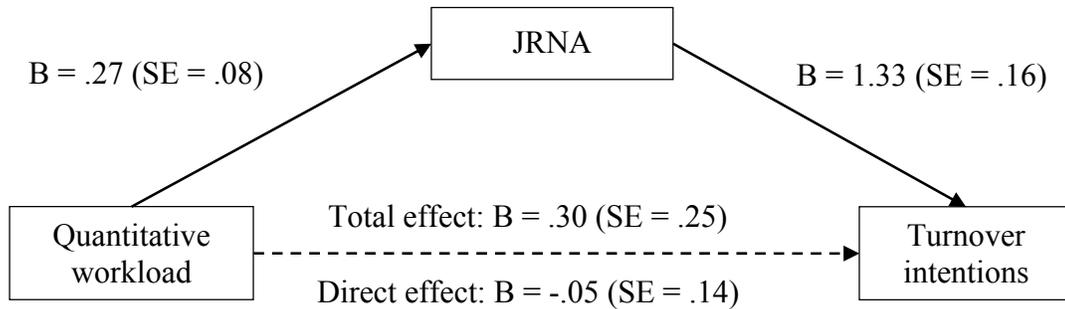
Bootstrapped indirect effect – JRNA = $-.16$ (SE = $.11$) $p < .05$ (95% CI: L = $-.41$; U = $.03$)

Figure 8. *Mediation between Interpersonal Conflict at Work and Injuries by Job-Related Negative Affect (JRNA)*



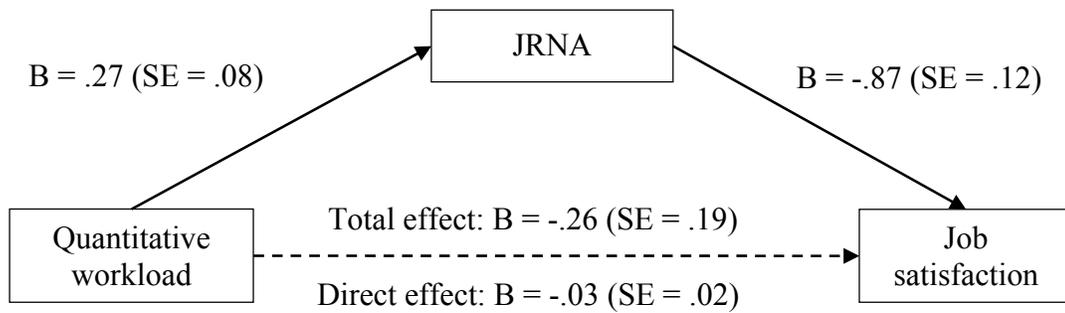
Bootstrapped indirect effect – JRNA = $.28$ (SE = $.16$) $p < .05$ (95% CI: L = $.01$; U = $.66$)

Figure 9. Mediation between Quantitative Workload and Turnover Intentions by Job-Related Negative Affect (JRNA)



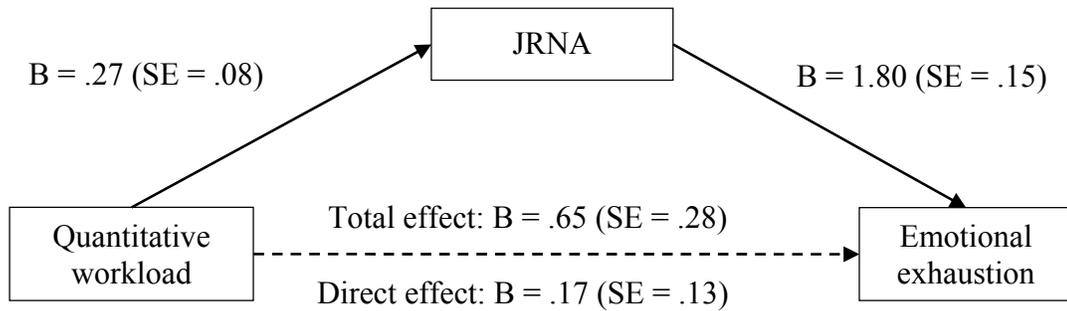
Bootstrapped indirect effect – JRNA = .35 (SE = .11) $p < .05$ (95% CI: L = .13; U = .55)

Figure 10. Mediation between Quantitative Workload and Job Satisfaction by Job-Related Negative Affect (JRNA)



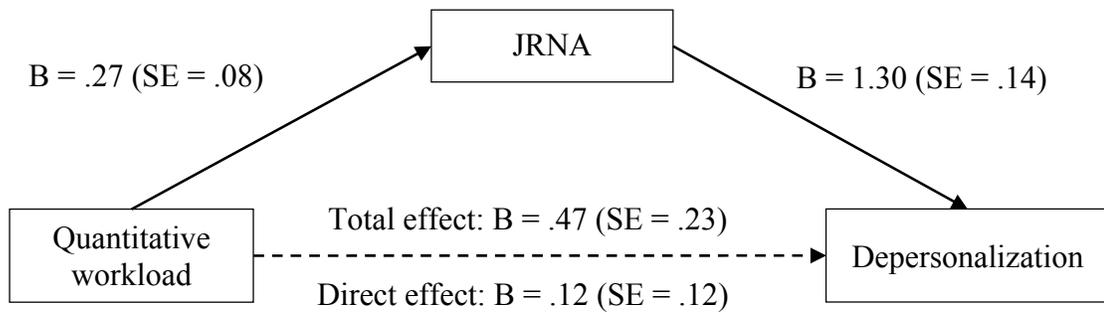
Bootstrapped indirect effect – JRNA = -.23 (SE = .08) $p < .05$ (95% CI: L = -.39; U = -.08)

