

Burnout and Psychological Capital in Rural Critical Access Hospital Nurses
by
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ABSTRACT

Job burnout, a prolonged reaction to job stress, includes mental and physical aspects of exhaustion related to professional work life. Linked to individual health-related problems, decreased job satisfaction, poor organizational commitment, and higher turnover, burnout poses a problem for both employees and organizations. The nursing profession identifies the prevalence of burnout and the resulting harmful effects in many settings, yet until now, rural critical access hospital settings have not been considered. To build and maintain a competent, healthy rural nursing workforce that responds innovatively to growing healthcare needs, it is important to examine burnout levels in rural nurses and to identify factors that might be associated with mitigating burnout.

This study focuses on how psychological capital, socio-demographic and organizational work-related factors are associated with burnout in this population. This cross-sectional, descriptive correlational study employed the Maslach Burnout Inventory for Health Professionals, the Psychological Capital Questionnaire, and a sociodemographic questionnaire assessing individual and organizational work-related factors as self-report tools. Descriptive statistics, correlations, and regression analyses were performed to assess aspects of the nurses' work environment, while describing the relationships among the variables. Means and standard deviations were examined across key variables and compared to reports from other studies. Hypotheses predicted psychological capital would be associated with burnout (negatively associated with emotional exhaustion and depersonalization, positively associated with personal accomplishment), and that individual sociodemographic and organizational work-related

factors would also be associated with BO. It was further hypothesized that PsyCap would moderate the relationship between work-related factors and BO.

Maslach Burnout Inventory results reveal similar findings to those in the global sample. However, levels of emotional exhaustion and professional accomplishment were greater in our rural nurse sample compared to published values. Higher levels of psychological capital were found to be related to decreases in depersonalization and correlated to greater professional accomplishment. Psychological capital was not found to moderate associations within this study. Intent to stay more than one year had a strong, negative correlation with emotional exhaustion. The findings suggest burnout in this sample resembles that of the global problem and sets a baseline from which psychological capital trainings may be built.

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Chapter 1 Introduction

In 2014, the American Nurses Association determined the U.S. will need to produce at least 1.1 million new registered nurses by 2022 to fill the demand of newly created jobs and to replace the vast numbers of nurse retirees (ANA, 2014). While the shortage varies from state-to-state, the Western region, which incorporates states like Arizona, California, Oregon, and Washington, is projected to have as many as 64,000 nurse vacancies by 2025 (U.S. Department of Health and Human Services, 2014). Rural acute care hospitals located in federally designated health professional shortage areas (HPSAs) where low numbers of trained providers practice, face even greater workforce challenges (U.S. Department of Health & Human Services, n.d.).

One of the potential contributors to this growing problem of nurse workforce shortage is the turnover associated with burnout (BO) (Leiter, Bakker, & Maslach, 2014). There is a need to focus on the problem of nurse BO in general, and specifically in rural hospitals and to understand its antecedents, including personal socio-demographic and organizational work-related factors, and consequences to inform interventions aimed at decreasing nurse BO and ultimately decreasing nurse turnover in rural areas.

Psychological capital (PsyCap), a collection of internal, positive psychological resources that can be cultivated and maintained (Luthans, Youssef, & Avolio, 2015), may serve as an internal buffer for intense or challenging situations, and as such should be considered in the study of BO.

Background of the Problem

Burnout

Job BO was first identified as a career crisis for working professionals in the 1970s and defined as mental and physical exhaustion related to professional work life (Freudenberger, 1974). BO has been linked to individual health-related problems for employees and organizations, including decreased job satisfaction, poor organizational commitment, and high turnover (Maslach, 2001). In the nursing profession, extensive research has confirmed the prevalence of BO and resulting harmful effects on individuals and organizations, drawing attention to this critical nursing workforce problem (Aiken, et al., 2002; Bakker & Demerouti, 2014; Leiter, et. Al., 2014; Schaufeli, et al., 2009).

As initially described by Freudenberger (1974), the term “burnout” encompassed the gradual emotional depletion and loss of motivation he observed among health clinic volunteers. The evolving BO concept, now defined as a multidimensional syndrome, is an experience in response to job stressors (Maslach, 1993). BO, a psychological syndrome of exhaustion, cynicism, and lack of efficacy is noted to be a response to chronic job stressors (Leiter, et al., 2014). The BO construct originated in the service industry and in helping professions, such as medicine, nursing, social work, education, counselling, coaching and ministry. Common causes of BO include a variety of stressors that individuals find they cannot fully cope with. The high levels of stress and strain workers experience in dealing with high-demand customer service issues results in BO. The three dimensions of energy, involvement, and efficacy which underlie the contemporary components in BO literature have evolved and are currently described as

emotional exhaustion, depersonalization (or cynicism), and lack of *personal accomplishment* (or lack of professional efficacy; Maslach & Leiter, 1997).

According to Maslach & Jackson (2017), BO can be a significant organizational problem characterized by an employee's chronic work state of feeling out of sync. These employees report a sense of constantly being overwhelmed, stressed, and exhausted. Despite work breaks, the demands of the job exceed the capacity of what the employee feels he/she may give. Often, the original passion for the job fades and work becomes burdensome. BO often is related to physical, mental health and wellness deficiencies. Loss of confidence, energy, and enthusiasm leads to a lack of motivation, which in turn may lead to feelings of decreased self-worth and personal achievement. As job performance declines and negative attitudes build, relationships with coworkers, clients, and patients may suffer.

Burnout in medical professionals. The medical culture commonly relies heavily on interconnected values of service, excellence, curative competence, and compassion, which may at times lead to BO when overdone or executed without sufficient resources. *Service*, often accompanied by a sense of self-sacrifice in serving others to make a difference, can lead to a sense of self-deprivation and ultimately emotional exhaustion. Perfectionism, which is frequently coupled with a commitment to high standards and *excellence*, can lead to feelings of being invincible. As providers take on a value for *competence in curing* others, this attitude can lead to a feeling of over-responsibility for patient outcomes that may be out of the provider's control. Meanwhile, providers inherently value compassion, which requires a balance of empathy and appropriate emotional boundaries. As providers are challenged to suppress emotional experiences, a

feeling of emotional isolation can result (American Academy of Family Physicians, 2013).

Burnout constructs.

Emotional exhaustion. Scholarly research on BO places a central focus on relationships between providers and recipients, with an added emphasis placed on the relationships between providers and coworkers or family members where emotional rewards and strains often emerge. Demanding occupations with personal connections are often linked to *emotional exhaustion* (EE), which is not uncommon under conditions of job overload. EE is a depletion of emotional energy that is distinct from mental fatigue or physical exhaustion. EE reflects feelings of exhaustion by work and how emotionally overextended the provider feels, which is a clear signal of distress. A common example of EE includes feeling statements such as “I feel emotionally drained from my work” (Maslach & Jackson, 2017, p. 5). Professional decision-making regarding the life and well being of others poses challenges from various directions resulting in caregiver stress. When caregivers experience prolonged stress or recurrent stressful experiences with incomplete recovery periods, EE often ensues (Leiter & Maslach, 2014). This is a personal toll that directly impacts care provided.

Depersonalization. *Depersonalization* (DP) or cynicism underlies burnout, resulting from unsuccessful attempts to cope with emotional stress and manifests as a detachment or lack of emotion in caring for patients. DP is commonly believed to be a workplace view that provides protection to caregivers themselves from the intense emotions that can interfere with job functioning (Leiter, et al., 2014). Cynicism concerns the development of negative attitudes toward the nature and the recipients of the work

that may be best described as dysfunctional disengagement and a gradual loss of concern (p.81). This excessive detachment may be a precursor to decreased concern, which often leads to providers responding to clients in negative, callous, or even dehumanizing ways (Leiter, et al., 2014; Maslach, 2001; Maslach & Leiter, 1997). DP reflects a lack of feeling or an impersonal response toward others. This is problematic in careers that value personal sensitivity to those within their care (Maslach & Jackson, 2017).

Personal accomplishment. A lack of or reduced sense of *personal accomplishment* (PA) has a complex relationship to BO as it can appear to be a function of emotional exhaustion, cynicism (depersonalization), or to some degree, a combination of the two. Work situations with chronic overwhelming demands often lead to emotional exhaustion or cynicism, which in turn may erode the provider's sense of effectiveness (Maslach & Leiter, 1997). EE and DP have been found to interfere with effectiveness as well, in that providers who experience feelings of exhaustion or indifference, often have difficulty gaining a sense of accomplishment. While exhaustion and cynicism emerge from the presence of social conflict and work overload, lack of PA has been shown to arise from an absence of relevant job resources (Leiter, et al., 2014).

Work Engagement

According to Maslach and Leiter (1997), BO and work engagement (WE) represent opposite ends of the continuum of work-related well being, with BO representing the negative end and WE the positive end. Though this research study has BO as a primary focus, a review of WE is necessary to provide context for understanding what BO is, and what it is not. WE, as observed through positive employee behaviors, attitudes, and performance, typically results in lower employee turnover, while BO is a

negative work experience that has a demonstrated link to increased turnover attrition rates. WE is the connection of an employee's self to his/her work roles through engagement, or the way he or she express his or her self physically, cognitively, emotionally, and mentally while working (Kahn, 1990). Compared to employees with BO, employees who report higher WE often have a sense of energy and have effective connections with their work activities while seeing themselves as able to deal with the demands of their work (i.e., a sense of efficacy; Shaufeli, Bakker, & Salanova, 2009).

Antecedents to Nurse BO

Much of the research on BO has focused on individual and situational correlates to determine the risks and causes of BO (Leiter & Maslach, 2009). Individual socio-demographic factors such as age, generational characteristics (Kelly, et al., 2015), degree and time in nursing have been inconsistently identified as antecedents to nursing BO (Maslach, et al., 2001). Across the literature, the relationship between age and BO has generally been included in sample descriptions but not discussed further. Those studies that have focused on age as a risk factor for BO have produced conflicting results (Gomez-Uquiza, Vargas, De la Fuente, Fernandez-Castillo, & Canadas-De la Fuente, 2017). Some reports indicate a significant decrease in BO scores as the participants age increased (Akkus, Karacan, Goker, & Aksus, 2010). This may be a result of survivorship bias, where more resilient nurses remain in the workplace while nurses with BO may not. Other studies report lower BO levels in nurses under age 30, compared with those over 30 (Losa Iglesias, De Bengoa Vallejo (Salvadores Fuentes, 2010), while some have reported no significant age group differences in BO (Kiekkas, Spyrtos, Lampa, Aretha, & Sakellaro-poulos, 2010). Contradictory results are similarly reported among other

sociodemographic variables such as gender as well (Purnavoa & Muros, 2010). A recent meta-analysis of the possible correlation between age and each of the BO dimensions indicates that a significant inverse association between age and the BO dimensions of EE and DP were found, indicating older nurses show lower levels of EE and DP than their younger counterparts (Gomez-Uquiza, et al., 2017). It is noted that the effect size for this analysis was small and therefore should be factored in to this conclusion, and continues to call into question if these relationships hold across various contexts.

Organizational work-related factors that include poor work environment, increased responsibility, unpredictability with workflow, and exposure to traumatic situations have been identified as occupational risks for BO as well (Browning, Ryan, Thomas, Greenberg, & Rolniak, 2007; Ergun, Oran, & Bender, 2005; Eriksen, 2006; Kipping, 2000; Mealer, Shelton, Berg, Rothbaum, & Moss, 2007; Laschinger & Fida, 2014). More specifically, in healthcare, BO may also be influenced by elements in the nurse's work environment that might include documentation requirements in the electronic health record, team work, and workplace safety programs (National Academy of Medicine, 2009).

Additionally, research findings indicate high-stress care unit settings such as oncology, critical care, and emergency departments have an unpredictable and often hectic environment with little to no recovery time (Gates, et al., 2011). These settings are often found to have high burnout rates (Hooper, et al., 2010; Potter, 2006). Figure 1 demonstrates the process of accumulating daily BO experiences. Adequate recovery following daily BO experiences mitigates long-term BO effects. Dispersion of BO experiences the next day lead to successful recovery from the BO experience where the

accumulation of BO experiences without adequate recovery creates a cumulative BO effect. Developable resources such as the building up of personal resources including Psychological Capital that result in increased hope, efficacy, resilience, and optimism are examples of a tool that can be implemented to aid in reaching adequate recovery.

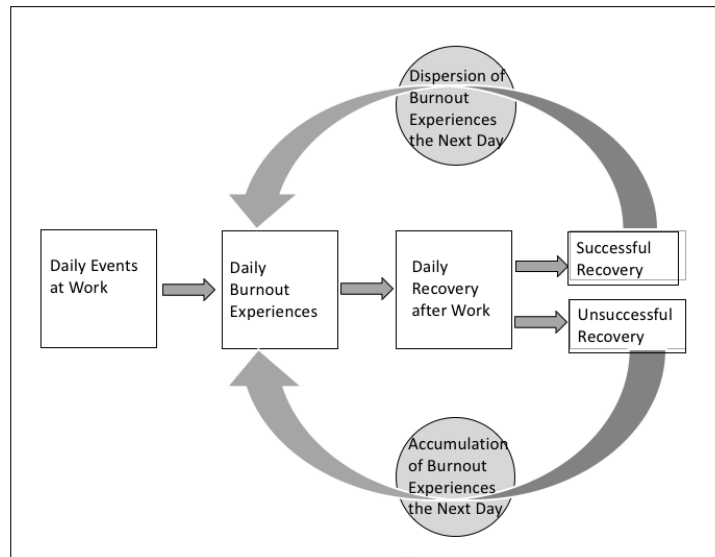


Figure 1. Process of accumulating daily burnout experiences (Sonnetag & Fritz, 2007 in Leiter, et al., 2014)

Consequences of BO

Individual consequences of BO. Harm resulting from BO can include consequences to both the individual and organization. Individual consequences from BO may occur, such as quality of life issues for the employee (Wu, Li, Wang, Yang, & Qiu, 2011) and occurrences of physical symptoms including musculoskeletal disorders (Sorour & El-Maksoud, 2012), insomnia (Jones & Gates, 2007) obesity, substance use (Poghosyan, Clarke, Finlayson, & Aiken, 2010), substance abuse (Moustaka & Constantinidis, 2010), depression (Pereira-Lima & Loureiro, 2015), and suicidal ideation (National Academy of Medicine, 2019).

Organizational consequences of BO. Personal consequences of BO can spill over into the work setting, leading to organizational consequences. These may include significant productivity and economic losses, increased absenteeism, higher turnover rates, and increased healthcare costs (Jones & Gates, 2007). Collectively, these consequences of BO place a burden on the healthcare system adding pressure to an overly strained system where healthcare needs are already greater than the resources available in the rural setting.

Clinician BO has also been linked to decreased patient satisfaction, and in rare cases, to medical errors (National Academy of Medicine, 2019). While the reported prevalence of generalized worker BO in Western countries ranges from 13% to 27% (Norlund et al., 2010), nurses have been found to be at higher risk than other occupations (Maslach, 2003) (Gelsema et al., 2006) with reports of clinical BO levels reaching 30% to 50% (Gelsema et al., 2006; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). Declining patient safety and an increase in preventable errors are also associated with increase nurse BO (Aiken, et al., 2002).

Programs aimed at increasing personal resources, workplace support and resources have been identified across the literature. While an interest in dealing with BO consequences has been apparent in the literature, little validated work directed at improving work relationships and decreasing BO exists presently (Leiter, et al., 2014). One approach, psychological capital, focuses on personal characteristics that may be built.

