2016

Determining the Relationship Among Change Fatigue, Resilience, and Job Satisfaction of Hospital Staff Nurses

Robin Brown
South Dakota State University

DETERMINING THE RELATIONSHIP AMONG CHANGE FATIGUE, RESILIENCE, AND JOB SATISFACTION OF HOSPITAL STAFF NURSES

BY

ROBIN BROWN

A dissertation submitted in partial fulfillment of the requirements for the

Doctor of Philosophy

Major in Nursing

South Dakota State University

2016

DETERMINING THE RELATIONSHIP AMONG CHANGE FATIGUE, RESILIENCE, AND JOB SATISFACTION OF HOSPITAL STAFF NURSES

This dissertation is approved as a creditable and independent investigation by a candidate for the Doctor of Philosophy degree and is acceptable for meeting the dissertation requirements for this degree. Acceptance of this dissertation does not imply the conclusions reached by the candidate are necessarily the conclusions of the major department.

Kay Poland, PhD, RN, CNP Date
Dissertation Advisor

Mary Minton, PhD, RN, CNS, CHPN Date
Department Head, Graduate School of Nursing

Dean, Graduate School Date

ACKNOWLEDGEMENTS

The author wishes to acknowledge the following for their assistance, guidance, and support in the completion of this dissertation. First, a heartfelt thank you to Dr. Kay Foland, dissertation advisor, who provided continuous support and guidance throughout the entire dissertation process. Next, a thank you to Dr. Howard Wey for all of his patience and guidance with statistical analysis. A thank you to Dr. Linda Herrick for her helpful advice and encouragement. A special thanks to the members of my dissertation committee, Dr. Kay Foland, Dr. Howard Wey, Dr. Linda Herrick, and Dr. Christine Stewart, graduate faculty representative, in assisting me with designing, conducting, and writing my dissertation.

A special thank you to my husband, John, who supported me throughout this journey. I am blessed to have such a supportive and understanding family that encouraged and supported me throughout this process. I am grateful to my two sons, Michael and Derek, for understanding when I had to be studying and had to miss certain activities.

A sincere appreciation to my fellow students for all their support and encouragement. We became close friends and encouraged each other to succeed. You made the difficult times much more tolerable and enjoyable.

Finally, a thank you to South Dakota State University graduate nursing program for offering an outstanding program and to all of the nurses that participated in my online study. Their willingness to participate made this dissertation possible.

TABLE OF CONTENTS

Page

ABBREVIATIONS

B	Beta Coefficient
df	Degrees of Freedom
M	Mean
N	Total Sample
n	Subsample
p	Significance Level
R	Reference Category
r	Pearson Product-moment Correlation Coefficient
SD	Standard Deviation
SE	Standard Error
t	A parametric statistical test for comparing differences in group means.

LIST OF TABLES

Table Page

ABSTRACT

DETERMING THE RELATIONSHIP AMONG CHANGE FATIGUE, RESILIENCE, AND JOB SATISFACTION AMONG HOSPITAL STAFF NURSES

ROBIN BROWN

2016

Purpose: The purpose of the study was to determine if there is a relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses and if differences exist between novice and experienced staff nurses.

Background: Healthcare is typified by change. Organizational changes have a negative impact on nurses and the effects of organizational change are being overlooked and under researched. Change fatigue is a result of constant organizational change and has not been researched with nurses.

Methods: The study utilized a descriptive correlational design. Participants completed an online survey, using three tools: Change Fatigue Scale, Connor-Davidson Resilience Scale (CD-RISC), and McCloskey/Mueller Satisfaction Scale (MMSS).

Results: The participants were 535 hospital staff nurses. The findings of the study report a significant difference between novice and experienced staff nurses in change fatigue (t = -2.9, p = .003), resilience (t = -2.3, p =.01), and job satisfaction (t= -2.0, p = .04). Experienced nurses had higher change fatigue, resilience, and job satisfaction mean scores. The study also found a significant negative association between change fatigue and job satisfaction (r = -.295, p = .000) and change fatigue and resilience (r = -.145, p

.002). A significant positive association was found between resilience and job satisfaction (r =.251, p = .000). Multiple linear regression found that years of experience was not significant with change fatigue, resilience, and job satisfaction. Magnet status, unit employed, and marital status are predictor variables of job satisfaction. Education and unit employed are predictor variables of resilience. Education, gender, and hospital size are predictor variables of change fatigue. Linear trend found as size of facility and number of beds increases, change fatigue increases and as education increases, change fatigue decreases.

Conclusions: The study provided new knowledge of the relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses. This new knowledge will assist nursing leaders to become more aware of the effects of change fatigue and develop interventions to prevent change fatigue of hospital staff nurses, which in turn may increase job satisfaction and retention rates.

Key words: change fatigue, nursing job satisfaction, resilience, organizational change, Transactional Model of Stress and Coping

Chapter 1: Introduction

Phenomenon of Interest

"We are shaping the world faster than we can change ourselves, and we are applying to the present, the habits of the past"—Winston Churchill

Hospitals constantly engage in change to become more competitive and cost effective, but these changes have a tremendous impact on people at every level in the organization. Yu (2009) defines organizational change as "the process whereby an organization converts from an existing state to a hoped for future state in order to increase its effectiveness" (pg. 17). Numerous organizational changes can be detrimental to not only the employees, but ultimately to the organization (Bernerth, Walker, & Harris, 2011).

Nurses working in the hospital setting are not immune to the effects of organizational change. Recurrent changes in the hospital have become a normal characteristic of the nurses work environment (Verhaeghe, Vlerick, Gemmel, Maele, & Backer, 2006). The effects of these changes and how nurses cope with these changes are being overlooked and under researched (Delmatoff & Lazarus, 2014; McMillan & Perron, 2013).

Healthcare is typified by change and today the pace, direction, and intensity of change challenges nurses to adapt and cope (Price, 2008). Organizational changes negatively impact both the physical and psychological well-being of nurses with a heightened potential for negative outcomes when the rate of organizational change is perceived as too frequent (Bernerth et al., 2011). Scholars have found that constant change in an organization leads to increased sick time, work disability, loss of productivity, organizational commitment, increased turnover rates (Bernerth et al., 2011),

stress (McMillian & Perron, 2013), emotional exhaustion (Manzano Garcia & Ayala Calvo, 2012), and change fatigue (Bernerth et al., 2011; McMillian & Perron, 2013).

Change fatigue has not been researched with nursing (McMillian & Perron, 2013), but as healthcare races forward into the future, change fatigue will likely be a factor (Vestal, 2013). Change fatigue is the overwhelming feeling of stress, exhaustion, and burnout associated with rapid and continuous change in the workplace (McMillian & Perron, 2013). With change fatigue, staff become disengaged, apathetic, and do not openly express their dissent about the organizational change. Because of this passive behavior, change fatigue is unnoticed by nurse managers and under researched (McMillan & Perron, 2013). According to Vestal (2013), new graduate nurses and staff newly transferred to a unit are more vulnerable for change fatigue and the pressures to perform at a basic level are compromised by the addition of each change in the organization.

Organizational changes cause a stressful work environment for employees (Kuokkanen, Suominen, Harkonen, Kukkurainen, & Doran, 2009). According to Yu (2009), organizational changes can be viewed as the greatest source of stress with a job. As a professional group, nurses are likely to face work-related stress (McDonald, Jackson, Wilkes, & Vickers, 2013). Females experience more work related stress as compared to men (Lian & Tam, 2014) and 91% of nurses are females (Department for Professional Employees, 2012). During the last decade, scholars have increasingly recognized the stress experienced in hospital nursing staff (Moustaka & Constantinidis, 2010). Stress can affect nurses' ability and willingness to provide nursing care and can also result in anxiety, sleep disturbances, loss of confidence, and self-esteem (Lim,

Bogossian & Ahern, 2010), impaired mental health, compassion fatigue, and burnout (Lee et al., 2015).

Job stress not only causes negative effects on the physical and emotional health of nurses, but also affects worker turnover and increased absenteeism (Lee et al., 2015; Lim et al., 2010). One in five nurses plan to leave the profession within the next five years and almost 50% consider leaving because of job stress (Letvak & Buck, 2008). Nurses employed in the hospital setting experience higher levels of job stress compared to nurses employed outside of the hospital setting (Sveinsdottir, Biering, & Ramel, 2006). According to a General Health Questionnaire administered to health service staff, 27% of all hospital staff suffers from stress and mental health issues, compared to between 14% and 18% of the general population (Mark & Smith, 2012).

Organizational change not only causes stress, but also a decrease in job satisfaction and increase in turnover rates (Rafferty & Griffin, 2006; Teo, Pick, Newton, Yeung, & Chang, 2013). Applebaum, Fowler, Fiedler, Osinubi, and Robson (2010) found a significant relationship between job stress, lack of job satisfaction, and increased turnover. Dool (2009) found that employees who reported more organizational change also reported less job satisfaction and more stress.

Nursing turnover is both costly for healthcare organizations and the quality and safety of patients (Li & Jones, 2013). Registered nurse (RN) turnover on a global basis falls in the moderate to high level (Li & Jones, 2013). The national average turnover rate for hospitals in the United States is at an all-time high. According to Nursing Solutions Inc. (2015), the current hospital turnover rate is 17.2%, up from 16.5% in 2014, and the turnover rate for bedside RNs increased to 16.4%, up from 14.2% in 2014. Nurses

working in behavioral health (30.7%), emergency (21.7%), and medical/surgical (20.7%) units experience a higher turnover rate compared to other specialty units (Nursing Solutions Inc., 2015).

To improve retention rates, nursing leaders must understand the important role that key resources play in enabling nurses to not only withstand the stressors of organizational change, but also the continued commitment to the organization during organizational change. Resilience is a personal quality that enables one to thrive in the face of adversity (Connor & Davidson, 2003) and withstand significant disruption and change in the workplace (Jackson, Firtko, & Edenborough, 2007). Shin, Taylor, and Seo (2012) found that resilience was positively related to employees' commitment to organizational change and commitment to change was negatively related to turnover. Resilience has also been found to be positively related to job satisfaction in nurses (Matos, Neushotz, Quin Griffin, & Fitzpatrick, 2010).

Resilience is a personal quality that can be used to cope with stressful situations and can be developed with experience (Gillespie, Chaboyer & Wallis, 2007). According to Lazarus and Folkman (1984), coping strategies emerge over time from stressful interactions with which the person attempts to manage their stress. Therefore, experienced nurses should be able to tolerate organizational change better, have higher levels of resilience, and report higher levels of job satisfaction. Stensaker and Meyer (2012) discovered employees who have had extensive experience with organizational change, demonstrated more positive reactions and less resistance to the change compared to employees with limited change experience. Lee et al. (2015) found that less

experienced staff (< 7 years) averaged two points lower on the resilience scale (RS-14) than their more experienced peers.

Purpose of the Study

The purpose of the study was to determine if hospital staff nurses experience change fatigue and if there were differences in levels of change fatigue, resilience, and job satisfaction of novice and experienced staff nurses. In addition, the purpose of the study was to determine if there was a relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses.

Significance of the Study

Frequent organizational changes have negative effects on both the physical and psychological health of nurses. Regardless of a nurse's position in an organization, nurses find themselves constantly dealing with change (Sullivan & Decker, 2009). Organizational changes stimulate alterations in nurses' work lives, which are often damaging and may include increased workloads, increased stress, prolonged feelings of anxiety, overwhelming fatigue (Hansson, Vingard, Arnetz, & Anderzen, 2008), decrease in job satisfaction (Rafferty & Griffin, 2006; Teo et al., 2013), and change fatigue (Bernerth et al. 2011; McMillian & Perron, 2013).

According to Yu (2009), organizational changes can be viewed as the greatest source of stress with a job. The impact of these changes on employees are overlooked and under researched (Delmatoff & Lazarus, 2014; McMillan & Perron, 2013). One way to deal with the negative effects of change is resilience. Resilience is the ability to adapt to stress in the workplace and has a direct link to positive emotions in challenging situations, such as with organizational change (Shin et al., 2012). It is imperative for

nurse leaders to understand the relationship between change fatigue, resilience, and job satisfaction in order to identify strategies to decrease stress, caused by organizational change, and improve job satisfaction and increase retention rates of staff nurses.

Change fatigue. Frequent organizational changes can cause change fatigue (Bernerth et al., 2011; Dool, 2009; McMillan & Perron, 2013). The concept of change fatigue evolved from the discipline of management as a means to explore organizational change (McMillan & Perron, 2013), but has not been researched in nursing, even though healthcare changes are at an all-time high (Price, 2008). Although organizational change often places strain on employees, few studies have explored the impact of multiple organizational changes and change fatigue on their well-being, job satisfaction, and turnover intentions (Bernerth et al., 2011).

According to Bernerth et al. (2011), when the rate of change is perceived as too frequent, there is a potential for negative outcomes within the organization. With change fatigue, staff become disengaged, apathetic, and do not openly express their dissent about the organizational change. Because of this passive behavior, change fatigue is unnoticed and under researched.

Failure of change in an organization is frequently associated with change resistance in the nursing literature, but change fatigue is different from resistance to change (McMillan & Perron, 2013). Resistant behaviors are intentional actions, but change fatigue is when staff become disengaged, apathetic, and passive about the changes. Change fatigue moves beyond simply discussing change failure, but also takes into account and questions the impact of repeated organizational change on overall health and well-being of nurses (McMillan & Perron, 2013).

Knowing if staff nurses have change fatigue could offer a different path of discourse in explaining change failure. Changes in healthcare are at an all-time high, so it is imperative that nursing leaders understand the negative effects of change fatigue on staff nurses and implement strategies to improve these negative effects.

Job satisfaction. Organizational change can cause a decrease in nurses' job satisfaction and increase in turnover rates (Rafferty & Griffin, 2006; Teo et al., 2013). Healthcare facilities need to find a way to improve nurse job satisfaction and reduce turnover. The current national nursing shortage is projected to increase to more than one million nurses by 2025 (American Association of Colleges of Nursing, 2014). The number of registered nurses is expected to remain inadequate because of the declining retention rates. The national average turnover rate for hospitals in the United States is at an all-time high (Nursing Solutions Inc., 2015). According to Kreps, Madigan, and Tullai-McGuinness (2008), 33-61% of newly licensed registered nurses will change their place of employment or exit from the nursing profession within their first year of practice. One strategy to retain nurses in the current workforce is to create a better work environment by monitoring the effects of organizational change. Research has shown that nursing work environment directly relates to nurses' job satisfaction (Caricati et al., 2014; Coomber & Barriball, 2007; Laschinger, Finegan & Shamian, 2001).

Resilience. It would be beneficial for facilities to find a way to help employees deal with the negative effects of organizational change. Resilience is the ability to adapt to stress in the workplace and has a direct link to positive emotions in challenging situations, such as with organizational change (Shin et al., 2012). Shin et al. (2012) also found that resilience was positively related to employees' commitment to the

organizational change and commitment to change was negatively related to turnover. Manzano Garcia and Ayale Calvo (2012) found that organizational change led to exhaustion and nurses that had higher levels of resilience, displayed lower levels of emotional exhaustion.

According to Hodges, Keeley, and Grier (2004), resilience can be developed and may help retain nurses in the profession. McGee (2006) suggests that it is nurses' own resiliency skills that sustain them through challenging and difficult situations. In a time of ongoing nursing shortages and retention difficulties, resilience is an important personal characteristic to manage the stress experienced with organizational change. The significance of studying change fatigue and resilience is to identify if resilience is a personal quality used by staff nurses to cope with change fatigue.

Summary

Hospitals are constantly engaging in change to become more competitive and cost effective, but these changes are having a tremendous impact on people at every level in the organization, including staff nurses. Organizational changes have a negative impact on both the physical and psychological well-being of staff nurses. Organizational change can cause change fatigue, which is the overwhelming feeling of stress, exhaustion, and burnout associated with rapid and continuous change in the workplace. Newly graduate nurses are more vulnerable for change fatigue. Organizational change can also lead to stress, decrease in job satisfaction, and increase in turnover rates. One way to combat the negative effects of change is resilience, which is the ability to adapt to stress in the workplace. A resilient individual is more likely to be able to prevail in the face of stress,

so resilient nurses should be better suited to tolerate organizational change, demonstrate lower levels of change fatigue, and higher levels of job satisfaction.

Lazarus and Folkman (1984) report coping strategies emerge over time from stressful interactions with which the person attempts to manage their stress, so more experienced nurses should demonstrate higher levels of resilience and report higher levels of job satisfaction. This study examined if staff nurses experienced change fatigue and if novice nurses experienced higher levels of change fatigue compared to experienced nurses. The study also examined if there was a relationship among change fatigue, resilience, and job satisfaction. Results from this study contributed to the gap in nursing research and advanced the nursing knowledge in understanding if nurses experienced change fatigue and if there was relationship among change fatigue, resilience, and job satisfaction. This new knowledge will assist nursing leaders to become more aware of the effects of change fatigue and develop interventions to prevent change fatigue of hospital staff nurses, which in turn may increase job satisfaction and retention rates.

Research Questions

- What is the difference in level of change fatigue experienced by novice and experienced hospital staff nurses?
- What is the difference in level of resilience experienced by novice and experienced hospital staff nurses?
- What is the difference in level of job satisfaction experienced by novice and experienced hospital staff nurses?
- What is the relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses?

Hypotheses

- Novice hospital staff nurses have higher change fatigue compared to experienced hospital staff nurses.
- Novice hospital staff nurses have lower resilience compared to experienced hospital staff nurses.
- An inverse association exists between resilience and change fatigue in hospital staff nurses.
- An inverse association exists between job satisfaction and change fatigue in hospital staff nurses.
- A positive association exists between job satisfaction and resilience in hospital staff nurses.

Definitions

The study focuses on the concepts of change fatigue, resilience, and job satisfaction of hospital staff nurses. Organizational change causes stress and a decrease in job satisfaction. Change fatigue, which is the overwhelming feeling of stress and exhaustion, is a result of organizational change. Resilience is a personal quality used to cope with stressful situations, such as with organizational change. The theoretical definitions defined are stress and coping. The operational definitions defined and measured with this study are change fatigue, resilience, and job satisfaction.

Stress. The concept of stress has been around for centuries and has many definitions. Most often, stress is defined as either a stimulus or response. A stimulus definition focuses on events in the environment. Response definitions refer to a state of stress or being under stress (Lazarus & Folkman, 1984). According to Lazarus and

Folkman (1984), psychological stress is a "relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (pg. 21). Organizational change causes stress and can lead to change fatigue and job dissatisfaction.

Coping. Lazarus and Folkman (1984) define coping as a "constantly changing cognitive and behavioral effort to manage specific external and/or internal demands appraised as taxing or exceeding the resources of the person" (pg. 141). This definition is process rather than trait orientated in that it is concerned with what a person actually thinks or does. The meaning of coping as a process can be seen in changes that take place over time (Lazarus & Folkman, 1984). Resilience is an individual coping resource and has a direct link to positive emotions during challenging situations, including organizational change (Shin et al., 2012). Hodges et al. (2004) suggests that resilience can be learned and may help retain nurses in the profession, rather than abandoning their profession when the job seems too overwhelming.

Operational Definitions

Change fatigue. The definition for change fatigue is the overwhelming feeling of stress, exhaustion, and burnout associated with rapid and continuous change in the workplace (McMillian & Perron, 2013). In this study, change fatigue is measured by the six-item Change Fatigue Scale developed by Bernerth et al. (2011).

Resilience. All definitions of resilience refer to the ability to adapt positively to stress. Two definitions refer to resilience in the workplace. Gillespie et al. (2007) defines resilience as the ability to adapt to stress in the workplace and is a dynamic process used by individuals to access resources to cope with and recover from adversity and therefore

is able to be learned or taught. Jackson et al. (2007) defines resilience as the ability to withstand significant disruption, change, or adversity in the workplace. Connor and Davidson (2003) developed a tool to measure resilience and defines resilience as personal qualities that enable one to thrive in the face of adversity. In this study, the Connor and Davidson (2003) definition of resilience is measured by the 10-item Connor-Davidson Resilience Scale (CD-RISC).

Job satisfaction. Some researchers believe that job satisfaction is simply how content an individual is with his or her job, in other words, whether or not they like the job or individual aspects of the job. Other researchers believe it is not this simplistic and that there are multidimensional psychological responses involved, such as cognitive (evaluative), affective (emotional) and behavioral components (Judge & Klinger, 2008). The most widely used definition of job satisfaction in organizational research is Locke's (1976) definition. According to Locke (1976), job satisfaction is "a pleasurable or positive emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of ones' job values" (pg. 316). Locke's (1976) definition of job satisfaction is measured by the 31-item McCloskey/Mueller Satisfaction Scale (MMSS).

Staff nurse. For this study, a staff nurse is a registered nurse with an associate, diploma, baccalaureate, masters or higher degree that provides direct patient care in a hospital setting.

Novice nurse. One professional development model that is familiar to the nursing world is Patricia Benner's *Model from Novice to Expert*. According to this model, the first stage of development is the novice or beginner nurse. The novice nurse has minimal

experience with situations in which they are expected to perform and they must depend on rules to guide their actions (Hansten & Jackson, 2009). For this study, the novice nurse is employed for two or less years and measured by demographic data.

