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Factors Influencing the Perceived Stressors of New Graduate Nurses Transitioning into Acute Care Settings: A Secondary Data Analysis

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This research was completed as part of the degree requirements for the Nursing Department at Molloy College.

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FACTORS INFLUENCING THE PERCEIVED STRESSORS OF NEW GRADUATE NURSES TRANSITIONING INTO ACUTE CARE SETTINGS: A SECONDARY DATA ANALYSIS

A dissertation

by

EILEEN K. MAHLER

Submitted in partial fulfillment of the requirements

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Abstract

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EILEEN K. MAHLER, MSN, RN, NE-BC

Background: The transition into practice of new graduate nurses continues to be of concern to the nursing profession. Smooth transition into practice takes on increased importance in the current era of healthcare transformation and resulting impact on the clinical environments within which nurses practice. It is important to study the stressors and challenges new graduates face in the practice environment.

Methods: This descriptive study utilized secondary data analysis to explore new graduate nurses' self-report of clinical stressors during their transition into the professional RN role. Meleis' Transitions Theory and Lazarus and Folkman's Transactional Model of Stress and Coping provided the theoretical framework for the study. The study purpose was to identify sources of work environment stress and their magnitude as stressors perceived by new graduate registered nurses during their first year of clinical practice in acute care settings. The study additionally sought to examine trends in stress levels over time and identify factors that may be predictive of stress levels in new graduate nurses.

Findings: The study utilized a large national sample of new graduate nurses responding to the National Student Nurses Association annual assessment of new graduates. Quantitative data analyses from this study identified that stressors related to work environment, interpersonal work

environment characteristics, and unpredictable work environment characteristics were perceived differently by new graduate nurses based on gender, age, and education. The study additionally revealed there were significant increases in the level of stress perceived by new graduates between 2013 through 2015.

Conclusions: As new graduates enter demanding practice environments, smooth transitions are vital. Knowing the new graduate experience from these data is essential to enable nurse leaders in education and practice settings to develop interventions to diminish work environment stressors for new graduate nurses and support their successful transition into professional practice.

DEDICATION

This work is dedicated to the spirit of the past: my family and mentors who set my compass and encouraged me on my journey; to the inspiration of the present: Bill, Billy, and Angela, true anchors of my homeport, and to my hope for the future: smooth sailing for our new graduate nurses.

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To my family and close friends, *Mea familia, meus portus certus, mea vita.*

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Introduction

Transition into professional practice as a new graduate nurse is a common experience common for all registered professional nurses. The difficulty new nurses encounter during the transition process has been identified as a major concern in the past for the nursing profession and is a mounting concern within a rapidly reforming American healthcare system. Stress is an inherent element within the transition into practice of new graduates and ever-present in the daily work of nurses (Jennings, 2008). Daily work stressors for nurses include varied occurrences: high workloads; managing clinical care simultaneously for multiple patients; inadequate staffing; time pressures; coordinating and planning complex care; documentation demands; emotional demands related to patient prognosis and death, interactions with patients' families, and other healthcare team members; lack of supervisory support; poor work group cohesion; lack of control; lack of reward; and shift working (Happell, Dwyer, Reid-Searl, Burke, Caperchione & Gaskin, 2012; Kramer, Schmalenberg & Maguire, 2010). As the healthcare delivery system changes, the work of nurses changes along with the stressors they face in their varied practice settings (Happell et al., 2012; Jennings, 2008).

Seamless transition into practice for newly licensed nurses has been recognized as a key factor in determining the success of the individual nurse, the outcomes of patients they care for, and the advancement of the nursing profession (American Organization of Nurse Executives (AONE, 2010). Through progressive clinical experiences that occur during the transition process, new graduate nurses learn the technical, interpersonal, and critical thinking skills

integral to the role of the registered professional nurse. New graduates ultimately evolve from novice and advanced beginner into a competent professional. Concerns regarding the readiness of new graduates for complex practice in potentially chaotic healthcare settings has been extensively debated within our profession. The literature consistently depicts the challenges of transition into practice for new graduate nurses (Casey, Fink, Krugman, & Propst, 2004; Kovner, Brewer, Fairchild, Poornima, Kim, & Djukic 2007; Olson, 2009; Teoh, Pua, & Chan, 2013). Although stress cannot be completely eliminated from the transition process, nursing science provides an introspective lens to examine difficulties new graduates encounter in practice environments and find innovative and effective solutions to transform their experience.

The values of the nursing profession and the work of nurses remain an integral part of the American healthcare system. As nurses witness wide-ranging change in practice patterns and workflow, it becomes important to retain and instill those core values and ethics in our newest nurses. The opportunity to explore ways to support novice nurses during the transition process and uncover strategies that eliminate unwarranted stress is a crucial step toward establishing an environment that cultivates excellence in professional practice. The intended audience for this study includes those with the potential to transform the transition experience of new graduates: new graduate nurses, preceptors, nurse educators, and nurse leaders in both academic and practice settings.

This chapter consists of an introduction to the study. It will review the background and significance of perceived stress experienced by new graduate nurses transitioning into professional practice. Key terms and concepts relating to stress, transition, and work environment characteristics will be defined. Factors that may influence the new graduate nurse's

transition experience will be explored and the specific aims of the study, hypotheses, assumptions, and limitations will be presented.

Background and Significance

The process of transition of new graduate RNs entering the workforce is multifaceted. The novice to expert continuum has been utilized as a framework to explore the transition into professional practice (Benner, 1984). Benner (1984) utilized the Dreyfus model of skill acquisition to frame the pattern of applied skill development within nursing practice. As new nurses enter practice, they may find their prior academic training does not fully prepare them to manage the realities of the clinical arena effectively. They bring theoretical knowledge but limited understanding of applying the contextual meanings to actual practice situations (Benner, 1984). Underlying uncertainties and anxieties mark transition. It is through progressive clinical experiences, knowledge acquisition, and skill development that new graduate nurses emerge as competent professional nurses (Benner, 1984).

Prior research identifies the influence of the work environment and ways it impacts new graduate nurses as they begin practice (Duchscher, 2009; Morrow, 2009). Characteristics such as increasing acuity of patient care, lack of confidence, fear of making mistakes, scarce clinical resources, heavy workloads, incivility, and recurrent change contribute to new graduate nurses perceptions of the transition as highly stressful (Duchscher, 2009; Kelly & Ahern, 2008; Morrow, 2009; Pellico, Brewer & Kovner, 2009; Wolters Kluwer Health, 2014). Experts suggest that the new graduate nurse realistically achieves competency within a supportive transition encompassing two years (Casey et al., 2004).

The current healthcare environment is increasingly complex. It is a rigorous setting within which most nurses work on a daily basis. Cost has emerged as a primary driver in the clinical setting, subjecting direct caregivers, especially nurses, to adverse effects of healthcare reform, such as: workforce downsizing, restructuring of nursing services, fluctuations in staffing mix, rapid movement of patients to discharge or sub-acute care settings, and decreased support services for patient care (American Association of Colleges of Nursing (AACN, 2002). Healthcare is a system confronted with competing priorities, economic constraints, regulatory requirements, and shrinking resources (Ebright, 2010). Consider the pressures for new graduates as they transition into the professional RN role within this complex, evolving system. Cultivating behaviors and skills that will enable new graduates to adapt to these complexities and achieve successful patient outcomes is essential to ensure their success.

Readiness for Practice

New graduate nurses enter their first positions with high expectations and idealism for the profession. Their infusion into the workforce is both promising and challenging. Today's new graduates bring the enthusiasm of a new generation of nurses but inexperience in contemporary care delivery. Since Kramer's seminal work on *Reality Shock* in 1974, the difficulties for new graduates as they transition into professional practice have been widely recognized. Kramer disclosed the discrepancy of new nurses understanding of the RN role from education and the reality of their experiences of nursing in the practice setting (Duchscher, 2009). Transition from student to professional nurse is often characterized in terms of concepts such as adaptation, new skill acquisition, socialization, engagement, intentions coping, and work environment. (Cubit & Lopez, 2011; Pellico et al., 2009; Teoh et al., 2013)

The perspective of academic leaders and clinical setting leaders differs on the topic of readiness to practice. In a study conducted for the Advisory Board Company by Berkow, Virkstis, Stewart, and Conway in 2009, approximately ninety percent of the academic leaders identified that their nursing students are prepared to provide safe and effective care in contrast to only ten percent of nurse executives with the same confidence level. This reflects a striking gap between the academic preparation of nurses and the cost driven reality of the acute care practice environment. Time constraints and limitations in clinical opportunities present a challenge for schools of nursing as they strive to provide new graduate nurses with the content they need to enter into practice (Ulrich, Krozek, Ashlock, Africa, Carman, 2010). Benner, Sutphen, Leonard, and Day (2010) identified that although there are many strengths in contemporary nursing education, a substantial gap exists between nursing education and nursing practice. New graduates are moving into the workforce in increasing numbers and assuming clinical responsibilities that may exceed their current capabilities. Despite the evident gap, many nurse leaders believe that academic programs are doing a good job of providing foundational knowledge for new nurses but that additional competencies can only be obtained within the clinical setting during transition (Goode, Lynn, Krsek, & Bednash, 2009).

Various initiatives have been implemented over the past decade that aim to bridge the gap between formal academic education and entry into the practice setting. The Quality and Safety Education for Nurses (QSEN) project funded by the Robert Wood Johnson Foundation was established in 2005. The project defined six competencies that are continuing to be integrated into national nursing education curriculum (Quality and Safety Education for Nurses [QSEN], 2016). The competencies include: patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics (QSEN, 2016). The project goal is

to enhance the knowledge, skill, and attitudes of nursing students within the domains of quality and safety, so as new graduates they are prepared to incorporate these competencies into practice.

As practice evolves beyond the walls of traditional hospital settings, new competencies will be required. Acknowledging the complexity of present-day healthcare environments, the Institute of Medicine (IOM) Report on *The Future of Nursing: Leading Change, Advancing Health* (2010) endorsed foundational competencies for nurses. These include: leadership, health policy, system improvement, research and evidence-based practice, and teamwork and collaboration (Institute of Medicine [IOM], 2010). As nursing roles evolve within our complex healthcare system, nursing education must transform to prepare nurses for practice.