Psychological Capital

From an organizational lens, effects of negative experiences or events may be mitigated when individuals are aware of existing positive resources that serve as an internal buffer to tough situations. This body of work known as Positive Organizational Behavior (Luthans, et al., 2015; Luthans, 2002), provides the tenets from which psychological capital (PsyCap) has evolved. Personal sociodemographic factors, like age or time in rural nursing, and organizational factors such as work schedules and job variability, are important work-related factors that must be considered when assessing for antecedents to BO.

PsyCap, an individual's positive psychological state of development is characterized by having confidence to put effort into being successful at a challenging task, having optimism about current and future success, reaching goals and redirecting paths toward goals as necessary to succeed, and having resiliency in overcoming barriers to achieve success (Luthans, et al., 2015). These positive psychological capacities are measured through four main constructs: *hope*, *efficacy*, *resilience*, and *optimism*, which can be developed and changed with various outcomes (Luthans, et al., 2004). These constructs are often referred to using the acronym HERO in the literature.

Hope. Hope, a goal-directed plan or action, is a positive motivational state defined in terms of agency and pathways (Snyder, LaPointe, Crowson, Jr., & Early, 1998). Agency is defined through goal-directed actions and the motivation to keep and pursue these goals, while pathways refer to goal-focused planning and identifying different ways of reaching these goals (Luthans, et al., 2007a). Employees with high

levels of hope are intrinsically motivated to set goals for themselves and equipped to modify their goals depending on the situation.

Self-Efficacy. According to Bandura (1998), “evidence shows that human accomplishments and positive well being require an optimistic sense of personal efficacy to override the numerous impediments to success” (p. 56). Self-efficacy involves self-motivation and the ability to thrive despite obstacles, in addition to the ability to set time-related goals to pursue and accomplish challenges. Luthans, et al. (2007a) report self-efficacy as a critical component to successful workplace performance.

Resilience. Resilience is a positive coping adaptation process developed in the face of risk and adversity (Masten, 2001). Within the workplace context, it is the capacity to thrive and bounce back despite adversity, conflict, failures, or work-related changes that may have negative consequences or increased responsibility. Luthans, et al. (2007a) finds resilient employees are those who grow and learn from challenging experiences.

Optimism. Optimism involves taking credit for the positive experiences and attributing them to personal resources. Optimists are individuals who tend to make stable, internal attributions regarding positive events and external attributions regarding negative events (Seligman, 1998). The construct of optimism in PsyCap involves positive emotions and motivations regarding realistic events. Generally, optimists tend to take more risks, welcome challenges, and employ a positive outlook on changes despite the risk of having some negative consequences (Luthans, et al., 2007a).

Each of the HERO components is distinct, though when combined, their motivational aspects are more impactful in affecting performance collectively than when considered individually (Luthans, et al, 2015). These positive resources can act as a shock

absorber for the negative effects of stressful and traumatic events in the hospital environment (Bitmis & Egneli, 2015). Employees who possess a higher HERO within are found to be equipped with the necessary cognitive and motivational resources that can be applied in work situations to protect them from job BO and other work-related stressors.

PsyCap is reported to be a positive resource that can improve job performance and satisfaction (Luthans et al., 2015; Avey, Reichard, Luthans, & Mhatre, 2011), decrease employee turnover, and improve employee well being over time (Avey, et al., 2011). Additionally, PsyCap is identified in the literature as a mediator between job burnout and turnover intention among Chinese nurses (Luo & Hao, 2010), while authentic leadership and PsyCap are significantly associated with lower BO levels among new graduate nurses, indicating a potential protective mechanism from PsyCap (Laschinger & Fida, 2014).

The literature generally supports the idea that work environment factors may interact with an employee's personality in such a way to disrupt their psychological or physical functioning (Constantini, Solano, Di Napoli, & Bosco, 1997; Cottrell, 2001; Kilfedder, Power, & Wells, 2001). The moderating role or protective effects of PsyCap associated with BO have been recognized in various settings as well; however, little is understood about the nature of the relationships among PsyCap, BO, and specific occupational stressors in small, rural hospital settings. A gap in literature exists in assessing whether PsyCap provides protective qualities that may decrease BO in rural, critical access hospital nurses.

An organizational focus on PsyCap development holds potential for building skills that may combat BO and ultimately reduce turnover. The presence of PsyCap, which is a developable resource of “becoming your best self”, may positively or negatively impact BO (Luthans, et al, 2007, p. 20). While this type of training is not required, the American Nurses Association (2014) has issued a position statement regarding the joint responsibilities of registered nurses and employers in creating and sustaining a culture of safety, a healthy work environment, and a work-life balance. The goals of this statement are aimed at promoting health, safety and wellness of nurses and health care providers as well as to ensure optimal patient outcomes. Additionally, all nurses are required by their professional body in the *Code of Ethics for Nurses* (ANA, 2015), to act in a manner consistent with maintaining patient and personal safety. Nurse leaders and health care organizations collectively are accountable for participating, establishing, maintaining, and improving health care environments and conditions of employment conducive to the provision of quality health care and consistent with the values of the profession through individual and collective action (Provision 6). This includes attention to work-related factors that may lead to fatigue or BO, and strategies such as the development of PsyCap that may have protective effects against BO and turnover.

Rural Nursing Shortage

Currently, about 20% of the U.S. population live in rural areas, while only 10% of U.S. providers deliver care rurally (U.S. Census Bureau, 2015). This places increased demands on rural healthcare organizations in terms of recruiting and retaining competent nursing staff to provide care for rural dwellers. Research confirms the prevalence of low

WE and high reports of BO among the nursing profession in generalized hospital settings and ties these to turnover and intent to leave (Aiken, et al, 2002; Aiken, et al., 2008; Browning, et al., 2007; Constantini, et al., 1997; Hooper et al., 2010; Jones & Gates, 2007; Kelly, et al., 2011; Laschinger, et al., 2001; Leiter & Maslach, 1988; Maslach, et al., 2001). Studies aimed at understanding the individual socio-demographic and organizational factors that contribute to nursing BO is necessary to address workforce issues that may negatively impact healthcare delivery, including the growing needs of millions in the rural setting.

As rural nurses face increasing work stress, the risk of BO, turnover and attrition in these underserved HPSAs continues to grow, threatening access and care delivery. In 2012, the forecast in states in the Western region of the United States indicate the nursing shortages will only continue to grow (Juraschek, Zhang, Ranganathan, & Lin, 2012). Research is necessary to examine causative and contributing factors to BO in these geographical regions.

The prominent difference between rural and urban nursing employment is simply geography. Many rural hospitals are situated in geographically-sparse areas with limited community resources, making recruitment a challenge for people who may not be accustomed to living in areas with these limitations. Fewer job opportunities in these small areas adds another complication for two-income families where a nurse's spouse may face barriers in finding adequate employment. HPSA and rural student loan repayment options often bring nurses and health care providers to the rural area, but short repayment commitment terms lead to many immediately choosing to return to larger, suburban or urban areas. Pay disparities exist between rural and urban hospitals with

urban nurses earning significantly more than rural nurses (ONA, n.d.), compounding the problem. These factors add to rural nurse turnover rates and may play a significant role in rates of BO in this population. Studies examining nursing BO have been conducted in a variety of urban hospitals and specialty care units, as well as with new graduate nurses (Boamah & Laschinger, 2015); however, nursing BO research in the rural acute care setting has not been identified in the literature to date, until now. This research is necessary to address nursing workforce shortages that may threaten safe health care delivery to rural Americans.

Rural Health Care

Attrition resulting from BO can be found across the spectrum of health care settings, though rural areas have fewer nursing resources to begin with. This creates a resource and demand imbalance for a significant portion of the U.S. population that experiences a variety of health disparity challenges. This population has unique values and needs that are impacted by decreased access to quality care.

In 2010, approximately 60 million adults were living in U.S. rural areas (U.S. Census Bureau, 2015). Nationally, well-documented health disparities related to health outcomes and access to care exist in rural areas (Smith, et al., 2013), with rural counties reporting higher rates of *fair to poor health* in comparison to urban counties (National Rural Health Association [NRHA], 2018). Rural Americans tend to be older, less insured, have higher chronic disease prevalence, greater environmental and occupational injuries, and higher obesity rates as well (NRHA, 2018; Health Resource & Services Administration [HRSA], n.d.). Additionally, rural health care provider shortages lead to inconsistent and/or disrupted care as well as fewer options for the types of care provided.

Rural dwellers may face limitations with who they seek care from based upon availability of services and services offered.

Critical access hospitals (CAH). CAH designations were established in the U.S. as a national response to an increasing number of hospital closures in the 1980's and 1990's. This designation is designed to improve access to health care by keeping essential services available in rural communities by reducing the financial vulnerability of these hospitals, many of which are in federally-designated HPSAs (HRSA.gov, n.d.). To deliver services to rural hospitals most in need, HRSA developed primary requirements including having 25 or fewer acute care inpatient beds, being located more than 35 miles from another hospital, maintaining an average length of stay of less than 96 hours for acute care patients, and providing 24/7 emergency care services (HRSA, 2017). Most rural areas only have CAHs, which have access to flexible minimum staffing requirements for medical and nursing staff than non-CAHs do. Even in states with hospital nurse staffing regulations, fewer nurses are required as a minimum. These factors change the hospital work environment and increase demands on a smaller pool of nurses.

Characterized as having low patient acuities, CAHs have low but rapidly fluctuating patient volumes. Just as in larger hospitals, adequate numbers of RNs are needed for direct patient care in CAHs. Although the nursing shortage has increased faster in rural areas versus urban areas, little has been done to document its effects in terms of the unique CAH work environment, where limited numbers of nurses and adjunct personnel perform multiple tasks (Cramer, Jones, & Herzog, 2011). Accordingly, gaps exist in addressing rural workforce needs, nursing BO and PsyCap in CAH nurses.

Purpose of the Study

To build and maintain a competent and healthy rural nursing workforce that in turn responds innovatively to the growing healthcare need of millions, it is important to examine burnout levels in rural nurses and what factors might be associated with mitigating BO. This research is designed to assess BO and PsyCap in the rural, CAH nurse population. Additionally, this study serves to explore the associations of personal, sociodemographic, and organizational work-related factors with BO, and if relationships exist, to assess the potential moderating role of PsyCap.

Significance of the Study

The paucity of research surrounding rural nurse BO and PsyCap underscores the need to understand the high demand and high turnover of the rural workforce. By adding to the understanding of rural nursing workforce issues' similarities and differences with urban nursing, more information will be available to inform organizational decision-makers who recruit and retain nurses, and direct policy that focuses on rural nursing workforce incentives. These may in turn, impact recruitment and retention rates for rural nurses, ultimately decreasing the cost of health care and increasing quality of care.

Access to care requires a reflection on the availability of providers as well as the quality and functionality of each member of the healthcare delivery system to meet service demands. The national health professional shortage has been widely documented and is expected to continue into the foreseeable future. This is due in part to the increasing population, which is projected to have an 18 percent growth by 2030, placing a larger demand on the system. At the same time, the population of Americans over the age

of 65 is expected to grow at three times that rate (United States Department of Agriculture, n.d.).

Nationally, the marked shortages of health professionals present a challenge while the maldistribution of providers and services compounds the problem of lack of resources even more for rural Americans. Rural provider incentives exist and vary in form across all fifty states. While these strategies continue to emerge, they have not resulted in closure to the gap of rural practitioners—specifically the number of rural Registered Nurses (RNs). Literature indicates rural health needs are continuing to go unmet, making it essential to look at how RN *retention* methods in addition to recruiting methods, may ease this burden. This study looks into the protective effects of PsyCap and the factors that lead to BO in rural hospitals, to providing a foundation from which innovative retention strategies to health care providers in the rural hospital setting may develop.

Conceptual Framework

Contributing Theoretical Frameworks

Two theories provide the background from which the proposed framework for this study arises: Maslach's Multidimensional Theory of Burnout (2001) and Psychological Capital Theory (Luthans, et al., 2007a).

Maslach's Multidimensional Theory of Burnout. Maslach's Multidimensional Theory of Burnout provides a basis for understanding components of BO from which the conceptualized theory is built. A majority of BO research focuses on both individual and situational correlates that are identified through the six key areas of work life depicted in the Maslach's (2001) framework. These include: workload, control, reward, community, fairness, and values. Incongruities or job-person mismatches in these areas are predictive

of BO (Leiter, et al., 2014; Maslach & Leiter, 1997). *Workload* issues include the physical and emotional demands on the provider as well as having the right skillset of workers for the job load. *Control* reflects having the given authority to reflect the provider's responsibilities. *Reward* refers to meaningful recognition or positive reinforcement that shapes behavior. *Community* captures the positive connection with the workplace and social support, while *fairness* reflects inequity from a social justice standpoint. *Values* refer to cognitive and emotional expectations and goals within the workplace environment.

While individual differences have been shown to weight the importance of the six areas differently, the degree to which providers deal with the mismatch depends on the number of areas that result in a concern (Figure 2) (Leiter, et al., 2014). For example, a nurse may not have control over his or her weekly schedule, only a commitment to the time of day or total hours required per work. Depending on the initial job requirements, the nurse may be expected to work a combination of shifts or across a variety of hospital units, which may or may not be perceived as fair when compared to the expectations of other nurses. An increase in the number of units a nurse works in also increases the number of competency demands placed on the nurse. These stressors may add to increase demands on the nurse and an increase in feelings that may lead to BO.

These issues of incongruencies can be assessed by thoroughly exploring job load issues such as length of shift, cross-training, and number of shifts worked, while control issues may be considered work uncertainty and be reflected through assessment of required overtime and rotating shifts. Community fairness issues are harder to capture but are often reflected in nurses' views on the culture, which, if toxic, may lead to BO.

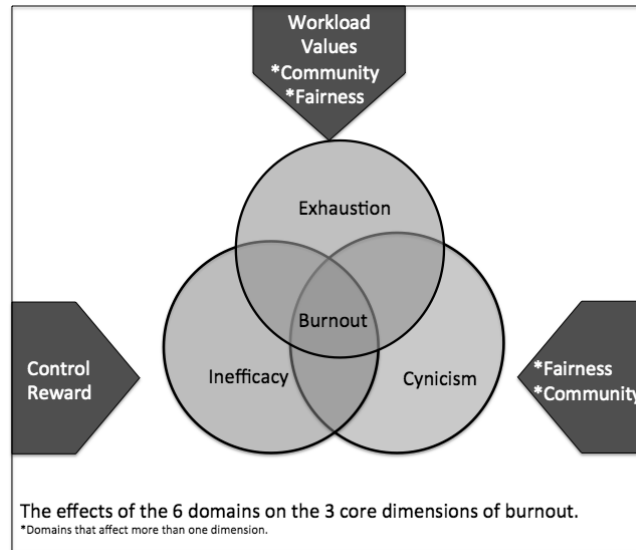


Figure 2. Domains and dimensions of burnout.

The Maslach model proposing the three constructs of BO suggest that people react to frustrations at work in ways that are reflected in their energy (exhaustion), involvement (cynicism), and efficacy, rather than simply shrugging off the problem (Leiter, Bakker, & Maslach, 2014). In other words, BO is a result of people’s interaction from continuous stressors and interactions with the work environment. Reported stressors may include an intense demand to provide care with inadequate resources, joyless, meaningless work, inadequate pay or recognition, and lack of employee-employer commitment. Focusing on psychological connections at work as a central theme, a continuum can be utilized to view the positive and negative states providers may experience (Figure 3). The positive end characterizes positive energy and the construct *engagement with work*, while the contrasting negative end depicts a separate construct of *burnout* (Schaeferli, et al., 2006). Emotional exhaustion, depersonalization, cynicism, and inefficacy are distributed in various degrees across the continuum (Maslach, et al., 1996).