Experienced nurse. According to the Benner model, as nurses gain more experience and education, an individual can progress through recognizable stages of development, and demonstrate marked differences in approach to decision making, problem solving, organization, and work efficiency (Hansten & Jackson, 2009). According to Benner, an experienced or competent nurse has been in practice two to three years (Hansten & Jackson, 2009). For this study, the experienced nurse is employed for more than two years and measured through demographic data.

Chapter 2: Literature Review

Chapter two provides a review of the literature and discussion of the conceptual framework which frames the research. The literature review provides the context for the relationship among organizational change, change fatigue, resilience, and nurse's job satisfaction. Relevant literature was reviewed following systematic searches of library holdings and databases including CINAHL, ProQuest, EBSCO MegaFile, Medline, PsycINFO, and Business Source Premier. The following keywords were used in various combinations with the search: organizational change, change fatigue, resilience, nursing job satisfaction, and Transactional Model of Stress and Coping. Duplicate articles were removed, resulting in identification of 76 applicable articles.

The literature review is divided into five primary sections. The first section presents a literature review on the effects of organizational change on nurses. The second section presents a literature review on change fatigue. The third section presents a literature review on the use of resilience with stress. The fourth section presents the findings of the review of literature on nurse's job satisfaction. The last section presents a literature review on Lazarus and Folkman's Transactional Theory of Stress and Coping to understand how employees appraise a situation, cope, and the resources used in coping.

Nursing and Organizational Change

Definitions. Yu (2009) defines organizational change as "the process whereby an organization converts from an existing state to a hoped for future state in order to increase its effectiveness" (pg. 17). Shin et al. (2012) define organizational change as "alterations of existing work routines and strategies that affect a whole organization" (pg. 727). According to Dzik-Jurasz (2006), change can be classified as either reactive or

proactive. Reactive change, occurs when organizations are forced to change. This type of change causes staff to feel de-motivated, undervalued, stressed, and unheard. Proactive change occurs when organizations identify the advantages and opportunities to make changes that enhance the workplace. With proactive change, individuals feel involved in the change and have ownership of the change. This sense of ownership enhances job satisfaction and leads to the change being sustainable.

Consequences. According to Kiefer (2005), organizational change can cause both positive and negative outcomes. Organizational change can be experienced positively such as offering hope for positive changes, but the majority of research focuses on the negative outcomes of change; such as anger, anxiety, stress, and frustration. Organizational change stimulates alterations in nurses' work lives, which includes increased workload, increased stress, prolonged feelings of anxiety, and inadequacy, leading to overwhelming feelings of fatigue (Hansson et al., 2008).

Numerous change initiatives in an organization can be detrimental to not only the employee, but ultimately to the overall organization (Bernerth et al., 2013). Kiefer (2005) examined the relationship between negative emotions and ongoing organizational change. The study reports the more changes a person experiences at work, the more negative emotions are reported on a daily basis. The two negative outcomes identified were lack of trust and withdrawal from the organization.

Smollan and Sayers (2009) performed a qualitative/social constructionist study and interviewed 24 people. The participants had experienced a wide range of changes including mergers and restructuring. The study reports that when participants' values are congruent with those of the organization, they tended to react to the change more

positively. Changes in the organization provoked emotional reactions, often of an intense nature. When emotions were acknowledged and treated with respect, people became more engaged with the change.

As organizations try to maintain their competitive edge, the necessity to change and to adapt to change becomes increasingly important. Changes in healthcare have often led to the transformation of units, reduced resources, and an increased demand for efficiency. These changes have an inevitable impact on the working conditions of both personnel and patients (Kuokkanen et al., 2009). Kuokkanen et al. (2009**)** examined nurses' view on work-related empowerment as well as employee satisfaction and motivation with a longitudinal quantitative study. The total sample from the three data collections were: $N = 199$, $N = 193$, and $N = 103$. The results of the study found that nurses reported the lowest assessment of factors promoting empowerment during the time the organization was going through changes. In addition, the findings suggest that organizational changes have a direct effect on the work environment in terms of empowerment and job satisfaction.

Teo et al., (2013) examined the effect of organizational change stressors on job satisfaction and the mediating effect of coping strategies using the Transactional Stress and Coping Model. They surveyed 306 nurses with a two-wave panel design. A relationship between change, administrative induced stressors, and job satisfaction was found. Organizational change had a positive correlation to stress and negative correlation to job satisfaction. The results found that the nurses who adopted more effective coping strategies are more likely to report a higher level of job satisfaction. Nurses in the study reported using problem and emotion-focused strategies when dealing with the negative

consequences of stress. The results of the study also found that participation in decision-making and being informed about the change, caused a decrease in stress and increase in job satisfaction, which supports the Transactional Model of Stress and Coping.

Although there are many studies on organizational change, few identify the aspects of change that are important to individuals and that influence well-being. Rafferty and Griffin (2006) conducted a quantitative study in a large Australian organization, using a cross-sectional design. The study population was 599 employees in Sample 1 and 700 in Sample 2. The study identified three distinct change characteristics: frequency, impact, and planning of change. Lazarus and Folkman's (1984) Transactional Model of Stress and Coping was used to examine the impact of organizational change on employee's job satisfaction and turnover intention. The results found the frequency of change was negatively associated with satisfaction and positively associated with turnover intentions. The results of the study also found that supportive leadership had a strong impact on all three change characteristics and that planned implementation of change is essential because failure to do so creates uncertainty and undue stress.

Hansson et al. (2008) conducted a study to measure the biological effects of stress with organizational change within a division of elder care in Sweden. The sample population was 226 employees with the first survey and 198 employees with the second survey. This longitudinal study investigated the effects of organizational change on employees self-reported health, work satisfaction, work-related exhaustion, stress, and sick leave. No significant differences were found in self-reported health, work satisfaction, and work-related exhaustion. The findings of the study did find that sick leave increased by seven percent and serum cortisol and the recovery hormone

dehydroepiandrosterone-sulphate (DHEA-S) had decreased levels across time. Cortisol levels increase with acute stress and decrease during long-lasting stressors. DHEA-S is a steroid hormone that counteracts the effects of cortisol and a decreased level has been found during long-term stress. The findings suggest that organizational change may have long-term health implications.

Another study by Verhaeghe et al. (2006) examined the long-term effects with major organizational change using a cross-sectional study with 2,094 registered nurses in 10 general hospitals. The study found that the occurrence of changes in the work environment has a negative impact on the psychological well-being of the organization's personnel. Nurses who were confronted with changes in the past six months, scored significantly higher for distress. Organizational changes that were appraised as threatening were negatively related to job satisfaction and positively related to distress and sickness absenteeism.

Baumann et al. (2001) researched whether nurses who experienced job change perceived their work different than those who did not undergo job change. The study also examined if nurses who experienced different types of job change varied in their perceptions about the organization. The findings of the study suggest that nurses who had to change their job/positon perceived their commitment to the organization, their work environment and quality of care, more negatively than those who did not change jobs.

Yu (2009) explored employees' perception of organizational change and how those perceptions are shaped by trust and stress management strategies. The results of the study found that organizational change had a significant negative influence on employees' trust and job involvement. The findings also suggest that stress management

strategies and an understanding of organizational change can positively influence employee's organizational identification and job involvement.

In summary, organizational change can cause both positive and negative outcomes, but the majority of research focuses on the negative outcomes. Numerous changes in an organization can be detrimental to not only the employee, but ultimately to the overall organization. Organizational change leads to stress, anger, anxiety, job dissatisfaction and increase in turnover rates. When emotions are acknowledged and employees are involved in the change, there is a decrease in stress and increase in job satisfaction.

Effective change strategies. Sustainability of a change is dependent on multiple factors. Dzik-Jurasz (2006) found having effective relationships with all team members is important to implementing effective change and effective teamwork leads to better patient care and services, higher job satisfaction, and lower levels of stress. Findings suggest using action learning to promote sustainability of the change. Action learning involves groups of people who work together exploring issues and problems associated with their work. Portoghese et al. (2012) and Brown, Zijlstra, and Lyons (2006) found that staff participation, giving information about the change, and effective communication is critical in promoting a positive change.

Mash et al. (2008) also studied teamwork with organizational change and examined how to create effective practice teams with doctors and nurses. The study used outcome mapping to assist with planning, monitoring, and evaluation. Using a qualitative approach, Mash et al. (2008) found that participation of both the doctors and nurses and the development of resilience were key aspects to creating successful practice teams.

Another response to organizational change is cynicism, which is a negative attitude towards one's employing organization (Brown & Cregan, 2008). Cynicism has been associated with negative emotions of frustration, disillusionment, and negative feelings toward the organization. Brown and Cregan (2008) found that active participation in change reduces cynicism. The findings suggest managers should use a participatory style of management during organizational change.

In summary, organizational change can be detrimental to individual employees and ultimately to the organization. Organizational change can lead to increased stress, anxiety, fatigue, lack of job satisfaction, and increased turnover rates. Studies report that when there is supportive leadership, employees are involved in the change, and employees' emotions are acknowledged and treated with respect, the change experience can be more positive (Rafferty & Griffin, 2006; Smollan & Sayers, 2009; Teo et al., 2013; Yu, 2009).

Change Fatigue

Change fatigue is the overwhelming feeling of stress, exhaustion, and burnout associated with rapid and continuous change in the workplace (McMillian & Perron, 2013). As organizations try to maintain their competitive edge, the necessity to change and to adapt to change becomes increasingly important (Vestal, 2013). According to Vestal (2013), new graduates or staff newly transferred to a unit, are more vulnerable to the effects of change fatigue. Constant change impacts a person's adaptive resources and the lack of these resources leads to severe fatigue at work and home. Fatigue of employees leads to increased sick time, work disability, loss of productivity, exhaustion, organizational commitment and increased turnover rates (Bernerth et al., 2011).

Organizational change often places strain on employees, but few studies have explored the impact of multiple organizational changes on their well-being and commitment to the organization. Bernerth et al. (2011) used data from change consultants and a manufacturing organization that had undertaken a number of organizational changes over the last three years to develop the Change Fatigue Scale. To understand the impact of organizational change, an 18-item survey was developed that measured change cynicism, psychological uncertainty, and change fatigue. Six of the items were validated and could be used to measure change fatigue. Bernerth (2011) found that change fatigue was positively correlated with exhaustion and absenteeism, and exhaustion was in turn negatively related to organizational commitment and positively related to turnover. According to Bernerth (2011), future research is needed to investigate potential moderating variables in connection to change fatigue.

Most of the research on organizational change focuses on change resistance rather than change fatigue. The terms change fatigue and change resistance are frequently used interchangeably, but there are distinct differences between the two (McMillan & Perron, 2013). The failure of change in an organization is often associated with change resistance, described as negative and disruptive behaviors that jeopardize the change process and its desired outcomes (Brown & Cregan, 2008). More recently, the concept of change fatigue has emerged and has not been researched in nursing (McMillan & Perron, 2013). With change fatigue, staff become disengaged and apathetic, often feeling disempowered, burnt out, disillusioned, and passive about changes being introduced. Also with change fatigue, concerns are not openly expressed and dissent is not apparent, although employees explicitly feel it. This silent dissent is a direct response of staff's

exhaustion. Because of this passive behavior, change fatigue is rarely apparent to managers and is under researched (McMillan & Perron, 2013). The recent concept of change fatigue could offer a different path of discourse in explaining change failure.

Stensaker and Meyer (2012) explored how experience with organizational change influences employees' reaction to change using qualitative semi-structured interviews. The findings report there are distinct differences in reactions to change among employees based on their level of experience to organizational change. Employees with limited change experience exhibit strong behavioral and emotional reactions, while employees with extensive change experience demonstrate less resistance to change and more positive reactions to the change.

Strategies. There are strategies that can be used to help prevent change fatigue. Developing a project planning list or spread sheet that lists every change activity that employees are involved with can help decrease change fatigue (Vestal, 2013). Valusek (2007) recommended the use of a change calendar to help monitor and manage when changes occur. The change calendar uses a weekly time line to inventory, evaluate, and coordinate a variety of changes occurring within the units and across the organization. Another strategy to prevent change fatigue is to prevent communication overload for nurses, by stratifying communications into the most critical to read (Vestal, 2013). Ace and Parker (2010) used the Canada School’s Planned Change Model to engage employees during a change project to prevent change fatigue. The model uses a multi-phased approach. Phase 1 focuses on preparing for the project, Phase 2 focuses on planning and implementing, and Phase 3 embeds and monitors the action plan.

Summary. Change fatigue is the overwhelming feeling of stress, exhaustion, and burnout associated with rapid and continuous change in the organization. New graduates or staff newly transferred to a unit are more vulnerable to change fatigue. The terms change fatigue and change resistance are frequently used interchangeable, but there are distinct differences. With change fatigue, employees become disengaged and apathetic to the change and do not express their dissent, even though it is explicitly felt. Change fatigue has not been researched with nurses and because of the silent dissent expressed by employees experiencing change fatigue, it is rarely apparent to mangers. Strategies can be used to help prevent change fatigue, such as a change calendars, project planning lists, or spreadsheets.

Resilience

History. The concept of resilience began in the 1800s and continues to be of interest to many disciplines, but only recently has been of interest with nursing (Jackson et al., 2007). Psychologists have led the way in exploring the concept of resilience and have given most of the attention to children, adolescents, and families (Jackson et al., 2007). From a historical perspective, there are two major types of resilience, physiological and psychological. A physiological perspective refers to the homeostatic mechanism that individuals possess in the event of adversity. Psychological resilience is the capacity to move forward in a positive way from traumatic or stressful experiences (Jackson et al., 2007). This study focuses on psychological resilience.

According to Grafton, Gillespie, and Henderson (2010), there are three waves of resilience inquiry in the literature. The first wave focused on uncovering and listing internal and external characteristics that help people cope with and recover from

adversity. The second wave focused on understanding resilience as a dynamic process with adaptation to adversity. The third wave sought to understand the origin of resilience and conceptualized resilience as an innate energy or motivating life force within an individual.

Definition. Resilience has attracted the attention of scholars for years, but currently there is no common definition. Most definitions refer to resilience as a trait that develops from an individual's experience with extreme adversity and it is how an individual successfully deals with stress. The word resilience comes from the Latin *resilire*, meaning to *leap back* or s*pring back* ("Resilience", n.d.). According to Lian and Tam (2014), resilience is an enhancement of an individual's adaptability and survival in the presence of occupational stressors and the success in overcoming the stressors, which results in increased resilience to future stressors.

According to Gillespie et al. (2007), resilience is the ability to adapt to stress in the workplace and is a dynamic process used by individuals to access resources to cope with and recover from adversity and resilience can be learned or taught. Another definition is resilience is "an accessible inner strength or resources within the individual that enables a positive stress response that can be enhanced or supported by external resources" (Grafton et al., 2010, pg. 700). Lian and Tam (2014) report resilience as the "capacity to withstand, regulate, and cope with ongoing life challenges and succeed in maintaining equilibrium despite negative effects from stress" (pg. 1966). Connor and Davidson (2003) view resilience as personal qualities that enable one to thrive in the face of adversity in the work environment, which is the definition that is used with this study.

DiCorcia and Tronick (2011) refers to resilience as a coping capacity that develops throughout one's life from dealing with everyday stressors. DiCorcia and Tronick (2011) formulated the *Everyday Stress Resilience Hypothesis*, which states that the more experience and success in stress regulation, the more equipped an individual is in dealing with more taxing stressors in the future. The Everyday Stress Resilience Hypothesis is explained using the analogy of a marathon runner to resilience. A marathon runner trains by gradually increasing their distance in each training period to develop stamina. The progressive training is analogous to resilience growth, because overcoming adversity to stress builds resilience and prepares an individual for future stress.

Nursing Resilience. Resilience is a personal quality found to have a direct link to positive emotions in challenging situations. One characteristic that allows nurses to cope with the stress in their work environment is resilience. Mealer, Jones, and Moss (2012) conducted a qualitative study to examine why some nurses experience psychological problems due to stress in the workplace and others thrive and remain employed for many years. Thirteen nurses working in the intensive care unit (ICU) who scored high on the Connor-Davidson Resilience Scale were interviewed. The findings report that highly resilient nurses identified spirituality, a supportive social network, optimism, and having a resilient role model as characteristics used to cope with stress in their work environment. The study suggests that highly resilient nurses are able to utilize positive coping skills to prevent the development of post-traumatic stress disorder (PTSD) and continue to successfully work in the stressful ICU work environment. Edward (2005) also found that resilience reduces the risk of burnout and promotes the retention and the mental health of employees.

According to Manzano Garcia and Ayala Calvo (2012), nurses display high levels of emotional exhaustion, which is caused by stress in the hospital environment. One reason for emotional exhaustion is the constant changes in the work environment. Manzano Garcia and Ayala Calvo (2012) examined if emotional annoyance (gradual state of psychological exhaustion) and resilience contribute to emotional exhaustion of 200 nurses. The study reports a significant association between emotional annoyance and emotional exhaustion, while resilience appeared to be a protective mechanism against emotional exhaustion. The nurses with higher resilience levels displayed a lower risk of emotional exhaustion.

Gillespie, Chaboyer, and Wallis (2009) studied resilience among 1,430 operating nurses and found a significant relationship with years of operating room experience and resilience. There was no relationship found between age or education and resilience. The study also reports that hope, self-efficacy, control, coping, and competence were significantly related to resilience. The authors suggest that a better understanding of resilience may lead to recognition of its utility in explaining why some individuals are able to overcome adversity while others are not. Understanding resilience may lead to the development of strategies that will help build resilience.

Lee et al. (2015) also examined resilience and years of experience with healthcare professionals. The participants were 1066 pediatric intensive care unit staff, including 893 nurses. The findings report that less experienced staff (< 7 years) averaged two points lower on the resilience scale than their more experienced peers. The study also explored the availability, use, and helpfulness of resilience-promoting resources used by pediatric intensive care staff. Lee et al. (2015) found that the two most used resources

were one on one discussions with colleagues and informal social interactions with colleagues out of the hospital. Other resources that were highly impactful, but underused included: taking a break from stressful patients, being relieved of duty after a patient's death, palliative care support for staff, structured social activities out of the hospital, and Schwartz Center rounds (exploring caregiver's emotional and psychological responses to their work). The authors recommend that institutions facilitate access to peer discussions and social interactions to promote resilience.

Pines et al. (2011) examined stress resilience, empowerment, and conflict management styles among 166 baccalaureate nursing students. Combining resiliency and empowerment strengthened the capacity of an individual to respond to stressors. The results of the study found empowerment scores were significantly correlated with resiliency scores. Students with higher than average stress scores, often used avoiding and accommodating styles to manage conflict.

Research suggests that resilience is a factor in the retention of nurses. According to Hodges et al. (2004), having planned development of professional resilience as a resource may help nurses sustain their practice. In a qualitative study of 19 newly graduated and experienced registered nurses, resiliency emerged as an overarching theme when determining how both new baccalaureate nurses and experienced nurses understood, adapted, and negotiated challenges in their acute care settings (Hodges, et al., 2004).

Shin et al. (2012) performed a longitudinal study with 234 employees and 45 managers. The findings report that resilience was positively related to employee's commitment to organizational change and commitment to change was negatively related

to turnover. The findings of the study suggests that employees with higher resilience responded more favorably to organizational change by using their resilience as a coping measure.

Lian and Tam (2014) performed a literature review on coping strategies and resilience of workplace stress. The review found that females experience more work stress as compared to men. According to the Transactional Model of Stress and Coping, stress is an outcome of an imbalance between demands and resources (Lazarus & Folkman, 1984). Mothers with children who are also working, have a variety of demands and resources and may perceive the imbalance differently. Females are not only entering the workforce in greater numbers, but are also remaining in the workforce throughout their child-bearing and child-rearing years (Lian & Tam, 2014) and 91% of the nursing workforce are females (Department of Professional Employees, 2012).

There is a lack of research that has examined how personal characteristics contribute to resilience. Gillespie et al. (2009) conducted a predictive survey study with 1,430 nurses working in the operating room (OR). The study tested the hypothesis that age, years of OR experience, and level of education contributed to resilience. The study found only years of OR experience predicted resilience. Age and education did not predict resilience. Kornhaber and Wilson (2011) conducted a qualitative study with seven nurses working in a burn unit and also found that resilience developed with nursing experience. The longer the participant was employed, the more coping skills they developed. The authors suggest that resilience is not a trait or fixed characteristic, but a dynamic process developing over time.

Resilience has also been described in relation to managing the effects of change within the workforce (Mallack, 1998). According to Shirey (2012), understanding personal resilience is crucial to drive effective change. People possessing high levels of personal resilience more readily accept change without experiencing traumatic and debilitating consequences.

An often-held stereotype is that older employees are more resistant to change (Kunze, Boehm, & Bruch, 2010). According to Moore, Kuhik, and Katz (1996), older nurses coped better with workplace stress than their younger counterparts, and perhaps adapted more effectively to the constant changes in the healthcare industry. Kunze et al. (2010) studied 93 employees and found that older employees are less resistant to change than their younger colleagues. Kunze et al. (2010) suggests that older employees might be more emotionally stable and better capable of coping with the negative emotions of workplace change.