A second initiative, the inclusion of simulation training in nursing programs is an innovative method aimed at enhancing nursing student performance (Fisher & King, 2013). Academic nursing programs strive to provide comprehensive clinical experiences for students but face barriers in achieving this goal in many contemporary practice sites. Limited instructor time in supervising student clinical skills, short patient lengths of stay, restrictions on student access to electronic medical records, facility policies that restrict student participation in care delivery, and increased competition among programs for clinical site placement all pose obstacles to optimum clinical practica for nursing students (National Council of State Boards of Nursing [NCSBN], 2014). Practice settings seek new graduates that are ready for practice but impose limitations within their learning environments. Simulation may present an appealing alternative as a means of preparing student nurses for clinical practice.

A third initiative has been the expansion of nurse residency programs. The IOM Report on *The Future of Nursing: Leading Change, Advancing Health* (2010) recommended the

widespread implementation of nurse residency programs. Unlike other healthcare disciplines such as medicine, pharmacy, physical therapy, and pastoral care, nursing continues as a profession that does not require a standardized residency program (Spector, 2011). These programs have the potential to facilitate a smooth transition for nurses from student to professional life but vary greatly from one organization to another (Welding, 2011). Nurse residency programs blend structured academic and clinical experiences and have been found to increase clinical competency and reduce turnover for healthcare organizations (Welding, 2011).

Findings from the University Health System Consortium (UHC) and American Association of Colleges of Nursing (AACN) residency program have demonstrated successful outcomes for new graduates after a one-year residency program (Goode et al., 2009). Research conducted by Goode and colleagues (2009) on new graduates participating in the UHC/AACN residency program demonstrated a unique "V" shaped pattern in scores reported by residents on skill confidence and RN satisfaction, suggesting the six month period was a challenging time for new graduates where confidence and satisfaction levels wane. Goode and colleagues (2009) propose that nurse residency programs may provide new graduates with the time and experience needed for a successful transition into practice.

A few studies have explored if prior health care or clinical experience has an influence on the readiness of new graduates for professional practice (Hasson, McKenna & Keeney, 2013; Brennan & McSherry, 2007). Increasing numbers of nursing students hold employment in healthcare sector positions during their undergraduate years (Salamonson, Everett, Koch, Andrew, & Davidson, 2012). Some concerns from the academic perspective is that time spent working may negatively impact academic performance in these student nurses. Potential benefits of employment of nursing students in healthcare assistant roles may include greater

clinical exposure, confidence, skill consolidation, increased independence, and lower stress levels (Hasson et al., 2013). Further investigation of the impact of prior work experience on the transition experience of new graduate nurses is warranted.

The Cost of Turnover

The Bureau of Labor Statistics reports that an average baby boomer changes jobs approximately ten times during their career life span and that future generations are anticipated to change jobs even more frequently (Elis, Bauer, Mansfield, Erdogan, Truxillo & Simon, 2015) The nursing profession has experienced increasing turnover rates in the acute care environment for several years (Jones, 2008). Unfortunately there is a lack of consistency in the definitions and measures healthcare organizations use to report turnover data.

The estimated cost of RN turnover ranges from $82,000 to $88,000 for an individual nurse (Jones, 2008). Total yearly RN turnover costs were reported by Kovner, Brewer, Fatehi, and Jun (2014) to run between 1.4 to 2.1 billion dollars. The complexity and realities of nursing practice can become overwhelming for new graduate nurses just entering the profession. New graduates are more likely to resign from their positions than experienced RNs (Welding, 2011). Kovner and colleagues (2014) identified that approximately17.5% of new nurses leave their job within the first year. Li and Jones (2013) explored RN turnover on a global perspective. Their findings revealed that turnover rates in Europe and Canada fall into the moderate to high category levels ranging between 12% to 21% (Li & Jones, 2013). Although viewed as a snapshot, turnover rates provide a measure of concern and place increased urgency to study and eliminate factors responsible for failed transitions into practice for new graduate nurses (Dyess & Sherman, 2009).

Workforce Trends

Over the past decade, predictions of an impending nursing shortage and concerns regarding the number of nurses available to meet future workforce demand within a transforming healthcare system were prevalent in the literature. (American Association of Colleges of Nursing [AACN], 2014, April 24; Buerhaus, 2008; IOM, 2010). The United States Bureau of Labor Statistics (2014) projected that about 3.2 million nurses will be needed by 2022, 19% more than the total job market for nurses in the year 2012. More recently, Buerhaus, Auerbach, and Staiger (2014) forecast an optimistic trend in light of the rapid growth in numbers of graduates from associate, baccalaureate, and graduate nursing programs. They attribute this increase to responsiveness from professional, educational, and private sectors to address the looming nursing shortage. Initiatives such as the Johnson and Johnson *Campaign for Nursing's Future*, the Sigma Theta Tau International initiative, and the Robert Wood Johnson Foundation grant programs are examples of proactive endeavors to support nursing (Buerhaus, 2009). Schools of nursing responded by expanding enrollments and increasing nursing degree opportunities such as postmasters certificate, clinical nurse leader, and doctor of nursing practice programs (Buerhaus et al., 2014). Support for the IOM *Future of Nursing: Leading Change, Advancing Health* (2010) charge to increase the proportion of nurses with a baccalaureate degree to eighty percent by the year 2020 laid groundwork for the extension of online and traditional RN to BSN programs.

The U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA, 2014) reports that RN graduates from schools of nursing that entered the workforce increased from 68,000 in 2001 to 150,000 in 2012 and 2013. They identified that increased numbers of new graduates are entering the workforce and that current workforce

projections reflect that the supply of registered nurses may outpace the demand by the year 2025 by 340,000 (HRSA, 2014). The report advises that national level projections may veil an imbalance of the supply of RNs on a state level (HRSA, 2014). These projections reflect consistent findings reported by Feeg and Mancino (2014) based on employment data from the National Student Nurses' Association (NSNA) annual new graduate survey trends and the annual licensure date reported by the National Council of State Boards of Nursing. NSNA data identifies new graduate nurses in the western U.S. report difficulty in finding employment post graduation (Feeg & Mancino, 2015).

As a majority of nurses near retirement and begin a progressive transition out of the professional workforce, it is imperative to find strategies that ease the transition for our newest colleagues into the profession. As the American economy improves and the retirement of baby boomer generation nurses begins to accelerate, the demographics of the nursing profession will shift to a shortage of experienced bedside nurses (Buerhaus, Auerbach, & Staiger, 2009). This potential shift in expertise reinforces the need to ensure successful transitions of new graduates into practice in order to meet the population's future healthcare needs (Rush, Adamark, & Gordon, 2013).

Another recommendation from the IOM *Future of Nursing Report* (2010) calls for a more educated nursing workforce to meet patients' increasingly complex healthcare needs. In findings from the Robert Wood Johnson RN Work Project, Kovner and colleagues (2014) identified that within two and a half years of becoming licensed as an RN, 14.5% of nurses with an Associate's degree enrolled in a BSN program and 9.9% of nurses with a BSN were enrolled in an advanced degree program. Key motivators for returning to school were interest in career and professional advancement and obtaining new knowledge (Kovner et al., 2014). Findings from the National

Student Nurses' Association Annual New Graduate Survey reflect the majority of new graduates (91%) plan to return to school for another degree (Feeg & Mancino, 2015). Survey respondents indicated the following as the highest degrees they planned to pursue: 16% cited a baccalaureate degree in nursing, 46% cited a Master's degree in nursing, 30% cited a doctorate in nursing practice, and 8 % cited intentions to achieve a PhD (Feeg & Mancino, 2015).

Healthcare Reform

As the American healthcare system navigates away from fee for service and acute care models, steering toward population-based health care, primary care and preventive services, nurses are a key stakeholder in changing practice environments and emerging models of care (IOM, 2010). Numerous factors have converged to alter the work environment of contemporary RNs. These factors include: rapid advances in biomedical science, improved disease prevention and management, new clinical technologies, changing models of care delivery, changes in population demographics (aging and diversity), downsizing and restructuring, expansion of healthcare systems, and information overload (AACN, 2002; Sitterding & Broome, 2015). Changes in the American political landscape resulting from the 2016 elections foretell repeal of the Patient Protection and Affordable Care Act (PPACA, 2010) but it is uncertain what sections of the law will be retained or replaced. The course of either repeal or replacement will bring unknown challenges to the American healthcare system and certain impact for the nursing practice environment.

New graduate nurses are entering a dynamic practice environment. Kovner and colleagues (2014) found in recent cohorts of newly licensed RNs that our newest nurses may be less likely to work in acute care settings and more likely to work as managers, be enrolled in formal education programs, work part time, and hold a second job. The landscape for nursing is

changing and it is important for nursing policy leaders to recognize and plan for the continued evolution of our profession. Determining and planning for future workforce needs must be precise. Patients within the acute care healthcare setting are presenting with more complex needs and higher acuity, often in advanced stages of illness (IOM, 2010). The phenomenon of increasing acuity combined with the focus on decreasing length of stay places a burden on the nurse to address discharge needs in a shorter period.

Healthcare organizations are seeking to decrease costs in order to survive economically within this evolving terrain. Regardless of the path lawmakers take on the continuing journey of healthcare reform, population health, innovative models of care, cost containment, and fulfilling consumer expectations will remain priorities. Operational, capital, and human resources will be scrutinized as organizations adapt to the tenets of value-based purchasing. As employers seek to hire nurses to fill vacant positions, they do not necessarily hire to the skills required to meet the needs of patients and the reforming healthcare system (IOM, 2010). The future workforce will require nurses skilled in technology, continuity of care across settings, team-based care, and nurse-led primary care models (IOM, 2010). Will nurses new to the workforce be afforded the time needed to cultivate these skills?

Changes and increasing pressures within the workplace bring corresponding stress. Occupational or job stress is not unique to nurses; it is a component of many professions and occupations (Weick, Dols, & Northam, 2009). The pace of work, changing workflows, new technologies, and multigenerational workforces all contribute to overall workplace stress (Weick et al., 2009). Aiken, Clarke, Sloane, Lake, and Cheney (2008) identified the relationship of stress to nursing job satisfaction. Decreased RN job satisfaction was linked to increased turnover rates and less than optimal patient outcomes (Aiken et al, 2008). Work-related stress negatively

impacts the physical and psychological well-being of employees, reduces job performance, influences employee attitudes, and increases turnover (Griffin & Clarke, 2011). Stress within the work environment has the potential to negatively influence both nursing outcomes and patient outcomes. Stress impacts employee well-being and contributes to burnout.