Figure 11. *Mediation between Quantitative Workload and Emotional Exhaustion by Job-Related Negative Affect (JRNA)*



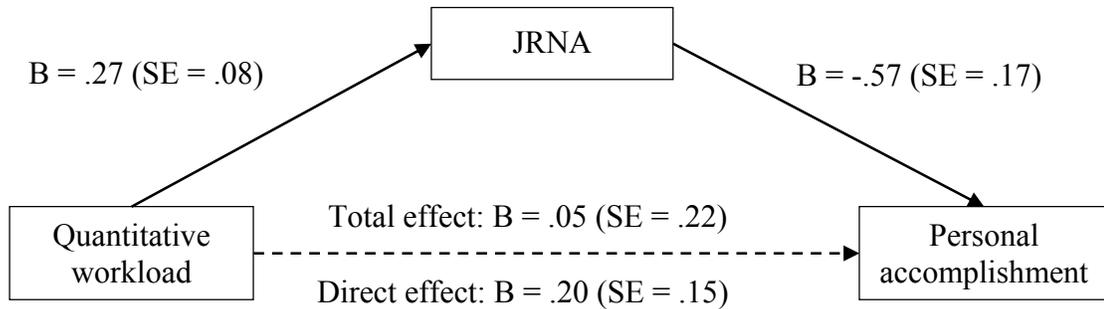
Bootstrapped indirect effect – JRNA = .48 ($SE = .15$) $p < .05$ (95% CI: L = .19; U = .79)

Figure 12. *Mediation between Quantitative Workload and Depersonalization by Job-Related Negative Affect (JRNA)*



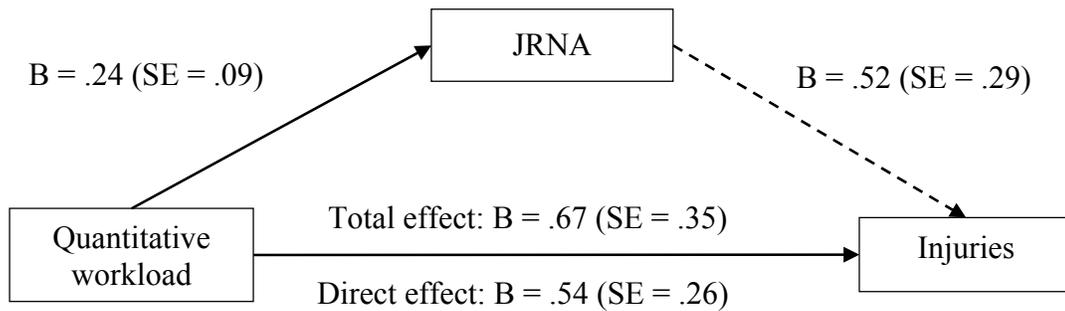
Bootstrapped indirect effect – JRNA = .35 ($SE = .11$) $p < .05$ (95% CI: L = .14; U = .56)

Figure 13. *Mediation between Quantitative Workload and Personal Accomplishment by Job-Related Negative Affect (JRNA)*



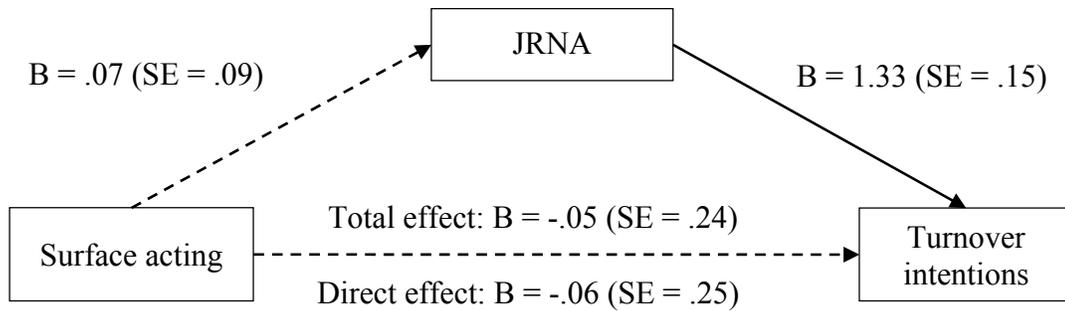
Bootstrapped indirect effect – JRNA = $-.15$ (SE = .07) $p < .05$ (95% CI: L = $-.30$; U = $-.02$)

Figure 14. *Mediation between Quantitative Workload and Injuries by Job-Related Negative Affect (JRNA)*