Psychological Capital Theory. Psychological Capital Theory (Luthans, et al., 2007a) provides the protective context from which the proposed theory arises. PsyCap is

a second-order factor, arising from a first-order factor model described as Positive Organizational Behavior (POB). The initial version of POB included the psychological capabilities of confidence, hope, optimism, subjective well being, and emotional intelligence (Luthans, 2002). With subsequent research evaluation, a final version of the POB model containing the capabilities of efficacy, optimism, hope, and resilience in the workplace was developed. The names of these constructs were reordered to form the acronym HERO, and the overall model was renamed Psychological Capital (Figure 6) (Luthans, 2002; Luthans, et al., 2004). The HERO variables are suggested to have a long-term impact on an employee's well being as well as desirable work-related outcomes. PsyCap differs from the established concept of human capital, which represents *what you know*, in that PsyCap posits an advantage can be gained at work through investment in *who you are and what you become* (Luthans, et al., 2007).

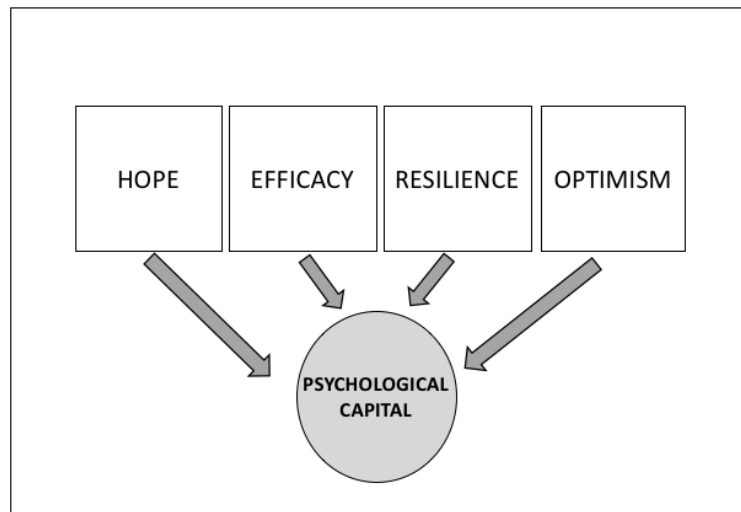


Figure 3. Psychological Capital Model.

Proposed Model

While the preceding theories inform individual sections of this study, an inclusive, multifactorial model demonstrating the interactions among these theoretical constructs could not be found in the literature. This proposed McCay Multifactorial Burnout Model (Figure 4), named after the primary investigator, provides a framework for which this study is based. Individual socio-demographic characteristics such as tenure, and organizational work-related factors (e.g., job load and degree of control or predictability), pose threats that may lead to EE, DP, PA, and ultimately BO. Hope, efficacy, resilience, and optimism create a PsyCap barrier that protects against these threats. While HERO within increases, so too do the protective rings between the individual and the work-related factors that pose challenges. These rings represent positive values that protect against the negative effects of BO while DP and cynicism are coping mechanisms that may potentially result in contributing to BO.

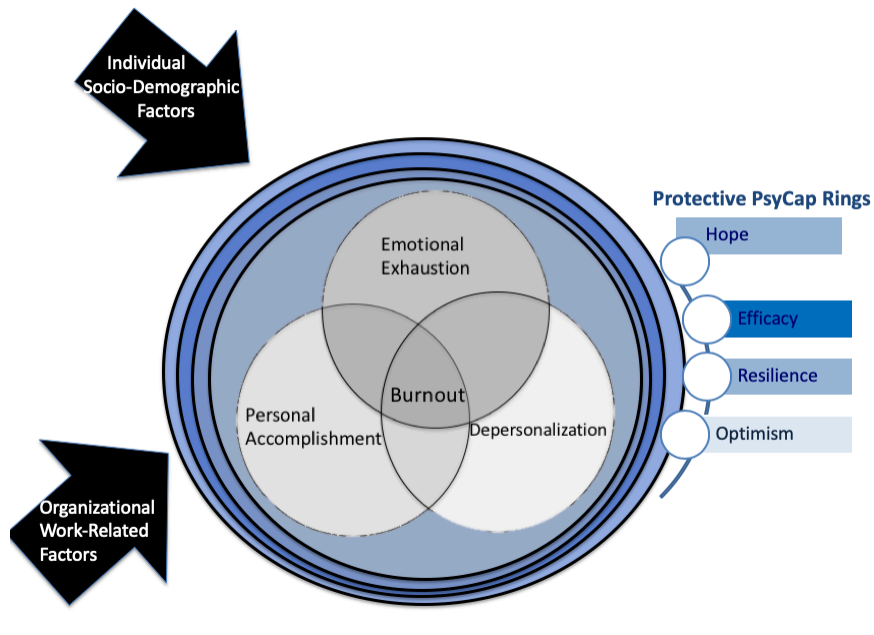


Figure 4. McCay's Multi-Factorial Burnout Model

Chapter 2 Literature Review Introduction

Although there is a substantial literature describing the generalized prevalence of BO among nurses and as well as both the individual and organizational effects BO has on the workforce (Aiken, et al., 2002; Laschinger, et al., 2001; Leiter & Maslach, 1988; Leiter, et al., 2014; Maslach, et al., 2001), there is scarcity of research regarding nurses' experiences of BO in rural CAHs and the role PsyCap may play.

Search Methods

Search Strategy and Study Selection

The search strategy included the use of three electronic databases: Cochrane Library, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), and PubMed. The initial, exhaustive database search was completed on February 10, 2018 for titles, abstracts, and key words using combinations of the search terms: *nurse**, *burnout*, *work engagement*, *psychological capital*, and *rural* yielded 31 articles for screening. The following inclusion criteria for manuscripts were applied: (1) peer reviewed research; (2) written in the English language; (3) set in the acute care hospital setting; (4) uses quantitative measures and analyses of key factors. This resulted in two full text articles for review and led to a second, expanded database search and additional hand-searches through the Arizona State University library, utilizing combinations of the same search terms while removing the search term *rural*. From the 111 articles identified, this semi-exhaustive combination of searches (Table 1) yielded a total of 24 full manuscript research articles for quality assessment and data extraction after applying the inclusion criteria and removing duplicate items. Studies that focused on mental health, pediatric, or outpatient settings were excluded from tabling.

Table 1

Database Searches and Results

Initial Database Search		
Database Searches	Search Terms	Results for Screening
Search 1	<i>nurse* AND burnout AND work engagement AND rural</i>	3
Search 2	<i>nurse* AND burnout AND psychological capital AND rural</i>	1
Search 3	<i>nurse* AND work engagement AND psychological capital AND rural</i>	0
Search 4	<i>nurse* AND psychological capital AND rural</i>	27
	Total of Articles	31
	*Total for Review—Initial Search *Inclusion criteria applied & duplicates removed	2
Expanded Database Search & Hand Search		
Database Searches	Search Terms	Results for Screening
Search 5	<i>nurse* AND burnout AND work engagement AND psychological capital</i>	7
Search 6	<i>nurse* AND burnout AND psychological capital</i>	66
Hand Searches	<i>nurse* AND burnout OR work engagement AND psychological capital</i>	38
	Total of Articles	111
	*Total for Review—Expanded Search *Inclusion criteria applied & duplicates removed	22
	Total Articles for Full Manuscript Review—Both Searches Combined	24

Data Extraction

The following data were manually extracted from the included studies: author(s), date of publication, journal, country of study, purpose, theoretical framework, research design, sample, setting, measurement instruments and findings (Appendix A). This information was used to critically analyze the breadth of the findings as well as the characteristics of each study. Two (8.3%) of the studies were longitudinal in nature, while the remaining 22 (91.7%) were cross-sectional in design. The bulk of the studies were conducted in the U.S. (25%), Canada (20.8%), and China (20.8%), with a total of 10

countries reporting on hospital nurse BO, WE, or PsyCap, indicating this nursing workforce problem is not only a national concern, but a global nursing concern as well.

Key Findings

Acknowledging that this review only represents findings prior to the search date using the search methods outlined, these findings hold value in representing the published literature to date which focuses on the components of BO, WE, and PsyCap in rural nursing. WE findings are included as they often refer to the opposite end of the continuum of BO, and therefore provide a valuable basis for identifying related research. Identified outcomes were sorted into three major categories from the review: (a) PsyCap effects on BO, (b) WE outcomes, and (c) predictors of WE, BO, and turnover. Most of the studies (45.8%) relied upon Psychological Capital and/or Positive Organizational Behavior (Luthans, 2002) as the theoretical underpinning for the research. As indicated, PsyCap is a second-order factor comprising four state-like psychological resources originating from the tenets of Positive Organizational Behavior (Luthans, et al., 2007). PsyCap incorporates four multidimensional, discriminant constructs (hope, efficacy, resilience, and optimism) that help to identify the broader conceptualization of this theory. Although these terms have been identified as individual constructs, there have shared mechanisms between them pointing to the conclusion that there is more in common between them than is different.

PsyCap Effects on BO

The positive effects of an individual's PsyCap have been explored in samples representing multiple professions including teachers, nurses, and leaders (Pan, 2015; Sun, 2012; Maree, 2014). Across the literature, PsyCap is conceptualized and analyzed as a

predictor of BO, a mediator, and a moderator of effects of BO. The positive mediating role an individual's PsyCap plays between job satisfaction and performance in nursing faculty has been reported (Wang, 2015) as well as the positive, protective role PsyCap plays between increased job stress and organizational identification with job satisfaction among police officers (Lu, 2015). Higher levels of PsyCap have been found to mediate work-family conflict and BO in female Chinese nurses (Wang, 2015) and between BO and turnover intention among Chinese nurses (Luo & Hao, 2010). Indications have been reported that higher PsyCap plays a protective role, thereby reducing stressors that can increase BO (Gökhan Bitmis, & Egeneli, 2015), while previous research indicates higher individual's PsyCap plays a positive role in reducing the occurrence of job BO and may buffer the effect of stressful work environments.

A meta-analysis looking at the impact of employees' positive PsyCap on attitudes, behaviors, and performance (Avey, et al., 2011) reported expected significant positive relationships between PsyCap and desirable employee attitudes and outcomes such as job satisfaction, organizational commitment, psychological well being, citizenship, and measures of performance. Significant relationships between PsyCap and undesirable employee attitudes such as cynicism, turnover intentions, job stress, and anxiety were also reported. These findings provide evidence-based support for the importance that an individual's PsyCap plays in predicting employee attitudes, behaviors, and performance.

Within the context of this literature review, higher nurse PsyCap is found to moderate the effects on BO and BO predictors such as compassion fatigue and secondary traumatic stress (Bao, et al., 2015; Bitmis & Ergeneli, 2015; Ding, et al., 2015; Estiri, et al, 2016; Laschinger & Fida, 2014; Laschinger & Grau, 2012; Wang, et al., 2012).

Additionally, higher levels of nurse PsyCap are found to be associated with increases in self-reports of job embeddedness (Sun, et al., 2011), and associated with decreases in perceived job insecurities, which also decreases BO (Bitmis & Egeneli, 2015).

Laschinger & Grau (2012) conclude that higher PsyCap positively influences new graduate nurses' perceived person-job fit, and significantly influences BO (negatively) and WE (positively) in other studies of new graduate nurses (Laschinger & Fida, 2014; Laschinger, et al., 2012). Estiri, et al., (2016). Additionally, reports that higher PsyCap levels in Iranian nurses resulted in a lower job BO and a significantly better nurse mental health. A study exploring the relationship between work-family conflict and BO among Chinese nurses also concluded that the nurses' PsyCap levels partially mediate the effects of work interfering family conflict and family interfering work conflict, on the BO constructs of emotional intelligence and cynicism in the former, and emotional intelligence, cynicism, and professional efficacy in the latter (Wang, et al., 2012). Bonner (2016) tested the theoretical relationship between PsyCap and WE in London hospital nurses as well, concluding a strong correlation between PsyCap measures and WE exists supporting the theory that PsyCap is an antecedent to WE in nurses.

WE Outcomes Related to BO

Mixed results have been reported determining whether WE and BO represent ends of a unidimensional construct that should be measured by one instrument or distinct constructs that should be measured separately with a combination of instruments.

Although WE is not measured in this study, a review of the literature including this construct as it relates to nursing BO and PsyCap was included to illustrate how the concepts of WE and BO have been treated. A meta-analysis conducted by Cole, et al.

(2011) examining 50 unique samples from 37 independent studies found high dimension-level negative correlations between BO and WE and similar patterns of associations with correlates, suggesting doubts about the functional distinctiveness of underlying WE and BO. Without agreement however, it is necessary to examine outcomes from the literature focused on both constructs of WE and BO to fully capture the state of the science.

Close coworker relationships and a sense of community have been found to contribute to increased WE, while negative interactions with others in the workplace have been found increase risk for experiencing BO (Maslach, et al., 1996). Unresolved collegial conflict can lead to feelings of frustration and hostility, reducing the possibility of social support, which is considered important for coping with stress (Haines, et al., 1996). According to Maslach and Leiter (1997), employees function best when they share praise and happiness with colleagues they like and respect. Social support, regardless of its specific form, is associated with greater WE (Leiter & Maslach, 1988). Workplace empowerment and PsyCap were identified as significant independent predictors of WE in a longitudinal study of new graduate nurses in Canada (Boahmah & Laschinger, 2015).

Findings regarding how job resources and personal resources influence WE are mixed. An increase in job resources predicted WE and decreased turnover intentions among new graduate nurses in one study (Laschinger, et al., 2012). Supervisor support was found to be positively related to WE among Malaysian nurses, while co-worker support was shown to have no significant effect on WE. Conversely, Shahpouri's (2016) study with Iranian nurses found no direct effects between job resources and WE; however, a direct positive association between personal resources and WE was found. Additionally, WE has been reported to have a negative direct association with turnover

intentions, fully mediating the relationship between respect and turnover (Shahpouri, 2016) and between mission fulfilment and turnover (Collini, e al., 2015). These findings indicate there is a need to further explore the effects job and personal resources may have on lowering nurse BO as well as the effects of a lack of these resource on BO and turnover.

Predictors of WE, BO, and Turnover

Personal and situational variables have been positively linked to new graduate nurses' work engagement; however, access to empowering resources in the work environment were found to influence WE to a stronger degree than personal resources (Boahmah & Laschinger, 2015). PsyCap was found to play a significant role in nurses' perceptions of WE in the same study, though it was not found to be a strong WE predictor. Bonner's (2016) U.K. study demonstrated a strong correlation between PsyCap measures and WE, supporting the finding that PsyCap is an antecedent to WE in nurses. Karatepe and Avcı (2018) studied the effects of PsyCap and WE on nurses' lateness attitudes and turnover intentions in Turkey, reporting findings for the underlying mechanism that links PsyCap to turnover intentions was WE in this population.

Maslach and Leiter's (2008) two-point, longitudinal study provides insight into the warning signs of BO and the process of how this shifts over time. Two early warning signs, inconsistent BO scores and job-person incongruence, predicted BO for nurses. WE was also identified as the key predictor of intention-to-leave in a Canadian study of emergency department nurses (Sawatzky, et al., 2012). WE was found to be statistically associated with job satisfaction, compassion satisfaction, compassion fatigue, and BO in this study.

Personal socio-demographic factors associated with BO. Shahpour et al., (2016) reports findings that characteristics such as professional education and HERO components, affect turnover intention both directly and indirectly with the mediating role of WE, in female nurses working in Iranian hospitals. According to Maslach, Schaufeli, and Leiter (2001), of all the personal, demographic variables studied, age is the factor that has most consistently been related to increased BO. These researchers found that among younger employees, BO is reported to be higher than it is among those over 30-40 years old. Nursing experience has also been shown to have strong connections to the precursors of BO, such as compassion fatigue, actual BO, and turnover. Evidence demonstrating that one in five nurses leave their position within their first year of nursing has also been reported in the literature (Kovner, Brewer, Fatehi, & Jun, 2014), as well as in a study indicating young nurses are choosing to leave the nursing profession altogether early in their careers (Flinkman, Isopahakala-Bouret, & Salantera, 2013; MacKusic & Minick, 2010). Kelly, et al (2015) reported findings that nurses in the Millennial generation (ages 21-33 years) were also more likely to be experiencing higher levels of BO than their older counterparts.