Research Problem

The seamless transition of new graduate nurses into practice has vital implications for the nursing profession. Increasing numbers of new graduate nurses will need to be positioned to assume and coordinate the care of acutely ill patient populations within varied and complex practice settings. In order to assist new graduates in successfully transitioning into initial practice, the current body of knowledge on what new graduates perceive as stressors within the clinical environment must be expanded on. Further study of factors that may influence the experience of stressors can serve to inform educators and leaders on strategies to eliminate factors contributing to failed transitions (Dyess & Sherman, 2009).

Knowledge Gap in Relation to the Research

Although there is a wealth of literature on transition into practice, the transition of new graduate nurses still remains a concern to the nursing profession. Many studies exploring new graduate transition are qualitative in nature (Chandler, 2012; Clark & Springer, 2012; Duchscher, 2009; Dyess & Sherman, 2009; Olson, 2009; Pellico et al., 2009; Pellico Djukic, Kovner, & Brewer, 2010; Wolff, Regan, Pesut, & Black, 2010) or mixed method designs (Casey et al., 2004; Parker, Giles, Lantry, & McMillan, 2014). Sample sizes are often limited in these studies and/or restricted to specific hospitals or regions. This may influence the ability to generalize findings when contrasted with a quantitative approach with the benefit of a large, national sample of new graduate nurses experiencing transition.

There are stress measures that have been utilized for practicing nurses and student nurses but not specific to new graduates during the transition phase. The predominant Stress Scales used have been in existence for a few decades. The Holmes and Rahe Stress Scale also known as the Social Readjustment Rating Scale (SRRS) was developed in 1967 by two psychiatrists to explore if stressful life events could be a factor in illness (American Institute of Stress [AIS], 2015). The Nursing Stress Scale (NSS), developed by Gray-Toft and Anderson (1981) is a widely used scale that provides a total stress score based on seven subscales measuring the frequency of stress experienced by nurses working in acute-care environments. That scale was expanded by Gray-Toft and Anderson from 34 to 46 items in 1985 for use with surgical and psychiatric nurses (French, Lenton, Walters & Eyles, 2000). The Expanded Nursing Stress Scale was developed by French and colleagues in 2000 to measure the source and frequency of stress perceived by nurses in varied work settings. The Perceived Stress Scale (PSS) is another commonly utilized instrument for measuring an individual's perception of stress (Cohen, Kamarck, & Mermelstein, 1983). It has been used in studies with college students, women, and individuals with varied health conditions (Al Kalaldeh & Abu Shosha, 2012). The scales differ in relation to the subjects self-report of stress and specificity to stressors, the experiences, and situations that produce stress.

We are experiencing a rapidly reforming healthcare environment with the probability of new stressors presenting within the changing clinical environment. A study that focuses on factors influencing the perceived stressors of new graduate nurses transitioning into an acute care setting will inform educators, preceptors, and nurse leaders on strategies to mitigate the experience of stress during the transition period. This study was conducted as a quantitative, descriptive study on nurses self-report of stressors using a secondary data analysis of a national

sample of new graduate nurses who were members of the National Student Nurses' Association (NSNA). The annual NSNA new graduate survey provided the data source for the secondary analyses.

Study Purpose

The purpose of the study is to identify sources of work environment stress and their severity as stressors perceived by new graduate registered nurses during the first year of clinical practice in acute care. It has been identified that new graduate RNs experience stress when faced with new technologies, responsibilities, difficulty finding their niche in a nursing unit, lack of confidence/competence, increased patient acuity, and chaotic practice environments (Kramer, Lindgren, High, Ocon, & Sanchez, 2012). In order to promote effective coping strategies in new graduate registered nurses, more information is needed about the perceived stressors new graduates encounter in the contemporary clinical environment. Additionally, it is important to know if these stressors are changing over time.

To provide new graduate nurses with the least stressful environment, we must explore what they experience as stressors in the clinical environment and what they recognize as sources of support. Have stressors changed as the healthcare environment changes and transforms? Varied theories of stress struggle with the reality that although some events are inherently stressful, individuals may respond differently – the same situation may be viewed negatively by one individual but viewed as stimulating and challenging by another (Griffin & Clarke, 2011). How do stressors vary for individual new graduate nurses? Are there antecedents that facilitate or inhibit the new graduate's perception of stressors through transition? All stakeholders: nurse managers, educators, preceptors, and new graduates need to identify specific the primary stressors experienced during transition and facilitate effective strategies for coping. Insights into

this process will assist educators and nurse leaders to advocate for clinical environments that facilitate a seamless transition toward becoming a nurse (AACN, 2002).

Specific Aims

The aim of the study is to explore the relationship among new graduate nurses' perception of work environment stressors based on selected individual factors (age, gender, education, program type), and to identify trends over a three year period in these factors and stress outcomes. Additionally, the study examined three antecedents that may facilitate or inhibit the new graduate's perception of stress: (a) prior clinical work experience, (b) the degree of integration of simulation within the new graduate's academic nursing program, and (c) the new graduate perception that their undergraduate program prepared them for the expectations of their first job. Lastly, the study explored the influence of participation in a nurse residency program on the perceived stress of new graduate nurses. The study is a secondary analysis of data from the National Student Nurses' Association annual new graduate survey.

Theoretical Frameworks

The two theoretical perspectives used to guide this study are Afaf Ibrahim Meleis' (2010) Transitions Theory and Richard Lazarus and Susan Folkman's (1984) Transactional Model of Stress and Coping.

Transitions Theory

The primary theoretical framework used in this study to understand the transition of new graduate nurses into professional practice is Transitions Theory (2010). In a situational context, transition is a complex process that occurs over time, characterized by the individual student nurse's engagement and enculturation into the role of the professional nurse. Meleis, Sawyer, Im, Hilfinger-Messias, and Schumacher (2000) identified that factors including meanings,

expectations, level of knowledge and skill, environment, level of planning, and emotional and physical well-being may influence the quality of the transition experience and the consequences of transition for individuals. Well-being, role mastery, and the well-being of relationships were identified as indicators of successful transition (Schumacher & Meleis, 1994). Conditions of transition encompass personal, community, and societal domains. The patterns of response of individuals experiencing transition are influenced by process indicators such as feeling connected, interacting, location and being situated, and developing confidence and coping (Schumacher & Meleis, 1994).

During transition, first an external change occurs which then leads to the internal process of transition. The key properties of transitions include: awareness, engagement, change and difference, time span, and critical points and events (Meleis et al., 2000). The need to construct and adapt to a new reality occurs if the individual is aware of the initiation of the transition process. Once aware, the individual becomes engaged in the transition and demonstrates a specific pattern of response (Meleis et al., 2000). Critical points and events during transition may be identifiable to the individual or be uncertain. The transition process is characterized by a time span with three distinct dimensions: entry, passage, and exit (Meleis, 2010). The individual may experience feelings of disconnectedness with previous patterns of behavior, which ultimately resolves during a consolidation phase to an ultimate response of feeling connected. Transition Theory provides a relevant theoretical framework, within which new graduate RN entry into practice can be understood.

Transactional Model of Stress

Transition is an inherently stressful event for new graduate nurses (Chandler, 2012; Clarke & Springer, 2012; Duchscher, 2009; Dyess & Sherman, 2009; Higgins, Spencer & Kane, 2010;

Hoffart, Waddell, & Young, 2011; Kramer, 1974; Morrow, 2009; Spector, Blegen, Silvestre, Barnsteiner, Lynn, Ulrich, Fogg, & Alexander, 2015). In viewing transition through the lens of stress theory, it is evident that individuals respond to stress differently (Griffin & Clarke, 2011). Lazarus and Folkman's (1984) Transactional model of stress is a relevant framework within which to explore new graduate transition into practice. It is a framework that considers stress as a relationship between the individual and the environment (Lazarus & Folkman, 1984). Stress results when the demands of the environment exceed the resources of the individual to cope with and mediate the stressful event. Two key processes mediate this relationship: first, a cognitive appraisal in which the individual determines why and to what degree an event is stressful and second, a coping process in which the individual manages the strain and emotions surrounding the event (Lazarus & Folkman, 1984).

Definition of Key Terms and Variables

Transition: For the purpose of this study, transition is defined as a complex process that occurs over time, characterized by the individual student nurses engagement and enculturation into the role of the professional nurse (Schumacker & Meleis, 1994). This definition incorporates properties identified by Meleis et al. (2000) in *Experiencing transitions: An emerging middle-range theory*.

Transition into Practice: For the purpose of this study, transition into practice is the period where the new graduate nurse shifts from the role of new graduate nurse to a new professional nurse and assumes responsibility functioning as a practicing nurse (Polifko, 2010).

New graduate nurse: For the purpose of this study, new graduate nurses will consist of registered professional nurses who have graduated from an accredited nursing program and are practicing within their first year of passing the RN licensure examination.

Stress: For the purpose of this study, stress is defined as "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" (Lazarus & Folkman, 1984, p. 21). Individual responses to stress vary based on cognitive appraisal, personal attributes, situational factors, and prior life experiences.

Stressor: For the purpose of this study, a stressor is defined as a perceived demand from the environment, which comprises both external stimuli and the perceptual processes of individual experiencing the event.

Operational Definitions

Dependent Variable

Perceived stress

For the purpose of this study, perceived stress refers to the self-reported stress level rating new graduate registered nurses identify in the National Student Nurses' Association annual survey for 18 workplace characteristics with 0 representing "not applicable," 1 representing "not stressful," 2 representing "somewhat stressful," and 3 representing "very stressful."

Independent Variables

Work environment characteristics

- *Pace of clinical workflow* – rate of turnover of patients on clinical unit and number of activities or patient transfers occurring during the shift
- *Shift workload and responsibilities* – intensity of workload and nursing related duties
- *Accessibility of equipment* – ease in obtaining equipment and supplies needed to provide patient care

- *Electronic documentation systems* – ease of functionality of the electronic health record
- *Work schedule* – designated working days and hours
    - *Working 12 hour shifts*
    - *Working night shift schedules*
- *Unit staffing ratios* – workload consisting of a nurse to patient ratio (example 1 nurse to 6 patients)

Unpredictable work environment characteristics

- *Patient acuity* – caring for patients with complex acute care needs
- *End of life experiences* – caring for patients who are critically ill or in the process of actively dying
- *Emergency clinical situations* - caring for patients who are clinically unstable and require urgent interventions to preserve life
- *Potential for workplace injury* – perceptions of lack of safe workplace environment which may lead to physical harm or injury

Interpersonal work environment characteristics

- *Interpersonal interactions* that include communicating changes in patient status with physicians, communicating with supervisors/managers, peer interactions, delegating tasks to unlicensed staff, communicating with patients, and experiences of verbal abuse

Academic preparation

For the purpose of this study, academic preparation refers to the self-report of new graduate registered nurses in the National Student Nurses' Association annual survey for the question: *Do you feel that your nursing education adequately prepared you for what to expect in your first nursing position?* Response option is yes or no.