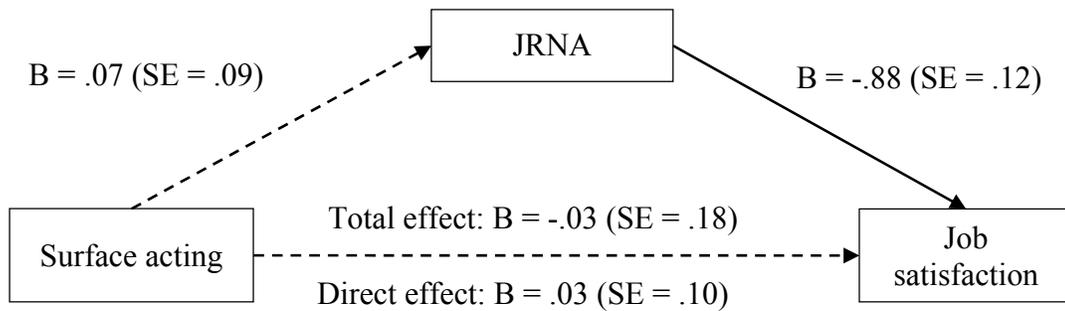
Bootstrapped indirect effect – JRNA = $.13$ (SE = .09) $p < .05$ (95% CI: L = $-.00$; U = $.38$)

Figure 15. *Mediation between Surface Acting and Turnover Intentions by Job-Related Negative Affect (JRNA)*



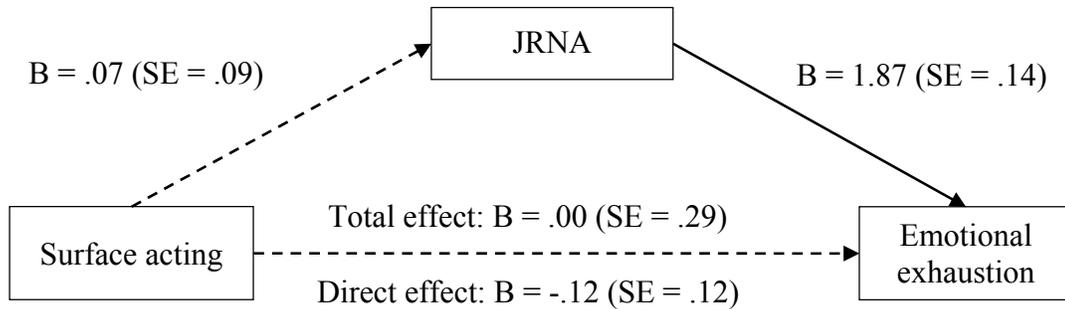
Bootstrapped indirect effect – JRNA = .09 (SE = .12) $p < .05$ (95% CI: L = -.14; U = .36)

Figure 16. *Mediation between Surface Acting and Job Satisfaction by Job-Related Negative Affect (JRNA)*



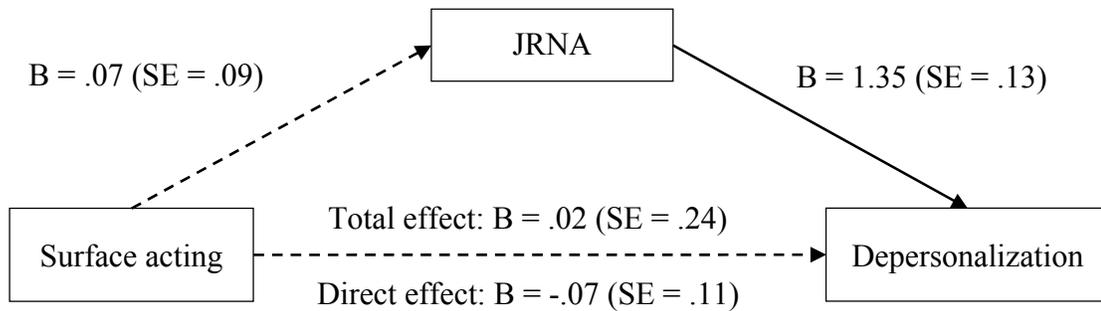
Bootstrapped indirect effect – JRNA = -.06 (SE = .08) $p < .05$ (95% CI: L = -.23; U = .09)

Figure 17. *Mediation between Surface Acting and Emotional Exhaustion by Job-Related Negative Affect (JRNA)*



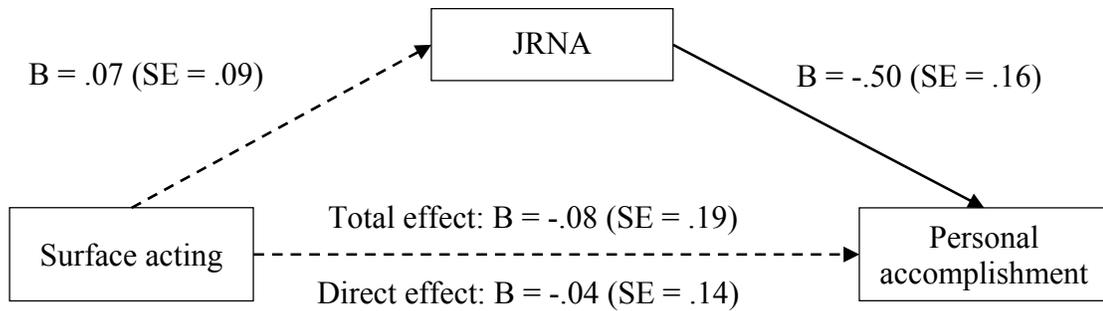
Bootstrapped indirect effect – JRNA = .13 (SE = .17) $p < .05$ (95% CI: L = -.19; U = .49)