Age is confounded with work experience in many situations thereby only indicating BO appears to be a greater risk earlier in a nurse's career (Maslach, et al., 2001). The authors note this finding that older age and more experience may predict less BO should be viewed with caution due to survival bias, where those who have BO early in their careers are likely to have already quit their jobs. Conflicting reports were identified in a recent meta-analysis, indicating contradictory results linking age to BO across the literature (Gomez-Urquiza, et al., 2017). Gender has not been shown to be a

strong predictor of BO due to some studies indicating female nurses have higher BO scores, while others indicate males have higher DP or cynicism scores. Additionally, some studies have linked higher education level to lower incidence of BO, though this finding has not been validated across the literature. In the context of these mixed findings, this study will focus on identifying personal socio-demographic and organizational work-related factors that may contribute to BO and/or PsyCap scores.

Organizational work-related factors associated with BO. A significant portion of the literature focused on BO describes BO as both a consequence of organizational factors and a driver of suboptimal productivity and well-being (Schaufeli & Buunk, 2003; Estryn-Mehar, et al., 2007; Aiken, et al., 2008). This finding is consistent with that of Laschinger, et al. (2012), who also reported job demands (workload and bullying), predict burnout, while job resources (supportive practice environment and control) predicts WE and subsequently lower turnover intentions.

Commonly, environmental factors are hypothesized to influence outcomes, like in studies of psychiatric nurses in mental health care settings (Hanrahan, et al., 2010; Roche & Duffield, 2009). Organizationally, BO research has been described in terms of resources, workplace influence, employee work time, and flexibility. Workload measures, such as low nurse-to-patient staffing ratios, have been shown to lead to decreased job satisfaction and increased BO (Aiken, et al., 2001). In areas with high workload, strong links have been established to EE and BO (Leiter & Maslach, 2009; Kowalski, et al., 2010; Van Bogaert, et al., 2012). These relationships have not been studied across rural CAH where patient characteristics and daily census are similar, nor has this been

explored across hospitals that are governed by hospital nurse staffing legislation, such as Oregon.

Chapter 3 Methodology Introduction

The purpose of this study was to quantitatively assess BO and PsyCap in the rural, CAH nurse population as well as the associations of socio-demographic and organizational work-related factors to BO. The potential moderating effects of PsyCap between these socio-demographic and organizational work-related factors and BO within this sample population was additionally explored. This chapter presents the methodology used, including a description of the research design, sample, setting, measurement, data collection and data analysis techniques.

Research Design

A quantitative descriptive study was conducted to assess selected personal, socio-demographic and organizational work-related factors, BO, and PsyCap in rural hospital settings using cross-sectional data from a convenience sample. Descriptive statistics, correlations, and regression statistics were used to describe and document aspects of the nurses' working situation as they occur, while describing the relationships among the work-related factors, BO, and PsyCap. This design was selected to gain a greater understanding for the interrelatedness of work-related factors, BO, and PsyCap. The results serve to inform personal, organizational, and nursing practices as well as identifying opportunities for PsyCap training, all aimed at decreasing BO in order to retain rural hospital nurses.

Hypotheses generated focus on CAH nurses' experiences in their respective organizational settings, their experiences of BO, and the potential protective effects of their PsyCap.

Hypothesis 1. PsyCap (Hope, Efficacy, Resilience, and Optimism) will be associated with factors of BO.

Hypothesis 1a. PsyCap will be negatively associated with EE.

Hypothesis 1b. PsyCap will be negatively associated with DP.

Hypothesis 1c. PsyCap will be positively associated with PA.

Hypothesis 2. Individual and organizational factors will be associated with factors of BO.

Hypothesis 2a. Individual and organizational factors will be positively associated with EE.

Hypothesis 2b. Individual and organizational factors will be positively associated with DP.

Hypothesis 2c. Individual and organizational factors will be negatively associated with PA.

Hypothesis 3. PsyCap (Hope, Efficacy, Resilience, and Optimism) will moderate the relationship between individual and organizational factors and BO (EE, DP, and PA).

Hypothesis 3a. PsyCap will moderate the relationship between individual and organizational factors and EE (Figure 2).

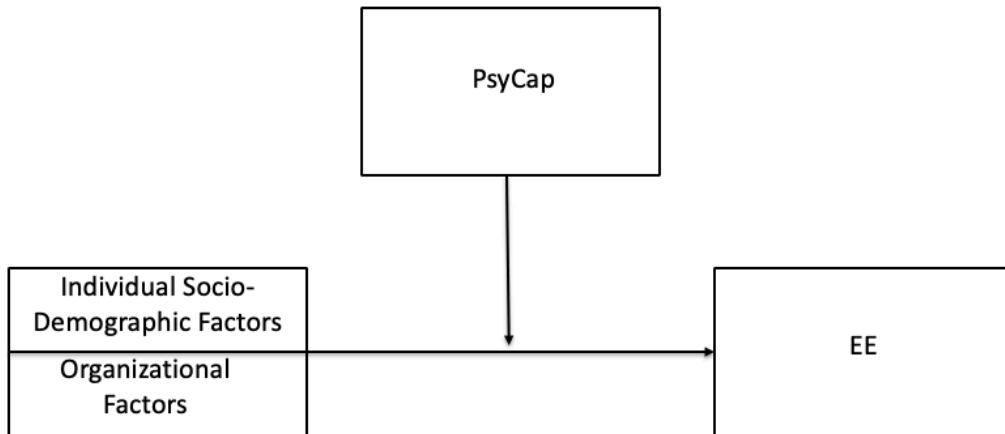


Figure 5. Hypothesis 3a

Hypothesis 3b. PsyCap will moderate the relationship between individual and organizational factors and DP (Figure 3).

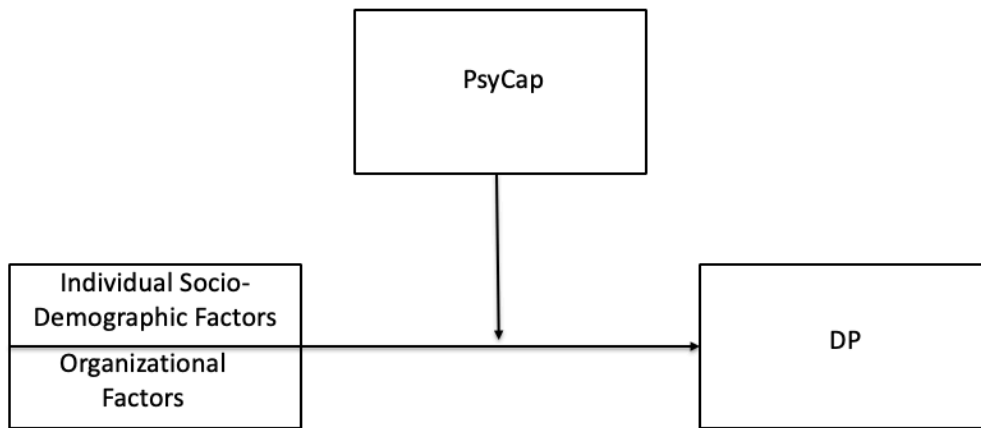


Figure 6. Hypothesis 3b.

Hypothesis 3c. PsyCap will moderate the relationship between individual and organizational factors and PA (Figure 4).

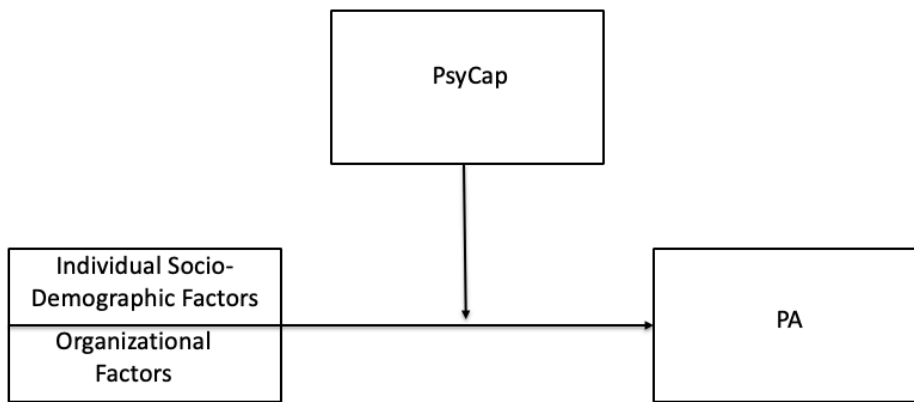


Figure 7. Hypothesis 3c.

Hypothesis 4. Is there an association between nurses’ reports of intention to stay in their positions for more than a year and BO-related variables?

Population and Sample

Setting

The study was conducted in rural Eastern Oregon, a healthcare area characterized by federally designated HPSAs, where six CAHs involved in this study are situated. The Oregon Health and Sciences University (OHSU) Institutional Review Board (IRB) provided oversight and approval for human subject research conducted each of these sites for the study. Because this research was used to meet the primary investigator’s Ph.D. dissertation requirements at Arizona State University (ASU), the ASU Institutional Review Board provided coordinated guidance and oversight in conjunction with the OHSU IRB.

Sample

Because rural CAHs are typically smaller hospitals with correspondingly small numbers of staff, a total of six rural CAHs in Eastern Oregon (employing a total of 384 eligible acute care nurses) characterized by Level II and IV Trauma designations, were approached in an attempt to reach an adequate sample size to answer the research questions while allowing for expected attrition. CAHs varied considerably in size, with CAH-1 employing 14 eligible staff nurses, CAH-2 employing 110, CAH-3 employing 111, CAH-4 employing 53, CAH-5 employing 71, and CAH-6 employing. A target response rate of 40% or greater ($n = 154$) was set for this study. Nurses were informed that the principle investigator was working independently and only aggregate scores would be presented to each participating organization at the end of the study to avoid perceptions that this research was organizationally sponsored.

Sample size and power. For tests addressing Hypotheses 1 and 2, the target sample size ($n = 154$) was calculated to afford power of .80 to detect significant correlations as small as $|r| = .23$ at $\alpha = .05$ (two-tailed). For tests of Hypothesis 3, this sample size was expected to afford power of .80 (at $\alpha = .05$) to detect interaction (and linear) effects accounting for 5% or more of the variance in the BO-related outcome over and above the variance accounted for by predictors already in the model (i.e., $\Delta R^2 \geq .05$).

Sample assumptions. Due to the nature of this study targeting rural CAH nurses working in Eastern Oregon with similar trauma designations and unit designs, homogeneity in variance of the sample is assumed for types of patient care provided. This means that each hospital provides the same basic level of care without requiring extensive specialty training skills for their patient population. CAH hospitals are not required to offer continuous surgical and/or orthopedic coverages, based upon this status,

nor do they provide face-to-face cardio-pulmonary services to their patients. Each hospital is limited to 25 inpatient beds per day; therefore, staffing has limited variability depending only on out-patient procedures and up to 25 in-patients throughout the hospital.

Rural geography poses challenges for the transferring of patients to higher levels of care within short timeframes; therefore, higher acuity patients who may ultimately need emergent consultations or those who may need care beyond 96 hours, are transferred out when first identified. This limits the number of high acuity patients who remain in the hospital setting. Additionally, the state of Oregon presently has legislation for hospital nurse staffing (OHA, 2017), which provides for similar staffing patterns among CAH units.

Inclusion & exclusion criteria. The sample includes Registered Nurses who worked full-time, part-time, and per diem in a direct patient care capacity in Emergency, Intensive Care, Obstetrics, Medical-Surgical, Surgical, Oncology, Float Pool, and Infusion Therapy departments. Registered Nurses who worked outside of direct patient care, such as in education, or those who worked more than 50% of their time in a managerial or supervisory role were excluded from the study. Advanced Practice Registered Nurse Practitioners, Licensed Practical Nurses, and Certified Nursing Assistants were also excluded from this study.

Recruitment. Nursing directors from each of the CAHs were preliminarily contacted to gain willingness to have staff nurses participate in this study through collaborative internal email sharing, access to bulletin boards, and face-to-face announcements. To achieve this organizational support, information was shared on how

individualized group reports for each hospital showing aggregate scores, summaries of their hospital's findings, and mean values from all participating hospitals will be provided for comparison. A nurse educator or designee from each hospital (independent from the researcher) sent recruitment emails (designed by the primary investigator) to all the eligible nursing groups within the hospital, outlining the purpose of the research and inviting anonymous and voluntary participation. These emails provided an active link to the survey. The study was also advertised through posters on hospital bulletin boards. Participants from the smaller hospitals were eligible to have their name entered in a drawing for an Amazon Gift Card; two Gift Cards were provided for each of the drawings in the two larger hospitals.

Instrumentation

The self-report questionnaire comprised three sections administered in a single session (Appendix B). The first section assessed individual socio-demographic and organizational work-related factors, the second section assessed burnout-related constructs using the Maslach Burnout Inventory for Health and Human Services—Medical Professionals (Maslach, et al., 2018), and the final section assessed PsyCap constructs using the PsyCap Questionnaire (Luthans, et al., 2007).

Part I: Socio-Demographics and Organizational Job Load

Nineteen items were used to obtain socio-demographic background information and data on individual and organizational factors. Seven socio-demographic factors, including age in years, years in nursing, education level (*Diploma, Associates Degree in Nursing, Bachelor's in Nursing, Master's in Nursing, or Doctorate*), nursing certification

(*yes/no*), professional membership (*yes/no*) and intent-to-stay (*yes/no*) were assessed. Seven items assessed each nurse's organizational work characteristics: the nurse's designated department (*Med/Surg, ICU, ER, OR/Surgical Services, Float, or Other*), regularly assigned shift (*Day, Evening, Night, or Combination*), shift length (*8 hours, 10 hours, 12 hours, or Other*), number of hours scheduled per week (reported in *hours*), whether additional hours were worked beyond those scheduled (*yes/no*), whether the nurse held secondary employment (*yes/no*), and how much the nurse was asked to work outside of his or her designated department (reported in *hours*). Collectively, these individual socio-demographic and organizational variables will be referred to as *work-related factors*.

An index variable was created to reflect work-related factors that can cumulatively contribute to increased job load. This computed variable is a composite of the following questions:

- On average, how often do you work more than your normal scheduled shift?
- Do you have an additional clinical nursing position outside of this employment?
- What shift do you regularly work?
- What is your normal shift length?
- Do you work in a nursing unit that is different than your home unit (i.e., do you *float* to other departments)?

Responses were recoded so that frequency of working more than the normal scheduled shift was recoded so that “never” and “rarely” were scored 0, “sometimes” was

rescored as 1, and both responses for “often” and “always” scored 2. Additional nursing employment was scored from 0 indicating “no” to 1 indicating “yes.” Shifts were ranked from 0 to 2, with “day” shift scoring 0, “evening” and “night” shifts scoring 1, and “variable” shifts scored 2. Shift length was recoded so that shift lengths less than 12 hours received a score of 0 and 12 hours or more scored 1. Nurses who reported floating scored 1, those who do not float scored 0 for this item. This index resulted in a continuous variable with a score range of 0 to 7, with 0 indicating no work-related factors, 1 and 2 indicating low work-related factors, 3 and 4 reflecting moderate work-related factors, and scores of 5, 6, and 7 indicating high job load.