Preparation through clinical simulation

For the purposes of this study, preparation through clinical simulation refers to the self-report of new graduate registered nurses in the National Student Nurses' Association annual survey to the inquiry to *estimate how much of your clinical experience used simulation* (while in nursing school). Response options are to be clustered as: (a) none to very little simulation; (b) some clinicals (part simulation); (c) some clinicals (all simulation) and many clinicals (part simulation); and (d) many clinicals (all simulation) and all clinicals simulation.

Prior clinical experience

For the purposes of this study, prior clinical experience refers to the self-report of new graduate registered nurses in the National Student Nurses' Association annual survey to the inquiry of: *Prior to entering nursing school were you any of the following?* (LPN, EMT, Medical Assistant, CNA, Home Care Aide, Radiology Technician, EKG Technician, Laboratory worker, Medical Corp, Respiratory Therapist, Paramedic, Surgical Technician).

Participation in an RN Residency Program

For the purpose of this study, participation in an RN Residency Program refers to the self-report of new graduate registered nurses in the National Student Nurses' Association annual survey for the question: *Was your orientation a new graduate RN Residency Program?* Response option is yes or no.

Research Questions

This study was designed to answer ten quantitative questions, which will be categorized as descriptive. A non-experimental, cross-sectional design was used. The study is a secondary data analysis of three years of data from the National Student Nurses' Association annual new graduate survey from 2013 through 2015. The following research questions guided the study:

1. What demographic attributes influence new graduate RN perception of stress during the first year of clinical practice in an acute care setting?

Sub questions include:

- Are there differences in new graduate RN attributes (age, gender, education, program type) and RN perception of clinical work environment characteristics (pace of clinical workflow, shift workload and responsibilities, availability/accessibility of equipment, electronic documentation systems, work schedule, working 12 hour shifts, working night shifts, unit staffing ratios)?
- Are there differences in new graduate RN attributes (age, gender, education, program type) and RN perception of interpersonal work environment characteristics (communicating with physicians, communicating with supervisors/managers, peer interactions, delegating to unlicensed staff, communicating with patients, experiences of verbal abuse)?
- Are there differences in new graduate RN attributes (age, gender, education, program type) and RN perception of unpredictable work environment characteristics (patient acuity, end of life experiences, emergency clinical situations, and potential for workplace injury)?

2. What factors influence or predict new graduate RN perception of clinical stressors during the first year of clinical practice in an acute care setting?

Sub questions include:

- Is there a difference in the perception of clinical stressors by new graduate nurses who believe that their nursing education program adequately prepared them for what to expect in their first positions influence the perception of clinical stressors?

- Is there a difference between new graduate level of participation in clinical simulation and reported stress scores?
- Is there a difference between new graduate prior clinical experience and reported stress scores?
- Is there a difference between new graduate participation in a residency program and reported stress scores?

3. Are there differences between new graduate RN attributes and clinical stressors observed over a three-year period from 2013-2015 (annual NSNA new graduate survey)?

Summary

There is an abundance of literature exploring varied facets of new graduate RN transition into practice. The challenges associated with transition from academia to the practice setting have been noted for over four decades. Widespread changes in the healthcare system, in workforce trends, and in the work environments of nurses lead to increasing complexity and stress within nursing practice.

We are poised at a threshold where we must take action to ensure preparation of our next generation of nurses to practice in care settings of the future. It is critical to understand the determinants of stress for new graduates and implement strategies and tactics to assist new nurses in transitioning through these experiences and events. A focus on facilitating a caring, learning environment within increasingly technical, complex, and stressful healthcare arenas will be essential to enable future nurses to thrive in the profession and embrace the essence of nursing.

Chapter 2: Review of the Literature

Introduction

This chapter presents a review of the literature concerning the transition of new graduate nurses entering professional practice. Two key theoretical frameworks that guide the research study, Afaf Ibrahim Meleis' (2010) Transitions Theory and Richard Lazarus and Susan Folkman's (1984) Transactional Model of Stress and Coping, will be examined. This literature review includes a depiction of new graduates entering the nursing workforce and a discussion of the current state of the acute care work environment. As the purpose of the study is to explore factors influencing the perceived stressors of new graduate nurses transitioning into practice in acute care, this chapter will consider the current evidence on factors that may inhibit or facilitate the new graduate's perception of stress. These influences may include: readiness for practice through academic preparation, preparation through simulation, prior healthcare work experiences, and participation in nurse residency programs. A review of international literature related to new graduate nurse transition, although not directly informing this study, is presented to consider global perspectives on entry into practice.

Theoretical Framework

Transitions Theory

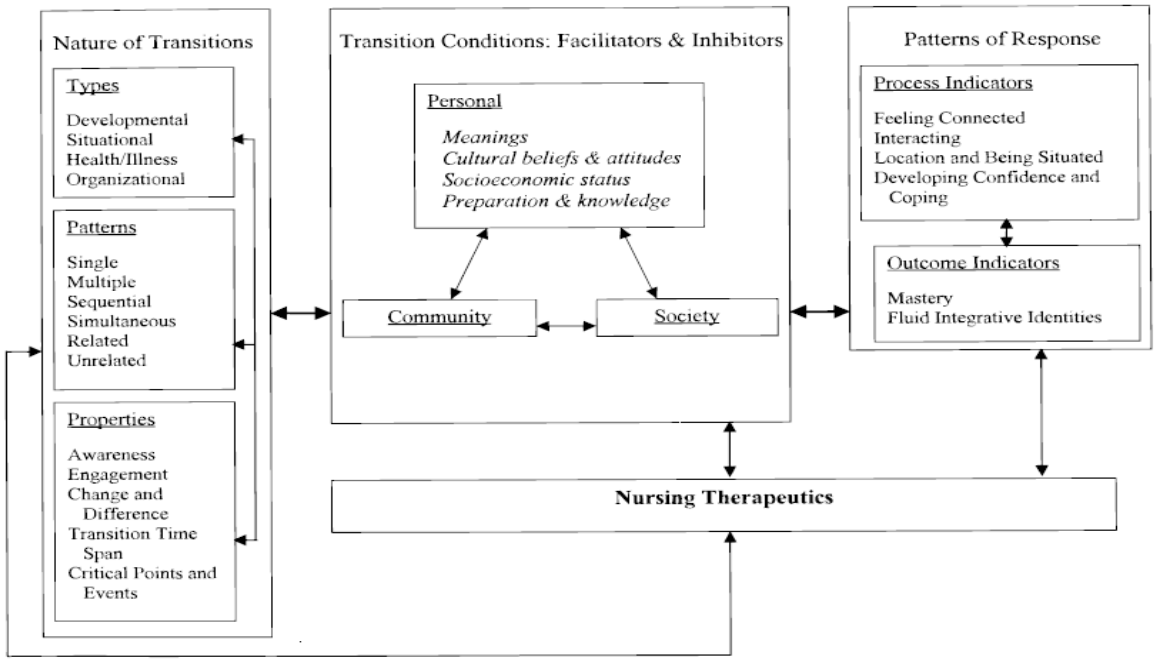
Within the domain of nursing, transition is a complex and multifaceted concept. In 1986, Chick and Meleis conducted a concept analysis on transitions, identifying it as a central concept in nursing. The types of transitions identified in their initial work as relevant to nursing were transitions related to change, development, situation, and health-illness. The types of transitions identified were broad in scope and clinically diverse. Schumacher and Meleis (1994)

subsequently conducted a synthesis of nursing literature encompassing the timeframe from 1986 to 1992 that again identified transition as a central concept in nursing.

Meleis, Sawyer, Im, Hilfinger-Messias, and Schumacher (2000) identified that factors including meanings, expectations, level of knowledge and skill, environment, level of planning, and emotional and physical well-being may influence the quality of the transition experience and the consequences of transition for individuals. Well-being, role mastery, and the well-being of relationships were identified as indicators of successful transition (Schumacher & Meleis, 1994). Conditions of transition encompass personal, community, and societal domains. The patterns of response of individuals experiencing transition are influenced by process indicators such as feeling connected, interacting, location and being situated, and developing confidence and coping (Schumacher & Meleis, 1994).

Properties of transitions identified in transition theory include: awareness, engagement, change and difference, time span, and critical points and events (Meleis et al., 2000). In defining transition, first an external change must occur to lead to the internal process of transition. The need to construct a new reality can only occur if the individual is aware of the initiation of the transition process. Once aware, the individual becomes engaged in the transition and demonstrates a pattern of response. Critical points and events during transition may be identifiable or ambiguous. The transition process is characterized by a time span with three distinct dimensions: entry, passage, and exit. The individual experiences a feeling of disconnectedness with previous patterns of behavior or security, which ultimately resolves during the consolidation phase to a response of feeling connected (Meleis et al., 2000).

Figure 1. Meleis, A., Sawyer, L., Im, E., Hilfinger-Massias, D., & Schumacher, K. (2000). Experiencing transitions: An emerging middle range theory. *Advances in Nursing Science*, 23(1), 17. Reprinted with permission.



Stress Theory

Stress can be viewed through varied lenses. In 1936, Hans Selye coined the term stress as we currently understand it, as *the non-specific response of the body to any demand for change* (AIS, 2015). This approach views stress as a response. Seyle also crafted a new word "stressor" to distinguish the stimulus from the stress response. The ensuing stress response elicits a physiological defensive response pattern Selye coined as the general adaptation syndrome (GAS) (Lyon, 2012).

A second approach views stress as a stimulus. Masuda and Holmes (1967) and Holmes and Rahe (1967) became interested in what happens when an individual experiences changes in life circumstances (Lyon, 2012). The life changes or events are identified as the stressor to

which the individual responds. This approach led to numerous studies seeking to explore relationships between stress and illness.

Thirdly, stress can be approached as a process that encompasses continual interactions and adjustments between the individual and their environment. The Transactional Model of Stress developed by Lazarus and Folkman (1984) incorporated cognitive, affective, and adaptive elements into stress theory. Lazarus and Folkman (1984) identified several factors that could influence if an individual experiences a situation as stressful including: individual abilities, goals and commitments, coping skills, self-esteem, social support, group constraints, controllability, and available resources. The Transactional Model approach emphasizes that individuals and groups differ in their sensitivity to different events, including their interpretation and response.