In summary, resilience is a personal quality that enables one to thrive in the face of adversity, such as with organizational change. Resilient nurses are better able to cope with stress and have lower levels of emotional exhaustion. Resilience reduces the risk of burnout, improves the retention and mental health of nurses, and has a positive correlation to years of work experience. Understanding resilience may lead to the development of strategies that will help build resilience in nurses.

Building Resilience. Nurses are exposed to various work-related stressors, so building resiliency is important (Chan, Chan, & Kee, 2013). Hodges et al. (2004) suggests that resilience can be learned and may help retain nurses in the profession, rather than abandoning their profession when the job seems too overwhelming. According to

McGee (2006), the nurse's own resiliency skills sustain them through challenges in the workplace.

McDonald et al. (2013) offered six resilient workshops and a mentoring program over a six-month period to 14 nurses and midwives. The intervention benefited the participants in both personal and professional areas by enhancing confidence, self-awareness, assertiveness, and self-care. Chan et al. (2013) also found that individuals that participated in resiliency intervention training were twice as likely to be resilient.

Building resilience can also be effective when dealing with organizational change. Sherlock-Storey, Moss, and Timson (2013) offered a brief coaching intervention on participants during organizational change. The results of the study found that participants reported significant positive changes in resilience levels and confidence in dealing with organizational change after participating in the coaching program.

Summary. An individual's resilience is the ability to withstand significant disruption, change, or adversity in the work environment. Resilience is a personal quality found to have a direct link to positive emotions in challenging situations, such as with organizational change. Research suggests that resilience should be taught to nurses to help retain them in the profession.

Job Satisfaction

Definition. Some researchers believe that job satisfaction is simply how content an individual is with his or her job, in other words, whether or not they like the job or individual aspects of the job. Others believe it is not this simplistic and that multidimensional psychological responses are involved, such as cognitive, affective, and behavioral components (Judge & Klinger, 2008).

The most widely used definition of job satisfaction in organizational research is Locke's (1976) definition, which views job satisfaction as a complex emotional reaction to a job (Judge & Klinger, 2008). According to Locke (1976), job satisfaction is "a pleasurable or positive emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values" (pg. 316). Job dissatisfaction is the unpleasable emotional state resulting from the appraisal of one's job as frustrating or blocking the attainment of one's job values. Job satisfaction and dissatisfaction are a function of the perceived relationship between what one wants from one's job and what one perceives. According to Locke's (1976) Value Percept model, individual's values would determine what satisfied them on the job.

Nurse's Job Satisfaction. Job satisfaction research has practical applications for the enhancement of individual's lives as well as organizational effectiveness (Judge & Klinger, 2008). As the nursing shortage and difficulties in retention continues, reasons nurses leave their jobs must be identified if the issue is to be successfully addressed (Coomber & Barriball, 2007). According to Caricati et al. (2014), nurses' job satisfaction is one of the most important factors in determining individuals' intention to stay or leave a healthcare organization. Minimizing turnover is a priority for healthcare executives, especially in times of a nurse shortage, which is currently being experienced in today's healthcare climate (Larabee et al., 2010). The national turnover rate for nurses has increased to 17.2% and 16.4% turnover rate for bedside RNs (Nursing Solutions Inc., 2015). There is considerable evidence in the literature of the link between the nurse's working conditions and job satisfaction. According to Laschinger et al. (2001),

individuals who perceive that the outcomes of the job are met or have been exceeded, are satisfied, when their expectations are not met, they may feel betrayed.

Job satisfaction among nurses has been studied in relation to many different variables. Some of the major concerns of job dissatisfaction of staff nurses is it is a major contributing factor to nursing turnover (Coomber & Barriball, 2007), intent to leave the profession (Larrabee et al., 2003), and quality of patient care (Buerhaus, Donelan, Ulrich, Norman, & Ditus, 2006). Other research has found a relationship to job satisfaction in relation to nursing leadership styles (Cummings, Olson, & Hayduck, 2008) and area of practice (Russell & Van Gelder, 2008). Larrabee et al. (2003) found the major predictor of intent to leave was job dissatisfaction and the major predictor of job satisfaction was psychological empowerment. One predictor of psychological empowerment is hardiness and hardiness is linked to resilience.

A multitude of factors can have an effect on nurse's job satisfaction and research has found that magnet hospitals have lower turnover rates (Adams & Bond, 2000). According to a review of literature by Coomber and Barriball (2007), factors related to the work environment rather than individual or demographic factors were the most important reasons for nurses' turnover intentions.

Other researchers have studied personal characteristics to job satisfaction. According to Chan and Morrison (2000), age was significantly associated with nurses overall job satisfaction and intention to stay. Other research contradicted these results. Adams and Bond (2000) found that age, years of employment, and education level made little difference to levels of job satisfaction. Larabee et al. (2003) also found that age was not correlated to job satisfaction, but found a difference in intent to leave related to

number of years in the job and number of years since graduating from nursing school. Nurses who graduated less than five years and had been in their jobs less than five years, were more likely to indicate intent to leave.

Murrells, Robinson, and Griffith (2008) found no association with longevity in practice and job satisfaction. Cummings et al. (2008) also found no association between job satisfaction and age or gender, but there was a significant relationship between job satisfaction and physician-nurse relationships. A significant relationship was found between job satisfaction and nurse attitudes (Larrabee et al., 2003), achievement, recognition, responsibility, advancement, and the work itself (Russell & Van Gelder, 2008).

In summary, it is important to study nurse's job satisfaction because minimizing turnover is a priority for healthcare executives. Job satisfaction among nurses was studied in relation to many different variables, but has not been studied in relation to change fatigue. Personal characteristics, such as age and education, were studied with job satisfaction, but the results are conflicting. Factors related to the work environment rather than individual or demographic factors were the most important reasons for nurse's turnover intentions.

Job satisfaction and stress. Job satisfaction has been associated with stress. Applebaum et al. (2010) found a significant direct relationship between perceived stress, job satisfaction, and turnover intentions. Lautizi, Laschinger, and Ravazzolo (2009) examined the relationship between empowerment, job satisfaction, and job stress with 77 mental health nurses. Findings report that empowerment was significantly related to job satisfaction and a negative relationship on nurses' work stress.

Letvak and Buck (2008) examined individual characteristics, workplace characteristics, job stress, and health to work productivity and intent to stay in nursing among 323 RNs employed in direct patient care in the hospital setting. The results of the study found that high job stress scores were significantly associated with being female, hours worked per day, working the day shift, being worried about injury, and being unable to meet patient needs. Sixty percent of the participants plan to stay in nursing over the next five years. The most frequent reason for leaving nursing was job stress.

Organizational change has also been linked to stress and job satisfaction. Organizational changes can be viewed as the greatest source of stress with a job (Yu, 2009) and how nurses cope with organizational change affects their level of job satisfaction (Sullivan & Decker, 2009). Dool (2009) conducted a quantitative research study to examine the effects of change on job satisfaction and stress. The study compared the number of reported organizational changes by the subjects in the last 12 months to job satisfaction and job stress. The participants were 1,243 individuals from public and private U.S. organizations. Findings suggest that subjects who reported more change also reported less job satisfaction and more stress. The findings support the concept of change fatigue and the negative impact of change on job satisfaction.

In summary, research found a direct relationship between stress, job satisfaction, and turnover intentions. Organizational change has been linked to stress and job dissatisfaction and how nurses cope with organizational change affects their level of job satisfaction.

Job satisfaction and resilience. Matos et al. (2010) examined the relationship between resilience and job satisfaction of 32 psychiatric nurses working in an urban

medical center. A positive correlation between resilience and job satisfaction was found. Several studies have also linked workplace empowerment to job satisfaction. Simoi, Larrabee, Birhimer, Mott, and Gladden (2004) surveyed 142 nurses and found psychological empowerment was the primary predictor of registered nurses' job satisfaction and hardiness predicted empowerment. Cash and Gardner (2010) also found a significant positive relationship with hardiness and job satisfaction and negative relationship to hardiness and turnover intentions with 297 employees from large organizations. The study suggests that hardier people view change as normal and as an opportunity for growth.

Larrabee et al. (2010) evaluated the relationship among intent to stay, job satisfaction, job stress, psychological empowerment and resiliency in 464 acute care hospital RNs. Nurses had lower stress scores when they were more than 29 years of age, male, had completed their RN education more than 10 years ago and had been in their current job more than 10 years. Additionally, age was significantly correlated with intent to stay. Unlike intent to stay, job satisfaction was not associated with any of the categorical variables. The results suggest that resiliency is a predictor of empowerment, stress, and job satisfaction. The results also found that the five predictors of intent to stay were job satisfaction, low job stress, age, more years since RN education, and lower level of education.

Pineau Stam, Spence Laschinger, Regan, and Wong (2015) examined the influence of new graduate nurses' personal resources (psychological capital) and access to structural resources (empowerment and staffing) on their job satisfaction. Psychological capital consists of four components: self-efficacy, hope, optimism, and

resiliency. The results of the study found that psychological capital, structural empowerment, and perceived staffing adequacy were significant predictors of job satisfaction.

Summary. Job satisfaction is one of the most important factors in determining a nurse's intention to stay or leave a healthcare organization. Research has found there is a multitude of factors that can have an effect on nurses' job satisfaction. Stress was linked to job dissatisfaction and organizational changes have been linked to stress and a decrease in job satisfaction. Resilience is a personal quality that enables one to thrive in the face of adversity, such as with organizational change, and was correlated to job satisfaction.

Theoretical Framework

The Transactional Model of Stress and Coping developed by Lazarus and Folkman (1984) was used as the theoretical framework for this study. This model proposes that stressors and ways individuals cope with stress need to be considered jointly in explaining the stress and coping process because they are interdependent. Organizational change is a frequent stressor experienced by nurses that causes stress, a decrease in job satisfaction, and change fatigue. Resilience is a personal quality that can be used to adapt to the stress of organizational change. This study jointly evaluated the stressors and personal qualities used to cope with organizational change by researching the interrelationships among change fatigue, resilience, and job satisfaction of hospital staff nurses, using multiple regression.

This Stress and Coping Model is a framework for evaluating the processes of coping with stressful events and proposes that psychological stress is the outcome of a

mismatch between the person and the environment, where demands are appraised as taxing or exceeding the person's resources. The stress experienced by an individual depends on the impact of the external stressor and the social and cultural resources available. According to the review of literature, organizational change can cause stress and trigger negative emotions (Kuokkanen et al., 2009; Rafferty & Griffin, 2006; Smollan & Sayers, 2009; Verhaeghe et al., 2006; Yu, 2009). Organizational change can also lead to change fatigue (Bernerth et al., 2011; McMillian & Perron, 2013) and decrease in job satisfaction (Teo et al., 2013).

According to the Transactional Model of Stress and Coping, when an individual is faced with stressors, the person evaluates the stressor as a potential threat or challenge, which is the primary appraisal. During the primary appraisal, the person evaluates the event as stressful, positive, controllable, challenging, or irrelevant. Through primary appraisal the person evaluates the transaction in terms of what is at stake for the person. Emotions such as threat, challenge, harm, and benefit are products of how individuals appraise their transactions with the environment (Lazarus & Folkman, 1984). The second appraisal, which is facing a stressor, is an assessment of people's coping resources and options. Secondary appraisals address what one can do about the situation and use coping efforts to resolve the problem (Lazarus & Folkman, 1984). Resilience is a personal qualtiy used by individuals to access resources to cope with and recover from adversity in the workplace (Gillespie et al., 2007).

Coping consists of cognitive and behavioral efforts to manage the specific demands that tax or exceed a person's resources. Lazarus and Folkman (1984) identified two types of coping strategies. Emotion-focused strategies are those that aim to manage

the negative emotions triggered by the demand. Problem-focused coping efforts utilize planning and taking action to deal with the cause of the stress, generate solutions, and weigh alternatives. Problem-focused coping strategies are associated with good mental health and well-being (Lim et al., 2010). Coping is influenced by the person's appraisal of the demands of the source of distress and resources available to manage the stressors (Lazarus & Folkman, 1984). Three major adaptational outcomes of coping identified by Lazarus and Folkman (1984) included well-being, social functioning, and somatic health/illness. These adaptational outcomes emerge over time from stressful interactions with which the person attempts to manage their stress.

According to Bernerth et al. (2011) constant organizational change has been found to impact a person's adaptive resources and cause stress and change fatigue. The lack of adaptive resources has been found to lead to severe fatigue which impacts an individual's level of function at home and at work. Fatigue of employees can impact an organization by way of increased sick time, loss of productivity, exhaustion, organizational commitment, job dissatisfaction, and turnover rates.

According to Lazarus and Folkman (1984), adapting to the effects of stress cannot begin until appraisal and comprehension takes place. Organizational change can lead to stress by making new demands on people, producing the loss of what seems predictable or familiar, creating a sense of isolation or posing new threats. Also the uncertainty of organizational change can influence the stress experienced by the individual. Change does not have to be harmful; instead it can produce growth and lead to a more satisfying way of life. Whether or not change creates stress, depends on how the change is appraised and coped with. Stressed workers use a variety of coping resources with

organizational change (Teo, et al., 2013). Lim et al. (2010) found that nurses also used a wide range of coping resources, such as seeking support, problem solving, and self-control, to cope with the stressors of organizational change.

The Transactional Model of Stress and Coping can be used to understand how nurses appraise a situation, cope, and the resources used in coping. Organizational change has been found to cause stress and have negative effects on the lives of nurses (Hansson et al., 2008). One way to cope with stress is resilience and nurses with higher resilience are better able to manage their response to stress, thus offsetting the negative impact of stress (Hodges, et al., 2004). According to Lian and Tam (2014), resilience is a personal quality that enhances an individual's ability to adapt to stress and survive in the presence of occupational stressors and contributes to the success in overcoming future stressors.

Lazarus and Folkman's Transactional Model of Stress and Coping contends that stress is subjective and individuals experience the same stressor differently. This varied reaction to the same stressful event suggests that there is a transaction between individuals and their environment and is a critical factor in influencing if the event is appraised as stressful. The impact of stressors caused by organizational change, cannot be fully understood until determining the effectiveness of the coping resources used to manage the mismatch between the person and the environment (Lazarus & Folkman, 1984).

The following pictorial model demonstrates how the Transactional Model of Stress and Coping frames this study (see Figure 1). An event or situation that staff nurses frequently experience is organizational change. During this situation (organizational changes), the individual appraises the situation as being a threat that is harmful or benign.

If the situation is not perceived as a threat, there is no stress experienced. If the organizational change is perceived as a threat, then the individual assesses one's coping resources (secondary appraisal). If the individual is unable to cope with the threat of multiple organizational changes, the individual will experience negative stress or change fatigue and job dissatisfaction. In contrast, the resilient nurse uses positive coping resources and has the ability to cope with multiple organizational changes and experiences positive stress and job satisfaction. According to Lazarus and Folkman (1984), coping is a process that emerges over time from stressful interactions with which the person attempts to manage their stress, so experienced nurses should have higher levels of resilience and job satisfaction and lower levels of change fatigue compared to novice staff nurses.

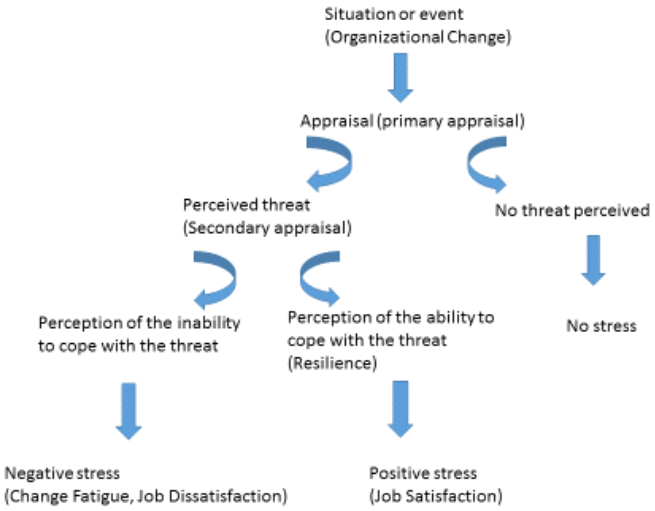


Figure 1. Conceptual Model. Adapted from Lazarus and Folkman (1983) Transactional Model of Stress and Coping.

Transactional Model of Stress and Coping Literature Review

Lazarus and Folkman (1984) describe stress as a dynamic and reciprocal relationship between the person and the environment. Stressors or environmental

demands can range from major catastrophes to daily hassles, which are experienced by stress in the workplace. According to the model, stress is only experienced when situations are appraised as exceeding one's resources. Thus, being given extra responsibilities at work, such as during organizational changes, might be viewed as threatening to a person while another person may appraise the situation as a challenge. The difference in appraisal of a situation being stressful or not, is due to an individual's personal resources used to cope with stress. Resilience is a personal quality that allows nurses to cope with the stress of organizational change. Nurses who use more effective coping strategies are more satisfied with their job (Chang & Hancock, 2003).

The Transactional Model of Stress and Coping has been applied to many research studies to understand how employees appraise a situation, cope, and the resources used in coping. Chang and Hancock (2003) found that nurses adopt emotional and problem-based coping strategies to deal with workplace stress and proposed that the effectiveness of how nurses cope with stress should be considered when understanding the coping strategies of nurses. Lim et al. (2010) noted that nurses used a wide range of coping strategies, such as seeking support, problem solving, and self-control to workplace stressors.

Rafferty and Griffin (2006) applied the concepts of Lazarus and Folkman (1984) model to examine the impact of organizational change on employee attitudinal outcomes such as job satisfaction. The results suggested that the perception of change planning was indirectly positively related to job satisfaction. Healy and McKay (2000) provided support for Lazarus and Folkman (1984) model. The authors found that nurses' stress is negatively associated with job satisfaction and nurses used coping behaviors in stressful

job circumstances. Chang and Hancock (2003) used the Transactional Model of Stress and Coping in their study where they concluded that nurses who adopted effective coping strategies were more satisfied with their job. Teo et al. (2013) also used the model to form the hypotheses in their study. The study found that effective coping strategies could be used as a mediator to reduce the negative impact of nursing stress on job satisfaction. The Transactional Model of Stress and Coping provided a useful theoretical lens in explaining the negative impacts of change-induced stressors in healthcare organizations.

Summary. Lazarus and Folkman Transactional Model of Stress and Coping proposes that stress is an outcome of a mismatch between the person and the environment. This model has been applied to many research studies to help understand how employees appraise a situation, cope, and the resource's used in coping. Organizational change causes stress and stress causes a decrease in job satisfaction. Change fatigue, which is the overwhelming feeling of stress and exhaustion, is a result of organizational change. Resilience is a personal quality that allows nurses to cope with the stress of organizational change. Studies have found that nurses use different types of resources to cope with stress and nurses who adopted effective coping resources were less stressed and more satisfied with their job.

Chapter 3: Research Methodology

Chapter three discusses the research design and the three tools (Change Fatigue Scale, Connor-Davidson Resilience Scale, and McCloskey/Mueller Satisfaction Scale) used with the study. Sampling, data collection, and data analysis are reviewed. Lastly, ethical considerations including the protection of human subjects are discussed.

Research Design

The research design for the study was a descriptive correlational design. A correlational study describes relationships among variables, without seeking to establish a causal connection (Polit & Beck, 2012). In correlational research, the independent variable is known, but how it influences other variables is not known. The purpose of descriptive research is to describe and document aspects of a situation as it naturally occurs (Polit & Beck, 2012). The descriptive correlational design allows estimation of associations among change fatigue, resilience, and job satisfaction of staff nurses, but the design does not provide good information on causal relationships.

The study tested the proposed hypotheses by using three tools (Change Fatigue Scale, Connor-Davidson Resilience Scale, and McCloskey/Mueller Satisfaction Scale) and demographic data. These tools were used to gather data from hospital staff nurses and to examine the relationships among change fatigue, resilience, and job satisfaction in these nurses.

Sample

The study sample was hospital staff nurses educated at the associate, diploma, baccalaureate, and masters or higher level and employed in a rural or urban hospital setting. The sample included both male and female participants with different ethnicities

and employed either full or part-time, ranging in age from < 25 to > 60. The participants held a current South Dakota RN license and self-reported if they were a hospital staff nurse using an online survey. Participants were recruited from names, emails, and home addresses obtained from the South Dakota Board of Nursing (SDBON). The majority of participants were female (90.5%), white/Caucasian (97.3%), having a bachelor's degree (62.2%), and employed full-time (86.9%).

An appropriate sample size is calculated using significance level, effect size, and power to reduce a Type II error (Munro, 2005; Polit & Beck, 2012). A Type I error is when researchers reject a null hypothesis that is in fact true and a Type II error is the failure to reject a false null hypothesis (Polit & Beck, 2012).

A sample size analysis was conducted to reduce the risk of Type II errors and strengthen statistical conclusion validity by estimating in advance how big a sample is needed (Polit & Beck, 2012). A 0.8 power is considered an adequate level (Munro, 2005). Significance level or alpha is a method of controlling for Type I errors, which is often set at 0.05 (Monro, 2005). A small effect size is 0.2 (Polit & Beck, 2005). With an alpha level of 0.05, a small standardized effect size of 0.2 and power of 0.8, a minimum sample size of 388 (194 in each group) is needed for a correlational study (Polit & Beck, 2012). Sample size is estimated in relation to the population size. There are approximately 16,000 licensed nurses in South Dakota, and 51% of them are staff nurses. According to Mitchell and Jolley (2013), for a population of 10,000 a minimum sample size of 370 is required.