Figure 18. *Mediation between Surface Acting and Depersonalization by Job-Related Negative Affect (JRNA)*



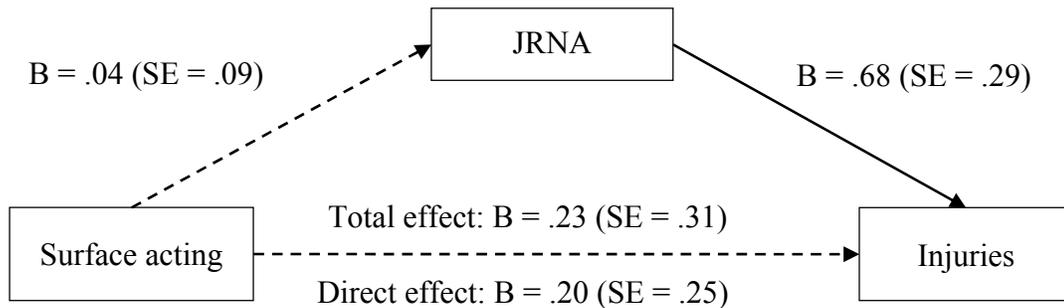
Bootstrapped indirect effect – JRNA = .09 (SE = .12) $p < .05$ (95% CI: L = -.15; U = .35)

Figure 19. *Mediation between Surface Acting and Personal Accomplishment by Job-Related Negative Affect (JRNA)*



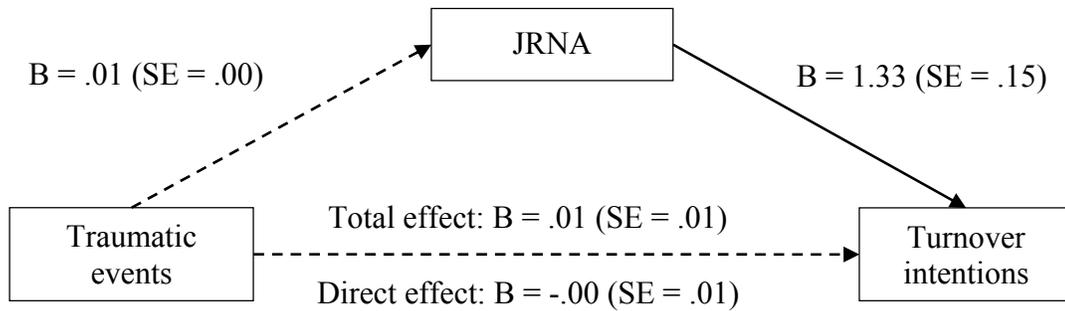
Bootstrapped indirect effect – JRNA = $-.03$ (SE = .05) $p < .05$ (95% CI: L = $-.16$; U = .04)

Figure 20. *Mediation between Surface Acting and Injuries by Job-Related Negative Affect (JRNA)*



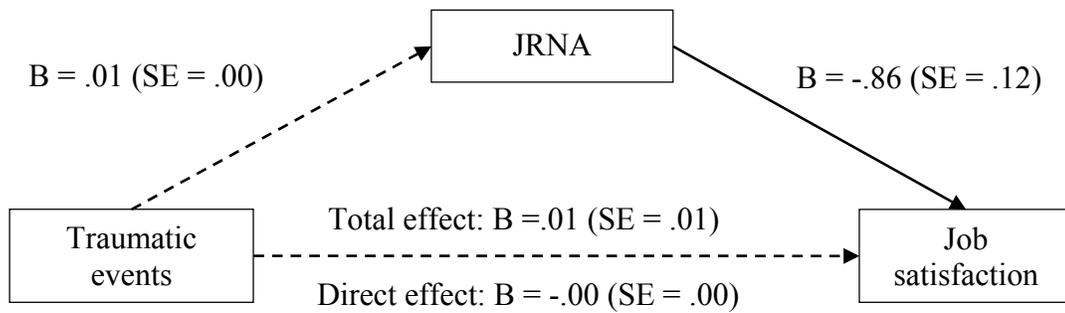
Bootstrapped indirect effect – JRNA = $.03$ (SE = .07) $p < .05$ (95% CI: L = $-.08$; U = .20)

Figure 21. *Mediation between Traumatic Events and Turnover Intentions by Job-Related Negative Affect (JRNA)*



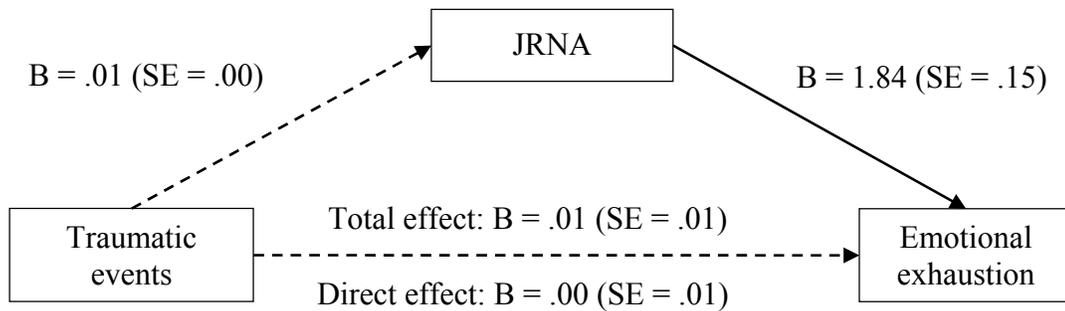
Bootstrapped indirect effect – JRNA = .01 ($SE = .01$) $p \leq .05$ (95% CI: L = .00; U = .02)