The Transactional Model of Stress includes two types of appraisal processes. The first determines if the stress constitutes a threat to the individual and results in one of three outcomes: (a) the stress is seen as irrelevant, (b) it is seen as positive to well-being, or (c) it is seen as negative to well-being. The appraisals of potentially stressful events are influenced by two factors: (a) the controllability and (b) the predictability of the events. In a secondary appraisal process, the individual assesses their personal coping resources.

Stress affects almost every occupation and profession. However, stress levels have been identified as being higher in health professionals, in particular, nurses (Lim, Bogossian, & Ahern, 2010). The term, stress, was first used in the nursing literature in the late 1950s (Lyon, 2012). Studies have been conducted that examine nursing student stress and overall nursing stress (French, Lenton, Walters, & Eyles, 2000; Gray-Toft & Anderson, 1981; Jennings, 2008). The Nursing Stress Scale (NSS) originally developed by Gray-Toft and Anderson (1981) and the expanded Nursing Stress Scale (ENSS) developed by French et al. (2000) are instruments that

have been used to measure work-related stress among nurses. The sources of stress in the ENSS consisted of nine subscales: death and dying, conflict with physicians, inadequate preparation, problems with peers, problems with supervisors, workload, uncertainty concerning treatment, patients and their families, and discrimination (French et al., 2000). Further exploration of stress as perceived by new graduate nurses is needed to accurately address if sources of that stress in a healthcare environment have changed over time.

Integration of Theoretical Frameworks

In seeking to integrate the frameworks of Transitions Theory and Stress Theories, both constructs are situational in nature for the new graduate. The new graduate enters the transition period with attributes, prior life experiences, and academic preparation for the RN role. New graduates may be experiencing either single or multiple patterns of transition depending on their unique life experience, but for the purposes of this study the transition process was explored in terms of the new graduate RN experience. Properties of transition would include the (1) awareness of status as a new graduate RN entering professional practice, (2) engagement in the learning process, (3) differences and changes in skills, knowledge and attitudes over time, (4) a distinct timeframe for transition being one year for the purposes of this study, and (5) critical points and events that occur during the course of transition. The critical points and events may include events perceived as stressful by the new graduate such as their first code, first birth, first patient death, first violent encounter, first patient hemorrhage, first medication error, assuming a full patient assignment, first time delegating to support staff, or first difference of opinion with a physician or colleague.

Transition conditions could include preparation and knowledge as well as attitudes and beliefs about the experience. This aligns with the Transactional Stress Theory. Academic

preparation within the nursing profession varies by program type (AD, diploma, BSN, accelerated programs) and by school type (public/private/proprietary) and could serve as a process facilitator or inhibitor for the new graduate. Participation in a new graduate residency program is another example of a likely facilitator of transition for the new graduate dependent on their experience in the program and setting. Patterns of response within the model of transition would include connections with colleagues and the organization and greater confidence and successfully coping with stressors inherent in the RN role. The new graduates' intentions to stay in their current positions or the decision to pursue advanced education would suggest a positive pattern of response.

The concept of transition is of central concern for nursing (Schumacker & Meleis, 1994). Transition into practice is a complex, situational process that occurs over time, characterized by the individual student nurses' engagement and enculturation into the role of the professional nurse. This definition incorporates properties identified by Meleis et al. (2000) in *Experiencing transitions: An emerging middle-range theory*. Meleis and colleagues (2000) identified that factors including meanings, expectations, level of knowledge and skill, environment, level of planning, and emotional and physical well-being may influence the quality of the transition experience and the consequences of transition for individuals. These personal conditions or antecedents to the transition may either facilitate or inhibit the transition process for the individual new graduate nurse.

Chandler (2012) acknowledges that new graduate nurses may be experiencing multiple life transitions in addition to transition into practice such as relocation, becoming newly married, and undergraduate to graduate school. These experiences beyond the walls of their workplace may intensify the difficulty of their professional transition into practice. The current study will

focus on clinical transitions but other life transitions may be present for many new graduates during their entry into practice period.

Review of Literature

New Graduates Entering Professional Practice

The most accurate data source to predict the numbers of new graduate nurses entering the U.S. workforce, is the annual number of individuals who pass the National Nurse Licensing Exams (NCLEX) (HRSA, 2013). The most recent data from 2011 indicates that more than 142,000 RNs passed the NCLEX-RN, reflecting a 108% increase from 2001, the prior decade (HRSA, 2013). As RNs enter the profession from varied programs, the NCLEX provides a uniform reference point for information on nurses entering the profession. The National Council of State Boards for Nursing (NCSBN, 2016a) reports 160,323 RNs passed the NCLEX in 2015. The trend demonstrates increasing numbers of new graduates are poised to enter the workforce. Characteristics of new graduates entering the workforce reflect a changing composition. HRSA (2013) reports on demographics that include the gender, age, and diversity of the profession. The RN workforce diversity is increasing at a rate of approximately 5 percent per decade with nine percent of nurses reported to be male gender and increasing proportions of racial and ethnic minorities entering the profession (HRSA, 2013).

The transition of new graduate RNs into professional practice is preceded by academic preparation. The nursing profession is unique in comparison with other professions as entry into practice can generate from four distinct program types: diploma, associates degree, baccalaureate degree, and accelerated programs. Our profession has long debated the minimum degree for entry into practice as a Registered Professional Nurse. The American Nurses Association first proposed that the baccalaureate degree should stand as the minimum degree for RN entry into

practice in 1965 as it recognized that nurses were the least educated of healthcare disciplines in a time period where science and technology were advancing (ANA, 1965). Other professional organizations and nurse leaders have echoed this position, yet the standard has not yet been realized.

The American Association of Colleges of Nursing (AACN) identifies the BSN as the minimum educational requirement for registered nurses. They cite the need for contemporary nurses to build a strong skill base, which encompasses critical thinking, leadership, case management, and health promotion (AACN, 2015 May 19). These abilities provide a foundation that professional nurses can carry across diverse practice settings.

Patricia Benner and colleagues (2010) resounded the recommendation of BSN as the minimal degree, in *Educating Nurses: A Call for Radical Transformation*. Benner, Sutphen, Leonard, and Day (2010) cited the challenges facing the nursing profession, imposed by a dysfunctional healthcare system driven by economic forces. A key finding of the study was the existence of a significant gap between practice and the educational preparation for nursing practice (Benner et al., 2010, p. 4). Nurses require preparation for the demands of practice but it is difficult for academic institutions to keep step with the rapid changes in acute care settings (Benner, et al., 2010). Although settings of care are expanding well beyond the walls of hospitals a majority of nurses, 63.2%, are still practicing in hospitals (HRSA, 2013 April).

The vision of the baccalaureate as a means of preparing professional nurses for a broad scope of practice within complex settings was reinforced in the IOM report on *The Future of Nursing* (2010). The IOM made the recommendation that 80% of the nurses in the United States should hold the minimum of a baccalaureate degree (BSN) by 2020. Baccalaureate programs include core nursing course work contained in diploma and associate degree programs but

provides more in depth studies of physical and social sciences, research, public/community health, and the humanities (AACN, 2016). Fifty-five percent of the current American RN workforce holds a baccalaureate degree or higher degree (HRSA, 2013).

The Contemporary Practice Environment

The nursing practice environment has been identified as one of the most challenging of work settings (AACN, 2002). The rapid flow of information along with the pace of the work environment contributes to a host of competing priorities for nurses. The average registered nurse is interrupted approximately every three minutes (Sitterding & Broome, 2015). Time management poses a challenge for all nurses, but is particularly stressful for new graduates transitioning into practice (Kohtz, 2016). The ability to prioritize, coordinate the care of multiple patients, maintain situational awareness, delegate, and communicate effectively are skills new graduates must cultivate to get their work done and contribute to positive patient outcomes. Nurses must develop proficiency in "stacking," a complex, cognitive process in which they organize, and reorganize their multifaceted work, and make decisions based on the changing needs of their patients and the work environment (Ebright, 2010; Kohtz, 2016). Time pressures, interruptions, and information overload are of particular concern in new graduate nurses who have not yet mastered complex and competing task demands (Sitterding & Broome, 2015).

Needleman (2013) attributes increasing acuity in the hospital environment to workflow adaptations designed for decreasing lengths of stay. He cites nursing and nursing care as key focus of hospital re-engineering. Faster discharges, more efficient throughput place increased pressure on nurses to move patients out to post-acute setting of care, while sicker patients take their place (Needleman, 2013). New technologies are proliferating within clinical settings in the form of the electronic health record, expansion of telemetry, increasing use of video, and

continuing advances in equipment. These rapid improvements contribute to a changing and unpredictable landscape for nursing practice.

The outcome of the 2016 U.S. election heralds an impending shift in healthcare policy, aimed to repealing or amending the provisions of the 2010 PPACA (National Council of State Boards of Nursing [NCSBN], 2017). The United States healthcare system remains the most expensive in comparison to other countries yet ranks far behind other counties in quality outcomes. The Affordable Care Act, signed into law in 2010 by President Barack Obama was intended to increase access to health care, lower healthcare costs and improve health outcomes. Major provisions of the law were phased in over a period of years, with the majority taking effect by January 2014. Some provisions of the law included: expansion of the number of Americans covered by insurance, creation of health insurance exchanges, Medicaid expansion, coverage of young adults on their parent's health insurance up to age 26, elimination of insurance denials for preexisting conditions, new healthcare delivery models focusing on prevention and innovation, expansion of technology and tele-health, and establishment of the value-based purchasing (VBP) program, (NCSBN, 2016a).

The political and financial landscape of health care delivery has a decided impact on the practice of nursing. As nurses comprise the largest sector of the healthcare workforce, they are an essential stakeholder in an organization's financial reimbursement and are pivotal in driving patient outcomes (Rome, Nickitas & Lawrence, 2016). With the number of uninsured Americans decreased from 16% in 2010 to a record low of 9.1% in 2015, nurses are delivering care to increased numbers of patients across varied settings of care (NCSBN, 2017). The system's changing payment structure has steered away from a fee for service model to advance a model of value-based purchasing. VBP is the Centers for Medicare and Medicaid Services initiative that

incentivizes hospitals and providers to decrease healthcare costs and improve the quality of care (Department of Health and Human Services [DHHS], 2015). Hospitals are under heavy financial pressure to achieve the best outcomes of care and service to obtain maximum reimbursement. A primary focus of healthcare organizations is on avoiding hospital acquired conditions, reducing avoidable readmissions, and achieving the best patient-reported outcomes (Needleman, 2013). Much of the actual work to achieve these outcomes relies on the work of registered nurses through care delivery, care coordination, patient/family education, and facilitating the patient experience.