It was expected that these job load events would not necessarily co-occur for each nurse., e.g., having an additional clinical position would not necessarily be related to shift length or shift type, therefore internal consistency for the index items was not expected to be high. To arrive at estimate of the internal consistency of the items, the two trichotomously scored items (frequency of working more than the normal scheduled shift, shift type) were scored as dichotomous ([set shifts versus variable shifts]) and then Cronbach’s alpha was computed for the full set of 5 (dichotomously scored) items, Internal consistency, as expected, was low ($\alpha = .20$) with interitem correlations ranging from negative ($r = -.18$ for working an additional job to modestly positive ($r = .11$ for shift length).

Part II: Maslach’s Burnout Inventory for Health and Human Services— Medical Professionals.

Maslach’s Burnout Inventory for Health and Human Services—Medical Professionals (MBI HHS-MP) is 22-question survey (Appendix D) measuring EE, DP,

and PA through self-reported ratings on a Likert-type scale where participants are asked to rate how often an event occurs from 0 indicating “*never*”, to 6 indicating “*every day*”. Subscales were scored separately; the instrument does not yield an aggregate BO score (Maslach, et al., 2018). The EE subscale consists of nine items (e.g., “I feel emotionally drained from my work.”), the DP subscale consists of five items (e.g., “I feel I treat some patients as if they were impersonal objects.”), and the PA subscale consists of eight items (e.g., “I can easily understand how my patients feel about things.”). Internal consistency and estimates of reliability are reported at .90, .79, and .71 for the EE, DP, and PA subscales, respectively (Maslach, et al., 2018).

Part III: Psychological Capital Questionnaire

The 24-item self-report Psychological Capital Questionnaire (PCQ-24) Self-Rater Form (Appendix E) was used to assess PsyCap in this study (Luthans, 2007) The PCQ-24 has four subscales: hope, efficacy, resilience, and optimism. Items use a 6-point Likert-type scale with response options ranging from 1 = *strong disagreement* to 6 = *strong agreement*. Subscales were scored independently and an aggregate (total) PsyCap score was computed, following the PCQ-24 scoring guidelines (Luthans, et al., 2014). The Hope subscale comprises four items (e.g., “Right now I see myself as being pretty successful at work”), the Optimism subscale consists of two items (e.g., “I always look on the bright side of things regarding my job”), the Resilience subscale comprises three items (e.g., “I usually take stressful things at work in stride”), and the Efficacy subscale comprises three items (e.g., “I feel confident representing my work area in meetings with management”). Average Cronbach alphas for the overall PsyCap score and each subscale from four separate samples representing different populations were generally good (hope,

$\alpha = .76$; self-efficacy $\alpha = .80$; optimism, $\alpha = .75$; resilience, $\alpha = .80$; PsyCap total, $\alpha = .89$; Luthans, et al., 2007). With respect to convergent and divergent validity, the PCQ-24 has shown positive relationships with constructs such as organizational commitment and only modest correlations with age, education, and measures of agreeableness. Consistent with the literature, the average/overall PsyCap score calculated by taking the mean of all the items in the PCQ-24, including reverse-scored items, was reported and used in hypothesis testing (Luthans, et al., 2014).

Data Collection

Upon receiving OHSU IRB approval for the study, ASU's approval to waive primary IRB oversight to OHSU was sought. Printed announcements describing the study were printed and posted on the bulletin boards by the designee in the participating hospital units two weeks before the study began and remained up throughout the duration of the study (Appendix G). Through each hospital's internal email system, the designee sent an email to each staff nurse in the identified care units, describing the study and seeking voluntary participation. These announcements were sent each week thanking those who had participated and encouraging those who had not, to fill out the survey. These email communications described the nature of the investigational research, encouraged voluntary participation, described benefits and risks of participation, assured nurses there would be no repercussions for not participating, and provided additional assurances that their responses were anonymous. Once participants submitted their

survey, they were directed by another link to submit their name via email for the gift card incentive drawing.

Both the MBI HHS-MP and PCQ-24 are proprietary instruments obtained through Mind Garden, Inc., an independent publisher of psychological assessments. Licensing and approval to use is attached in Appendix H. The Mind Garden, Inc. online survey platform was utilized for delivery of the online survey. The hyperlink included in the recruitment emails directed nurses to the survey on the Mind Garden, Inc. site. Nurses were required to provide informed consent prior to moving into the actual survey, and could not answer the survey twice from the same computer, in order to decrease the chance of nurses filling out multiple surveys. Reminder emails were sent at seven and fourteen days, with the survey closing after 21 days.

Data Analysis Strategy

Once data collection was complete, the scores were exported from the Mind Garden, Inc. database in a Microsoft Excel file and transferred to a SPSS file for data processing. The level for statistical significance was set at $\alpha = .05$ prior to analysis. Descriptive statistics were used to summarize nurses' socio-demographic and organizational work-related factor background characteristics, including the number and percentages of nurses who reported on each question in Part I. Instructions provided in the Mind Garden manual for the MBI-HHS-MP and PCQ-24 instruments were followed as part of the coding and scoring procedures. Mean scores and standard deviations were then calculated for each of the subscales. Internal consistency reliabilities for the MBI-HHS-MP and PCQ-24 questionnaires were estimated using Cronbach's alpha. Pearson correlations were used to examine correlations between the two survey scores and a

regression analysis was performed. To address Hypothesis 3, three sets of hierarchical multivariable linear regression models were estimated, with each set comprising three models in which one MBI subscale (EE, DP, or PA) was the outcome. The first model in each set included three background factors (years in nursing, years in CAH, and type of nursing degree). The second model in each set included predictors from the first model along with main effect terms for PsyCap total score and the work-related factors index. The third and final model in each set included predictors the previous two models, plus a term for the interaction between PsyCap and individual and organizational factors, which was used to assess moderation of the association between PsyCap and each burnout-related outcome via tests of changes in model R^2 values. PsyCap and individual and organizational factors scores were mean-centered prior to calculation of the PsyCap x Work product term, and these centered variables were used for estimating main effects of PsyCap and work-related factors in Models 2 and 3, which is necessary to minimize multicollinearity among the constituent main effect terms and their interaction and to facilitate interpretation of main effects of the predictor variables (Fairchild & McQuillin, 2010). To address Hypothesis 4, independent group t-tests were conducted to compare the BO, DP, and PA *scores of nurses who did intend stay in their positions for more than a year to those who did not intend to stay.*

Analyses were conducted using the Statistical Package for the Social Sciences (SPSS) (version 24; SPSS Inc., Chicago, IL).

Chapter 3 Conclusion

This chapter described the methodology used for this descriptive, correlational research study that was employed to examine the relationships between personal socio-

demographic factors, organizational work-related factors, BO and PsyCap among staff nurses working in rural CAHs. The online survey delivered through the Mind Garden, Inc. platform was distributed via hospital email to prospective participants via three email invitations at the beginning of the study and again at seven and fourteen days. Following data collection, SPSS was used to address research questions posed through each hypothesis.

Chapter 4 Results

This chapter reflects the findings from analyses of the survey data. The survey, which comprised assessments of various demographic measures, the Maslach Burnout Inventory (assessing EE, DP, and PA), and the Psychological Capital Questionnaire (assessing four facets [dimensions] of PsyCap and overall PsyCap), was used to obtain information related to CAH nurses' work experiences in rural, Eastern Oregon. This chapter describes the response rate, descriptive statistics, and statistical findings related to each of the research hypotheses.

Findings

Descriptive Statistical Findings

A sample of 384 nurses from six CAHs was targeted for the survey, of whom, 41.1% ($n = 158$) responded. Response rates varied by survey section. For those sections with incomplete measures, items were excluded from analysis. Descriptive statistics for demographic characteristics of study respondents are displayed in Table 1. In this sample, nearly 90 percent of these nurses identified as female, over half of all nurses (58.9%) reported holding a bachelor's degree in nursing, while one-third (33.3%) reported holding an associate's degree. Nurses were on average 43 years old ($SD = 10.7$ years), reported, on average, being a nurse for 14 years ($SD = 11.4$ years), and a CAH nurse for 11 years ($SD = 9.0$ years). Approximately half (52.6%) of the nurses held a nursing specialty certification, and approximately half of all nurses (48.7%) reported being asked to work in more than one department (floating). More than half the respondent nurses worked on either a medical-surgical floor (31.4 percent) or an emergency department (20.9 percent).

Nearly 90 percent of rural CAH nurses reported intent-to-stay in their current position more than one year.

Table 2

Respondent Demographic and Background Characteristics (n=158)

Variable	<i>M (SD)</i>
Age (years)	43.17 (10.68)
Time as RN (years)	14.07 (11.39)
Time in CAH (years)	11.12 (8.97)
Time in Current Role (years)	7.79 (8.15)
Job Load (index scores from 0 to 7)	3.47 (1.31)
	<i>n (%)</i>
Female	141 (89.2)
RN Certification	82 (52.6)
Professional Member	125 (79.6)
Float	77 (48.7)
Work Additional Job	22 (14.0)
Units Worked	
ER	32 (20.9)
Medical-Surgical	48 (31.4)
ICU/CCU	13 (8.5)
OR-Surgical Services	27 (17.6)
OB/Family Birthing	10 (6.5)
Float/Resource Pool	10 (6.5)

Other/Specialty Units	13 (8.5)
Nursing Education	
Diploma	2 (1.3)
Associate's	52 (33.3)
Bachelor's	93 (58.9)
Master's	8 (5.1)
Doctorate	1 (1.3)
Intent to Stay >1 year	139 (89.1)

Maslach Burnout Inventory (MBI) subscales. Average scores for each of the three MBI subscales (EE, DP, and PA), are reported in Table 3. For EE and DP, higher scores reflect greater BO (with average scores ranging from 0 to 6). For PA, higher scores reflect *less* BO. The mean scores for the current sample were generally similar to those reported by Maslach & Jackson (2017; see Table 3) in a worldwide sample of 11,000+ health service professionals for DP, but the CAH nurses had EE and PA scores that were slightly higher than those reported in the global sample. Cut-off scores have been removed from the MBI Manual (4th edition) due to findings that the cut-offs were arbitrary (Leiter & Maslach, 2016).

Internal consistency estimates of reliability were calculated for the current sample using Cronbach's alpha. Alphas for EE ($\alpha = .92$), DP ($\alpha = .79$), and PA ($\alpha = .79$), were greater than or comparable to those reported by Maslach et al. (2017 α s = .90, .79, and .71, respectively) (Maslach & Jackson, 2017).

Table 3

Means and Standard Deviations for Maslach Burnout Inventory (MBI) Subscales in the Current Sample (n=157) and as Reported in Maslach and Jackson (2017)

MBI Subscale	Current Sample	Maslach & Jackson (2017)
	<i>M (SD)</i>	<i>M (SD)^a</i>
Emotional Engagement (EE)	2.58 (1.23)	2.3 (1.2)
Depersonalization (DP)	1.75 (1.25)	1.7 (1.2)
Personal Accomplishment (PA)	4.57 (0.83)	4.3 (0.9)

Note. ^aMeans and standard deviations reported to only one decimal place by authors.

Psychological Capital Questionnaire (PCQ) findings. The PCQ findings provide feedback on how the participants perceive their attributes on the HERO components (hope, efficacy, resilience, and optimism) with higher scores indicating perception of higher levels of the attribute. Overall PCQ scores had a range from 4.5 to 4.7 and are reported in Table 4. Overall *hope* was 4.6, with a range of 4.5 to 4.8. The average *efficacy* score was 4.4, with a range of 4.1 to 4.7. *Resiliency* had an overall average of 4.8 and a range from 4.6 to 5.0. Overall *optimism* was 4.4, with a range of 4.1 to 4.5. *Resiliency* scores most reflected the overall PsyCap average score, while *efficacy* scores were the least indicative of overall PsyCap.

Reliability was assessed for each of the PsyCap subscales in the current sample using Cronbach's alpha and compared to previously reported estimates of reliability. In the current sample, reliability estimates for the *hope* ($\alpha = .86$), *efficacy*, ($\alpha = .88$), and *optimism* ($\alpha = .84$) subscales were all greater than the values reported by Luthans et al.

(2014; α s = .76, .80, and .75, respectively). Reliability for the *resilience* subscale in the current sample was equal to that reported by Luthans et al. (α = .80).

Table 4

Sample Means and Standard Deviations for PCQ-24 Outcome Measures (n = 157)

Measure	<i>M (SD)</i>
Hope	4.63 (0.76)
Efficacy	4.40 (1.01)
Resiliency	4.78 (0.63)
Optimism	4.35 (0.75)
Overall PsyCap score	4.54 (0.63)

Tests of Study Hypotheses

Hypothesis 1. Pearson product-moment correlation coefficients were computed to test hypotheses that PsyCap would be positively associated with BO-related factors for EE and DP, and negatively associated with PA. There was a moderate significant negative association between PsyCap and EE, $r(155) = -.510, p < .001$. There was also a modest, but significant, negative association between PsyCap and DP, $r(155) = -.303, p < .001$. Additionally, there was a moderately strong positive correlation between PsyCap and PA, $r(155) = .569, p < .001$. These findings provide support for Hypothesis 1.

Table 5

Pearson Product-Moment Correlations of MBI Subscales (EE, DP, & PA), Overall PCQ-24 Score, and Job Load Index

Measure	1	2	3	4
1. EE	--			
2. DP	.609**	--		
3. PA	-.341**	-.240**	--	
4. Overall PsyCap	-.510**	-.303**	.569**	--
5. Job Load Index	-.008	.083	-.107	.003

Note. ** $p < .01$.

Hypothesis 2. Pearson product-moment correlations were used to examine the second hypothesis that individual and organizational factors would be positively associated with EE and DP, and negatively correlated with PA (see Table 3). Individual sociodemographic variables and the job load index were not significantly related to BO-related variables ($ps > .20$) with correlations ranging from weakly negative (PA: $r(131) = -.107, p = .221$) to near zero (EE: $r(131) = -.008, p = .925$) to weakly positive (DP: $r(131) = .083, p = .341$).

Hypothesis 3. The third hypothesis that PsyCap will moderate the relationships between individual and organizational factors and the components of EE, DP, and PA was tested in three sets of hierarchical multiple linear regression models, one set for each BO-related outcome as described above. The first model in each set (Models 1a, 1b, and 1c) have background factors (years in nursing, years in CAH, and type of nursing degree) as predictors. The second model in each set (Models 2a, 2b, and 2c) have background

factors and main effect terms for PsyCap total score and the job load index. The third model in each set (Models 3a, 3b, and 3c) included predictors from Models 1 and 2 and a term for the interaction between PsyCap and individual and organizational factors (PsyCap x Work; see Tables 4-6).

In predicting EE, the PsyCap x Work interaction was not significant ($b = -0.06$, $p = .638$; see Model 3a in Table 4) indicating that PsyCap did not moderate the association between individual sociodemographic and organizational factors and EE. There was, however, a negative linear relationship between PsyCap and EE ($b = -0.99$, $p < .001$; see Model 2a in Table 4), even after accounting for background factors and job load factors. Consistent with the bivariate correlation findings (Table 3), the linear relationship between work-related factors and EE was essentially zero ($b = 0.00$, $p = .962$; Model 2a in Table 4).