Setting

The staff nurses were employed in an urban or rural hospital and employed full or part-time. The majority of participants were employed full-time (86.9%) in a hospital with > 250 beds (48.64%).

Tools

Change Fatigue Scale. The Change Fatigue Scale was used to measure the level of change fatigue of staff nurses employed in a hospital setting. Permission to use the Change Fatigue Scale was given by Jeremy Bernerth (J. Bernerth, personal communication, March 11, 2014) (see Appendix A). The Change Fatigue Scale is a newly developed tool that has not been researched with nursing and was developed to explore the impact of multiple organizational change on employee's well-being, organizational commitment, and turnover intentions. The Change Fatigue Scale originally had 10-items, but after psychometric assessment, four items were dropped. Two items were not viewed as content valid in the opinion of experts and two items did not load significantly with the other change fatigue items when subjected to an exploratory factor analysis (Bernerth et al., 2011). The tool was developed using a multi-step approach described by Hinkin (1998). An initial set of items was generated by completing a literature review and reviewing conceptual frameworks on stress and exhaustion.

Next, content and construct validity was established by factor analysis, pilot testing, and use of consultants. Content validity was assessed by 14 consultants employed by a world-wide strategic consulting firm. Each of the 14 consultants had a minimum of a master's degree in a relevant field and at least two years' experience (mean > 6 years) in consulting on organizational change, organizational behavior, and human resource

management projects. The consultants were given a set of 22 survey items and asked to classify each item into one of three defined constructs (change fatigue, change cynicism, or psychological uncertainty) or indicate that they were unidentifiable. In addition, the consultants were asked to indicate the extent to which each item assessed each of the three constructs (Bernerth et al., 2011).

Content validity of each item was calculated using a content validity ratio (CVR). According to Polit and Beck (2012), content validation should be conducted with at least three experts, but a larger group is preferable. A panel of 14 experts was used and a minimum CVR value of .51 ($p < .05$) was needed to indicate that an item had content validity in terms of change fatigue. Results indicated that none of the change cynicism items were identified as change fatigue. Eight of the 10 items had a CVR > .51. The two items that did not have a sufficient CVR were dropped (Bernerth et al., 2011).

Initial assessment of the tool was tested with 200 employees of a government agency that had been affected by a number of changes in the last three years. Factor analysis was used and two items were dropped because they failed to group with the other change fatigue items after exploratory factor analysis. The final 6-item tool has a Coefficient alpha of .85 (Bernerth et al., 2011). A Cronbach's alpha is a measure of internal consistency reliability and ranges from 0 to1 and higher values reflect higher internal consistency (Polit & Beck, 2012). A Cronbach's alpha above 0.70 and preferably above 0.8 is needed for an instrument to be internally consistent (Mitchell & Jolley, 2013).

The Change Fatigue Scale is based on a 7-point response format ranging from 1= strongly disagree to 7 = strongly agree and based on summing the total of all items (see

Appendix B). There are limitations to the Change Fatigue Scale because it is a newly developed tool and has not been used with the nursing population. The scale was developed using a rigorous development process and shows good internal consistency.

Connor-Davidson Resilience Scale (CD-RISC). The CD-RISC was used to measure the level of resilience of staff nurses. A number of scales have been developed to measure resilience, but these measures have not been widely used or applied to specified populations. The CD-RISC has been used with nurses. Permission to use the CD-RISC was obtained by Jonathan Davidson (J. Davidson, personal communication, November 30, 2014) (see Appendix C).Three versions of the CD-RISC are available: 25-item, 10-item, and 2-item scale. The tool is designed as a self-rating scale and participants are directed to respond to each question with reference to the previous month. The scale is based on a 5-point Likert and based on summing the total of all items. Participants' rate items on a scale from 0 (not true at all) to 4 (true nearly all the time). The total score of the 25-item version ranges from 0-100. According to the Flesch Reading Ease calculations, the scale is expected to be understood by those with a fifth grade education (Connor & Davidson, 2003).

The 25-item CD-RISC has been compared to numerous other measures that are related to resilience such as hardiness, social support, stress-coping ability, self-esteem, life satisfaction, successful aging, and positive and negative affect. The tool with general populations, primary care, psychiatric outpatient and clinical trial samples support its internal consistency, test-retest reliability, and convergent and divergent validity. The CD-RISC scores have also been shown to increase with treatments hypothesized to enhance resilience (Connor & Davidson, 2003).

Cronbach's alpha for the 25-item CD-RISC is 0.89. Convergent validity was assessed by correlating the CD-RISC with measures of hardiness, perceived stress and stress vulnerability, measures of disability, and social support. Divergent validity was assessed by correlating the CD-RISC scores with the Arizona Sexual Experience Scale. Test-retest reliability was assessed in 24 subjects with an intraclass correlation coefficient of 0.87 (Connor & Davidson, 2003).

Connor and Davidson (2003) conducted an exploratory factor analysis (EFA) of the CD-RISC in a general population sample of 577 adults. The EFA yielded a 5-factor solution with factors representing personal competence, high standards and tenacity; trust in one's instincts, tolerance of negative affect, and strengthening effects of stress; positive acceptance of change and secure relationship; control; and spiritual influences. Mean scores were calculated by demographic grouping and no differences were observed in the characteristics of gender, ethnicity, and age (Connor & Davidson, 2003).

The 10-item version was developed by Campbell-Sills and Stein (2007) on the basis of factor analysis. Campbell-Sills and Stein (2007) found the 25-item scale had unstable factor structure and proposed a shorter version. All items were dropped that had either inconsistent or nonsalient loadings, as well as items corresponding to factors that were poorly defined. The 10-item scale demonstrated good internal consistency and construct validity. Internal consistency of the 10-item CD-RISC was evaluated by calculating Cronbach's alpha. The alpha value of .85 indicated good reliability (Campbell-Sills & Stein, 2007). For this study, the 10-item version was used (see Appendix D).

McCloskey/Mueller Satisfaction Scale (MMSS). The MMSS was used to measure nurse's job satisfaction. Permission to use the McCloskey/Mueller Satisfaction Scale was given by Sharon Sweeney (S. Sweeney, personal communication, April 10, 2015) (see Appendix E). The MMSS was designed to assess satisfaction of hospital staff nurses. The scale has 31 items that measure eight types of satisfaction: satisfaction with extrinsic rewards, scheduling, family/work balance, co-workers interaction, professional opportunities, praise/recognition and control/responsibility (see Appendix F). Each item is rated on a 5-point Likert scale. An overall mean for the global scale can be attained as a general measure of nursing satisfaction (Mueller & McCloskey, 1990).

The tool reports face and content validity and test-retest and alpha reliability. Factor analysis supported the current eight subscales. Cronbach's alpha for the global scale is .89 and the eight subscales range from .52-.84. Test-retest correlations between measurements taken at six months on the job and at 12 months are consistently at the same level (Mueller & McCloskey, 1990).

Construct validity was measured by factor analysis of the eight subscales. The subscales were assessed to determine if they correlate as theoretically expected with other variables: task variety, autonomy, feedback, friendship opportunities, task identity, and intent to stay. Moderate positive correlations found for all expected relationships demonstrate construct validity (Mueller & McCloskey, 1990).

Criterion-related validity was measured by correlating the subscales with the Brayfield-Roth general job satisfaction scale and with subscales from Hackman and Oldham's Job Diagnostic Survey (JDS). Correlations of the overall scale with Brayfield-Roth was .41 and with JDS general dimension was .56. These scores indicate that the

MMSS may be a more valid measure of nursing satisfaction compared with other scales that were not designed for nurses (Mueller & McCloskey, 1990).

Data Collection

Human Subjects Approval. Prior to data collection, approval for the study was obtained from South Dakota State University's Human Subjects Committee (see Appendix G). Study participants received information about the risks and benefits, nature of involvement, purpose of the study, how data is analyzed, how to contact the researcher, and that participation is voluntary. The cover letter (see Appendix H) contained an implied consent statement. The cover letter also included the subject's right to terminate participation in the study at any time.

Confidentiality. Confidentiality of the participants was maintained by using QuestionPro settings to maintain anonymity and no personal identifiers were used. QuestionPro is a web based software tool that creates online surveys. All collected data was prepared in aggregate form and strict anonymity was maintained. Data was not linked by name and personal information was not used for evaluative purposes. Only the project director has access to the online data. The data was kept confidential and stored electronically in a password-protected file. Data will be deleted after three years.

Subject recruitment. Names, home addresses, and email addresses of South Dakota RNs were obtained from the SDBON for a $25 fee. There are 16,923 licensed RNs in the state of South Dakota (South Dakota Center for Nursing Workforce, 2015). The participants were associate, diploma, baccalaureate, and masters or higher registered nurses employed in a hospital setting.

The SDBON does not obtain data from RNs on employment setting, status of employment, or educational level. To ensure that participants were staff nurses in a hospital setting, the first question with the online survey asked if the participants were currently a staff nurse in a hospital. If participants answered no to being a staff nurse, they were thanked for their participation and informed they did not meet the qualifications of the study. According to Nulty (2008), online survey response rates range from 20-39%. To obtain the desired sample size of 388, surveys were sent to 4,000 South Dakota licensed RNs, which was calculated using a 20% return rate, and 51% of RNs are staff nurses in South Dakota (South Dakota Center for Nursing Workforce, 2015).

Participants were recruited by email, which included details about the study, eligibility to participate, and the link to access the survey online. Emails were sent to 4,000 randomly selected RNs with a current South Dakota license. A week after the first email, a reminder email was sent to serve as a thank-you to those who completed the survey and reminder to those who had not completed the survey. Reminder emails were sent because according to Dillman, Smyth, and Christian (2009), sending multiple reminders to survey respondents is the most effective way to increase response rates. An individual email was sent to each participant, rather than bulk emails to promote confidentiality (Dillman et al., 2009).

An issue with using email surveys is having them returned. According to Dillman et al. (2009), the problems that cause an email to be returned is frequently temporary and the message can be re-sent at a later date. Emails that bounced back, were checked for accuracy and then resent a week later. Twenty emails bounced back twice, so a letter was

mailed informing the participants about the email issue and how to access the study online (Appendix I).

Recruitment incentive. Some researchers are using financial recruitment incentives to increase participation rates, because recruitment may be a challenge for nurse researchers. There are concerns with using incentives. One concern with using financial incentives is that it increases the cost of the study. Russell, Moralejo, and Burgess (2000) explored research subjects' opinions on payment to medical participants. The authors reported that more than 56% disagreed with paying research participants. According to Groth (2010), there are other ways to motivate individuals to participate in a study rather than monetary incentives, such as emphasizing the benefits to participation.

An internet survey that uses email contacts raises special problems for delivering financial incentives, in that cash cannot be sent by email. Researchers begun exploring different ways of delivering incentives, such as electronic gift certificates, gift cards, or lotteries and prize drawings. According to Dillman et al. (2009), lotteries and prize drawings do not increase rates significantly. Another concern with using lotteries is that lotteries fail to satisfy the principle of justice because they result in inequality in compensation for all participants (Phillips, 2015).

The researcher considered both the positive and negative aspects of monetary incentives. Because there are issues with giving incentives with online surveys and research shows incentives do not increase participation rates dramatically, the study did not offer any recruitment incentives. Instead, the recruitment letter discussed the benefits in participating to encourage participation.

Data Analysis

Data were analyzed using IBM Statistical Package for the Social Sciences (SPSS) software, version 22. The survey data were directly exported into SPSS from QuestionPro. Pearson's product-moment correlation coefficient (Pearson's *r*) was used to test the relationships of the variables change fatigue, resilience, and job satisfaction using an alpha level of $p < .05$. The correlation coefficient *r* mathematically identifies if an association exists between two variables and whether the relationship is positive or negative (Munro, 2005).

In addition, the differences between novice and experienced nurses were compared using a *t*-test for independent groups. The *t*-test is used to test the differences between two group means and can be used when there are two independent groups (Polit & Beck, 2012). The two independent groups for this study were novice versus experienced staff nurses. The novice nurse was employed two or less years, and the experienced nurse was employed more than two years as an RN, which was obtained from the demographic data.

Scores for each scale were based on summing the total of items and obtaining a mean score. Multiple regression was used to predict outcomes and explain interrelationships among the three variables: change fatigue, resilience, and job satisfaction. Demographic data were analyzed using frequencies and percentages. In addition, a multiple regression approach was developed to consider demographic and other covariates. The variables of change fatigue, resilience, and job satisfaction were compared to age, gender, marital status, number of children, educational level, full or

part-time status, unit employed, years employed, size of facility, and designated magnet status of the facility, using multiple regression.

There was a small sample size for years employed from five to seven years, so those years were collapsed into the eight or more category, which resulted in six categories of years employed. In addition to multiple regression, the variables were assessed for linear trend. The research questions and hypotheses was tested using Pearson's *r*, multiple regression, and linear trend.

The first hypothesis was: novice hospital staff nurses have higher change fatigue compared to experienced hospital staff nurses. This hypothesis was tested by comparing the mean change fatigue scores. The change fatigue score was based on summing the total items on the Change Fatigue Scale and obtaining a mean score. The novice and experienced change fatigue mean scores were compared using a *t*-test for independent groups. A p value $< .05$ was considered significant. Multiple linear regression was used to explain relationships between change fatigue and multiple predictor variables. In addition, linear trend was assessed.

The second hypothesis was: novice hospital staff nurses have lower resilience compared to experienced hospital staff nurses. This hypothesis was tested by comparing the mean resilience scores. The resilience score was based on summing the total items of the CD-RISC and obtaining a mean score. The novice and experienced mean resilience scores were compared using a *t*-test for independent groups. A p value $< .05$ was considered significant. Multiple linear regression was used to explain relationships between resilience and multiple predictor variables. In addition, linear tread was assessed.

The third hypothesis was: an inverse association exists between resilience and change fatigue in hospital staff nurses. This hypothesis was tested by comparing the mean resilience score to the mean change fatigue score, using Pearson's r. A *p* value < .05 was considered significant.

The fourth hypothesis was: an inverse association exists between job satisfaction and change fatigue in hospital staff nurses. This hypothesis was tested by comparing the mean job satisfaction score to the mean change fatigue score, using Pearson's *r*. Job satisfaction was based on summing the total of all items on the MMSS and obtaining a mean score. A *p* value < .05 was considered significant.

The last hypothesis was: a positive association exists between job satisfaction and resilience in hospital staff nurses. This hypothesis was tested by comparing the mean resilience score to the mean job satisfaction score, using Pearson's *r*. A *p* value < .05 was considered significant.

Ethical Considerations

In the United States, the *National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research* adopted a code of ethics to follow when conducting research with human subjects. The commission issued the *Belmont Report*, which identified three ethical principles: beneficence, respect of human dignity, and justice (U.S. Department of Health & Human Services, 1979). These principles were used to guide the study and were respected throughout the entire research study.

The first ethical principle is beneficence, which imposes a duty on researchers to minimize harm and maximize benefits (Polit & Beck, 2012). With beneficence, participants are treated in an ethical manor not only by respecting their decisions and

protecting them from harm, but also making an effort to secure their well-being (U.S. Department of Health & Human Services, 1979). There are minimal risks with a quantitative study because most details of the study will be spelled out in advance with the consent form (Polit & Beck, 2012). The benefits to the participants is they will aid in the understanding of the effects of change in the work environment, which is an important concept that has not been researched with nurses.

Respect of human dignity is the second ethical principle. This principle includes the right to self-determination and the right to full disclosure. Self-determination means participants can voluntarily decide whether to take part in a study, without risk of prejudicial treatment. Participants have the right to ask questions, to refuse to give information, and to withdraw from the study (Polit & Beck, 2012). The right to self-determination also includes freedom from coercion or threats of penalty from failing to participate in the study (Polit & Beck, 2012). Full disclosure means that the researcher has freely described the nature of the study, the person's right to refuse, the researchers responsibilities, and likely risks and benefits (Polit & Beck, 2012). The right to self-determination and the right to full disclosure was protected through informed consent. The participants received information about the risks and benefits, nature of involvement, purpose of the study, how the data will be used and analyzed, how to contact the researcher, and that participation is voluntary.

Justice, the third ethical principle, is the right to fair treatment and right to privacy (Polit & Beck, 2012). An injustice occurs when some benefits to which a person is entitled, is denied (U.S. Department of Health & Human Services, 1979). Registered nurses in South Dakota that met the qualifications of the study, had an equal opportunity

to participate. All participants were treated fairly, by allowing them to withdraw from the study without nonprejudicial consequences. Data for the study was collected using QuestionPro. This online program offers settings to maintain anonymity and no personal identifiable information was collected.

Summary

This chapter presented the research design, sample, data collection, data analysis, and ethical considerations of the study. The study is a descriptive correlational design that examined the relationships among change fatigue, resilience, and job satisfaction of novice and experienced staff nurses employed in a hospital setting.

Chapter 4: Results

This chapter presents a descriptive analysis of the data and results of the research questions and hypotheses. The purpose of the study was to determine if hospital staff nurses experience change fatigue and if there were differences in levels of change fatigue, resilience, and job satisfaction of novice and experienced staff nurses. In addition, the purpose of the study was to determine if there was a relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses.

Results and Analysis

Sample/Setting. Of the 4,000 licensed RNs invited to participate in the study, 725 started the survey, 535 answered yes to the first question of being a staff nurse in a hospital setting and 190 answered no to being a staff nurse (see Appendix K for CONSORT Diagram). If participants answered no to being a staff nurse, they were thanked for their participation and informed they did not meet the qualifications of the study. According to the South Dakota Center for Nursing Workforce (2015), 51% of RNs in SD are staff nurses, so 51% of 4,000 is 2,040, which gives a response rate of approximately 26%. The response rate for this study is similar to other online surveys. According to Nulty (2008), online survey response rates range from 20-39%.

The sample was registered nurses educated at the associate, diploma, baccalaureate, and masters or higher level and employed in an urban or rural hospital as a staff nurse. The sample included both male and female participants and the majority were female and white/Caucasian. Participants held a current SD RN license and self-reported being a staff nurse in a hospital setting using an online survey.

Demographic data. The sample population was 535 SD RNs employed full or part-time as staff nurses in a hospital setting, 90.5% females and 9.5% males (Table 1). Ethnicity identified by participants was 97.3% white/Caucasian, 0.9% American Indian, 0.2% Black/African American, 0.4% Hispanic/Latino, and 1.2% multiple/other race (Table 2). Age identified by participants was < 25 (17.9%), 25-30 (25.1%), 31-35 (8.3%), 36-40 (4.4%), 41-45 (2.7%), 46-50 (2.1%), 51-55 (13.4%), 56-60 (12.7%), and > 60 (13.4%) (Table 3). Number of children reported by participants was having no children (40.9%), one child (10.4%), two children (21.9%), three children (18.2%), four children (6.7%), and five or more children (1.9%) (Table 4). The majority of the participants reported being married (63.2%), followed by being single (27.9%), and divorced (8.9%) (Table 5). A bachelor's degree was identified most frequently as the highest education level (62.2%), followed by associate degree (23.2%), diploma (10.0%), and masters or higher (4.6%) (Table 6).

Table 1

Gender of Study Sample

Gender	Participants	Percent
Male	49	9.5
Female	469	90.5

Note. Missing data (n = 17, 3.0%). N = 518

Table 2

Ethnicity of Study Sample

Ethnicity	Participants	Percent
American Indian	5	0.9
Asian/Pacific Islander	0	0
Black/African American	1	0.2
Hispanic/Latino	2	0.4
White/Caucasian	504	97.3
Multiple/Other Race	6	1.2

Note. Missing data (n = 17, 3.0%). N = 518

Table 3

Age of Study Sample

Age	Participants	Percent
<25	93	17.9
25-30	131	25.1
31-35	43	8.3
36-40	23	4.4
41-45	14	2.7
46-50	11	2.1
51-55	70	13.4
56-60	66	12.7
>60	70	13.4

Note. Missing data (n = 14, 2.6%). N = 521

Table 4

Children of Study Sample

Children	Participants	Percent
None	213	40.9
1	54	10.4
2	114	21.9
3	95	18.2
4	35	6.7
5 or more	10	1.9

Note. Missing data (n = 14, 2.6%). N = 521

Table 5

Marital Status of Study Sample

Marital Status	Participants	Percent
Single	145	27.9
Married	328	63.2
Divorced	46	8.9

Note. Missing data (n = 16, 2.9%). N = 519

Table 6

Highest Education Level of Study Sample

Education	Participants	Percent
Associate	120	23.2

Diploma	52	10.0
Bachelors	322	62.2
Masters or higher	24	4.6

Note. Missing data (n = 17, 3.2%). N = 518

Employment data. The majority of the participants (86.9%) reported being employed full-time and 13.1% reported being employed part-time (20 hours or less/week) (Table 7). Years employed as an RN was reported as < 1 year (7.1%), one year (9.6%), two years (16.4%), three years (11.4%), four years (5.8%), five years (1.4%), six years (0.6%), seven years (0.6%), and eight or more years (47.1%) (Table 8).