Figure 22. *Mediation between Traumatic Events and Job Satisfaction by Job-Related Negative Affect (JRNA)*



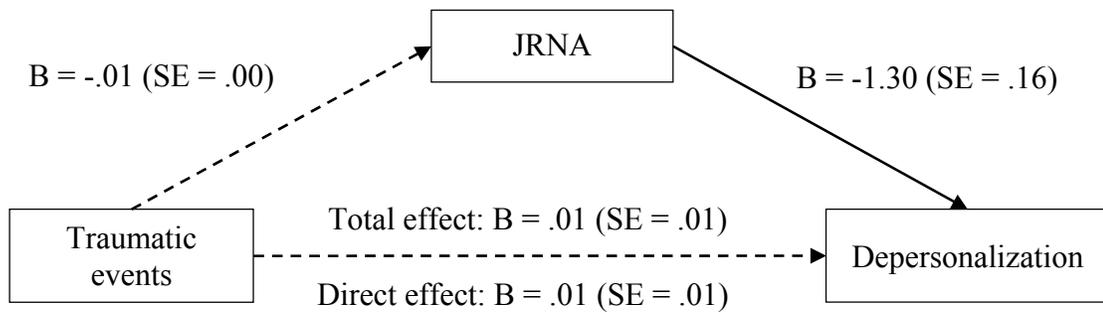
Bootstrapped indirect effect – JRNA = -.01 ($SE = .01$) $p \leq .05$ (95% CI: L = -.02; U = -.00)

Figure 23. *Mediation between Traumatic Events and Emotional Exhaustion by Job-Related Negative Affect (JRNA)*



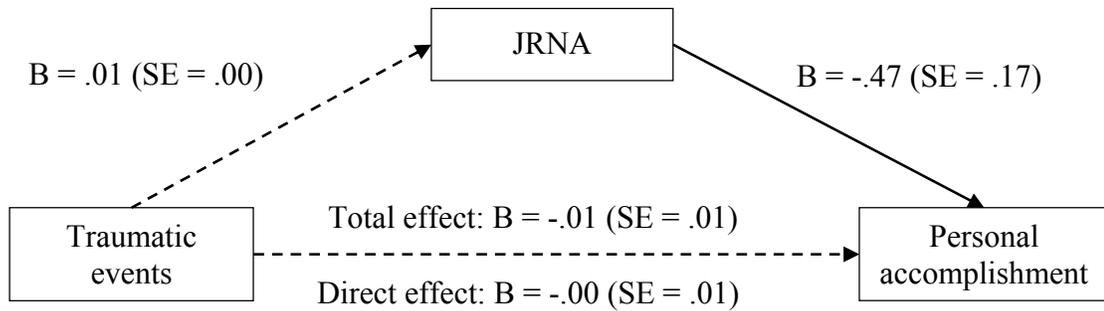
Bootstrapped indirect effect – JRNA = .01 (SE = .01) $p \leq .05$ (95% CI: L = .00; U = .03)

Figure 24. *Mediation between Traumatic Events and Depersonalization by Job-Related Negative Affect (JRNA)*



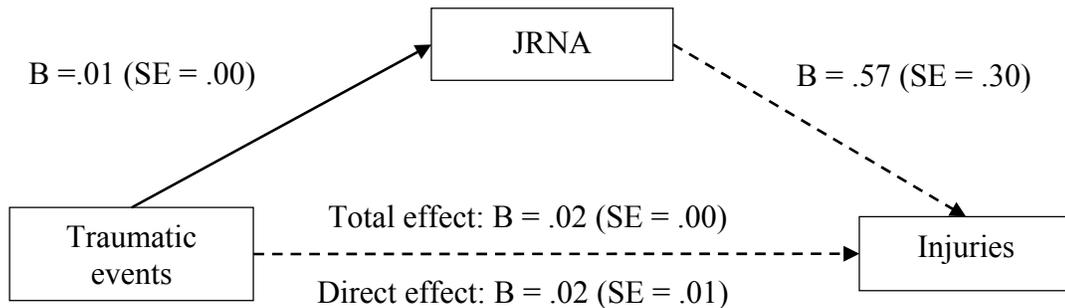
Bootstrapped indirect effect – JRNA = .01 (SE = .00) $p < .05$ (95% CI: L = -.00; U = .02)

Figure 25. *Mediation between Traumatic Events and Personal Accomplishment by Job-Related Negative Affect (JRNA)*



Bootstrapped indirect effect – JRNA = $-.00$ ($SE = .00$) $p < .05$ (95% CI: L = $-.01$; U = $-.00$)

Figure 26. *Mediation between Traumatic Events and Injuries by Job-Related Negative Affect (JRNA)*



Bootstrapped indirect effect – JRNA = $.00$ ($SE = .00$) $p < .05$ (95% CI: L = $-.00$; U = $.02$)