Table 6

Prediction of Emotional Exhaustion from Background Covariates, PsyCap, Job Load Factors, and PsyCap x Work-Related Factors Interaction (n = 133)

Predictor	Model 1a		Model 2a		Model 3a	
	<i>b (se)</i>	<i>p</i>	<i>b (se)</i>	<i>p</i>	<i>b (se)</i>	<i>p</i>
Years in nursing	-0.05 (0.02)	.017	-0.03 (0.02)	.167	-0.03 (0.20)	.171
Years in CAH	0.06 (0.03)	.017	0.03 (0.02)	.142	0.03 (0.02)	.142
Nursing degree ^a	-0.16 (0.24)	.507	-0.06 (0.21)	.791	-0.07 (0.22)	.748

			-0.99		-0.99	
PsyCap ^b	–	–	(0.16)	<.001	(0.16)	<.001
Job Load			0.00		0.00	
factors ^b	–	–	(0.09)	.962	(0.09)	.977
PsyCap x					-0.06	
Work	–	–	–	–	(0.13)	.638
	<i>R</i> ²	.047		.283		.284
<i>F</i> for change in	<i>F</i> (3, 127) = 2.08,		<i>F</i> (2, 125) = 20.56,		<i>F</i> (1, 124) = 0.22,	
	<i>R</i> ²	<i>p</i> = .106		<i>p</i> < .001		<i>p</i> = .638

Note. *b* = Unstandardized linear regression coefficient. ^aDiploma/ADN degrees coded as 0, BSN/Graduate degrees coded as 1. ^bMean-centered scores.

In predicting DP, the PsyCap x Work interaction was not significant ($b = -0.19$, $p = .193$; see Model 3b in Table 5) indicating that PsyCap did not moderate the association between work-related factors and DP. There was a significant negative linear relationship between PsyCap and DP ($b = -0.69$, $p < .001$; see Model 2b in Table 5), even after accounting for background factors and job load factors. Consistent with the bivariate correlation findings (Table 3), the linear relationship between work-related factors and DP was positive, but not significant ($b = 0.12$, $p = .225$; Model 2b in Table 5).

Table 7

Prediction of Depersonalization from Background Covariates, PsyCap, Job Load Factors, and PsyCap x Work-Related Factors Interaction (n = 133)

Predictor	Model 1b		Model 2b		Model 3b	
	<i>b</i> (<i>se</i>)	<i>p</i>	<i>b</i> (<i>se</i>)	<i>p</i>	<i>b</i> (<i>se</i>)	<i>p</i>

Years in nursing	-0.06 (0.02)	.016	-0.04 (0.02)	.095	-0.04 (0.02)	.098
Years in CAH Nursing degree ^a	0.06 (0.03)	.020	0.04 (0.02)	.082	0.04 (0.02)	.079
PsyCap ^b	-0.17 (0.24)	.482	-0.16 (0.23)	.499	0.20 (0.23)	.403
Job Load factors ^b	-	-	-0.69 (0.17)	<.001	-0.68 (0.17)	<.001
PsyCap x Work	-	-	0.12 (0.10)	.225	0.11 (0.10)	.244
R^2	-	-	-	-	-0.19 (0.14)	.193
F for change in R^2	.047		.168		.179	
	$F(3, 127) = 2.09,$ $p = .105$		$F(2, 125) = 9.08,$ $p < .001$		$F(1, 124) = 1.72,$ $p = .193$	

Note. b = Unstandardized linear regression coefficient. ^aDiploma/ADN degrees coded as 0, BSN/Graduate degrees coded as 1. ^bMean-centered scores.

In predicting PA, the PsyCap x Work interaction was not significant ($b = -0.01, p = .918$; see Model 3c in Table 6) indicating that PsyCap did not moderate the association between work-related factors and PA. There was a significant positive linear relationship between PsyCap and PA ($b = 0.79, p < .001$; see Model 2c in Table 6), even after accounting for background factors and job load factors. Consistent with the bivariate

correlation findings (Table 3), the linear relationship between work-related factors and PA was negative, but not significant ($b = -0.08, p = .112$; Model 2c in Table 6).

Table 8

Prediction of Professional Accomplishment from Background Covariates, PsyCap, Work-Related Factors, and PsyCap x Work-Related Factors Interaction (n = 133)

Predictor	Model 1c		Model 2c		Model 3c	
	<i>b (se)</i>	<i>p</i>	<i>b (se)</i>	<i>P</i>	<i>b (se)</i>	<i>p</i>
Years in nursing	0.03 (0.02)	.080	0.01 (0.01)	.686	0.01 (0.01)	.686
Years in CAH	-0.03 (0.02)	.071	-0.01 (0.01)	.463	-0.01 (0.01)	.466
Nursing degree ^a	0.09 (0.16)	.589	0.05 (0.13)	.717	0.05 (0.13)	.729
PsyCap ^b	–	–	0.79 (0.09)	<.001	0.79 (0.09)	<.001
Work-related factors ^b	–	–	-0.08 (0.05)	.112	-0.09 (0.05)	.112
PsyCap x Work	–	–	–	–	-0.01 (0.08)	.918
<i>R</i> ²	.027		.385		.385	
<i>F</i> for change in <i>R</i> ²	$F(3, 127) = 1.16,$ $p = .329$		$F(2, 125) = 36.43,$ $p < .001$		$F(1, 124) = 0.01,$ $p = .918$	

Note. *b* = Unstandardized linear regression coefficient. ^aDiploma/ADN degrees coded as 0, BSN/Graduate degrees coded as 1. ^bMean-centered scores.

Hypothesis 4. In t-tests conducted to determine if a nurse's intent to stay in his or her position for more than a year and BO-related variables, it was found that compared to nurses who *did* intend stay ($n = XX$), those who *did not* intend to stay ($n = 17$) reported higher EE ($M = 3.67, SD = .96$ vs. $M = 2.44, SD = 1.20$), higher DP ($M = 2.29, SD = 1.17$ vs. $M = 1.68, SD = 1.25$), and lower PA ($M = 4.18, SD = .76$ vs. $M = 4.62, SD = 0.83$). None of these differences were statistically significant ($ps = 2.68, .48, \text{ and } .31$, respectively).

Conclusions

Prediction of emotional exhaustion (EE). The prediction that PsyCap would be negatively associated with EE was supported, based upon the statistical findings above. However, the second and third predictions that individual and organizational work-related factors would be positively associated with EE, and that PsyCap would moderate the relationship between these work-related factors and EE were not supported.

Prediction of depersonalization (DP). In terms of depersonalization (DP), it was hypothesized that PsyCap would be negatively associated with DP. This hypothesis was supported. The hypotheses that individual sociodemographic and organizational work-related factors would be positively associated with DP, and that PsyCap would moderate the relationship between these work-related factors and DP, however, were not supported.

Prediction of personal accomplishment (PA). Like the findings related to EE and DP, the prediction that PsyCap would be positively associated with PA was supported. The findings that individual/organizational work-related factors would be

negatively associated with PsyCap, and that PsyCap would moderate the relationship between these work-related factors and PA, were not found to be significant, and therefore the hypotheses were not supported.

Chapter 5 Conclusions, Discussion, and Suggestions for Future Research

Introduction

The purpose of this study was to investigate the roles of, and interplay among, work-related factors and PsyCap in explaining BO in rural, CAH nurses. Two contributing theories, Maslach's Multidimensional Theory of Burnout (Leiter, et al., 2014) and Psychological Capital Theory (Luthans, et al., 2007a), were used for the development of McCay's Multifactorial Burnout Model (2018), which served as the foundation for this study. This chapter provides a summary discussion of the findings, limitations of the study, and implications for future research. Recommendations for practice and policy are included, as well.

Burnout

Job BO, has been identified as a serious issue for working individuals, is focused on the mental and physical exhaustion related to professional work life (Freudenberger, 1974). Linked to individual health-related problems, decreased job satisfaction, poor organizational commitment, and higher turnover, BO poses a problem for both employees and organizations. Burnout prevalence has been identified in the nursing profession; however, the rural setting has been underrepresented, and his study, in part, addresses this gap in the literature.

Nurses and healthcare providers alike, are in a profession which requires not only compassion and empathy, but also maintaining emotional boundaries that may result in feelings of emotional isolation (American Academy of Family Physicians, 2013). Three components of BO can be described as prolonged stress or recurrent stressful experiences without recovery occur. These include emotional exhaustion (EE),

depersonalization (DP), and lack of professional accomplishment (PA). Characterized by feelings of work exhaustion, EE is a depletion of emotional energy distinct from mental fatigue and physical exhaustion, while DP, also described as cynicism, is reflected as a workplace view that provides caregiver protection from the intense emotions that may come interfere with job functioning (Maslach & Jackson, 2017). Lack of efficacy or decreased PA is the third component of BO that may appear to be a function of exhaustion or cynicism; all which may erode the nurse's sense of effectiveness (Maslach & Leiter, 1997). To effectively assess all three BO constructs in rural, CAH nurses, this study employed the MBI-HHS (MP) (Maslach, et al., 2018).

Work-Related Factors

Work-related antecedents of nursing BO include increased responsibility, unpredictability of workflow, individual high-stress care settings, and hectic work environments with little to no recovery time (Gates, et al., 2011). These work-related factors in accumulation, often lead to BO (Leiter, et al., 2014). In this study, individual socio-demographic work-related factors were assessed as well as the cumulative effect of five organizational, job load variables concerning working beyond normal scheduled shifts, working additional employment, time of work shifts, shift length, and working in additional nursing units (floating). These job load factors that reflect potential areas for increased job demands were evaluated individually and then collectively via a computed index score in effort to capture BO experiences in this population. As anticipated, this index showed poor internal consistency reliability, which may have attenuated the ability to detect associations between job load index scores and BO-related variables.

Summary of Implications and Findings

This cross-sectional study from a convenience sample of registered nurses working in six CAHs in rural, Eastern Oregon provided valuable findings that were obtained through a three-part online survey. The methodology detailed in chapter three, describes the use of the Maslach Burnout Inventory for Health and Human Services—Medical Professionals (Maslach, et al., 2018) and the Psychological Capital Questionnaire (Luthans, et al., 2007) as main survey components, in addition to demographic and work-related descriptions.

Demographic and Personal Characteristics

The sample of responding nurses was primarily female (89.2%), with over half of all nurses reporting they hold a bachelor's degree in nursing (58.9%). The average time reported being an RN was 14.1 years (SD = 10.7 years). While the average nurse had over 14 years of experience, the average tenure in CAH was approximately 11.1 years (SD = 9.0), indicating nurses did not spend their entire career working in a CAH, and at some point, gained RN experience at a non-CAH worksite. Additionally, the average nurse reported tenure in their current as approximately 7.8 years (SD = 8.2), which exceeds time spent in the urban hospital settings as reported by Kelly, et al., (2015). This finding likely reflects the rural isolated nature of the setting where CAH are located and the lack of nearby hospitals offering competing RN employment. More than half the nurses report holding an RN Certification (52.5%) and more than three-quarters identify themselves as a member of professional nursing organization (79.6%). This finding reflects the strong union density noted through professional service and collective bargaining representation, which is high in the region and tends to boost professional

service numbers dramatically. Four of the CAH surveyed are represented for collective bargaining by the Oregon Nurses Association, while another is represented by American Federation of State, County and Municipal Employees (AFSCME). Only one hospital, the smallest, lacks a collective bargaining agreement.

Nurses identified as working within seven units in the hospital: ER, Medical-Surgical, ICU/CCU, OR/Surgical Services, OB/Family Birthing, Float/Resource Pool, and Other/Specialty Units. More than half the responding nurses identified as either an ER nurse (20.9%) or a Medical-Surgical nurse (31.4%). Nurses from the OR-Surgical Services departments comprised 17.6% of the respondents, while the remaining units each comprised 6.5-8.5% of the total. The small nature of the hospital limits the ability of nurse specialization because rural nurses are expected to be generalists who can cross over to multiple departments based upon the need of the patient population at any given time. This is consistent with the literature where the *expert generalist* term has provided a foundation for rural nurses with understandings informed by the scope of practice needed to meet service delivery requirements (Knight, et al., 2016).

Three background factors were selected to use across this study's hypotheses: years in nursing, years in a CAH, and type of earned nursing degree. This narrowed the focus to the nurses' professional experience since obtaining his/her RN license, and years in a relevant CAH nursing role, rather than relying on a report of chronological age, which does not reflect on the buildable characteristics of work experience and education.

Nurse Burnout and Psychological Capital

PsyCap scores and BO outcome measures, including EE, DP, and PA, were reported for the rural CAH nurse sample. The three factors described above, and

organizational work-related factors such as the five items that were combined into a composite index score representing job load (working more than scheduled shifts, holding an additional nursing position, shift designation, shift length, and floating to more than one nursing unit) were key components for analysis. To capture generational differences, participant ages were recoded according to published generational groups. Contrary to findings reported by Maslach (2001) and Kelly (2015), Generation Y respondents (born 1977-1995) were found to have *lower* Depersonalization scores than their workmates from other generational groups. Perhaps contributing to this is the finding that the same group of Generation Y nurses had significantly *higher* levels of overall PsyCap, all characteristic traits that can be built through training, and have been linked to lower BO levels in several settings (Bao & Taliaferro, 2015; Bitmis & Ergeneli, 2015; Ding, et al., 2015; Estiri, et al., 2016; Laschinger & Grau, 2012; Peng, et al., 2013).

Hypothesis 1

Under Hypothesis 1, it was predicted that the four “HERO” dimensions of PsyCap would be associated with BO factors (EE, DP, and PA). This sample of CAH nurses had DP scores similar to those of a worldwide sample of 11,000+ health professionals; however, the CAH nurses had slightly higher EE and PA scores than those reported for the global sample (Maslach & Jackson, 2017). Conversely, PA scores were also higher in the CAH sample than in the worldwide sample suggesting that despite CAH nurses’ relatively higher EE, they tend to have a greater sense of PA.

PsyCap, established as a positive psychological state of development characterized by an individual’s optimism about current and future successes, with paths toward goals, and resiliency to overcome barriers (Luthans, et al., 2015), comprises the

second piece of the hypothesis. The four constructs that measure this positive psychological capacity and include hope, efficacy, resilience, and optimism (HERO), which can be developed to change various outcomes (Luthans, et al., 2004). Employees who possess higher levels of these components, known as the HERO within, are found to have greater resources for achieving improved job performance and satisfaction that often leads to a decrease in reported BO and turnover at work.

In this study, PsyCap scores fell in the middle-to-high range for each of the HERO components, with higher scores indicating perception of higher levels of the attribute. As predicted, analyses revealed a significant, moderate negative association between PsyCap and EE, indicating that higher levels of PsyCap are related to lower reports of Emotional Exhaustion. Likewise, a significant, modest, negative association was found between PsyCap and DP scores, also indicating higher PsyCap scores are related to lower reports of Depersonalization. Finally, the third finding in the analysis of Hypothesis 1 indicated there was a moderately strong positive correlation between PsyCap and PA, indicating higher levels of PsyCap are correlated to higher levels of Personal Accomplishment in this population. These findings indicate the rural nurses hold moderate-to-high resources for achieving satisfaction and increased job performance, which may in turn translate to lower BO and job attrition.

Hypothesis 2

The second hypothesis projected that individual sociodemographic and organizational work-related factors would be associated with factors of BO. More specifically it was hypothesized that work-related factors would be positively associated with EE and DP, but negatively associated with PA. According to Leiter, et al. (2014),

the presence of demanding job characteristics with the absence of resources or motivational job characteristics trigger BO from a theoretical and practical point of view. While increases in workload and high job demands have been found to increase the risk of developing BO (Demerouti, et al., Lee & Ashforth, 1996 in Leiter, et al., 2014), these anticipated results were not found to be statistically supported in this study. Further exploration into the availability of job resources and motivational characteristics (such as overtime or bonus pay) may shed more light on this finding.

Hypothesis 3

The third hypothesis posited that PsyCap would moderate the relationships between work-related factors and BO was tested in three sets of hierarchical multiple linear regression models for each of the three BO-related outcomes.