Participants reported the unit they were currently employed as psych/mental health unit (3.5%), maternal-child health (9.0%), pediatrics/neonatal (5.0%), trauma (4.2%), acute/critical care (15.0%), oncology (3.8%), medical/surgical (17.5%), rehabilitation (1.5%), and other (40.5%) (Table 9). Participants reported other as: rural nursing, surgery/same day surgery, dialysis, cardiac rehab, hospice, emergency room, neonatal intensive care, and float pool. The majority of the participants reported working at a hospital with designated magnet status (64.4%) and non-magnet status (35.6%) (Table 10). The total number of hospital beds where the participants were employed was reported as < 50 beds (27.2%), 51-100 beds (12.3%), 101-250 beds (11.9%), and > 250 beds (48.6%) (Table 11).

Table 7

Employment Status of Study Sample

Employment status	Participants	Percent
Full-time	450	86.9
Part-time	68	13.1

Note. Missing data (n = 17, 3.2%). N = 518

Table 8

Years Employed of Study Sample

Years employed	Participants	Percent
<1 year	37	7.1
1 year	50	9.6
2 years	85	16.4
3 years	59	11.4
4 years	30	5.8
5 years	7	1.4
6 years	3	0.6
7 years	3	0.6
8 or more years	244	47.1

Note. Missing data (n = 17, 3.2%). N = 518

Table 9

Unit Employed of Study Sample

Unit	Participants	Percent
Psych/Mental Health	18	3.5
Maternal-Child	47	9.0
Pediatrics/Neonatal	26	5.0
Trauma	22	4.2
Acute/Critical Care	78	15.0
Oncology	20	3.8
Medical/Surgical	91	17.5
Rehabilitation	8	1.5
Other	211	40.5

Note. Missing data (n = 14, 2.6%. N = 521

Table 10

Magnet Status of Hospital where Study Sample Employed

Magnet	Participants	Percent
Yes	324	64.4
No	179	35.6

Note. Missing data (n = 32, 6.0%). N = 503

Table 11

Number of Hospital Beds where Study Sample Employed

Beds	Participants	Percent
<50	140	27.2
51-100	63	12.3
101-250	51	11.9
>250	250	48.6

Note. Missing data (n = 21, 3.9%). N = 514

Change fatigue. The Change Fatigue Scale measured the level of change fatigue of staff nurses employed in a hospital setting. The scale has six items and is based on a 7-point response ranging from 1 (strongly disagree) to 7 (strongly agree) and based on summing the total of all items. The minimum score for the scale is six and maximum score is 42. Of the 535 participants, 489 completed the scale with a mean score of 22.81 (*SD* = 8.97). Scores ranged from 6-42.

Cronbach's alpha for the 6-item instrument was conducted and the score was .94. With development of the tool, the Cronbach's alpha was reported at .85 (Bernerth et al., 2011). This is a newly developed tool and has not been used with the nursing population, but a Cronbach's alpha of >.7 indicates high internal consistency (Mitchell & Jolley, 2012). Because the Change Fatigue Scale is a newly developed scale, a principal component factor analysis was performed using varimax orthogonal rotation to test for loading of the questions. Results were a single eigenvalue over 1 of 4.6 indicating one scale. All questions loaded adequately, with a factor loading ranging from .66 to .87. With development of the Change Fatigue Scale, the factor loading ranged from .54 to .79 for the six items (Bernerth et al., 2011).

Resilience. The 10-item Connor-Davidson Resilience Scale (CD-RISC) measured the level of resilience of staff nurses. The CD-RISC is based on a 5-point Likert ranging from 0 (not true at all) to 4 (true nearly all the time) and based on summing the total of all items. Scores for the scale range from 0-40. Of the 535 participants, 471 completed the

CD-RISC with a mean score of 30.72 (*SD* =4.96). This mean score is comparable to the general population mean score of 31-32 (Connor & Davidson, 2003). Mean scores of the participants ranged from 11-40. Cronbach's alpha for the 10-item instrument was conducted and the score was .86, indicating high internal consistency (Mitchell & Jolley, 2013). Campbell-Sills and Stein (2007) report a Cronbach's alpha of .85 for the 10-item instrument.

Job Satisfaction. The McCloskey/Mueller Satisfaction Scale (MMSS) measured the level of job satisfaction of staff nurses employed in a hospital setting. The tool was developed to measure satisfaction of hospital staff nurses. The scale has 31 items and each item is rated on a 5-point Likert scale. An overall mean for the global scale can be attained as a general measure of nursing satisfaction (Mueller & McCloskey, 1990). The MMSS has a minimum score of 31 and maximum score of 155. Of the 535 participants, 394 completed the MMSS with a mean score of 104.83 (*SD* = 16.96) compared to Mueller and McCloskey (1990) mean global score of 101.8 with the development of the tool. Mean scores of the participants ranged from 36-146. Cronbach's alpha for the 31-item instrument was conducted and the score was .91, indicating high internal consistency (Mitchell & Jolley, 2013). According to Mueller and McCloskey (1990), the Cronbach's alpha for the global scale is .89.

The global score is used to assess the general measure of nursing job satisfaction. The scale also has eight subscales that can be used to assess specific areas of job satisfaction: extrinsic rewards, scheduling satisfaction, family/work balance, co-workers, interaction, professional opportunities, praise/recognition, and control/responsibility.

Analysis of Demographic data. The sample population was 535 RNs employed full or part-time as staff nurses in a hospital setting. Participants were non-systematically chosen from the database obtained from the South Dakota Board of Nursing. The database includes all RNs licensed in SD (*N*=16,923) and does not compile data of current positions. To obtain staff nurses for the study, the survey asked participants to self-identify if they were a staff nurse in a hospital setting.

Demographic data of the participants was similar to the SD RN demographic data in gender and ethnicity. The majority of the participants were female (90.5%) and white/Caucasian (97.3%). South Dakota RN population is 91.4% female and 93.4% white/Caucasian (South Dakota Center for Nursing Workforce, 2015).

Analysis of Employment data. Employment data of the participants was similar to the SD RN data. The majority of the participants (86.9%) reported being employed full-time. South Dakota RNs report being employed full-time (74.6%) and the majority of RNs are employed in a hospital setting (51.4%) and 68.1% hold the position title of staff nurse (South Dakota Center for Nursing Workforce, 2015). The most identified unit of employment was other (40.5%), followed by medical/surgical (17.5%). South Dakota RNs report the highest unit of employment as other (22%) followed by medical/surgical (15.7%) (South Dakota Center for Nursing Workforce, 2015). The majority of the participants reported being employed at hospitals having > 250 beds (48.6%) and having magnet status (64.4%). In South Dakota, there are three hospitals that have designated magnet status.

Demographic variables. Demographic variables and potential covariates in the study were age, gender, number of children, marital status, ethnicity, educational level,

employment status, unit employed, years employed, number of hospital beds and if the hospital had designated magnet status. Multiple regression was conducted to control for these covariates with change fatigue, resilience, and job satisfaction.

Distribution frequency. Histograms were used to evaluate frequency distribution of change fatigue, resilience, and job satisfaction. The histogram for change fatigue had a multimodal distribution and was normally distributed (see Appendix K). The histogram for resilience had a unimodal distribution and was negatively skewed, meaning a higher percentage of participants had higher resilience (see Appendix L). The histogram for job satisfaction had a unimodal distribution and was negatively skewed, meaning a higher percentage of participants were satisfied with their job (see Appendix M).

Assumptions of multiple regression. The assumptions of normality for residuals and homoscedasticity for multiple regression were assessed. Normality of residuals were assessed through the use of histograms. The histograms showed no evidence of non-normality sufficient to warrant transforming of the dependent variable. Homoscedasticity was assessed by comparing variance of residuals across categories.

Assumptions of constant variance for the study of interest years employed were assessed. According to Vittinghoff, Glidden, Shiboski and McCulloch (2012), violations of the assumptions of constant variance should be addressed in cases where the variance of the residuals differs by a factor of two or more between subgroups that differ in size by a factor of two or more. Another violation is if the variance of residual differs by a factor of three or more between subgroups that differ in size by a factor of less than two. No violations of the assumptions of constant variance were noted with this study.

Missing data. Participants did not complete all three tools, which results in missing data and can affect statistical analysis. See Appendix N for frequencies/percent of the study sample completing the three research tools. Pearson chi-square was used to evaluate the distribution of demographic characteristics between respondents with or without data on change fatigue, resilience, and job satisfaction. No differences were found in distribution for years employed, change fatigue, resilience, and job satisfaction.

Research Question 1: What is the difference in level of change fatigue experienced by novice and experienced hospital staff nurses?

Change fatigue was measured using the Change Fatigue Scale. The novice nurse was measured by being employed two or less years and the experienced nurse was measured by being employed more than two years. The change fatigue score was obtained by summing the total items on the Change Fatigue Scale and obtaining a mean. The novice and experienced change fatigue scores were compared using a *t*-test for independent groups.

Participants were 159 novice nurses and 325 experienced nurses. A statistically significant association was identified between change fatigue of novice and experienced nurses using a *t*-test for independent groups. The *t* value was -2.9 and $p = .003$. The novice nurses had a lower change fatigue mean score ($M = 21.2$) compared to experienced nurses ($M = 23.6$) (Table 12). No prior studies have researched change fatigue and nurses. Kunze et al. (2012) found older employees were less resistant to change.

According to Vestal (2013), new graduate nurses and staff newly transferred to a unit are more vulnerable for change fatigue. The results from this study showed that

experienced nurses have higher levels of change fatigue compared to novice staff nurses. However, this result may be confounded by other variables, therefore multiple regression was conducted.

Table 12

t-test for Independent Groups for Change Fatigue

Group	n	M	df	t-value	p
Novice	159	21.2	482	-2.9	.003*
Experienced	325	23.6			

Note. M = mean, df = degrees of freedom, *p = significance level < 0.05

Multiple regression. A multiple linear regression was conducted using a univariate general linear model to assess for confounding variables with years of experience and change fatigue. A 10% or greater coefficient of change was considered significant. The regression showed that age, children, marital status, and education were confounding variables of change fatigue (Table 16).

In addition, a multiple linear regression analysis was conducted to analyze for potential covariates with change fatigue. The following categorical variables were used in the model: gender, marital status, highest educational level, employment status, years of experience, unit employed, number of hospital beds, and having magnet status. The covariates included in the model were age and number of children. Ethnicity was not included in the multiple regression model because 97% of the participants were white/Caucasian.

Multiple regression analysis revealed that years of experience was not statistically significant (p = .48) with change fatigue. The analysis revealed educational level, gender, and number of beds are significant predictor variables of change fatigue. Males had

higher change fatigue (M = 24.8) compared to females (M = 21.9). Refer to Appendix O for multiple regression results for change fatigue.

Next, linear trend was evaluated for all predictor variables. Beds (p =.001) and education (p =.009) were found to be significant. The linear trend suggests as education increases, change fatigue decreases and as hospital size and number of beds increases, change fatigue increases.

Research Question 2: What is the difference in level of resilience experienced by novice and experienced hospital staff nurses?

Resilience was measured by the 10-item Connor-Davidson Resilience Scale (CD-RISC). The novice nurse was employed two or less years and the experienced nurse was employed more than two years. The resilience score was obtained by summing the total items on the CD-RISC and obtaining a mean. The novice and experienced resilience mean scores were compared using a *t*-test for independent groups.

Participants were 153 novice staff nurses and 313 experienced staff nurses. A statistically significant association was identified between resilience of novice and experienced nurses using a *t*-test for independent groups. The novice nurses had a lower resilience mean score (M = 29.9) compared to experienced nurses (M = 31.1). The *t*-value was -2.4 and p = .02 (Table 13). However, this result may be confounded by other variables, therefore multiple regression was conducted.

Similar results were found in a study by Lee et al. (2015). The study found that less experienced staff (< 7 years) averaged two points lower on the resilience scale (RS-14) than their more experienced peers. Gillespie et al. (2009) found years of experience

predicted resilience and Kornhaber and Wilson (2011) found that experienced nurses had higher resilience.

Table 13

t-test for Independent Groups for Resilience

Group	n	M	t-value	df	p
Novice	153	29.9	-2.4	464	.02*
Experienced	313	31.1			

Note. M = Mean, df = degrees of freedom, *p = equal variance significance level < 0.05

Multiple regression. A multiple linear regression was conducted using a univariate general linear model to assess for confounding variables with years of experience and resilience. A 10% or greater coefficient of change was considered significant. The regression showed that age, children, marital status, employment status, unit, magnet status, and number of beds were confounding variables of resilience (Table 16).

In addition, a multiple linear regression analysis was conducted to analyze for potential covariates with resilience. The following categorical variables were used in the model: gender, marital status, highest educational level, employment status, years of experience, unit employed, number of facility beds, and having magnet status. The covariates included in the model were age and number of children. Ethnicity was not included in the multiple regression model because 97% of the participants were white/Caucasian.

The multiple regression analysis revealed years of experience was not significant ($p = .36$) with resilience. Regression analysis revealed educational level and unit employed are significant predictor variables of resilience at $p < .05$ level. The analysis revealed that participants employed in obstetrics, oncology, and medical/surgical units

have lower resilience. Also, participants with a master's degree had significantly higher resilience. The analysis revealed that number of children is a marginally significant predictor variable of resilience ($p = 0.06$). Refer to Appendix P for multiple regression results for resilience. Next, linear trend was evaluated. No linear trend was found with predictable variables and resilience.

Research Question 3: What is the difference in level of job satisfaction experienced by novice and experienced hospital staff nurses?

The 31-item McCloskey/Mueller Satisfaction Scale (MMSS) measured job satisfaction of staff nurses. Novice nurse was employed two or less years and the experienced nurse was employed more than two years. Job satisfaction score was obtained by summing the total items on the MMSS and obtaining a mean. Novice and experienced job satisfaction mean scores were compared using a *t*-test for independent groups.

Participants were 130 novice staff nurses and 260 experienced staff nurses. There was a statistically significant association between job satisfaction of novice and experienced nurses using a *t*-test for independent groups. The mean score for novice staff nurses was lower (M =102.3) compared to experienced staff nurses (M = 105.9). The *t*-value was -2.0 and $p = .04$. The study found that experienced nurses have higher levels of job satisfaction (Table 14). The results of this study may be confounded by other variables, therefore multiple regression was conducted.

Research findings have found conflicting results with experience and job satisfaction. Chan and Morrison (2000) found age was significantly associated with nurse's job satisfaction. Adams and Bond (2000) found that age, years of employment,

and education level made little difference to levels of job satisfaction. Larabee et al. (2003) also found that age was not correlated to job satisfaction, but found a difference in intent to leave related to number of years on the job and number of years since graduating from nursing school. Nurses who graduated less than five years and had been in their jobs less than five years, were more likely to indicate intent to leave. Other studies have found no association with longevity in practice and job satisfaction (Cummings et al., 2008; Murrells et al., 2008).

Table 14

t-test for Independent Groups for Job Satisfaction

Group	*n*	*M*	*t-value*	*df*	*p*
Novice	130	102.3	-2.0	388	.04*
Experienced	260	105.9			

Note. M = Mean, df = degrees of freedom, *p = equal variance significance level < 0.05.

The MMSS has eight subscales that can be used to asses specific areas of job satisfaction: extrinsic rewards, scheduling satisfaction, family/work balance, co-workers, interaction, professional opportunities, control/responsibility and praise/recognition. The novice and experienced MMSS subcategories were compared using a *t*-test for independent groups. There was a statistically significant association between novice and experienced staff nurses in the scheduling satisfaction subscale ($p = .00$). The novice staff nurses had lower satisfaction with scheduling ($M = 18.6$) compared to experienced staff nurses ($M = 21.8$). There was also a statistically significant association between novice and experienced staff nurses in the family/work balance subscale ($p = .00$). The novice staff nurses had a lower satisfaction with family/work balance ($M = 8.5$) compared to experienced staff nurses ($M = 9.2$) (Table 15).

Table 15

t-test for Job Satisfaction Subcategories for Novice/Experienced Staff Nurses

Subcategories	Novice (M)	Experienced (M)	p
Extrinsic	9.5	9.5	.82
Scheduling	18.6	21.8	.00*
Family	8.5	9.2	.00*
Co-workers	8.3	8.2	.75
Interaction	15.1	15.1	.98
Professional	12.3	12.3	.74
Control	16.1	15.9	.60
Praise	13.8	13.8	.92

Note. M = Mean, *p = equal variance significance level < 0.05

Multiple regression. A multiple linear regression was conducted using a univariate general linear model to assess for confounding variables with years of experience and job satisfaction. A 10% or greater coefficient of change was considered significant. The regression showed that age, children, marital status, employment status, unit, magnet status, and number of beds were confounding variables of job satisfaction (Table 16).

In addition, a multiple linear regression analysis was conducted to analyze for potential covariates of overall job satisfaction. The following categorical variables were used in the model: gender, marital status, highest educational level, employment status, years of experience, unit employed, number of facility beds, and magnet status. The covariates included in the model were age and number of children. Ethnicity was not included in the multiple regression because 97% of the participants were white/Caucasian.

The multiple regression analysis revealed that years of employment was not statistically significantly (p = .16) with job satisfaction. The regression analysis found marital status, unit employed, and magnet status are significant predictor variables of job

satisfaction at the $p < .05$ level. The regression indicated that nurses that are single ($p = .02$) and employed in a facility with magnet status ($p = .009$) have higher job satisfaction. Adams and Bond (2000) also found that magnet status correlated with higher levels of job satisfaction and lower turnover rates. The analysis also suggests nurses employed in critical care and oncology have significant lower job satisfaction. Refer to Appendix Q for the multiple linear regression results of job satisfaction. Next, linear trend was evaluated. No linear trend was found with predictor variables and job satisfaction.

Table 16

Confounding Variables with Years of Experience

	Change fatigue	Resilience	Job Satisfaction
Variable	β (% change)	β (% change)	β (% change)
None	0.79	0.35	0.71
Age	0.67 (15%)*	0.47 (34%)*	-.21 (70%)*
Children	1.0 (26%)*	0.16 (54%)*	0.75 (5%)
Marital Status	0.68 (13%)*	0.19 (45%)*	1.3 (83%)*
Gender	0.82 (3%)	0.38 (8%)	0.61 (14%)*
Education	0.63 (20%)*	0.34 (3%)	0.70 (1%)
FT/PT status	0.75 (4%)	0.40 (14%)*	0.62 (12%)*
Unit	0.86 (8%)	0.30 (14%)*	0.26 (63%)*
Magnet	0.73 (6%)	0.41 (17%)*	0.65 (8%)
Beds	0.77 (2%)	0.41 (17%)*	0.65 (8%)

Note. β=beta coefficients, *significant coefficient of change

Research Question 4: What is the relationship among change fatigue, resilience, and job satisfaction?

A statistically significant association was found among change fatigue, resilience, and job satisfaction, using Pearson's correlation at $p < 0.05$ level. Change fatigue was negatively associated with resilience ($r = -.146$, $p = .002$), change fatigue was negatively associated to job satisfaction ($r = -.295$, $p = .000$), and job satisfaction was positively associated with resilience ($r = .252$, $p = .000$).

Hypotheses 1: Novice hospital staff nurses have higher change fatigue compared to experienced hospital staff nurses.

This hypothesis was tested using multiple linear regression. The regression model revealed that years of experience was not statistically significant with change fatigue and that education, gender, and number of beds were predictor variables of change fatigue. Linear trend suggests as education increases, change fatigue decreases and as hospital size and number of beds increases, change fatigue increases.

Hypothesis 2: Novice hospital staff nurses have lower resilience compared to experienced hospital staff nurses.

This hypothesis was tested using multiple regression. The regression model revealed that years of experience was not statistically significant with resilience and that education and unit were predictive variables of resilience.

Hypothesis 3: An inverse association exists between resilience and change fatigue in novice and experienced hospital staff nurses.

This hypothesis was tested using Pearson's correlation and was supported. A statistically significant inverse association at the $p < 0.05$ level was identified between resilience and change fatigue ($r = -.146$, $p = .002$), which suggests staff nurses that have higher resilience, have lower change fatigue (Table 17).

Table 17

Association between Resilience and Change Fatigue

Variable	n	p	r
Change fatigue	489	.002*	-.146
Resilience	471		

Note. r = estimate of Pearson product-moment correlation coefficient, *significance level, p < .05.

Hypothesis 4: An inverse association exists between job satisfaction and change fatigue in novice and experienced hospital staff nurses.

This hypothesis was tested using Pearson's correlation and was supported. A statistically significant inverse association at the $p < 0.5$ level was identified between job satisfaction and change fatigue scores ($r = -.295$, $p = .000$), which suggests staff nurses that have lower change fatigue, are more satisfied with their job (Table 18).

Table 18

Association between Change Fatigue and Job Satisfaction

Variable	n	p	r
Change fatigue	489	.000**	-.295
Job Satisfaction	394		

Note. r = estimate of Pearson product-moment correlation coefficient, *significance level, p < .05.

Hypothesis 5: A positive association exists between job satisfaction and resilience in novice and experienced staff nurses.