Figure 27. *Simple Slopes of Interpersonal Conflict Predicting Job-Related Negative Affect for 1 SD Above and Below the Mean of Resilience*

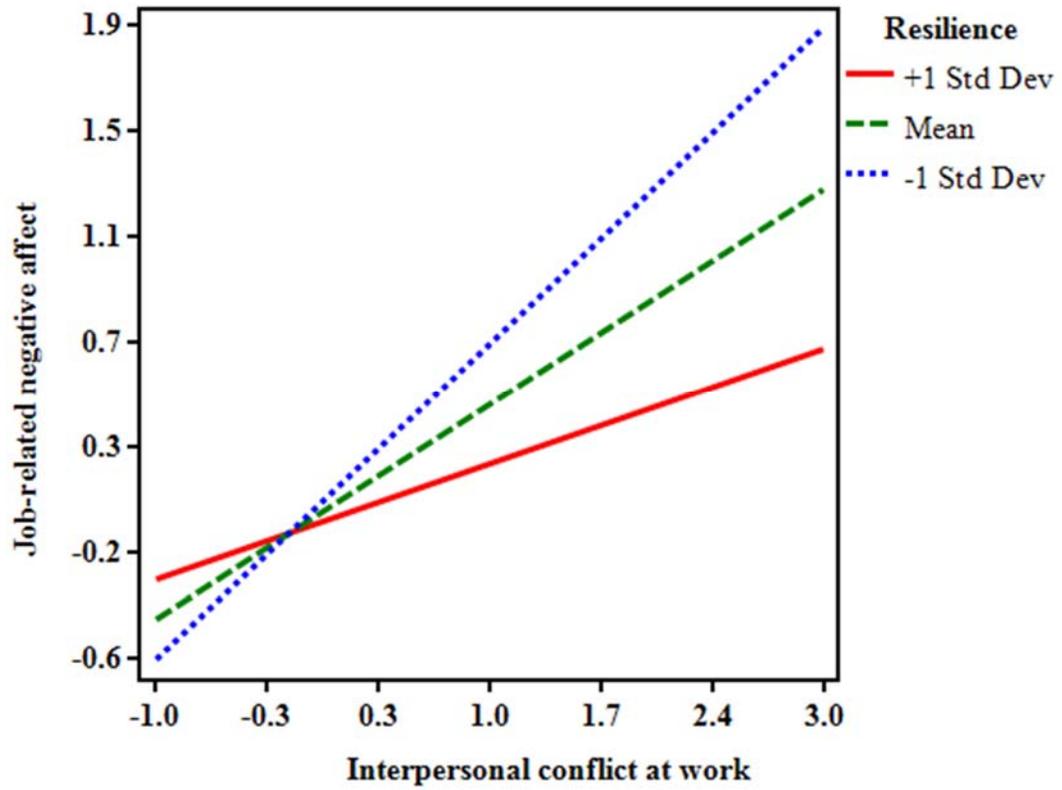


Figure 28. *Simple Slopes of Quantitative Workload Predicting Job-Related Negative Affect for 1 SD Above and Below the Mean of Resilience*

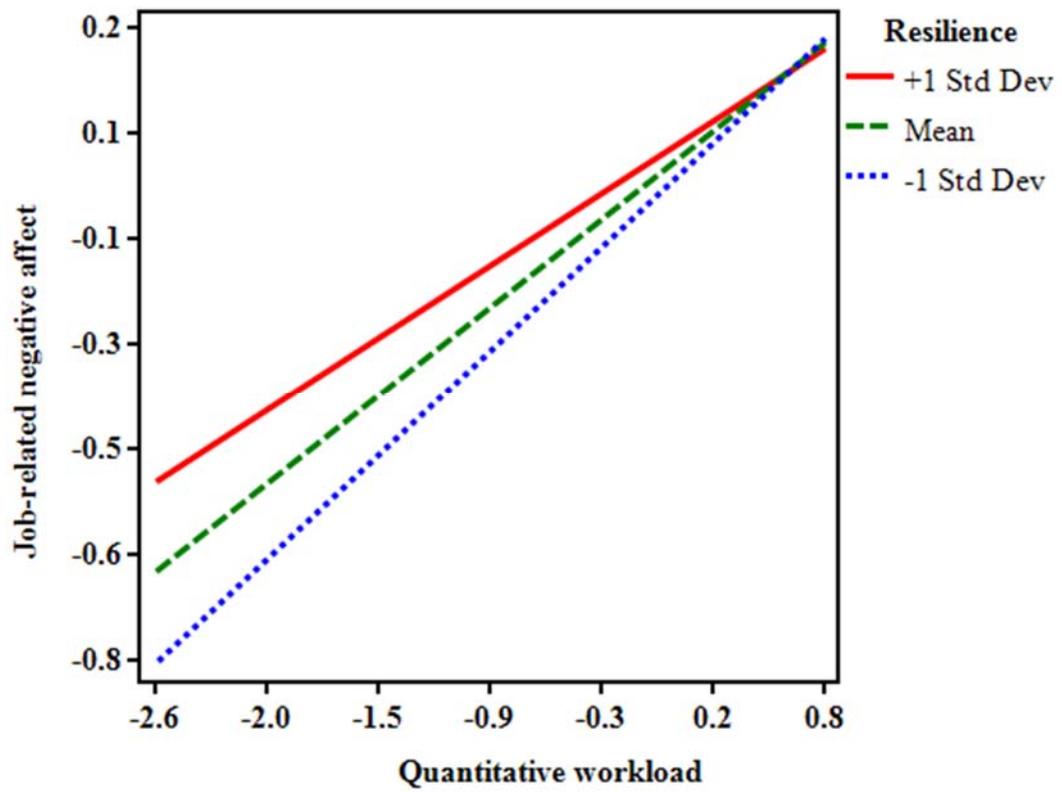


Figure 29. Simple Slopes of Surface Acting Predicting Job-Related Negative Affect for 1 SD Above and Below the Mean of Resilience