Ebright (2010) emphasizes the complexity of delivering nursing care and the need to recognize that complexity contributes to errors, omissions, and failures in the provision of care. New models of care delivery and refocusing the work of nurses on provision of direct patient care are needed to respond to this complexity. As they transition into practice in the swift pace of acute care environments, new graduate nurses need time and support to advance their cognitive and decision-making skills (Ebright, 2010). Healthy work environments that afford new graduates the time and resources needed to effectively transition into the professional RN role will be essential to ensure safe, quality outcomes of care.

New Graduate Transition into Practice

Kramer (1974) devised the term "reality shock" almost forty years ago to describe the transition from nursing student to registered nurse and the inherent conflict between the new nurse's role expectations and the reality of the work/practice setting. Healthcare has changed dramatically from the 1970s but transition remains a difficult process for many new nurses. Judy B. Duchscher (2009) broadened Marlene Kramer's concept of "Reality Shock" into what she coined "Transition Shock." Duchscher (2009) identifies numerous factors that may contribute to

a new graduates' negative transition experience: most new graduates transition into practice through an acute care environment, acute care patients are complex and exceedingly sick, demands of nursing work outweigh available resources, new nurses are not fully prepared to work in teams, and the practice environment continues to focus on an illness model of care versus prevention and primary health care,

Casey and colleagues (2004) conducted a descriptive, comparative study design using survey questionnaires that studied graduate RN experiences in six Denver organizations during their first year of practice as an RN. The researchers utilized "The Casey-Fink Graduate Nurse Experience Survey" which was crafted to measure the new graduate RN's experience upon entry into practice. Graduate RNs participating in the study reported transition experiences that included stress, feeling inadequate, and deficits in skill and knowledge. (Casey et al., 2004) The study identified it took a time period of twelve months for the new graduate RNs to feel comfortable and confident in their practice setting (Casey et al., 2004). The preceptor role and the importance of support by peers and managers were identified as essential to the success of the new graduate RN. The Casey-Fink Graduate Nurse Experience Survey has been widely used in the evaluation of the University Health System Consortium/ American Association of Colleges Nurse Residency Program (Goode et al., 2009).

Kovner and colleagues (2007) conducted non-experimental research in the form of a 16-page survey of newly licensed nurses within 60 sites that combined metropolitan and rural areas in 35 states and the District of Columbia. The 2007 study is part of the RN Work Project, a multi-state longitudinal panel study of new nurses funded by the Robert Wood Johnson Foundation. Newly licensed RNs were defined as those who had received their first RN license by passing the NCLEX within the previous eighteen months (Kovner et al., 2007). There were

3,266 returned surveys that met inclusion criteria of the study. The results identified that the majority of the newly licensed RNs were reasonably satisfied and did not plan to change jobs but identified only moderate support from supervisors (Kovner et al., 2007). Sixty two percent of the newly licensed RNs identified themselves as the victims of verbal abuse in the workplace (Kovner et al., 2007).

Kelly and Ahern (2008) conducted a phenomenological study exploring the expectation of final year Australian nursing students prior to employment and again at six months post-employment. Although the term transition is not utilized within the article, it describes the experience of new graduate nurses moving through a transition into practice. The focus was on socialization of new nurses to the culture of nursing and findings revealed that the participants were unprepared for assuming their new role (Kelly & Ahern, 2008). Themes included new nurses' perceptions of verbal and nonverbal communication, nurses "eating their young," "power games," "bitchiness," "role conflict," "being thrown in at the deep end," and "reality shock" (Kelly & Ahern, 2008).

Pellico, Djukic, Kovner, and Brewer (2010) explored the work experiences of a national cohort of 229 nurses. A work environment survey was conducted at two different time periods. The first being between six and eighteen months post licensure and then a year later between eighteen to thirty months of employment (Pellico et al., 2010). Six themes emerged from the qualitative study: "pressured time," "the reality of being a nurse is nothing like the dream," "growing weary," "getting out," "finding one's niche," and "upward mobility" (Pellico et al., 2010). Findings indicated that initial RN frustrations related to their personal limitations as a new nurse in contrast to the subsequent survey, which associated frustrations with the work environment. Sources of RN dissatisfaction with the work environment included: lack of nurse

manager leadership, verbal abuse, high nurse-patient ratios, workload pressures, and the physical demands of patient care that lead to injury (Pellico et al., 2010)

Spence Laschinger, Leiter, Day, and Gilin (2009) performed an analysis of a subset of cross-sectional data from Canadian staff nurses from 2006. The authors hypothesized that new graduate nurses who felt their practice environments were supportive, would rate the civility among colleagues and their feelings of empowerment high. The researchers felt this would result in lower levels of burnout for new graduate RNs (Spence Laschinger et al., 2009). The new graduates in the study reported that their work environments were only somewhat empowering, reported somewhat positive ratings of workplace civility, and reported high levels of emotional exhaustion (Spence Laschinger et al., 2009). Nursing leadership was identified as central to ensuring supportive professional practice environment and preventing burnout.

Olson (2009) conducted a qualitative interpretive longitudinal study utilizing phenomenology to highlight the perceptions of millennial-born (1980-1999) novice nurses. Audiotaped interviews were conducted at three months, six months, and one year. The focus of the study was to understand transition from the individual new graduate's perspective. A sample of twelve new nurse graduates (six BSN degree and six ADN degree) were recruited during their first week of orientation. The novice nurses identified unfamiliarity with the acute care environment as a barrier in assimilating existing knowledge into practice and incorporating new knowledge. The nurses had an unanticipated worry of making a mistake; requested reassignment to another care unit to find their niche in nursing; hurdles in finding their own voice, and expressed the importance of receiving ongoing feedback from co-workers and managers related to performance (Olson, 2009).

Cubit and Lopez (2011) explored the transitions of graduate RNs who previously practiced as enrolled nurses (licensed practical nurses). A descriptive qualitative approach was utilized in the study. The sample size was eight graduate nurses with prior experience. The variation in this nursing population is that due to their prior clinical experience, assumptions are made by others that they are more prepared than their counterparts to adopt RN roles and responsibilities. The result revealed the nurses preferred not to be identified as having prior nursing experience; the RNs identified feelings of being outside their comfort zone, being taken advantage of, and needing as much support as new RNs without prior clinical experience (Cubit & Lopez, 2011).

Several authors have conducted literature reviews examining the transition of new graduate nurses into practice. (Morrow, 2009: Teoh et al., 2013) These authors offer perspectives on the lived experiences of the transitions of new graduate nurses. Common themes in the literature include a gap between the expectations of the new graduate nurse and the practice environment; the importance of support in the work environment from peers, preceptors and managers; stressors that include role ambiguity, communication and interactions with colleagues, and the realities of practice settings (Morrow, 2009: Teoh et al., 2013).

Chandler (2012) conducted a qualitative, descriptive analysis of 36 new graduate registered nurses (NGRNs) making the transition from school to practice. Data were collected in the form of semi-structured interviews of NGRNs utilizing a framework of appreciative inquiry. Three themes were derived from five questions asked on transition, relationships, knowledge, skills, and attitudes. The first theme that emerged was: “They were there for me” which cited the importance of support from peers, preceptors, managers and other new graduates in a successful transition experience (Chandler, 2012). The second theme: “There are no stupid questions,”

reflected that environments supporting inquiry led to a culture of learning and success in practice (Chandler, 2012). In the final theme of " Nurturing the seeds," new graduate RNs likened their academic preparation as a planting of the "seeds of knowledge" in comparison to their work experience which brings that knowledge to fruition (Chandler, 2012).

Clarke and Springer (2012) conducted a qualitative, descriptive study to explore the lived experience of new graduate nurses and their level of job satisfaction during the first year of professional practice. Thirty-seven new graduate RNs from a northwestern U.S. hospital setting participated in focus groups. The themes that arose included: "rhythm in the chaos," "feeling valued," "stress from *not knowing,*" "life-long learning," and "preserving the profession" (Clarke & Springer, 2012). The researchers identified the first year of clinical practice as essential in the development of new graduate nurses citing that many new graduates leave the profession due to job stress inclusive of: lack of support, poor RN-physician relations, workload intensity, and incivility (Clarke & Springer, 2012).

Thomas, Bertram, and Allen (2012) conducted a qualitative, phenomenological study to investigate the lived experience of new graduate nurses during the first year of professional practice. A sample of eleven new graduate nurses working in acute care settings in the Midwest was utilized. Four themes emerged from the study: "feelings of frustration and being overwhelmed," "ongoing support of preceptors," "identified fears," and "ongoing feedback during orientation" (Thomas, Bertram, & Allen, 2012). The researchers identified varied strategies to reduce new graduate frustrations through collaboration between nurse educators and preceptors.

Much of our knowledge of the stress and stressors perceived by new graduate nurses is gleaned through an abundance of qualitative literature and some quantitative studies. Although a

rich source of information and detail on the experience as perceived by new graduates, many of the studies may not be generalizable due to the sample size and limited settings of study. Stressors identified within the literature are recurrent: feelings of inadequate preparation, interpersonal interactions, frustrations with the work environment, workload and overload, lack of support, and role ambiguity.

International Perspective on Transition

The challenges that new nurses face during transition are not specifically a concern limited to American nurses. Literature from varied international communities reflects this may be a concern of global perspective and not limited to new graduate nurses in the United States. Donnelly (2014) explored stress among nurses working in an acute care hospital in Ireland. The aims of the study were to identify perceived stressors for nurses working in both critical and non-critical care practice areas. Two hundred nurses completed the Bianchi Stress Questionnaire to rate their level of this stress. Age, job title, professional experience, and formal academic qualifications of the cohort were investigated to distinguish if they had an influence on stress perception. The highest perceived stressor for RNs participating in Donnelly's (2014) study was redeployment to work in other areas (floating). The second highest perceived stressor in this study was unit staffing levels. Other high-scoring perceived stressors included administrative duties, death of a patient, and achieving work– life balance. Low-scoring factors included complying with mandatory training, participating in audits, communicating with the patient and family, and communicating with nursing colleagues. (Donnelly, 2014).