Hypothesis 3a. This hypothesis predicted that PsyCap would moderate the relationship between work-related factors and EE. The interaction between PsyCap and work-related factors was not significant indicating that PsyCap did not moderate the association between work-related factors and PsyCap. There was a negative linear relationship identified between PsyCap and EE, even after accounting for background and work-related factors though. This finding was consistent with the bivariate correlation finding that the linear relationship between work-related factors and EE was essentially zero. These findings indicate that higher levels of PsyCap are associated with lower levels of EE in this population, as predicted in Hypothesis 1a. Consistent with the literature, greater PsyCap resources such as optimism and resilience often result in a decrease in reported BO, indicated by the finding of lower EE levels (Luthans, et al., 2015). At the same time, research suggests that older employees may have experienced more

difficulties in their working careers than their younger colleagues indicating nursing resilience may have been developed in order to cope with challenging experiences (Shelton & Reynard, 2015).

Hypothesis 3b. It was predicted that PsyCap would moderate the relationship between work-related factors and DP, which was also not statistically supported. Again, it was noted that a negative linear relationship between PsyCap and DP existed, even after accounting for background and work-related factors. Bivariate correlational findings were consistent in revealing the same linear relationship between work-related factors and DP was essentially zero, all pointing to the finding that higher PsyCap levels are associated with lower levels of Depersonalization as predicted in Hypothesis 1b.

Hypothesis 3c. The hypothesis that PsyCap would moderate the relationship between work-related factors and PA was also disproven in this study. A positive linear relationship between PsyCap and PA was uncovered, even after accounting for background and work-related factors. This finding was consistent with the bivariate correlation findings indicating the linear relationship between work-related factors and PA was essentially zero, leading to the conclusion that higher PsyCap is associated with higher levels of PA. As nurses report positive feelings of hope, efficacy, resilience, and optimism, this naturally reflects on PA, which is characterized by efficacy and a professional sense of accomplishment (Leiter, et al., 2014). Further research is needed to understand whether rural hospitals support higher PA than urban hospitals.

Hypothesis 4

Intent to stay more than one year was the only work-related indicator that had a strong, negative correlation with EE, indicating nurses who see themselves staying in the

job may have lower EE than nurses who do not see themselves in the same role one year from now. More information is necessary to determine if nurses who do not intend to stay more than a year may be experiencing some form of BO that has prompted the decision to leave their current position, in hopes of finding work with decreased job demands, floating requirements or greater resources.

Limitations and Suggestions for Future Research

The results of this study have several implications for future research. The nature of this study focusing on a small cohort of rural, CAH nurses is inherently limited by sampling size. Future studies will be strengthened by increasing the sample size and moving from a purposive sampling technique, which decreased the generalizability of the findings, to a randomized sampling method. Future studies that focus on WE and BO may provide valuable information as to the level of engagement the CAH nurses have versus their actual feelings of EE, DP, and PA as well. Further analysis including an assessment for individual factors such as work-life balance, dependent care, and whether the nurse is the primary economic provider would also enhance future studies that aim to understand various individual antecedents to BO.

Additionally, PsyCap has been established as a buildable characteristic that may decrease BO in various settings. An experimental study that provides PsyCap training as the intervention would provide valuable information as to whether BO, exhibited through EE, DP, or PA scores, can be improved with heightened PsyCap tools. Further exploration of the social conditions, norms, and beliefs common to the nurses' rural setting (e.g., isolation, independence, reliance on self, resilience) may shine light on the

how these values parallel or are associated with the PsyCap characteristics of hope, efficacy, resilience, and optimism.

Conclusion

CAH nurses experience BO rates similarly to nurses in non-rural settings, although some differences in the reported occurrence of EE, DP, and PA were identified. As rural CAHs strive to serve geographically isolated Americans in HPSAs with fewer resources, continued research into individual, organizational, and work-related factors that may predict BO and lead to increased attrition rates needs further exploration. While recruitment efforts aimed at drawing nurses to the rural practice area exist, few strategies aim at retaining nurses and providers alike in the rural setting. By understanding BO and resiliency strategies such as those that can be developed through PsyCap trainings, emphasis can be placed on maintaining a healthy rural CAH nursing workforce.

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APPENDIX A
REVIEW OF LITERATURE

Ref #	Author(s), year, journal & country	Purpose	Theoretical Framework	Research Design	Sample/Setting	Measurement/instruments	Findings
1	Bao & Taliaferro, 2015, Int. J Human Caring, USA.	Identify levels and explore relationship between PsyCap and Compassion Fatigue (precursor to BO) in hospital nurses.	1. Cognitive-Motivational-Relational Theory of Motion (Lazarus, 1993). 2. Positive Organizational Behavior (POB) (Luthans, 2002).	1. Cross-sectional 2. Descriptive 3. Comparative 4. Correlational	260 RNs from large teaching hospital in the Midwest U.S.	1. PsyCap Questionnaire (PCQ) 2. Professional Quality of Life (ProQOL V5)	1. Hospital RNs have PsyCap scores consistent with other disciplines. 2. Secondary traumatic stress subscale level was higher than average scores in Stamm's (2010) database. 3. Compassion satisfaction mean was higher in this sample than in Stamm's (2010) database. 4. PsyCap had moderate to strong negative correlation with CF.
2	Bitmis & Ergeneli, 2015, Procedia Soc Behav Sci, Turkey.	Investigate the mediating role of job insecurity on the relationship between PsyCap and BO.	1. POB.	1. Cross-sectional, 2. Descriptive, 3. Correlational	161 nurses from hospitals of foundation universities in Ankara, Turkey	1. PCQ 2. Job Insecurity Scale 3. Maslach Burnout Inventory (MBI)	1. PsyCap affected both BO and job insecurity in a negative way. 2. Mediation effect for PsyCap-BO relationship confirmed. 3. PsyCap decreases perceived job insecurities, which decreases BO.
3	Boahmah & Laschinger, 2015, J Nurs Res, Canada.	Test model linking perceptions of workplace empowerment and PsyCap to new grad nurses' work engagement by integrating theories of empowerment.	1. Kanter's Theory of Structural Empowerment (1977, 1993). 2. PsyCap (from POB). 3. Hypothesized work engagement theory.	1. Longitudinal 2. Descriptive 3. Confirmatory 4. Correlational	205 new grads from Canadian hospitals—secondary analysis from larger study of 907 new grads.	1. Conditionals of Work Effectiveness-II (COWEQ-II) 2. PCQ 3. Utrecht Work Engagement Scale (UWES) (Schaufeli, et al., 2006).	1. Hypothesized theoretical model supported 2. Combined effect of workplace empowerment and PsyCap explained 38% of variance in new grad's WE. 3. Workplace empowerment and PsyCap were sig. independent predictors of WE.
4	Bonner, 2016, Br J Nurs, U.K.	Test whether theoretical relationship between PsyCap	1. The Revised Job Demands-Resources (JD-R) Model (Schaufeli & Bakker, 2004).	1. Cross-sectional 2. Descriptive 3. Correlational	Convenience sample from Agenda for Change band 5, 6, 7 nurses in	1. UWES (17 item) 2. PCQ (24 item)	1. Statistical sig. difference between job band level and PCQ-24 scores. 2. Statistically sig. difference between lengths of time

		and WE exist in nurses.			London teaching hospital. (n=137).		nurses practicing and PCQ-24 scores. 3. Strong correlation between PsyCap measures and WE supporting theory that PsyCap is antecedent to WE in nurses.
5	Brunetto, et al., 2016, JAN, Australia.	Examine impacts of nurses PsyCap and managerial support, (safety interventions, safety training satisfaction) on nurses' in-role safety performance.	1. POB 2. Social Exchange Theory (Cropanzano & Mitchell, 2005).	1. Cross-sectional 2. Secondary Analysis 3. Descriptive 4. Correlational	Private-sector nurses from large, medium, and small hospitals covering rural and city (not remote) locations in one Australian healthcare organization.	1. Leader-Member Exchange (LMX-7)(Graen & Uhl-Bien, 1995). 2. PCQ-24	1. Leader-Member Exchange (LMX) accounted for 28.3% variance in nurses' PsyCap. 2. LMX had positive influence on PsyCap, which has strong correlation with in-role safety performance.
6	Collini, et al., 2015, J Nurs Manag, USA.	Understand interaction between interpersonal respect, diversity climate, mission fulfillment, and engagement to predict turnover.	1. None stated	1. Cross-sectional 2. Descriptive 3. Correlational	Healthcare employees from 185 departments in U.S. rural and urban settings. (n=185, 55% were reported as nurses).	1. HR Solutions Sweet16 (2012). 2. 2-Climate of Diversity items (created by researcher) 3. 4-Respect in Workplace items (created by researcher) 4. 1-Mission Fulfillment item (created by researcher) 5. Reasons for Leaving (created by researcher).	1. Engagement fully mediated relationship between respect and turnover. 2. Engagement fully mediated the relationship between mission fulfillment and turnover. 3. Diversity climate was not related to turnover.
7	Ding, et al., 2015, PLoS ONE, China.	1. Explore relationship between PsyCap and BO. 2. Determine whether the dimensions of coping style mediate the	1. POB.	1. Cross-sectional 2. Descriptive 3. Correlational	1496 nurses from 2 large general hospitals in Daqing City, China.	1. PCQ-24 2. Chinese Maslach Burnout Inventory (CMBI) 3. Chinese Trait Coping Style Questionnaire (TCSQ)	1. Constructs of PsyCap were all negatively related to all BO constructs. 2. Positive coping partially mediated relationship between hope/optimism (PsyCap) and emotional exhaustion (BO). 3. Positive coping partially mediated relationship between

		dimensions of PsyCap on the dimensions of BO.					self-efficacy/optimism (PsyCap) and reduced personal accomplishment (BO). 4. Negative coping fully mediated relationship between self-efficacy and emotional exhaustion (BO). 5. Self-efficacy was positively correlated with emotional exhaustion. 6. Negative coping partially mediated relationship between hope/optimism (PsyCap) and emotional exhaustion (BO). 7. Negative coping partially mediated relationship between optimism (PsyCap) and depersonalization (BO).
8	Estiri, et al., 2016, SpringerPlus, Iran.	1. Explore impact of PsyCap on mental health by investigating mediating effects of job BO.	1. None stated.	1. Cross-sectional 2. Descriptive 3. Correlational	384 nurses in selected Iranian public hospitals.	1. PCQ-24 2. MBI (22-item) 3. General Health Questionnaire (Goldberg & Hillier, 1979).	1. Sig. Relationship between PsyCap, job BO, and mental health. 2. Sig. negative relationship between PsyCap and job BO. 3. Sig. positive relationship between PsyCap and mental health.
9	Karatepe & Avci, 2017, J Manag Dev, Cypress.	1. Investigate WE as a mediator to the influence of PsyCap on lateness attitude and turnover intentions. 2. Examine lateness attitude as a mediator between WE and turnover intentions.	1. JD-R Model	1. Cross-sectional 2. Descriptive 3. Correlational	250 nurses in 2 Cypress public hospitals.	1. PsyCap 2. Work Engagement (Schaufeli, 2006) 3. Lateness attitude (Foust, 2006) 4. Turnover Intentions (Singh, 1996).	1. WE mediates the influence of PsyCap on lateness attitude and turnover intentions. 2. Lateness attitude is a mediator between WE and turnover intentions. 3. Lateness attitude plays a mediator in relationship between WE and turnover intentions.
10	Kelly, et al., 2015, J Nurs Scholarsh, USA.	1. Examine compassion fatigue (precursor to BO) and compassion satisfaction in acute care nurses	1. Professional Quality of Life Model (Stamm, 2010)	1. Cross-sectional 2. Descriptive 3. Comparative	491 direct care nurses in 700-bed quaternary hospital in southwestern U.S.	1. Demographic survey (created by researcher) 2. ProQOL 3. Meaningful Recognition	1. Sig. predictors of BO included lack of meaningful recognition, nurses with more years of experience, and “Millennial” nurses.

		across multiple specialties in a hospital.				(created by researcher).	2. Meaningful recognition and higher job satisfaction was noted in “Baby Boomer” nurses. 3. Nurses with fewer years’ experience sig. predicted compassion satisfaction. No sig. differences noted across nursing specialties or departments.
11	Laschinger, & Fida, 2014, Burnout Res, Canada.	1. Investigate the influence of authentic leadership (AL) and PsyCap on new grad nurse BO, occupational satisfaction, and workplace mental health over first year of employment.	1. Authentic Leadership (Avolio & Gardner, 2005) 2. PsyCap (from POB) (Luthans & Jensen, 2005).	1. 2-wave, longitudinal (1 year) 2. Descriptive 3. Correlational	907 practicing new grad. nurses in Ontario Canada, working in acute care hospitals.	1. Demographic survey 2. Authentic Leadership Questionnaire (ALQ) (Avolio, et al., 2007). 3. PCQ 4. MBI-General Survey (Emotional Exhaustion & Cynicism subscales) 5. Work Satisfaction (Shaver & Lacey, 2003) 6. Mental Health Index- 5 items of the SF-36 (Ware & Sherbourne, 1992).	1. PsyCap and BO were correlated with all study variables, as was AL with exception of mental health at time-2.
12	Laschinger & Grau, 2012, Int J Nurs Stud, Canada.	1. Test model from Leiter & Maslach’s (2004) Six Areas of Worklife Model with added workplace factors of bullying, PsyCap and BO, in new grad nurses.	1. Six Areas of Worklife Model with personal disposition factor, PsyCap, and BO added.	1. Cross-sectional 2. Secondary Analysis 3. Descriptive 4. Correlational	907 practicing new grad. nurses in Ontario Canada, working in acute care hospitals.	1. PCQ-24 2. Areas of Worklife Scale (AWL) 3. Negative Acts Questionnaire-Revised (NAQ-R) 4. MBI-General Scale: Emotional Exhaustion and	1. Fit indices indicate a fit of data with hypothesized model. 2. Increased PsyCap positively influenced nurses’ perceived person-job fit, which in turn was negative related to bullying exposure and emotional exhaustion, and ultimately influenced their physical and mental health.

						Cynicism subscales.	
13	Laschinger, et al., 2012, Health Care Manage Rev, Canada.	1. Test theoretical model of new grad nurses' worklife derived from JD-R Model to better understanding workload and bullying, job resources and supportive practice environments, PsyCap, BO and WE.	1. JD-R Model	1. Cross-sectional 2. Descriptive 3. Correlational	420 new grad nurses in acute care hospitals in Canada.	1. AWL Scale 2. NAQ-R 3. PES (perceptions of professional practice environment tool) 4. PCQ 5. Emotional Exhaustion subscale from MBI 5. Mental Health Index-5	1. Partial fit with hypothesized model. 2. Job demands (workload and bullying) predicted BO and subsequently poor mental health. 3. Job resources predicted WE and subsequently lower turnover intentions. 4. BO was sig. predictor of turnover intent (crossover effect). 5. PsyCap sig. influenced BO and WE.
14	Luthans & Jensen, 2005, JONA, USA.	1. Examine the important linkage between nurses' self-reported PsyCap and their Intentions to stay as well as their supervisors' ratings of their commitment to the mission of the organization.	1. PsyCap from POB	1. Cross-sectional 2. Descriptive 3. Correlational	71 nurses and supervisors from 200 bed hospital in the Midwest U.S.	1. Generalized Self-Efficacy Scale (Parker) 2. Life Orientation Test (LOT) (Scheier & Carver) 3. State Hope Questionnaire (Snyder, et al.) 4. PsyCap 5. 2 dependent measures of organizational commitment 6. Supervisory performance data from HR Dept.	1. Highly sig. positive relationship between PsyCap and intentions to stay. 2. Highly sig. positive relationship between PsyCap and commitment to the mission, vision, and goals of hospital.
15	Maslach & Leiter, 2008, J Appl Psychol, USA	1. Measure scores on 6 areas of work life at time-1 and time-2, to assess whether the relationship between workplace incongruities and BO were replicated at both time points.	1. None directly stated. 2. Maslach Burnout Inventory-implicit	1. 2-Wave, longitudinal 2. Descriptive 3. Correlational	1. 1140 organizational participants (details unclear), from North American university.	1. Demographics 2. MBI-GS 3. AWS	1. People who showed an inconsistent pattern at time-1 were more likely to change over the year than were those who did not. 2. A workplace incongruity in fairness moved to BO at time-2 for these people, while those without this incongruity moved toward engagement.