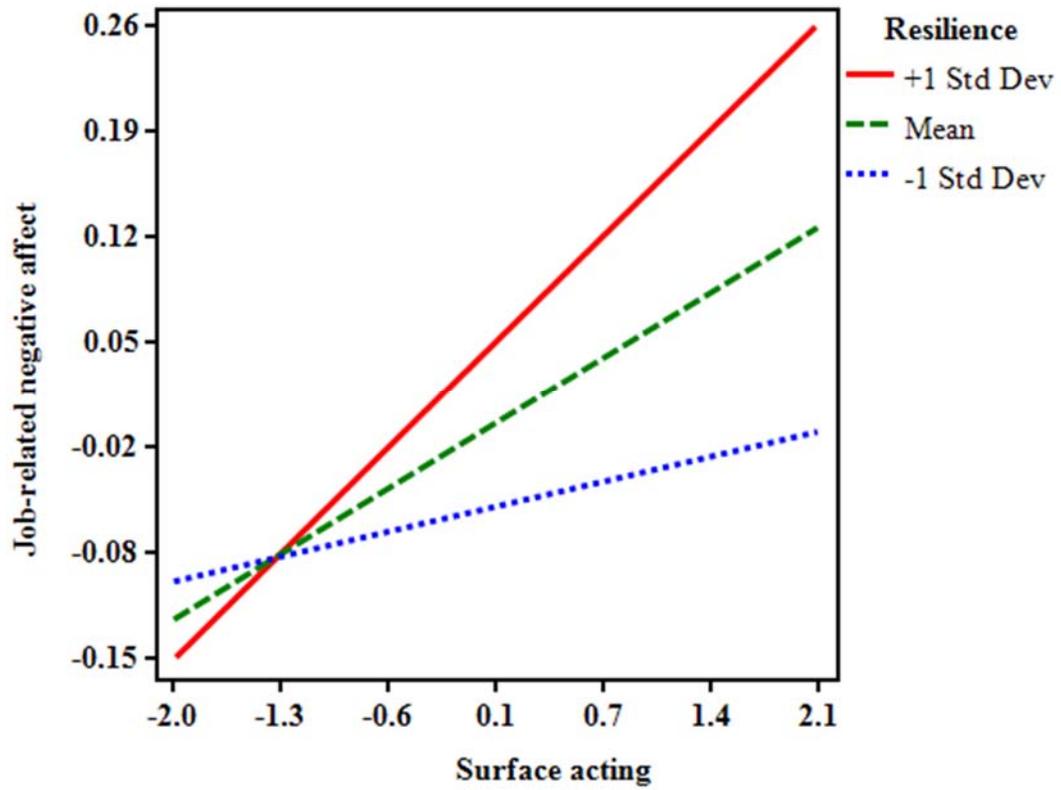
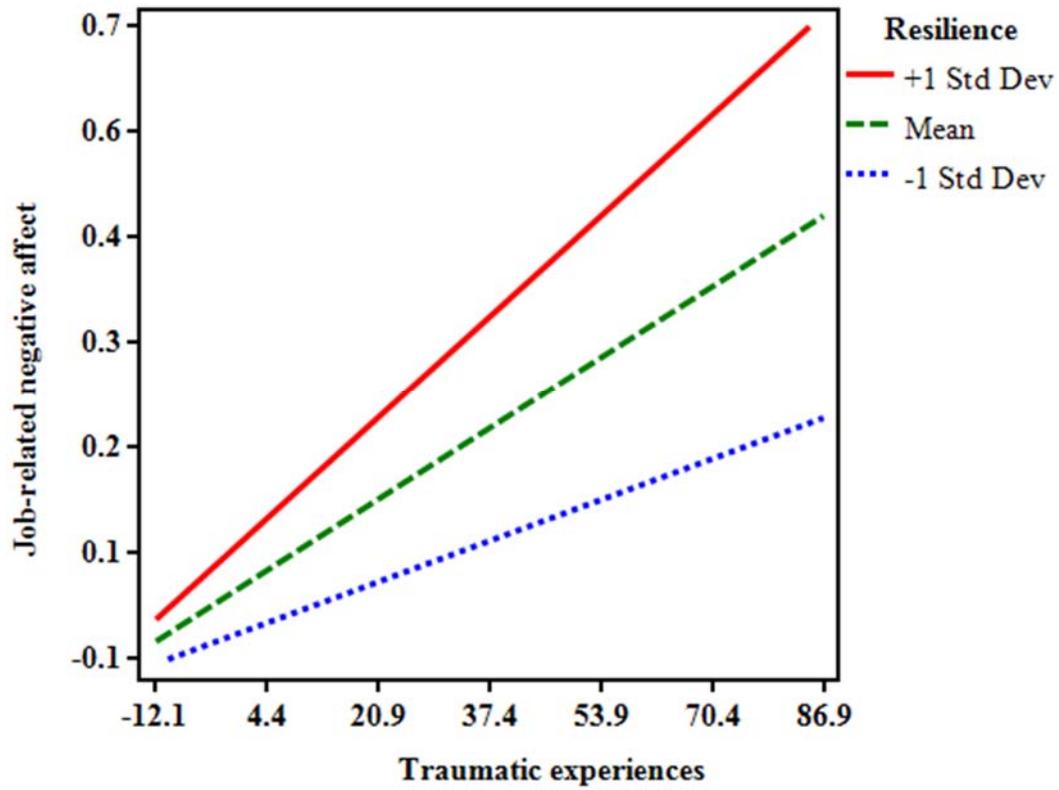