Suresh, Matthews and Coyne (2013) explored perceived levels of work-related stress and stressors in new graduates (newly qualified) and fourth year nursing students in Ireland. The researchers used a cross-sectional mixed methods survey design using Gray-Toft and Anderson's

(1981) Nursing Stress Scale. Their findings reflected high levels of stress and stressors in both new graduates and fourth year students. Both groups cited excessive workload, challenging working relationships, and unmet clinical learning needs as prime sources of stress. Student nurses additionally cited stress related to academic requisites and clinical placement (Suresh et al, 2013).

Thian, Kannusamy, He, and Klainin-Yobas (2015) examined sources of work-related stressors among registered nurses in Singapore. The researchers used a descriptive-correlational design in a sample of 195 RNs working in a tertiary hospital. They sought to explore the relationships among stress, positive affectivity, and work engagement using path analyses. Stress was measured with the Cohen et al. (1983) Perceived Stress Scale (PSS) and a single-item stress scale (SSS) that was developed by Thian and colleagues. The Cronbach alpha of the PSS was 0.72 on the sample. The researcher's SSS had a significant correlation with the PSS ($r=0.60$, $p<0.001$) evidencing concurrent validity of the Thian et al. (2015) scale. Findings yielded workload, time pressure, inadequate reward, insufficient patient interaction, and challenging emotional demands as key work stressors. Thian and colleagues (2015) identified that RNs with higher levels of positive affectivity were more likely to report greater work engagement: vigor, dedication, and absorption. Their findings supported the premise that work engagement is closely linked to the presence of positive affectivity (PA). They identified high-PA people as energetic, contented, joyful, optimistic, and goal-directed while working, despite the presence of problematic situations (Thian et al., 2015). The researchers found those individuals with high positive affectivity could cope more effectively with negative events, tend to engage in task/activities that are most rewarding, and expect positive outcomes from the involved tasks.

Risks of Turnover

Turnover is a metric that is not easily quantified by researchers and not fully understood. Turnover is costly for organizations, in both monetary terms and in the less tangible, destabilization of the nursing workforce. The effect of turnover can lead to decreased morale and potential patient safety issues. New graduate nurses are increasingly becoming an essential pool of new employees in acute care settings. They are at special risk for turnover as they encounter the demands of practice. Welding (2011) reports that new graduates are more likely to resign from their positions than experienced RNs.

One aspect of turnover relates to the intention of new graduate nurses to stay in their current position. Harrison and Ledbetter (2014) report that over the past decade, healthcare organizations have been reporting high first year turnover rates for new graduate nurses. New graduate RN first year turnover has been reported as high as 40 to 60 per cent (Harrison & Ledbetter, 2014). Kovner et al. (2014) identified that approximately 17.5% of new nurses leave their job within the first year. Li and Jones (2013) identified that turnover rates in Europe and Canada range between 12% to 21%. Cho, Lee, Mark, and Yun (2012) examined turnover on new graduate Korean nurses in their first job. The researchers conducted survival analysis to estimate the probabilities of new graduates staying in their first job for 1 year (*0.823*), 2 years (*0.666*) and 3 years (*0.537*). The key dissatisfiers for the 351 nurses participating in their study were: interpersonal relationships, physical work environment, and work content (Cho et al., 2012). Turnover rates in new graduates raise a cause for concern and place increased urgency to study and eliminate those factors responsible for failed transitions for new graduate nurses (Dyess & Sherman, 2009).

Job satisfaction has been identified as a predictor of RN turnover (Brewer, Kovner, Greene, Tukov-Shuser, & Djukic, 2012). In a 2014 study, Djukic, Kovner, Brewer, Fatehi, and Greene examined the direct and indirect influence of physical work environment on the job satisfaction of a national sample of 1,141 early career RNs. The researchers conducted a path analysis that demonstrated that physical work environment had a positive indirect effect ($p<.05$) on new career RN job satisfaction (Djukic et al., 2014). Variables of interest in the study included: negative affectivity, variety, work group cohesion, RN-MD relations, workload, organizational constraints, distributive justice, opportunity for promotion, and job opportunities (Djukic et al., 2014). The study findings linked physical work environment characteristics to RN job satisfaction.

The cost of RN turnover is a key concern for healthcare organizations and impacts on their ability to meet patient needs. Duffield, Roche, Homer, Buchan, and Dimitrelis (2014) identified average turnover costs in four countries, including the U.S., as ranging from $20, 561 to $48,790 per nurse. The 2016 estimates for the costs of RN turnover in the United States range from $37,000 to $54,000 (Nursing Solutions Inc. [NSI], 2016). Hayes and colleagues (2012) cite generational differences related to turnover and intention to leave one's position. Excessive workload, concerns related to interpersonal relationships, and lack of support are cited as key determinants of RN turnover (Hayes et al., 2012).

Readiness for Practice

Work readiness has been defined as the extent to which new graduate nurses possess the qualities and skills they need for success in the workplace (Caballero Walker, & Fuller-Tyszkiewicz, 2010). The attributes cited as reflective of work readiness transcend technical or clinical skills and include: communication, teamwork, change, motivation, initiative, creativity,

conflict management, adaptability, collaboration, and interpersonal skills (Caballero et al., 2010; Walker, Storey, Costa, & Leung, 2015). Walker and colleagues (2015) identified that new graduate nurses displaying capabilities in social intelligence may experience a smoother transition and be regarded as more work ready than peers without this proficiency.

Perceptions of the work readiness of new graduates differ among academic and clinical setting leaders. Berkow and colleagues (2009) conducted a study for the Advisory Board Company in 2008 that revealed approximately ninety percent of academic leaders viewed new graduate nursing students are prepared to provide safe and effective care in comparison to only ten percent of nurse executives with the same belief. New graduates entering into practice may be faced with patient assignments that challenge their clinical readiness. Their success is dependent upon nursing leaders and healthcare organizations to ensure new nurses are met with supportive professional environments (AONE, 2010).

Wolff and colleagues (2010) explored the meaning of new graduate RN readiness for practice. Focus group interviews were conducted on one hundred and fifty nurses and new graduates. Themes extracted included providing safe client care, keeping up with the realities of nursing practice, being equipped with the tools needed to adapt to the future needs of clients, and possessing a balance of doing, knowing, and thinking (Wolff et al., 2010). The researchers' findings sought to clarify the meaning of readiness to practice and cited the need for education, practice, and regulatory leaders to collaborate to create greater understanding in terms of the new graduate's experience (Wolff et al., 2010).

Antecedents of Transition into Practice

Academic Preparation

The IOM Report on *The Future of Nursing: Leading Change, Advancing Health* (2010) stressed the importance of nurses achieving higher levels of education. "Major changes in the U.S. health care system and practice environments will require equally profound changes in the education of nurses both before and after they receive their licenses" (IOM, 2010, p. 163). The complexity of the health care system and the corresponding needs of the patients within it will require nurses with a skill set to navigate unfamiliar terrain. Prevention, community and public health, coordination of care, collaborative practice, new models of care, and varied practice settings are becoming part of the new nomenclature.

As new graduates transition from student into the professional RN role, they often experience uncertainty about their skills and abilities (Casey et al., 2004). New graduates often report not feeling competent, confident, or comfortable in their role for up to one year after entry into practice (Casey et al., 2004; Chandler, 2012; Clarke & Springer, 2012; Dyess & Sherman, 2009). The demands of today's acute care settings place demands on new graduate nurses that are beyond their initial decision-making and critical thinking abilities (Clarke & Springer, 2012).

Preparation through Simulation

Simulation is a teaching methodology of increasing interest in undergraduate nursing curriculum. It was an established teaching strategy in the military, aviation, and in nuclear power facilities prior to integration into healthcare settings (Aebersold & Tschannen, 2013). Simulation is defined as a technique that replaces or amplifies real experiences with guided experiences that may replicate or evoke key aspects of the real world in a fully interactive manner (Gaba, 2004, p. 126). David Gaba MD (2004) an early leader in simulation training,

envisioned the application of simulation as a standard learning modality for medical and nursing students.

The National League for Nursing (NLN) has endorsed simulation as a modality to prepare nurses for professional practice. Simulation provides an interactive context for experiential learning to occur as opposed to didactic content (National League for Nursing [NLN], 2015). Simulation encompasses multiple approaches: high, medium, and low fidelity simulators, use of standardized patients, role play, and use of virtual or computer-based programs (NLN, 2015). In the practice setting, simulation has been used for training nursing staff in diverse scenarios: respiratory and cardiac arrest, hemorrhage, stroke, patient deterioration, obstetrical emergencies, asthma, altered mental status, and perioperative emergencies (Aebersold & Tschannen, 2013). In the academic setting, simulation is a means of supplementing the sometimes-limited clinical placement experiences of nursing students in a safe, learning environment. Advancements in simulation technology provide nurse educators with tools to help prepare students to safely and competently care for the patients they will encounter in complex work settings (Robinson & Dearmon, 2013).

The National Council of State Boards of Nursing (2014) conducted a national, multisite, randomized control trial in pre-licensure nursing programs to seek evidence that simulation could effectively replace traditional clinical hours. The study findings revealed that up to 50% of simulation can be effectively substituted for traditional clinical placement experiences (NCSBN. 2014). Upon completion of the nursing program there were no significant differences in clinical competency assessed by clinical preceptors/instructors ($p=0.688$) and there were no significant differences in NCLEX pass rates in the three study groups ($p=0.737$) (NCSBN, 2014). National Council Licensure Examination (NCLEX) pass rates were unaffected by the substitution of

simulation within the nursing curriculum (Alexander et al., 2015). Use of simulation has been cited as a teaching strategy that may enhance critical thinking and clinical judgment in nursing students (Wane & Lotz, 2013). For practicing nurses, simulation has demonstrated efficacy as a method that enhances skill development and communication skills (Aebersold & Tschannen, 2013).

Prior Clinical Experience

Hasson and colleagues (2013) conducted a qualitative study exploring the effect previous health care experience on nursing students in the United Kingdom. Forty-five nursing students from one academic setting participated in focus groups or individual interviews which explored student nurses' perceptions of the healthcare assistant role and yielded open comments on how this influenced their training and learning experiences (Hasson et al., 2013). The findings suggest students perceived both positive and negative effects from their prior work experiences. Positive effects cited were increased confidence and experience and a perception that the nursing students were better prepared for the reality of nursing practice than those students without prior experience (Hasson et al., 2013). Negative effects cited were role confusion, being treated as a knowledgeable health care assistant rather than a learner, and perceptions that some clinical placements did not meet their learning needs (Hasson et al., 2013).