This hypothesis was tested using Pearson's correlation and was supported. A statistically significant positive association at the $p < 0.05$ level was identified between job satisfaction and resilience ($r = .252$, $p = .000$), which suggests staff nurses with higher resilience, are more satisfied with their job (Table 19).

Table 19

Association between Job Satisfaction and Resilience

Variable	n	p	r
Job Satisfaction	394	.000**	.252
Resilience	471		

Note: r = estimate of Pearson product-moment correlation coefficient, **significance level, p < .05.

Chapter 5: Summary and Conclusions

This chapter includes a summary, the strengths and limitations of the study, indications for the conceptual framework, future research suggestions, and discussion about the study findings.

Summary of Findings

The purpose of this study was to determine the relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses. In addition, differences between novice and experienced staff nurses were examined in relation to change fatigue, resilience, and job satisfaction. The study was a descriptive correlational design and utilized three tools (Change Fatigue Scale, Connor-Davison Resilience Scale, and McCloskey/Mueller Satisfactions Scale) with an online survey.

Hospitals are constantly engaging in change to become more competitive and cost effective, but these changes are having a tremendous impact on people at every level in the organization, including staff nurses. Organizational changes have a negative impact on both the physical and psychological well-being of staff nurses. Organizational change can cause change fatigue, which is the overwhelming feeling of stress, exhaustion, and burnout associated with rapid and continuous change in the workplace and has not been researched with nurses. Organizational change can also lead to stress, decrease in job satisfaction, and increase in turnover rates. One way to combat the negative effects of change is resilience, which is the ability to adapt to stress in the workplace.

The Transactional Model of Stress and Coping developed by Lazarus and Folkman (1984) was used as the theoretical framework for this study. This model proposes that stressors and ways individuals cope need to be considered jointly in

explaining the stress and coping process because they are interdependent. Organizational change is a frequent stressor experienced by nurses that causes stress, a decrease in job satisfaction, and change fatigue. Resilience is a personal quality that can be used to adapt to the stress experienced with organizational change. The study jointly evaluated the stress of organizational change and resilience as a personal quality used to cope with organizational change by researching the relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses.

Participants of the study were non-systematically chosen from the database of all licensed RNs in South Dakota. Names, addresses, and emails were obtained from the South Dakota Board of Nursing. The participants were novice and experienced staff nurses. The majority of the participants were female, white/Caucasian, having a baccalaureate degree, and employed full-time in a > 250 bed hospital with designated magnet status.

The research questions were developed from the literature and Lazarus and Folkman's Transactional Model of Stress and Coping. Four research questions and five hypotheses were developed and tested.

Research question 1: What is the difference in level of change fatigue experienced by novice and experienced hospital staff nurses?

Multiple regression analysis revealed change fatigue was not statistically significant with years of experience. The analysis found educational level, gender, and size of hospital are significant predictor variables of change fatigue. Males have higher change fatigue compared to females. A linear trend was found with educational level and

size of hospital. The findings suggest as educational level increases, change fatigue decreases and as size of hospital increases, change fatigue increases.

Research question 2: What is the difference in level of resilience experienced by novice and experienced hospital staff nurses?

Multiple regression analysis revealed resilience was not statistically significant with years of experience. The analysis found educational level and unit are significant predictor variables of resilience. This regression indicated that those with a master's degree have statistically higher resilience. The analysis suggests that nurse's employed in obstetrics, oncology, and medical/surgical units have lower resilience. The analysis also revealed number of children is a marginally significant predictor variable of resilience.

Research question 3: What is the difference in job satisfaction experienced by novice and experienced hospital staff nurses?

Multiple linear regression analysis revealed that job satisfaction was not statistically significant with years of experience. The analysis showed that marital status, unit employed, and magnet status are significant predictor variables of job satisfaction. The regression indicated that nurses who are single and employed in a facility with magnet status have higher job satisfaction. The analysis suggests that nurses employed in critical care and oncology have the lowest job satisfaction. Adams and Bond (2000) also found that magnet status correlated with higher levels of job satisfaction.

Research question 4: What is the relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses?

According to this study, there is a positive association between resilience and job satisfaction, negative association between change fatigue and job satisfaction, and

negative association between change fatigue and resilience. Multiple linear regression was conducted with years of experience and found there are many confounding variables with change fatigue, resilience, and job satisfaction that should be considered with these results.

Hypothesis 1: Novice hospital staff nurses have higher change fatigue compared to experienced hospital staff nurses.

This hypothesis was not supported by the findings of the study. There was a statistically significant difference between novice and experienced hospital staff nurses at the $p < 0.05$ level, but experienced nurses reported higher change fatigue scores. Also, multiple regression analysis identified change fatigue was not statistically significant with years of experience. No previous studies have examined change fatigue in nurses or the relationship with years of employment. Vestal (2013) suggested that new graduate nurses are more vulnerable to the effects of change fatigue. Two studies examined nursing experience and age with organizational change. Stensaker and Meyer (2012) explored how experience with organizational change influences employee's reaction to change with a qualitative study. The results of the study suggest employees with more change experience demonstrated less resistance to change and more positive reactions to the change. Moore et al. (1996) found older nurses coped better with constant organizational changes.

Hypothesis 2: Novice hospital staff nurses have lower resilience compared to experienced hospital staff nurses.

This hypothesis was not supported by the study. There was a statistically significant difference between novice and experienced hospital staff nurses resilience at

the $p < 0.05$ level, using a *t*-test for independent groups; but multiple regression analysis revealed years of experience was not statistically significant. The multiple regression analysis revealed that educational level and unit employed are predictor variables of resilience. The analysis revealed that participants employed in obstetrics, oncology, and medical/surgical units have lower resilience. Also, participants with a master's degree have higher resilience.

Other studies have identified that nursing experience correlates with higher resilience. Gillespie et al. (2009) conducted a predictive survey study with 1,430 nurses working in the operating room (OR). The study revealed that only years of OR experience predicted resilience. Age and education did not predict resilience. Connor and Davidson (2003) also report no differences in resilience with age or gender. Kornhaber and Wilson (2011) found that nurses develop resilience with experience. The longer the participant was employed in the burn unit, the more coping skills they developed. Lee et al. (2015) found that less experienced staff (< 7 Years) averaged two points lower on the resilience scale than their more experienced peers. According to Lazarus and Folkman (1984), coping emerges over time from stressful interactions, so experienced nurses should have higher resilience.

Hypothesis 3: An inverse association exists between resilience and change fatigue in novice and experienced hospital staff nurses.

The findings of this study supported this hypothesis. A statistically significant inverse association was determined between resilience and change fatigue at a $p < 0.05$ level, using Pearson's correlation. No previous studies have examined change fatigue in nurses or its relationship to resilience. Shin et al. (2012) performed a longitudinal study

with employees and managers and found that resilience was positively related to employee's commitment to organizational change and commitment to change was negatively related to turnover. The study suggests that employees with higher resilience respond more favorable to organizational change.

Hypothesis 4: An inverse association exists between job satisfaction and change fatigue in hospital staff nurses.

This findings of this study supported this hypothesis. A statistically significant inverse association was determined between job satisfaction and change fatigue using Pearson's correlation. No previous studies have examined change fatigue in nurses or its relationship to job satisfaction. According to Caricati et al. (2014), nurses' job satisfaction is one of the most important factors in determining individuals' intention to stay or leave a healthcare organization. Minimizing turnover is a priority for healthcare executives, especially in times of a nurse shortage, which is currently being experienced in today's healthcare climate. The national turnover rate for nurses is at an all-time high (Nursing Solutions Inc., 2015).

There is considerable evidence in the literature of the link between organizational change and job dissatisfaction and change fatigue is a result of frequent organizational change. Many studies have reported a negative association to organizational change and job satisfaction (Dool 2009; Kuokkanen et al., 2009; Rafferty & Griffin, 2006; Teo et al., 2013; Verhaeghe et al., 2006). Bernerth (2011) found that change fatigue was positively correlated with exhaustion and absenteeism and exhaustion was in turn negatively related to organizational commitment and positively related to turnover.

Hypothesis 5: A positive association exists between job satisfaction and resilience in hospital staff nurses.

The findings of the study supported this hypothesis. A statistically significant positive association was determined between job satisfaction and resilience using Pearson's correlation. Other studies have found a positive correlation between resilience and job satisfaction. Matos et al. (2010) found a positive correlation between resilience and job satisfaction with psychiatric nurses. Larrabee et al. (2010) found that resiliency is a predictor of stress and job satisfaction in nurses. Hardiness has been linked to resilience and hardiness has been found to have a positive correlation to job satisfaction (Cash & Gardner, 2010; Larrabee et al., 2003).

Summary of Results

Prior research studies have reported a positive association with resilience and nursing experience. The findings of this study found that years of experience was not significant with change fatigue, resilience, and job satisfaction, using multiple linear regression. Predictor variables were found with the regression analysis. Magnet status, unit employed, and marital status were predictor variables of job satisfaction. A previous study by Adams and Bond (2000) also reported magnet status to be positively related to job satisfaction. The regression analysis also found that education and unit employed are predictor variables of resilience. Education, gender, and hospital size are predictor variables of change fatigue. In addition, linear trend found as size of facility and number of beds increases, change fatigue increases and as education increases, change fatigue decreases.

The results of the study found a significant negative association between change fatigue and job satisfaction (r = -.295, p = .000) and change fatigue and resilience (r = -.145, p .002). No previous studies have examined change fatigue and nurses, but Shin et al. (2012) found a positive association with resilience and organizational change. There is considerable evidence in the literature of the link between organizational change and job satisfaction and change fatigue is a result of frequent organizational change. The findings of the study also found a significant positive association between resilience and job satisfaction (r =.251, p = .000), which has been reported by other research studies.

Strengths of the Study

This study has several strengths. First, it was framed by a theoretical framework. The study utilized Lazarus and Folkman (1983) Transactional Model of Stress and Coping. The model proposes that stress and coping need to be considered jointly. The study jointly evaluated the stress of organizational change and resilience as a personal quality used to cope with organizational change.

Secondly, the instruments used have a high degree of reliability and validity. This was found both with the current study and with prior research studies. The CD-RISC, which tested resilience, is highly utilized and used with many different populations, including nursing. The MMSS was designed to assess satisfaction of hospital staff nurses, which was the population for this study. Change fatigue scale is a newly developed instrument and had not been used with nurses, but demonstrated a Cronbach's alpha of .91 with the study. In addition, all questions of the Change Fatigue Scale loaded adequately using varimax orthogonal rotation.

Thirdly, the sample size was adequate. According to Polit and Beck (2012), with an alpha level of 0.05, a small standardized effect size of 0.2 and power of 0.8, a minimum sample size of 388 is needed for a correlational study. The sample size was 535 hospital staff nurses. This sample size was comparable to the development of the MMSS and Change Fatigue Scale. In addition, the sample was similar to SD RNs demographic data in age, gender, ethnicity, and educational level.

Finally, the study used an online survey using QuestionPro to promote confidentiality. Participants were sent the survey link by email, and the link to the QuestionPro survey could not be associated with their names to promote confidentiality. The response rate for this study (26%) is similar to other online surveys (20-39%) (Nulty, 2008).

Limitations of the Study

There are several limitations with the study**.** First, the study was a descriptive correlational design, which describes relationships of variables, but does not provide good information on causal relationships. Another limitation is the potential for unmeasured confounding variables that may have contributed to the findings of this study. Bias cannot be ruled out due to residual confounding variables. The potential confounding variables that were measured in this study were: age, gender, marital status, ethnicity, number of children, educational level, employment status, years of experience, number of hospital beds, unit employed, and magnet status of the hospital.

Secondly, there was an unequal sample size of novice and experienced nurses. There was an adequate number of experienced nurses, but the responses for novice nurses with the different research tools ranged from 130-160. According to Polit and Beck

(2012), with an alpha level of 0.05, a small standardized effect size of 0.2 and power of 0.8, a minimum sample size of 194 is needed in each group for a correlational study. The sample size for novice nurses gives an effect size of 0.25 (Polit & Beck, 2012)

Another limitation is the inability to send the survey to only hospital staff nurses. The participants may have been confused if they met the qualifications for the study. Some participants may have taken the survey and not been employed as a staff nurse. To control for this, the cover letter explained the qualifications for the study and also the first question on the online survey asked if they were a staff nurse in a hospital setting. If they answered no to the first question, they were thanked for their participation and informed they did not meet the qualifications for the study.

Finally, not all of the participants completed all three tools. A Pearson chi-square evaluated the distribution of demographic characteristics and found no differences in distribution for years employed, change fatigue, resilience, and job satisfaction. Missing data is a limitation for interpreting the results, but the chi-square test suggests that at least for the demographic characteristics, there is no evidence for bias. Additionally, the lack of ethnic diversity and the majority of participants being female limits generalizability. The sample was predominately white/Caucasian and female. Registered nurses in South Dakota and in the United Sates are also predominantly white/Caucasian and female.

Implications for Nursing

Healthcare is typified by change, and organizational changes can have a negative impact on the physical and psychological well-being of nurses. Organizational change causes stress, decrease in job satisfaction, increase in turnover, and change fatigue. Turnover rates for nurses are at an all-time high and job satisfaction is one of the most

important factors in determining a nurse's intention to stay or leave a healthcare organization. At a time of increasing nurse turnover, it is important to identify ways to enhance job satisfaction. Several research studies found a negative association between organizational change and job satisfaction (Kuokkanen et al., 2009; Rafferty & Griffin, 2006; Teo et al., 2013). This study extended the current knowledge and found a significant positive association between change fatigue and job satisfaction.

Change fatigue has not been researched with nurses, prior to this study. With change fatigue, employees become disengaged and apathetic to the change and do not express their dissent, even though it is explicitly felt. Because this is silent dissent expressed by employees experiencing change fatigue, it is rarely apparent to managers. It is imperative that nurse leaders understand the negative effects of change fatigue and monitor for the passive behaviors, so change fatigue does not go unnoticed. The study supports the recommendation of hospitals implementing strategies to prevent change fatigue, such as utilizing a change calendar to help monitor and manage when changes occur.

Another recommendation to prevent change fatigue and improve job satisfaction is to implement resilience training for staff nurses. The study found a significant positive association between resilience and job satisfaction and significant negative association between resilience and change fatigue. Prior research studies highlight the importance of resilience and job satisfaction. Research also found individuals with higher resilience tolerate organizational change better.

The findings of this study advances the nursing knowledge and contributes to the gap in the literature on change fatigue and the relationship with resilience and job

satisfaction. This new knowledge will assist nursing leaders to become more aware of the effects of change fatigue and encourage them to develop interventions to prevent change fatigue of hospital staff nurses, which in turn may increase job satisfaction and retention rates.

Implications for Conceptual Framework

The Transactional Model of Stress and Coping developed by Lazarus and Folkman (1984) was used as the theoretical framework for this study. This model proposes that stressors and ways individuals cope need to be considered jointly in explaining the stress and coping process because they are interdependent. Organizational change is a frequent stressor experienced by nurses that causes stress, a decrease in job satisfaction, and change fatigue. Resilience is a personal quality used to adapt to stress experienced with organizational change. This study jointly evaluated the stress of organizational change and resilience as a personal quality used to cope with the stress of organizational change, by researching the relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses.

During organizational changes, the individual appraises the situation as being a threat that is harmful or benign. If the situation is not perceived as a threat, there is no stress experienced. If the organizational change is perceived as a threat, then the individual assesses one's coping resources. If the individual is unable to cope with the threat of multiple organizational changes, the individual will experience change fatigue and job dissatisfaction. In contrast, the resilient nurse has the ability to positively cope with multiple organizational changes and has job satisfaction. According to Lazarus and Folkman (1984), coping is a process that emerges over time from stressful interactions

with which the person attempts to manage their stress, so experienced nurses should have higher levels of resilience and job satisfaction and lower levels of change fatigue compared to novice staff nurses.

The study partially supports the theoretical framework. Experienced nurses demonstrated higher resilience and job satisfaction mean scores, but higher change fatigue when compared to novice staff nurses. In addition, with multiple regression, years of experience was not statistically significant with change fatigue, resilience, or job satisfaction.

Recommendations for Future Study

Change fatigue is a concept that has not been researched in nursing, prior to this study. No research studies have been conducted on the relationship among change fatigue, resilience, and job satisfaction. The Change Fatigue Scale is a newly developed instrument, and additional research is needed to understand change fatigue and the relationship it has with other confounding variables. According to Bernerth et al. (2011), additional research is needed on individual differences, including self-efficacy, openness to experience, and tolerance for ambiguity that may impact the extent to which organizational change is experienced as stressful.

Research should be conducted on change fatigue with different ethnic groups. The participants for this study were predominantly white/Caucasian and female. Research is needed to test interventions that promote resilience and the association to change fatigue. Furthermore, a qualitative study would be beneficial to understand the meaning of change, individual coping strategies used, and what is important to nurses during organizational change.

The study obtained information from nurses employed in urban and rural hospitals. Results from the study found that nurses employed in larger hospitals have higher change fatigue. Additional research should be conducted with the larger hospitals and assessing for change fatigue. It may also be beneficial to conduct a longitudinal study to assess for changes over time.

Conclusion

The purpose of this descriptive correlational study was to determine the relationship among change fatigue, resilience, and job satisfaction of hospital staff nurses and if differences exist between novice and experienced staff nurses. This study was framed by the Transformational Model of Stress and Coping. Strengths, limitations, and recommendations for further research were discussed.

The findings of this study will advance the nursing knowledge on change fatigue and the relationship with resilience and job satisfaction. This new knowledge will assist nursing leaders to become more aware of the effects of change fatigue and encourage them to develop interventions to prevent change fatigue of hospital staff nurses, which in turn may increase job satisfaction and retention rates.

References

Ace, W. & Parker, S. (2010). Overcoming change fatigue through focused employee engagement. *OD Practitioner, 42*(1), 21-25.

Adams, A. & Bond, S. (2000). Hospital nurses' job satisfaction, individual and organizational characteristics. *Journal of Advanced Nursing, 32*(3), 536-543.

American Association of Colleges of Nursing, Nursing Shortage, (January 21, 2014). *AACN factsheet.*

Retrieved from http://www.aacn.nche.edu/media-relations/fact-sheets/nursing-shortage

Applebaum, D., Fowler, S., Fiedler, N., Osinubi, O. & Robson, M. (2010). The impact of environmental factors on nursing stress, job satisfaction, and turnover intention. *Journal of Nursing Administration, 40*(7/8), 323-328. doi: 10.1097/NNA.0b013e3181e9393b

Baumann, A., Giovannetti, P., O'Brien-Pallas, L., Mallette, C., Deber, R., Blythe, J., Hibberd, J. & DiCenso, A. (2001). Healthcare restructuring: The impact of job change. *CJNL, 14*(1), 14-20.

Bernerth, J., Walker, H. & Harris, S. (2011). Change fatigue: Development and initial validation of a new measure. *Work & Stress, 25(*4), 321-337.

Brown, M. & Cregan, C. (2008). Organizational change cynicism: The role of employee involvement. *Human Resource Management, 47*(4), 667-686.

Brown, H., Zijlstra, F. & Lyons, E. (2006). The psychological effects of organizational restructuring on nurse. *Journal of Advanced Nursing, 53*(3), 444-357.

Buerhaus, P. I., Donelan, K., Ulrich, B. I., Norman, L. & Ditus, R. (2006). State

of the registered nurse workforce in the United States. *Nursing Economics, 24*(1), 6-12.

Campbell-Sills, L. & Stein, M. B. (2007). Psychometric analysis and refinement of the Connor-Davidson resilience scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress, 20*(6), 1019-1028.

Caricati, L., La Sala, R., Marletta, G., Pelosi, G., Ampollini, M., Fabbri, A., . . . Mancini, T. (2014). Work climate, work values and professional commitment as predictors of job satisfaction in nurses. *Journal of Nursing Management, 22*, 984-994. doi: 10.1111/jonm.12079

Cash, M. L. & Gardner, D. (2010). Cognitive hardiness, appraisal and coping: Comparing two transactional models. *Journal of Managerial Psychology, 26*(8), 646-664. doi: 10.1108/0268.3941111181752

Chan, A. Chan Y. & Kee, J. (2013). Exposure to crises and resiliency. *Occupational Medicine, 63,* 141-144.

Chan, E. & Morrison, P. (2000). Factors influencing the retention and turnover intentions of registered nurses in a Singapore hospital. *Nursing and Health Sciences,* 2, 113-121.

Chang, E. & Hancock, K. (2003). Role stress and role ambiguity in new nursing graduates in Australia. *Nursing Health Science, 5*(2), 155-163.

Connor, K. M. & Davidson, R. T. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale. *Depression and Anxiety, 18*, 76-82.

Coomber, B. & Barriball, L. (2007). Impact of job satisfaction components on

intent to leave and turnover for hospital-based nurses: A review of the research literature. *International Journal of Nursing Studies, 44*, 297-314. doi: 10.1016/j.ijnurstu.2006.02.004

Cummings, G., Olson, K., & Hayduck, L. (2008). The relationship between nursing leadership and nurses' job satisfaction in Canadian oncology work environments. *Journal of Nursing Management, 16,* 508-518.