Figure 30. *Simple Slopes of Traumatic Events Predicting Job-Related Negative Affect for 1 SD Above and Below the Mean of Resilience*



VITA

JULIE JEAN LANZ

Born, Des Moines, Iowa

- 2008 B.A., Psychology
University of Iowa
Iowa City, Iowa
- 2010 M.S., Industrial-Organizational Psychology
Missouri State University
Springfield, Missouri
- 2010 – 2015 Doctoral Candidate
Florida International University
Miami, Florida

PUBLICATIONS AND PRESENTATIONS

- Nixon, A.E., Lanz, J.J., Manapragada, A., Bruk-Lee, V., Schantz, A., & Rodriguez, J.F. (2014). *Modeling relationships between psychological safety climate, job attitudes, safety behaviors, and injuries*. Manuscript submitted for publication.
- Bruk-Lee, V., Lanz, J.J., Drew, E.N., Coughlin, C., Levine, P.J., Tuzinski, K., & Wrenn, K.A. (2015). *Examining applicant reactions to different media types in character-based simulations for employee selection*. Manuscript submitted for publication.
- Lanz, J.J., Nixon, A.E., & Manapragada, A. (2015, May). Beyond safety: Safety climate's influence on contextual performance. Symposium conducted at the 11th international conference for Work, Stress, and Health, Atlanta, GA.
- Lanz, J.J., & Bruk-Lee, V. (2015, May). The buffering effects of resilience on nurse conflict. Interactive Panel conducted at the 11th international conference for Work, Stress, and Health, Atlanta, GA.
- Manapragada, A., Falcon, A., Lanz, J. J., Schantz, A., & Bruk-Lee, V. (2015, April). Speaking up at work: Personality's role in employee voice behavior. Poster presented at the 30th Annual Conference of the Society for Industrial Organizational Psychology, Philadelphia, PA.
- Schantz, A., Falcon, A., Lanz, J., Manapragada, A., & Bruk-Lee, V. (2015, April). Drug,

alcohol, and tobacco use to cope with workplace conflict. Symposium conducted at the 30th Annual Conference of the Society for Industrial and Organizational Psychology, Philadelphia, PA.

Lanz, J.J., Manapragada, A., Nixon, A.E., Bruk-Lee, V., Schantz, A., & Rodriguez, J. (2014, May). The safety dance: Outcomes of psychological safety climate. Poster presented at the 29th Annual Conference of the Society for Industrial Organizational Psychology, Honolulu, HI.

Manapragada, A., Lanz, J.J., Falcon, A., Schantz, A., & Bruk-Lee, V. (2014, May). Breaking the silence: The influence of job control and engagement on employee silence behavior. Poster presented at the 29th Annual Conference of the Society for Industrial Organizational Psychology, Honolulu, HI.

Lanz, J.J., Falcon, A., Schantz, A., Manapragada, A., & Bruk-Lee, V. (2014, February). Predictors of resilience. Poster presented at the Sunshine Education and Research Center, Tampa, FL.

Lanz, J.J., Manapragada, A., Bruk-Lee, V., & Nixon, A.E. (2013, May). Expanding safety climate research: The mediating effect of job attitudes on organizational outcomes. Poster presented at the 9th international conference for Work, Stress, and Health, Los Angeles, CA.

Lanz, J.J. & Rudolph, C.W. (2013, April). Do incremental theorists penalize others' failure to demonstrate positive change? Poster presented at the 28th Annual Conference of the Society for Industrial Organizational Psychology, Houston, TX.

Manapragada, A., Lanz, J.J., Bruk-Lee, V., & Nixon, A.E. (2013, February). Beyond safety: Safety climate's influence on organizational outcomes. Poster presented at the Sunshine Education and Research Center, Tampa, FL.

Drew, E.N., Lamer, J.J., Bruk-Lee, V., Levine, P.J., & Wrenn, K.A. (2012, April). Keeping up with the Joneses: Applicants' reactions to multimedia SJTs. Poster presented at the 27th Annual Conference of the Society for Industrial and Organizational Psychology, San Diego, CA.

Lamer, J.J., Jones, R.G., Fleenor, J.W., & Mitchell, W. (2011, April). Do expatriates change or bring their biases with them? Performance self-rating modesty and leniency biases among expatriates. Symposium conducted at the 26th Annual Conference of the Society for Industrial and Organizational Psychology, Chicago, IL.