		2. Identify whether incongruent scores in any of six areas at time-1 were predictors of changes toward BO or WE at time-2.					
16	Othman & Nasurdin, 2013, J Nurs Manag, Malaysia	1. Examine the role of job resources (supervisor & co-worker support) as antecedents of WE among Malaysian nurses.	1. None stated.	1. Cross-sectional 2. Descriptive 3. Correlational	1. 466 nurses from 3 main public hospitals in Peninsular Malaysia.	1. Demographics 2. UWES (9 item)	1. Supervisor support is positively related to WE. 2. Co-worker support has no effect on WE.
17	Peng, et al., 2013, PLOS One, China	1. Explore the impact of PsyCap on job BO by investigating the mediating effect of organizational commitment (OC) on this relationship.	1. PsyCap from POB. 2. Conservation of Resources Theory.	1. Cross-sectional 2. Descriptive 3. Correlational	1. 473 female nurses from 4 large general hospitals in Xi'an City of China.	1. PCQ (Chinese) 2. MBI-GS (Chinese) 3. Organizational Commitment Scale (Chinese)	1. Sig. path from PsyCap to job BO through OC was determined. 2. OC partially mediated the effect of PsyCap on job BO. 3. PsyCap can negatively affect job BO.
18	Sawatzky, & Enns, 2012, J Nurs Manag, Canada	1. Explore factors that predict the retention of nurses working in ERs.	1. The Conceptual Framework for Predicting Nurse Retention (CFPNR) (Larrabee, et al., 2003).	1. Cross-sectional 2. Secondary Analysis 3. Descriptive 4. Exploratory 5. Correlational	1. 261 RNs working in 12 designated ERs within rural, urban community and tertiary hospitals in Canada.	1. The Perceived Nurse Working Environment scale (42-item) (Choie, et al., 2004). 2. Job satisfaction (single item by researcher) 3. Engagement Composite Questionnaire (Hewitt, et al., 2008) 4. ProQOL	1. 26% reported will probably/definitely leave their job within the next year. 2. Engagement is a key predictor of intent-to leave. Engagement is associated with job satisfaction, compassion satisfaction, compassion fatigue, and BO. 3. Nursing management, professional practice, collaborations with physicians, staffing resources, and shift work emerged as significant influencers for engagement.
19	Shahpouri, et al, 2016, Appl Nurs Res, Iran.	1. Investigate the effect of job resources and personal resources	1. Comprehensive Work Engagement Model (Bakker & Demerouti, 2007).	1. Cross-sectional 2. Descriptive 3. Correlational	1. 608 female nurses working at Alzahra Hospital.	1. UWES (17 item) 2. Personal Resources	1. Personal resources and job resources do not have a direct effect on turnover intentions.

		on turnover intention with the mediator role of WE among female nurses at Asfahan Alzahra Hospital.				Inventory (13 item) (Nguyen & Nguyen, 2011) 3. Inventory of Job Resources (mix of Spector & Karask's questionnaires) 4. Organizational Justice questionnaire (Niehooff & Moorman, 1993). 5. Turnover Intention Inventory (Kelloway, et al., 1999).	2. There was no direct effect noted between job resources and WE. 3. Personal resources has a direct positive effect on WE. 4. WE has a negative direct effect on turnover intentions. 5. WE plays a mediating role between job and personal resources and turnover intentions.
20	Lewis & Cunningham, 2016, Nurs Res, USA.	1. Test a conditional process model linking perceived transformational nurse leadership to nurse staff BO and WE via important work environment characteristics.	1. AWL Model.	1. Cross-sectional 2. Exploratory 3. Descriptive	1. 120 full-time nurses at a local hospital in the U.S.	1. Transformational Leadership (Rafferty & Griffin, 2006). 2. Areas of Worklife Scale (29 items) (Leiter & Maslach, 2004) 3. MBI-GS 3. UWES (17 item) 4. Demographics & Personality traits	1. Transformational leadership is strongly associated with work environment characteristics that are further linked to nurse BO and WE. 2. Different work characteristics appeared to be critical channels through which transformational leadership impacts nurse BO and WE.
21	Sun, et al., 2011, J Adv Nurs, China.	1. Provide empirical evidence on the relationship between PsyCap, job embeddedness, and performance. 2. Presents the theoretical development of PsyCap and job embeddedness in nursing research.	1. PsyCap from POB.	1. Cross-sectional 2. Descriptive 3. Correlational	1. 1000 nurses working in 5 university hospitals in China.	1. Job Embeddedness (7-items) (Crossley, et al., 2007). 2. PsyCap (24-item) 3. Job performance (Campbell, et al., 1993).	1. Higher PsyCap increases self-reports of job embeddedness and performance.

22	Wang, et al., 2012, BMP Public Health, China.	1. Explore the relationship between work-family conflict and BO among Chinese female nurses and the mediating role of PsyCap on this relationship.	1. PsyCap from POB.	1. Cross-sectional 2. Descriptive 3. Correlational	1. 1700 female nurses from 6 large general hospitals in China.	1. MBI-GS (Chinese) 2. PsyCap (24 item) (Chinese) 3. WIF scale 4. FIW scale 5. Demographic and work characteristics.	1. Interfering family conflict and family interfering work conflict are positive related to emotional exhaustion (EE) and cynicism. 2. Work interfering family conflict is positively related to professional efficacy. 3. Family interfering work conflict is negatively related to professional efficacy. 4. PsyCap partially mediated the relationship of work interfering family conflict with EE and cynicism. 5. PsyCap partially mediated the relationship of family interfering work conflict with EE, cynicism and professional efficacy.
23	Van Bogaert, et al., 2017, BMC Nursing, Belgium.	1. Retest and confirm two structural equation models exploring associations between practice environment and work characteristics as predictors of BO and WE, as well as nurse-reported job outcome and quality of care 2. To study staff nurses' and nurse managers' perceptions and experiences of staff nurses' workload. 3. To explain and interpret the 2 models by using a qualitative study component.	1. Maslach's Multi-Dimensional Theory of Burnout.	1. Cross-sectional 2. Mixed-Methods (only quant reviewed here) 3. Confirmatory 4. Correlational	1. Staff nurses working in direct care in either medical, surgical, obstetric, geriatric, operating, or intensive care units in 1 Dutch-speaking Hospital (600 beds) and 1 French-speaking Belgium hospital (850 beds).	1. Revised Nursing Work Index (NWI-R) 2. MBI-HHS 3. UWES 4. Intensity of Labour Scale 5. Social Capital Scale 6. Nurse reported Job Outcomes and Quality of Care scale.	1. Nurse-reported job outcomes and quality of care explained variances between 52%-62%. 2. Nurse management at the unit level and workload had a direct impact on outcome variables with explained variances between 23%-36% and 12%-17%. 3. Personal accomplishment and depersonalization had an explained variance on job outcomes of 23% and vigor of 20%. 4. BO and engagement had a less relevant direct impact on quality of care (<5%).

24	Wang, et al., 2012, BMC Public Health, China.	1. Explore the relationship between work-family conflict and BO among Chinese female nurses and the mediating role of PsyCap.	1. PsyCap in POB	1. Cross-sectional 2. Descriptive 3. Correlational	1. 1700 female nurses in 6 large general hospitals in China.	1. MBI-GS (Chinese) 2. WIF scale 3. FIW scale 4. PCQ (24 items) (Chinese) 5. Demographic and working characteristics	1. Work interfering family conflict is positively related to EE and cynicism. 2. Family interfering work conflict is positively related to EE and cynicism. 3. Work interfering family conflict is positively related with professional efficacy 4. Family interfering work conflict is negatively related to professional efficacy. 5. PsyCap partially mediated the relationship of family interfering work conflict with EE, cynicism and professional efficacy.
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APPENDIX B
CONSENT FOR PARTICIPATION

You are being invited to voluntarily participate in a research study to assess work engagement, burnout and psychological capital in rural critical access hospital staff nurses. The purpose of the study is to examine nurse characteristics on a self-reported survey. You are eligible to participate if you are a staff nurse working in a Registered Nursing role in the acute care setting within this critical access hospital. Please do not take the survey if you are not a Registered Nurse in a staff nurse role in the acute care setting. The survey will take approximately 20 minutes to complete. By volunteering to take part in the survey, you will be agreeing to participate and acknowledging the use of the information you provide for data analysis. The information you provide will be confidential and your individual responses will not be reported. Data from the study will be used for purposes of this research study only.

If you choose to participate, you will have the opportunity to participate in a drawing for a chance to receive a \$25 Amazon gift card. Completing the survey enters your name into the drawing one time. At the end of the survey, you will be directed to a separate link where you can enter in your email address to be entered in to the raffle drawing. Your email address will not be linked to your survey and will be viewed by the investigator only for the purpose of distributing the incentive. There will be no cost to you to take part in the survey and you may withdraw from the study (i.e. exit the survey) at any time. There are no known risks from your participation. To participate in the survey, please click YES below.

I agree to participate in this research study. YES/NO

APPENDIX C
SOCIODEMOGRAPHIC AND ORGANIZATIONAL JOB LOAD SURVEY

This section of the survey is designed to provide information about you, your background, and your typical working conditions. Please answer the following questions about yourself:

1. What is your gender? (*Male, Female*)
2. What is your age?
3. How many years have you been a registered nurse?
4. How many years have you been practicing as a registered nurse in rural critical access hospital?
5. How many years have you been practicing in your current position?
6. What shift do you regularly work? (*Day, Evening, Night, Combination of Shifts*)
7. What is your normal shift length? (8 hours, 10 hours, 12 hours, other)
8. What is your highest nursing degree attained? (*Diploma, Associates, Bachelors, Masters, Doctorate*)
9. On average, how often to you work more than your scheduled/normal work hours? (*Never, Rarely, Sometimes, Often, Always*)
10. Do have an additional clinical nursing position outside of this employment?
(*No, Yes*)
11. If yes, on average how many hours in clinical nursing do you work outside of this employment?
12. Do you have a nationally recognized certification? (*No, Yes*)
13. Are you a member of a professional nursing organization? (*No, Yes*)
14. Do you intend to be in your current position one year from now? (*No, Yes*)

15. Do you work in a nursing unit that is different than your home unit (i.e., do you float to other departments?) (*No, Yes*)

16. If yes, how often do you work in a unit that is different than your home unit?
(*Never, Rarely, Sometimes, Often, Always*)

17. On average, how many hours do you work per work at this rural hospital?

Use the following scale to answer the next questions:

1	2	3	4	5
Very Dissatisfied	Dissatisfied	Unsure	Satisfied	Very Satisfied

1. What is your satisfaction level with your current work? 1 2 3 4 5
2. What is your satisfaction with your work-life balance? 1 2 3 4 5
3. What is your satisfaction with the recognition you receive from your work?
1 2 3 4 5
4. What is your satisfaction with the level of collaboration among your peers
and colleagues? 1 2 3 4 5
5. On a regular basis, do you feel satisfied that you are able to meet the needs
of your patients? 1 2 3 4 5

APPENDIX D

MASLACH BURNOUT INVENTORY FOR HEALTH AND HUMAN SERVICES—

MEDICAL PROFESSIONALS SURVEY

Please answer the following questions about yourself based upon how often you have these experiences.

How often?	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

How often? (0-6)

1. I feel emotionally drained from my work. 0 1 2 3 4 5 6
2. I feel used up at the end of the workday. 0 1 2 3 4 5 6
3. I feel fatigued when I get up in the morning and have to face another day on the job. 0 1 2 3 4 5 6
4. I can easily understand how my patients feel about things. 0 1 2 3 4 5 6
5. I feel I treat some patients as if they were impersonal objects. 0 1 2 3 4 5 6
6. Working with people all day is really a strain for me. 0 1 2 3 4 5 6
7. I deal very effectively with the problems of my patients. 0 1 2 3 4 5 6
8. I feel burned out from my work. 0 1 2 3 4 5 6
9. I feel I'm positively influencing other people's lives through my work. 0 1 2 3 4 5 6
10. I've become more callous toward people since I took this job. 0 1 2 3 4 5 6
11. I worry that this job is hardening me emotionally. 0 1 2 3 4 5 6
12. I feel very energetic. 0 1 2 3 4 5 6
13. I feel frustrated by my job. 0 1 2 3 4 5 6
14. I feel I'm working too hard on my job. 0 1 2 3 4 5 6
15. I don't really care what happens to some patients. 0 1 2 3 4 5 6
16. Working with people directly puts too much stress on me. 0 1 2 3 4 5 6
17. I can easily create a relaxed atmosphere with my patients. 0 1 2 3 4 5 6
18. I feel exhilarated after working closely with my patients. 0 1 2 3 4 5 6
19. I have accomplished many worthwhile things in this job. 0 1 2 3 4 5 6
20. I feel like I'm at the end of my rope. 0 1 2 3 4 5 6
21. In my work, I deal with emotional problems very calmly. 0 1 2 3 4 5 6
22. I feel patients blame me for some of their problems. 0 1 2 3 4 5 6

APPENDIX E
PSYCHOLOGICAL CAPITAL QUESTIONNAIRE—SELF-RATER FORM

Below are statements that describe how you may think about yourself **right now**. Use the following scale to indicate your level of agreement or disagreement with each statement.

1	2	3	4	5	6
Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

1. I feel confident in representing my work area in meetings with management. 1 2 3 4 5 6
2. I feel confident contributing to discussions about the organization's strategy. 1 2 3 4 5 6
3. I feel confident presenting information to a group of colleagues. 1 2 3 4 5 6
4. If I should find myself in a jam at work, I could think of many ways to get out of it. 1 2 3 4 5 6
5. Right now I see myself as being pretty successful at work. 1 2 3 4 5 6
6. I can think of many ways to reach my current work goals. 1 2 3 4 5 6
7. At this time, I am meeting the work goals that I have set for myself. 1 2 3 4 5 6
8. I can be "on my own," so to speak, at work if I have to. 1 2 3 4 5 6
9. I usually take stressful things at work in stride. 1 2 3 4 5 6
10. I can get through difficult times at work because I've experienced difficulty before. 1 2 3 4 5 6
11. I always look on the bright side of things regarding my job. 1 2 3 4 5 6
12. I'm optimistic about what will happen to me in the future as it pertains to work. 1 2 3 4 5 6

Thank you for taking the time to participate in this study. If you would like to enter the drawing to win a \$25 Amazon Gift Card, please provide your name and email address on the next page. This information will not be associated in any way to your survey responses.

APPENDIX F
RESEARCH ANNOUNCEMENT

Work Engagement and Burnout in Rural Critical Access Hospital Nurses



You are being invited to voluntarily participate in a research study to assess work engagement, burnout and psychological capital in rural critical access hospital staff nurses in Eastern Oregon. The purpose of the study is to examine nurse characteristics on a self-reported survey. You are eligible to participate if you are a staff nurse working in a Registered Nursing role in the acute care setting within this critical access hospital. Please watch your hospital email for the upcoming invitation and link to participate.

The information you provide will be confidential and your individual responses will not be reported. Data from the study will be used for purposes of this research study only. If you choose to participate, you will have the opportunity to participate in a drawing for a chance to receive a \$25 Amazon gift card.

If you have any questions, please direct them to the Principle Investigator, Rebecca McCay, mccay@ohsu.edu.

APPENDIX G
PROPRIETARY LICENSING



To whom it may concern,

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

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

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Sincerely,

Robert Most
Mind Garden, Inc.
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