Delmatoff, J. & Lazarus, I. R. (2014). The most effective leadership style for the new landscape of healthcare. *Journal of Healthcare Management, 59*(4), 245-249.

Department for Professional Employees. (2012). *Fact sheet 2012: A profile of the profession.* Retrieved from http://dpeaflcio.org/wp-content/uploads/Nursing-A-Profile-of-the-Profession-2012.pdf

DiCorcia, J. A. & Tronick, E. (2011). Quotidian resilience: Exploring mechanisms that drive resilience from a perspective of everyday stress and coping. *Neuroscience and Biobehavioral Reviews, 35,* 1593-1602. doi: 10.1016/j.neubiorev.2011.04.008

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed.). Hoboken, NJ: John Wiley & Sons, Inc.

Dool, R. (2009). Change fatigue: The impact of enervative change on job satisfaction. *Revue Sciences de Gestion, 70*, 21-40.

Dzik-Jurasz, D. (2006). Supporting sustainable change. *Nursing Management, 13*(4), 26-29.

Edward, K. L. (2005). The phenomenon of resilience in crisis care mental health

clinicians. *International Journal of Mental Health Nursing, 14*(2), 142-148.

Grafton, E. Gillespie, B. & Henderson, S. (2010). Resilience: The power within. *Oncology Nursing Forum, 37*(6), 698-705.

Gillespie, B. M., Chaboyer, W., & Wallis, M. (2007). Development of a theoretically derived model of resilience through concept analysis. *Contemporary Nurse, 25,* 124-135.

Gillespie, B. M., Chaboyer, W., & Wallis, M. (2009). The influence of personal characteristics on the resilience of operating room nurses: A predictor study. *International Journal of Nursing Studies, 46*, 968-976. doi: 10.1016/j.ijnurstu.2007.08.006

Groth, S. W. (2010). Honorarium or coercion: Use of incentives for participants in clincal research. *Journal of the New York State Nurses Association, 41*(1), 11-22.

Hansson, A., Vingard, E., Arnetz, B., & Anderzen, I. (2008). Organizational change, health, and sick leave among health care employees: A longitudinal study measuring stress markers, individual, and work site factors. *Work & Stress, 22,* 69-80. doi: 10.1080/02678370801996236

Hansten, R. I. & Jackson, M. (2009). *Clinical delegation skills a handbook for professional practice* (4th ed.). Sudbury, MA: Jones and Bartlett Publishers.

Healy, C. M. & McKay, M. F. (2000). Nursing stress: The effects of coping strategies and job satisfaction in a sample of Australian nurses. *Journal of Advanced Nursing, 31*(3), 681-688.

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1*, 104-121.

Hodges, H., Keeley, A. & Grier, E. (2004). Professional resilience, practice longevity, and Parse's theory for baccalaureate education. *Journal of Nursing Education, 44*(12), 548-554.

Jackson, D.. Firtko, A. & Edenborough, M. (2007). Person resilience as a strategy for surviving and thriving in the face of the workplace adversity: A literature review. *Journal of Advanced Nursing, 60,* 1-9.

Judge, T. A. & Klinger, R. (2008). *Job satisfaction, subjective well-being at work.* In M. Eid & R. J. Larson. The Science of Subjective Well Being (pp. 393-399). New York, NY: The Guilford Press.

Kiefer, T. (2005). Feeling bad: Antecedents and consequences of negative emotions in ongoing change. *Journal of Organizational Behavior, 26*, 875-897. doi: 10.1002/job.339

Kornhaber, R. A. & Wilson, A. (2011). Building resilience in burns nurses: A descriptive phenomenological inquiry. *Journal of Burn Care & Research, 32*, 481-488. doi: 10.1097/BCR.0b013e3182223c89

Krebs, J., Madigan, E. & Tullai-McGuinness (2008). The rural nurse work environment and structural empowerment. *Policy, Politics, & Nursing Practice, 9,* 28-38.

Kunze, F., Boehm, S., & Bruch, H. (2010). Age, resistance to change, and job performance: Testing for a common stereotype. *Academy of Management Annual Meeting Proceedings,* 1-6. doi: 10.5465/AMBPP.2010.54495229.

Kuokkanen, L., Suominen, T., Harkonen, E., Kukkurainen, M. & Doran, D.

(2009). Effects of organizational change on work-related empowerment, employee satisfaction, and motivation. *Nursing Administration Quarterly, 33*(2), 116-124.

Larrabee, J. H., Janney, M. A., Ostrow, C. L., Withrow, M. L., Hobbs, G. R., & Burant, C. (2003). Predicting registered nurse job satisfaction and intent to leave. *Journal of Nursing Administration, 33*(5), 271-283.

Larrabee, J. H., Wu, Y., Persily, C. A., Simoni, P. S., Johnston, P. A., Marcischak, T. L., . . . Gladden, S. D. (2010). Influence of stress resiliency on RN job satisfaction and intent to stay. *Western Journal of Nursing Research, 32*(1), 81-102. doi: 10.1177/0193945909343293

Laschinger, H, Finegan, J., & Shamian, J. (2001). The impact of workplace empowerment, organizational trust on staff nurses' work satisfaction and organizational commitment. *Health Care Management Review, 26*, 7-23.

Lautizi, M., Laschinger, H. K. S., & Ravazzolo, S. (2009). Workplace empowerment, job satisfaction and job stress among Italian mental health nurses: An exploratory study. *Journal of Nursing Management, 17*, 446-452. doi: 10.1111/j.1365-2834.2009.00984.x

Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer Publishing Company.

Lee, K. J., Forbes, M. L., Lukasiewicz, G. J., Williams, T., Sheets, A., Fischer, K., & Niedner, M. F. (2015). Promoting staff resilience in the pediatric intensive care unit. *American Journal of Critical Care, 24*(5), 422-430. doi: http://dx.doi.org?10.4037?ajcc2015720

Letvak, S. & Buck, R. (2008). Factors influencing work productivity and intent to stay in nursing. *Nursing Economics, 26*(3), 159-165.

Li, Y. & Jones, C. B. (2013). A literature review of nursing turnover costs. *Journal of Nursing Management, 21,* 405-418. doi: 10.1111/j.1365-2834.2012.01411.x

Lian, S. & Tam, C. (2014). Work stress, coping strategies and resilience: A study among working females. *Asian Social Science, 10*(12), 1911-2025. doi: 10.5539/ass.v10n12p41

Lim, J., Bogossian, F. & Ahern, K. (2010). Stress and coping in Australian nurses: A systematic review. *International Nursing Review, 57,* 22-31.

Locke, E. A. (1976). What is job satisfaction? *Organizational Behavior and Human Performance, 4,* 309-336.

Mallack, L. (1998). Putting organizational resilience to work. *Industrial Management, 40*(6), 8-14.

Manzano Garcia, G. & Ayala Calvo, J. C. (2012). Emotional exhaustion of nursing staff: Influence of emotional annoyance and resilience. *International Nursing Review, 59,* 101-107.

Mark, G. & Smith A. P. (2012). Occupational stress, job characteristics, coping, and the mental health of nurses. *British Journal of Health Psychology, 17,* 505-521.

Mash, B. J., Mayers, P., Conradie, H., Orayn, A, Kuiper, M. & Marais, J. (2008). How to manage organizational change and create practice teams: Experiences of a South African primary care health centre. *Education for Health, 21*(2), 1-14.

Matos, P. S., Neushotz, L. A., Quinn Griffin, M. T., & Fitzpatrick, J. J. (2010). An exploratory study of resilience and job satisfaction among psychiatric nurses working in inpatient units. *International Journal of Mental Health Nursing, 19,* 307-312. doi: 10.1111/j.1447-0349.2010.00690.x

McDonald, G., Jackson, D., Wilkes, L. & Vickers, M. (2013). Personal resilience in nurses and midwives: Effects of a work-based educational intervention. *Contemporary Nurse, 45*(1), 134-143.

McGee, E. M. (2006). The healing circle: Resiliency in nurses. *Issues in Mental Health Nursing, 27,* 43-57. doi: 10.1080/01612840500312837

McMillan, K. & Perron, A. (2013). Nurses amidst change: The concept of change fatigue offers an alternative perspective on organizational change. *Policy, Politics, & Nursing Practice, 14*(1), 26-32. doi: 10.1177/1527154413481811

Mealer, M., Jones, J. & Moss, M. (2012). A qualitative study of resilience and posttraumatic stress disorder in United States ICU nurses. *Intensive Care Medicine, 38,* 1445-1451. doi: 10.1007/s00134-012-2600-6

Mitchell, M. L. & Jolley, J. M. (2013). *Research design explained* (8th ed.). Belmont, CA: Wadsworth.

Moore, S., Kuhik, N. & Katz, B. (1996). Coping with downsizing: Stress, self-esteem and social intimacy. *Nursing Management, 27*(3), 28-30.

Moustaka, E. & Constantinidis, C. (2010). Sources and effects of work-related stress in nursing. *Health Science Journal, 4(*4), 210-216.

Mueller, C. W. & McCloskey, J. C. (1990). Nurses' job satisfaction: A proposed measure. *Nursing Research, 39*(2), 113-117.

Munro, B. H. (2005). *Statistical methods for health care research* (5th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

Murrells, T., Robinson, S. & Griffith, P. (2008). Job satisfaction trends during nurses' early career. *BMC Nursing, 7,* 7.

Nursing Solutions Inc. (2015). *National Healthcare Retention & RN Staffing Report.* Retrieved from http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/NationalHealthcareRNRetentionReport2015.pdf

Nulty, D. D. (2008). The adequacy of response rates to online and paper surveys: What can be done? *Assessment & Evaluation in Higher Education, 33*(3), 301-314.

Phillips, T. (2015). Incentives to participate in research: Are lotteries the winning ticket? *IRB: Ethics & Human Research, 37*(2), 1-7.

Pineau Stam, L. M., Spence Laschinger, H. K., Regan, S. & Wong, C. A. (2015). The influence of personal and workplace resources on new graduate nurses' job satisfaction. *Journal of Nursing Management, 23,* 190-199. doi: 10.1111/jonm.12113

Pines, E. W., Rauschhuber, G. H., Norgan, G. H., Cook, J. D., Canchola, L., Richardson, C. & Jones, M. E. (2011). Stress resiliency, psychological empowerment and conflict management styles among baccalaureate nursing students. *Journal of Advanced Nursing, 68*(7), 1482-1493.

Polit, D. F. & Beck, C. T. (2012). *Nursing research: Generating and assessing*

evidence for nursing practice (9th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

Portoghese, I., Galletta, M., Batttistelli, A., Saiani, L., Penna, M. & Allegrini, E. (2012). Change-related expectations and commitment to change of nurses: The role of leadership and communication. *Journal of Nursing Management, 20,* 582-591. doi: 10.1111/j.1365-2834.2011.01322.x

Price, B. (2008). Strategies to help nurses cope with change in the healthcare setting. *Nursing Standard, 22*(48), 50-56.

Rafferty, A. & Griffin, M. (2006). Perceptions of organizational change: A stress and coping perspective. *Journal of Applied Psychology, 91*(5), 1154-1162. doi: 10.1037/0021-9010.91.5.1154

Resilience [Def 1]. (n.d.). *Oxford Dictionary Online*. Retrieved April 1, 2015, from http://www.oxforddictionaries.com/us/definition2), 126-130./american_english/online

Russell, M. L., Moralejo, D. G., & Burgess, E. D. (2000). Paying research subjects: Participants' perspectives. *Journal of Medical Ethics, 26*(2), 126-130.

Russell, C. & Van Gelder, F. (2008). An international perspective: Job satisfaction among transplant nurses. *Progress in Transplantation, 18(*1), 32-40.

Sherlock-Storey, M., Moss, M. & Timson, S. (2013). Brief coaching for resilience during organizational change – an exploratory study. *The Coaching Psychologist, 9*(1), 19-26.

Shin, J., Taylor, M. S., & Seo, M. (2012). Resources for change: The relationships

of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change. *Academy of Management Journal, 55*(3), 727-748.

Shirey, M. (2012). How resilient are your team members? *Journal of Nursing Administration, 42*(12), 551-553. doi: 10.1097/NNA.0b013e318274b4d6.

Simoni, P., Larrabee, J., Birhimer, T., Mott, C., & Gladden, S. (2004). Influence of interpretive styles of stress resiliency on registered nurse empowerment. *Nursing Administration Quarterly, 28*(3), 221-224.

Smollan, R. & Sayers, J. (2009). Organizational culture, change and emotions: A qualitative study. *Journal of Change Management, 9*(4), 435-457. doi: 10.1080/14697010903360632

South Dakota Center for Nursing Workforce, 2015 Report. *South Dakota nursing workforce supply and employment characteristics: 2015.* Retrieved from http://doh.sd.gov/boards/nursing/documents/2015WorkforceReport.pdf.

Stensaker, I. G. & Meyer, C. B. (2012). Change experience and employee reactions: Developing capabilities for change. *Personnel Review, 41*(1), 106-124. doi: 10.1108/00483481211189974

Sullivan, E. & Decker, P. (2009). *Effective leadership and management in nursing* (7th ed.). Upper Saddle River, NJ: Prentice Hall.

Sveinsdottir, H., Biering, P. & Ramel, A. (2006). Occupational stress, job satisfaction, and working environment among Icelandic nurses: A cross-sectional questionnaire survey. *International Journal of Nursing Studies, 43*, 875-889. doi: 10.1016/j.ijnurstu.2005.11.002

Teo, S., Pick, D., Newton, C., Yeung, M. & Chang, E. (2013). Organizational change stressors and nursing job satisfaction: The mediating effect of coping strategies. *Journal of Nursing Management, 21,* 878-887.

U.S. Department of Health & Human Services (4/18/1979). *The Belmont Report*. Retrieved from http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html

Valusek, J. R. (2007). The change calendar: A tool to prevent change fatigue. *The Joint Commission Journal on Quality and Patient Safety, 33*(6), 355-360.

Verhaeghe, R., Vlerick, P., Gemmel, P., Maele, G. & Backer, G. (2006). Impact of recurrent changes in the work environment on nurses' psychological well-being and sickness absence. *Journal of Advanced Nursing, 56*(6), 646-656. doi: 10.1111/j.1365-2648.2006.04058.x

Vestal, K. (2013). Change fatigue: A constant leadership challenge. *Nurse Leader, 1*(5), 10-11

Vittinghoff, E., Glidden, D., Shiboski, S. & McCulloch, C. (2012). *Regression Methods in Biostatistics.* (2nd ed.). New York, NY: Springer

Yu, M. (2009). Employees' perception of organizational change: The mediating effects of stress management strategies. *Public Personnel Management, 38*(1), 17-32.

Appendix A
Tool Use Permission

From: Jeremy Bernerth [jeremyb@lsu.edu]

Sent: Tuesday, March 11, 2014 9:22 AM

To: Robin Brown

Subject: RE: Change fatigue tool

Hi Robin,

The items are listed in the article. Feel free to use the measure.

Sincerely, Jeremy

Assistant Professor
2710 Business Education Complex
Rucks Department of Management
Louisiana State University
Baton Rouge, LA 70803
225-578-6154
jeremyb@lsu.edu

Appendix B
Change Fatigue Scale

Change Fatigue Scale	**Strongly Disagree**				**Strongly Agree**
1. Too many change initiatives are introduced at my hospital.	1	2	3	4	5
2. I am tired of all the changes in my hospital.	1	2	3	4	5
3. The amount of change that takes place at my hospital is overwhelming.	1	2	3	4	5
4. We are asked to change too many things at my hospital.	1	2	3	4	5
5. It feels like we are always being asked to change something at my hospital.	1	2	3	4	5
6. I would like to see a period of stability before we change anything else at my hospital.	1	2	3	4	5

Appendix C
Tool Use Permission

From: Jonathan Davidson, M.D. [jonathan.davidson@duke.edu]

Sent: Monday 12/1/2014 2:53 PM

To: Robin Brown

Cc: Kathryn Connor [Kathryn_connor@merck.com

Subject: Re: Request Form from: Robin Brown

Attachments: Agreement Form

Dear Robin,

Thank you for your inquiry. We would be pleased to send the CD-RISC for your dissertation project and an agreement is attached for you to kindly sign and return to me. Also, if you can arrange with Dr. Connor for payment of the $30 user fee, that would be appreciated. When those steps have been taken, we'll forward the scale and manual right away.

Please let me know if you have questions.

Kind Regard,

Jonathan Davidson

Appendix D

Connor-Davidson Resilience Scale 10 (CD-RISC-10)

Please indicate how much you agree with the following statements as they apply to you over the last **month**. If a particular situation has not occurred recently, answer according to how you think you would have felt.

	Not true				True all the time
• I am able to adapt when changes occur.	0	1	2	3	4
• I can deal with whatever comes my way.	0	1	2	3	4
• I try to see the humorous side of things when I am faced with problems.	0	1	2	3	4
• Having to cope with stress can make me stronger.	0	1	2	3	4
• I tend to bounce back after illness, injury, or other hardships.	0	1	2	3	4
• I believe I can achieve my goals, even if there are obstacles.	0	1	2	3	4
• Under pressure, I stay focused and think clearly.	0	1	2	3	4
• I am not easily discouraged by failure.	0	1	2	3	4
• I think of myself as a strong person when dealing with life's challenges and difficulties	0	1	2	3	4
• I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	0	1	2	3	4

Appendix E
Tool Use Permission

From: Sharon Sweeney, Coordinator

Sent: Friday 4/10/15 10:11 AM

To: Robin Brown

Subject: McCloskey/Mueller Satisfaction Scale

Attachment: McCloskey/Mueller Satisfaction Scale, Permission Form

Thank you for your interest in the McCloskey/Mueller Satisfaction Scale.

Attached please find the following:

- The McCloskey/Mueller Satisfaction Scale
- Permission form

Sincerely,

Sharon Sweeney, Coordinator
Center for Nursing Classification & Clinical Effectiveness
The University of Iowa
College of Nursing 407 CNB
Iowa City, IA 52242
(319) 335-7051

Appendix F

McCloskey/Mueller Satisfaction Scale (MMSS)

How satisfied are you with the following aspects of your current job?

Please circle the number that applies.

	Dissatisfied				Satisfied
• Salary	1	2	3	4	5
• Vacation	1	2	3	4	5
• Benefits package (insurance, retirement)	1	2	3	4	5
• Hours that you work	1	2	3	4	5
• Flexibility in scheduling your hours	1	2	3	4	5
• Opportunity to work straight days	1	2	3	4	5
• Opportunity to work part-time	1	2	3	4	5
• Weekends off per month	1	2	3	4	5
• Flexibility in scheduling your weekends off	1	2	3	4	5
• Compensation for working weekends	1	2	3	4	5
• Maternity leave time	1	2	3	4	5
• Child care facilities	1	2	3	4	5
• Your immediate supervisor	1	2	3	4	5
• Your nursing peers	1	2	3	4	5
• The physicians you work with	1	2	3	4	5
• The delivery of care method used on your unit (e.g. functional, team, primary)	1	2	3	4	5
• Opportunities for social contact at work	1	2	3	4	5
• Opportunities for social contact with your colleagues after work	1	2	3	4	5
• Opportunities to interact professionally with other disciplines	1	2	3	4	5
• Opportunities to interact with faculty of the College					

of Nursing	1	2	3	4	5
• Opportunities to belong to department and institutional committees	1	2	3	4	5
• Control over what goes on in your work setting	1	2	3	4	5
• Opportunities for career advancement	1	2	3	4	5
• Recognition for your work from superiors	1	2	3	4	5
• Recognition of your work from peers	1	2	3	4	5
• Amount of encouragement and positive feedback	1	2	3	4	5
• Opportunities to participate in nursing research	1	2	3	4	5
• Opportunities to write and publish	1	2	3	4	5
• Your amount of responsibility	1	2	3	4	5
• Your control over work conditions	1	2	3	4	5
• Your participation in organizational decision making	1	2	3	4	5

Appendix G
IRB Approval Letter

Office of Research/Human Subjects Committee

SAD Room 124

Box 2201 SDSU

Brookings, SD 57007

To: Robin Brown, College of Nursing

Date: November 19, 2015

Project Title: Determining the Relationship among Change Fatigue, Resilience, and Job Satisfaction of Hospital Staff Nurses

Approval #: IRB-1511009-EXM

Thank you for taking such care in completion of the request and research protocol. This project is approved as exempt human subjects' research. The basis for your exempt status from 45 CFR 46.101 (b) is:

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

If there are any unanticipated problems involving risks to subjects or others, or changes in the procedures during the study, contact the SDSU Research Compliance Coordinator. At the end of the project please inform the committee that your project is complete.

If I can be of any further assistance, don't hesitate to let me know.

Sincerely,

Norm

Norman O. Braaten

SDSU Research Compliance Coordinator

Appendix H
Cover Letter

Dear Participant,

I am conducting a research project as part of my dissertation at South Dakota State University. The purpose of the study is to examine the effects of change in the work environment and to examine the relationship among change fatigue, resilience, and job satisfaction of staff nurses in a hospital setting. Change in healthcare is at an all-time high and the effects of these changes have not been researched with nurses.

As a full or part-time staff nurse, you are invited to participate in the study by completing the online survey. I realize your time is valuable and have attempted to keep the requested information as brief and concise as possible. It will take you approximately 5-10 minutes to complete the survey.

There are no physical or emotional risks to you participating in this study and your participation is voluntary. You may withdraw from the study at any time without consequences. The benefits to you for participating is the information gained from this research will aid in understanding the effects of change in the work environment, which is an important concept that has not been researched in nursing. The collected data will be prepared in aggregate form and strict anonymity will be maintained.

Please assist me in this research by completing the survey, which will be open for **2 weeks.** If you have any questions, now or later, you may contact me using the information below. Thank you for your time and assistance and I greatly appreciate your cooperation with this study. If you have any questions regarding your rights as a research participant in this study, you may contact the SDSU Research Compliance Coordinator at (605) 688-6975 or SDSU.IRB@sdstate.edu.

Sincerely,

Robin Brown, MS RN

Project Director

1004 Pebble Beach Drive

Clark, SD 57225

E-mail address: robin.brown@sdstate.edu

Phone: (605) 532-3904

The project has been approved by the SDSU Institutional Review Board,

Approval No.: IRB-1511009-EXM

Appendix I
Recruitment Letter

January 5, 2016

Dear Registered Nurse,

I am conducting a research study as part of my dissertation at South Dakota State University. You are receiving this letter because you were initially invited to participate via email, but your email bounced back. The purpose of the study is to examine the effects of change in the hospital work environment, which has not been researched with nurses.

If you are a full or part-time staff nurse employed in a hospital setting, you are eligible to participate in the study by completing the online survey, which takes approximately 5-10 minutes to complete. To access the survey, use the following link: http://www.questionpro.com/t/AH293ZTO8O. The survey will be open until **January 13th**.

Thank you for your time and I greatly appreciate your assistance with this study. Please contact me with any questions at robin.brown@sdstate.edu.

Sincerely,

Robin Brown, MS RN

Appendix J
Demographic Data

- What is your age
  - < 25
  - 25-30
  - 31-35
  - 36-40
  - 41-45
  - 46-50
  - 51-55
  - 56-60
  - > 60

- How many children do you have?
  - None
  - 1
  - 2
  - 3
  - 4
  - 5 or more

- Are you currently?
  - Single
  - Married
  - Divorced

- What is your gender?
  - Male
  - Female

- What is your ethnicity?
  - American Indian
  - Asian/Pacific Islander
  - Black/African American
  - Hispanic/Latino
  - White/Caucasian
  - Multiple/Other Race

- What is your highest nursing educational level?
  - Associate
  - Diploma
  - Bachelors
  - Masters or Higher

- What is your current RN employment status?

- Full-time
- Part-time (20 hours or less/week)

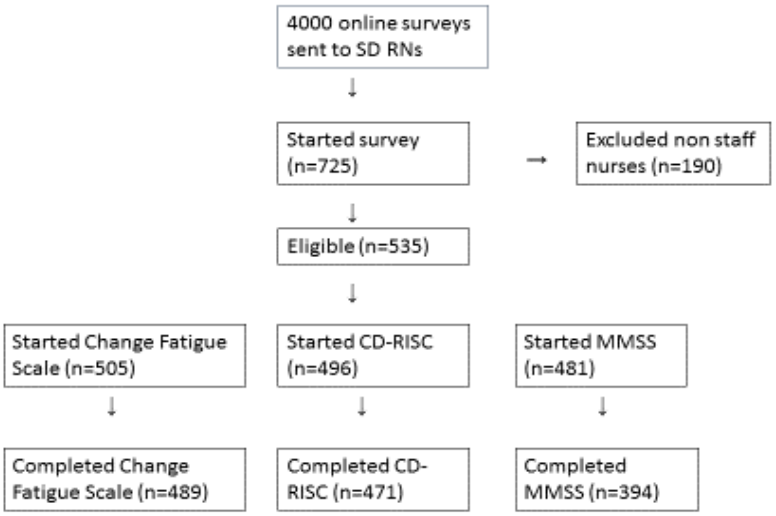
- Which unit are you currently employed in?
  - Psych/Mental Health
  - Maternal-Child Health
  - Pediatrics/Neonatal
  - Trauma
  - Acute/Critical Care
  - Oncology
  - Medical Surgical
  - Rehabilitation
  - Other

- How many years have you been employed as an RN?
  - < 1 year
  - 1 year
  - 2 years
  - 3 years
  - 4 years
  - 5 years
  - 6 years
  - 7 years
  - 8 or more years.

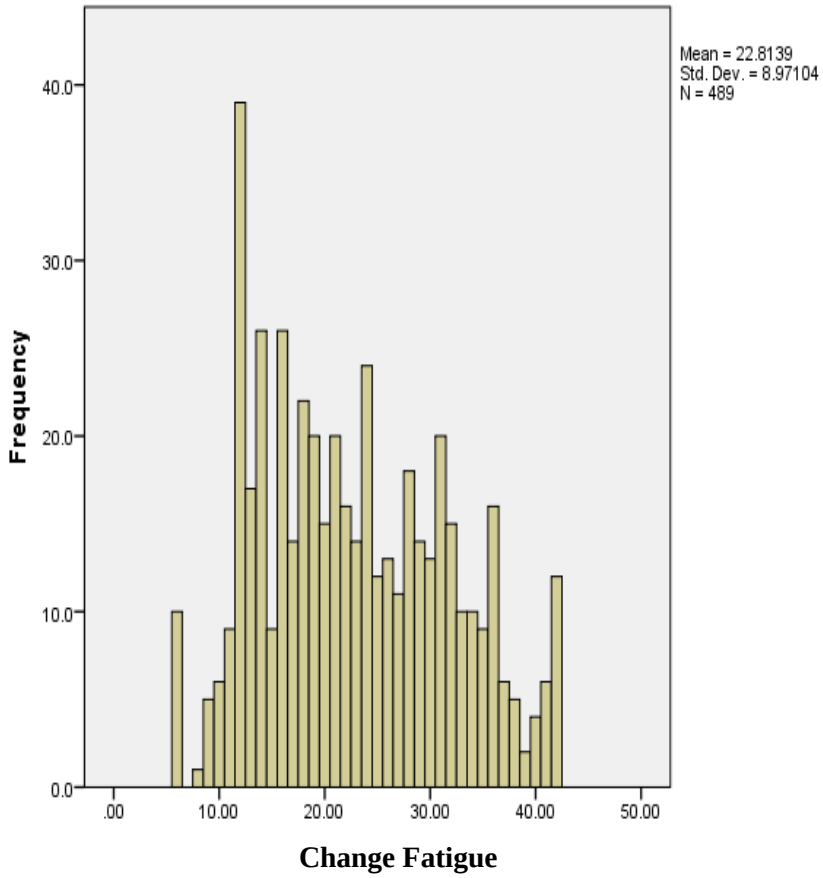
- What is the total number of hospital beds where you are employed?
  - < 50 beds
  - 51-100 beds
  - 101-250 beds
  - > 250 beds

- Does your hospital have magnet status?
  - Yes
  - No

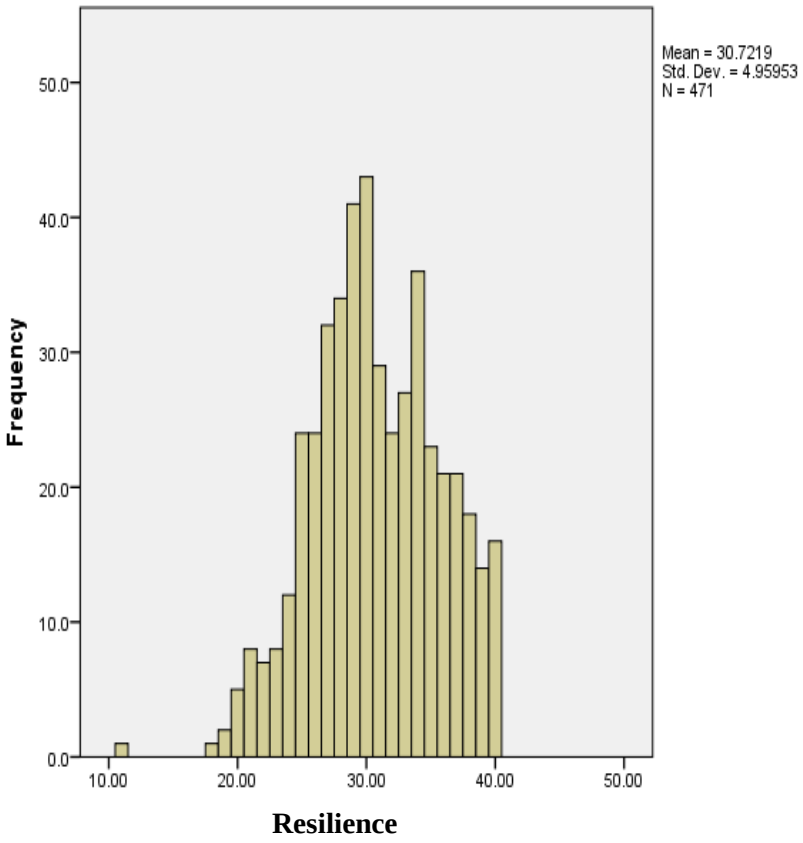
Appendix K
CONSORT Diagram



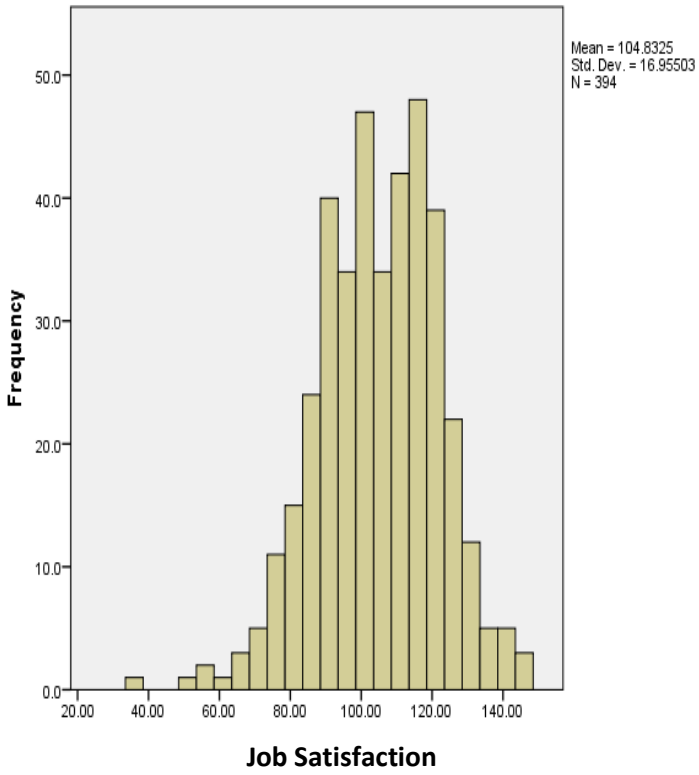
Appendix L
Change Fatigue Histogram



Appendix M
Resilience Histogram



Appendix N
Job Satisfaction Histogram



Appendix O

Frequencies/Percent of Study Sample Completing Research Tools

Staff nurses starting the survey (*N* = 535)

	Frequencies/Percent		
Age	Resilience	Change fatigue	Job Satisfaction
<25	82 (17.5%)	87 (17.9%)	68 (17.3%)
25-30	119 (25.4%)	121 (24.8%)	104 (26.4%)
31-35	37 (7.9%)	40 (8.2%)	34 (8.7%)
36-40	21 (4.6%)	22 (4.5%)	18 (4.6%)
41-45	12 (2.6%)	13 (2.7%)	9 (2.3%)
46-50	10 (2.1%)	10 (2.1%)	9 (2.3%)
51-55	62(13.2%)	65 (13.3%)	53 (13.5%)
56-60	60 (12.7%)	62 (12.7%)	50 (12.7%)
> 60	66 (14.0%)	67 (13.8%)	48 (12.2%)
Total	469 (100%)	487 (100%)	393 (100%)

Children	Resilience	Change fatigue	Job satisfaction
None	188 (40.1%)	195 (40.0%)	163 (41.5%)
1	51 (10.9%)	52 (10.7%)	44 (11.2%)
2	105 (22.4%)	110 (22.6%)	87 (22.1%)
3	85 (18.1%)	87 (17.9%)	65 (16.5%)
4	31 (6.6%)	34 (7.0%)	27 (6.9%)
5 more	9 (1.9%)	9 (1.8%)	7 (1.8%)
Total	469 (100%)	487 (100%)	393 (100%)

Marital Status	Resilience	Change fatigue	Job satisfaction
Single	125 (26.8%)	131 (27.0%	108 (27.7%)
Married	300 (64.2%)	310 (64.0%)	247 (63.3%)
Divorced	42 (9.0%)	44 (9.0%)	35 (9.0%)
Total	467 (100%)	485 (100%)	390 (100%)

Gender	Resilience	Change fatigue	Job satisfaction
Male	42 (9.0%)	45 (9.3%)	40 (10.3%)
Female	424 (91%)	439 (90.7%)	350 (89.7%)
Total	466 (100%)	484 (100%)	390 (100%)

Ethnicity	Resilience	Change fatigue	Job satisfaction
Am. Indian	4 (0.9%)	4 (0.8%)	3 (0.8%)
Black	1 (0.2%)	1 (0.2%)	1 (0.3%)
Hispanic	0 (0%)	1 (0.2%)	0 (0%)
White	455 (97.6%)	472 (97.6%)	380 (97.4%)
Other	6 (1.3%)	6 (1.2%)	6 (1.5%)
Total	466 (100%)	484 (100%)	390 (100%)

Educational Level	Resilience	Change fatigue	Job satisfaction
Associate	105 (22.5%)	110 (22.7%)	82 (21.0%)
Diploma	48 (10.3%)	48 (9.9%)	41 (10.5%)
Bachelors	290 (62.2%)	303 (62.6%)	248 (63.6%)
Masters/higher	23 (5.0%)	23 (4.8%)	19 (4.9%)
Total	466 (100%)	484 (100%)	390 (100%)

Employment Status	Resilience	Change fatigue	Job satisfaction
Full-time	408 (87.6%)	420 (86.8%)	343 (87.7%)
Part-time	58 (12.4%)	64 (13.2%)	48 (12.3%)
Total	466 (100%)	484 (100%)	391 (100%)

Unit Employed	Resilience	Change fatigue	Job satisfaction
Psych/MH	16 (3.4%)	17 (3.5%)	13 (3.3%)
OB	44 (9.4%)	47 (9.7%)	41 (10.4%)
Pediatrics	24 (5.1%)	24 (4.9%)	21 (5.3%)
Trauma	18 (3.8%)	19 (3.9%)	20 (5.1%)
Acute/Critical	72 (15.3%)	72 (14.8%)	64 (16.3%)
Oncology	20 (4.3%)	19 (3.9%)	15 (3.8%)
Med/Surg	77 (16.4%)	84 (17.2%)	70 (17.8%)
Rehab	6 (1.3%)	7 (1.4%)	4 (1.0%)
Other	192 (41.0%)	198 (40.7%)	145 (37.0%)
Total	469 (100%)	487 (100%)	393 (100%)

Years employed	Resilience	Change fatigue	Job satisfaction
<1 year	33 (7.1%)	34 (7.0%)	24 (6.2%)
1 year	45 (9.7%)	46 (9.5%)	39 (10.0%)
2 years	75 (16.1%)	79 (16.3%)	67 (17.2%)
3 years	51 (11.0%)	54 (11.2%)	47 (12.1%)
4 years	29 (6.2%)	28 (5.8%)	25 (6.4%)
5 years	7 (1.5%)	7 (1.5%)	5 (1.3%)
6 years	3 (0.6%)	3 (0.6%)	3 (0.7%)
7 years	3 (0.6%)	3 (0.6%)	2 (0.5%)
8 or more years	220 (47.2%)	230 (47.5%)	178 (45.6%)
Total	466 (100%)	484 (100%)	390 (100%)

Number of beds	Resilience	Change fatigue	Job satisfaction
<50 beds	130 (28.0%)	136 (28.3%)	106 (27.2%)
51-100 beds	54 (11.7%)	57 (11.9%)	47 (12.1%)
101-250 beds	53 (11.5%)	54 (11.2%)	43 (11.1%)
>250 beds	226 (48.8%)	234 (48.6%)	193 (49.6%)
Total	463 (100%)	481 (100%)	389 (100%)

Magnet Status	Resilience	Change fatigue	Job satisfaction
Yes	292 (64.6%)	301 (64%)	244 (64%)
No	160 (35.4%)	169 (36%)	137 (36%)
Total	452 (100%)	470 (100%)	381 (100%)

Appendix P

Multiple Linear Regression Results of Change Fatigue

Predictor	β	SE	p-value
Marital Status			
-Married (R)			
-Divorced	-.09	1.5	.95
-Single	-1.5	1.1	.17
Education			
-Bachelors (R)			
-Associate	2.5	1.1	.03*
-Diploma degree	3.1	1.7	.06
-Masters degree	-.29	2.1	.89
Gender			
-Female (R)			
-Male	3.0	1.5	.04*
Unit			
-Other (R)			
-MH	-3.4	2.3	.14
-OB	.38	1.6	.81
-Peds	-2.5	2.0	.22
-Trauma	-1.2	2.1	.57
-CCU	-1.4	1.3	.27
-Oncology	2.3	2.3	.32
-Med/Surg	.90	1.2	.46
-Rehab	-2.4	3.7	.53
Employment			
-Full-time (R)			
-Part-time	1.4	1.3	.26
Years of Experience			
-< 1 year	-4.2	2.3	.06
-1 year	-2.4	2.0	.24
-2 years	-2.7	1.8	.15
-3 years	-1.6	1.9	.38
-4 years	-3.6	2.2	.10
-5 or more years (R)			
Number of beds			
-<50	-4.5	1.3	.001*
-51-100	-1.4	1.5	.35

-101-250	.84	1.4	.55
-> 250 (R)			
Magnet			
-No (R)			
-Yes	-1.8	1.2	.13
Age	-.10	.28	.73
Children	-.82	.41	.05

Note: β = beta coefficient, SE = standard error, *significance level, $p < .05$, (R) = reference category

Appendix Q
Multiple Linear Regression Results of Resilience

Predictor	β	SE	p-value
Marital Status			
-Married (R)			
-Divorced	.58	.86	.50
-Single	-1.0	.65	.11
Education			
-Bachelors (R)			
-Associate	-.30	.66	.65
-Diploma degree	.05	.95	.95
-Master's degree	2.4	1.2	.04*
Gender			
-Female (R)			
-Male	1.4	.85	.08
Unit			
-Other (R)			
-MH	-2.3	1.3	.09
-OB	-2.4	.93	.01*
-Peds	-1.2	1.2	.30
-Trauma	.52	1.3	.68
-CCU	-.44	.73	.55
-Oncology	-3.1	1.2	.01*
-Med/Surg	-1.7	.71	.02*
-Rehab	1.9	2.3	.34
Employment			
-Full-time (R)			
-Part-time	-.48	.75	.52
Years of Experience			
-< 1 year	-1.4	1.3	.27
-1 year	.63	1.2	.60
-2 years	-.46	1.1	.67
-3 years	-.55	1.1	.61
-4 years	1.1	1.2	.39
-5 or more years (R)			
Number of beds			
-<50	.10	.77	.90
-51-100	.86	.87	.33

-101-250	-.28	.79	.73
-> 250 (R)			
Magnet			
-No (R)			
-Yes	-.12	.67	.87
Age	-.15	.16	.37
Children	.45	.24	.06

Note: β = beta coefficient, SE = standard error, *significance level, $p < .05$, (R) = reference
category

Appendix R
Multiple Linear Regression Results of Job Satisfaction

Predictor	β	SE	p-value
Marital Status			
-Married (R)			
-Divorced	-1.3	3.2	.67
-Single	5.5	2.4	.02*
Education			
-Bachelors (R)			
-Associate	1.2	2.4	.63
-Diploma degree	-5.5	3.5	.12
-Master's degree	-.05	4.3	.99
Gender			
-Female (R)			
-Male	-3.8	2.9	.20
Unit			
-Other (R)			
-MH	-4.6	5.0	.36
-OB	-5.7	3.3	.08
-Peds	-2.6	4.1	.52
-Trauma	-1.8	4.1	.66
-CCU	-8.9	2.7	.001*
-Oncology	-13.0	4.9	.008*
-Med/Surg	-5.2	2.6	.04*
-Rehab	-17.5	8.6	.04*
Employment			
-Full-time (R)			
-Part-time	1.0	2.8	.71
Years of Experience			
-< 1 year	3.5	5.0	.48
-1 year	3.5	4.3	.41
-2 years	-1.1	3.9	.27
-3 years	2.4	3.9	.54
-4 years	1.4	4.5	.75
-5 or more years (R)			
Number of beds			
-<50	3.1	2.9	.28
-51-100	1.9	3.2	.55

-101-250	-2.5	2.9	.39
-> 250 (R)			
Magnet			
-No (R)			
-Yes	6.6	2.5	.009*
Age	.83	.60	.16
Children	.53	.88	.55

Note: β = coefficient, SE = standard error, *significance level, $p < .05$, (R) = reference category