Brennan and McSherry (2007) conducted a qualitative study on the transition process of health care assistants who became student nurses. Although the students mostly believed that their prior healthcare assistant role would help them in their role as a student, they experienced what the researchers coined as culture shock (Brennan & McSherry, 2007). There were varied critical points where the students viewed themselves as fully within the student role and no longer as a healthcare assistant.

Nurse Residency Programs

Nurse residency programs originated as a strategy to facilitate the transition of new graduates into the acute care setting and to improve the retention rates of within their first year of employment (Rosenfeld, Glassman, & Capobianco, 2015). Although structured orientation programs, preceptorships, and internships have improved over time, to better support the transition experience, residency programs have emerged as the newest transition into practice model (Harrison & Ledbetter, 2014). Standardization of transition into practice through nurse residency programs has been endorsed by the American Nurses' Association, the American Association of Colleges of Nursing, the National Council of State Boards of Nursing, the American Organization of Nurse Executives, and the Institute of Medicine Report on *The Future of Nursing* (Harrison & Ledbetter, 2014; I.O.M., 2010; Spector, 2010).

Hospitals initially developed their own residency programs, with the first programs developing in the 1970s in response to Kramer's (1974) seminal work on *Reality Shock*. Varied program structures were developed and implemented in U.S. hospitals (Ulrich et al., 2010). In 2002, the University Health System Consortium/ American Association of Colleges of Nursing (UHC/AACN) developed their new graduate Nurse Residency Program in an effort to train new graduates in acute care settings. The program has reported retention rates as high as 95% and self-reports from new graduates that they feel increased confidence, competence, and decreased stress (Spector, 2010).

Goode and colleagues (2009) cited the importance of one-year nurse residency programs for successful transition of new graduate nurses. The presented findings from evaluations of the University Health System Consortium (UHC) and American Association of Colleges of Nursing (AACN) residency program that upon completion of the program, new graduate nurses have

transitioned successfully with the requisite knowledge and skills to provide, safe, quality care (Goode et al., 2009). Their analysis of UHC/AACN residency participants from 2004 to 2005 provided outcome data on 655 of 1484 nurse residents. As new graduate RNs are one of the primary sources of RN employees in acute care settings, structured programs such as RN residencies are key to a successful transition program. The need for RN residencies has been endorsed by the Carnegie study on nursing education (Benner et al., 2010) and the IOM repot on *The Future of Nursing* (IOM, 2010).

Kowalski and Cross (2010) conducted a study of 55 new graduate RNs who participated in a year-long residency program in two hospitals in Las Vegas, Nevada. The authors sought to provide early outcomes on whether the residency program achieved specific goals. Four tools instruments were used to assess clinical competency, measure stress and anxiety, and evaluate professional transition. Their findings identified increased clinical competency, improved retention rates, and improved communication skills (Kowalski & Cross, 2010).

Fiedler and colleagues (2014) explored the impact of nurse residency programs on long term nursing outcomes including: RN turnover rates, job satisfaction, and leadership development. The researchers utilized a descriptive study design in a survey of fifty-one RN residents who completed the UHC/AACN nurse residency program at a large Midwest academic medical center. RN turnover for the participants in the residency program was reported as lower than the national average for all RNs of 14.7% (Fiedler et al., 2014). The RN resident job satisfaction was rated high, with peer support ranked as the most important job satisfaction indicator (Fiedler et al., 2014).

There are varied models of nurse residency programs, differing in length and content. They were designed to assist new graduate RNs in their transition from academia into the

practice setting. Elements that include an evidence-based curricula, clinical immersion, and a mentoring model are common to most programs (Ulrich et al., 2010). Nurse residency programs may serve as a strategy to facilitate the effective transition of new graduate RNs into practice.

Summary

This literature review provides compelling evidence for continued concerns for new graduate nurses transitioning into professional practice. A greater understanding of how clinical stressors are perceived by new graduate nurses can inform leaders in academia and practice settings on strategies to better prepare new graduates for entry into practice. Meleis' (2010) Transitions Theory and Lazarus and Folkman's (1984) Transactional Model of Stress and Coping are the two theoretical frameworks providing the context for studying new graduate transition. Both frameworks emphasize the importance of the individual's perception, active interaction with the environment, and antecedent factors inhibiting or facilitating stress and transition. Factors that could influence the individual's experience of a situation as stressful include: individual abilities, goals and commitments, coping skills, self-esteem, social support, group constraints, controllability, and resources. Meleis and colleagues (2000) identified factors influencing the quality of the transition process as: meanings, expectations, level of knowledge and skill, environment, level of planning, and emotional and physical well-being. The frameworks align and serve to guide the study.

The phenomenon of the transition of new graduate RNs into practice is a complex one. Many new graduates enter acute care environments that are fraught with increasing acuity of patient care, decreasing resources, heavy workloads, constant change, and numerous other stressors. There are numerous factors that may facilitate or inhibit the transition experience. Variables of interest in this study include: academic preparation, use of simulation, prior work

experience in healthcare, and participation in nurse residency programs. The advancement and the future of the nursing profession depends on our ability to address the issues and stressors facing our new graduate nurses and assist them in embracing innovative solutions as they embark on a career that can bring them pride and fulfillment. There are many dimensions of transition into practice that are yet to be uncovered. We must ensure the success of our next generation of nurses as they enter practice. It is our responsibility to empower our newest colleagues to carry on the commitment, the art, and the science of our profession.

Chapter 3: Methods

Introduction

This chapter discusses the research methodology employed in the study. Discussion of the methodology begins with a description of the research design and follows with a depiction of the study population, data collection and preparation, instrumentation, and ethical considerations for the study.

Research Methodology and Design

The purpose of this descriptive, quantitative study is to explore factors that may influence the relationship between selected variables (age, gender, education, program type), and clinical work environment variables that may be perceived as stressors by new graduate nurses during the first year of clinical practice to identify trends over the last three years in these factors and stress outcomes. This was accomplished through a cross-sectional analysis of clinical stressors as reported by new graduate respondents of the National Student Nurses' Association (NSNA) annual new graduate survey from 2013 through 2015. The study further explores four variables and their potential influence on the perception of stress and as a possible predictor of stress of the 2015 NSNA respondents.

A non-experimental, descriptive, cross-sectional design was chosen for this study to determine if there was a change in perceived stress in new graduate nurses over time. This methodology was utilized to examine potential patterns of change in the stressors of new graduate nurses through the transition period. Cross-sectional research designs collect data at a single point in time (Polit & Beck, 2012). This research study was designed, based on the

research questions and a comprehensive literature review. Descriptive and inferential statistics were used to analyze the data.

Research Questions

The following research hypotheses guided the proposed study:

What work environment determinants are perceived as clinical work setting stressors by new graduate RNs during the first year of clinical practice in an acute care setting?

1. H_0: There is no difference between new graduate RN attributes (age, gender, education, program type) and RN perception of clinical work environment (WE) characteristics (pace of clinical workflow, shift workload and responsibilities, availability/accessibility of equipment, electronic documentation systems, work schedule, working night shift or 12 hour shifts, unit staffing ratios).

   H_1: There is a difference between new graduate RN attributes (age, gender, education, program type) and RN perception of clinical work environment (WE) characteristics (pace of clinical workflow, shift workload and responsibilities, availability/accessibility of equipment, electronic documentation systems, work schedule, working night shift or 12 hour shifts, unit staffing ratios).

2. H_0: There is no difference between new graduate RN attributes (age, gender, education, program type) and RN perception of interpersonal work environment (IP) characteristics (peer interactions, communicating with physicians, communicating with

supervisors/managers, peer interactions, delegating to unlicensed staff, communicating with patients, experiences of verbal abuse)?

H_1: There is a difference between new graduate RN attributes (age, gender, education, program type) and RN perception of interpersonal work environment (IP) characteristics (peer interactions, communicating with physicians, communicating with supervisors/managers, peer interactions, delegating to unlicensed staff, communicating with patients, experiences of verbal abuse)?

3. H_0: There is no difference between new graduate RN attributes (age, gender, education, program type) and RN perception of unpredictable work environment (UP) characteristics (patient acuity, end of life experiences, emergency clinical situations, potential for workplace injury).

H_1: There is a difference between new graduate RN attributes (age, gender, education, program type) and RN perception of unpredictable work environment (UP) characteristics (patient acuity, end of life experiences, emergency clinical situations, potential for workplace injury).

4. H_0: There are no differences between new graduate RN attributes and clinical stressors over time (Annual NSNA New Graduate Survey 2013-2015).

H_1: There are differences between new graduate RN attributes and clinical stressors over time (Annual NSNA New Graduate Survey 2013-2015).

What factors influence or predict new graduate RN perception of stress during the first year of clinical practice in an acute care setting?

5. H_0: There are no differences in the perception of clinical stressors by new graduate nurses who believe that their nursing education program adequately prepared them for what to expect in their first position.

   H_1: There is a difference in the perception of clinical stressors by new graduate nurses who believe that their nursing education program adequately prepared them for what to expect in their first position.

6. H_0: There are no differences in the perception of clinical stressors by new graduate nurses based on level of participation in clinical simulation.

   H_1: There is a difference in the perception of clinical stressors by new graduate nurses based on level of participation in clinical simulation.

7. H_0: There are no differences in the perception of clinical stressors by new graduate nurses with prior healthcare experience.

   H_1: There is a difference in the perception of clinical stressors by new graduate nurses with prior healthcare experience.

8. H_0: There are no differences in the perception of clinical stressors by new graduates who participated in a nurse residency program.

   H_1: There is a difference in the perception of clinical stressors by new graduates who participated in a nurse residency program.

Study Population

The target population for the study was new graduate nurses within their first year of clinical practice. This study utilized samples from the NSNA database from new graduate annual surveys between the years 2013 through 2015.

The National Student Nurses' Association (NSNA) was founded in 1952 (Mancino, 2002). It is a nonprofit organization with national membership from all fifty states, the District of Columbia, Puerto Rico, Guam, and the U. S. Virgin Islands. The NSNA represents 60,000 students from varied types of nursing programs, including: Diploma, Associates, Baccalaureate, and generic master's nursing programs. Students pay annual dues to become members of NSNA.

The NSNA mission statement is "to bring together and mentor students preparing for initial licensure as registered nurses, as well as those enrolled in baccalaureate completion programs; convey the standards and ethics of the nursing profession; promote development of the skills that students will need as responsible and accountable members of the nursing profession; advocate for high quality, evidence-based, affordable and accessible health care; advocate for and contribute to advances in nursing education; and develop student nurses who are prepared to lead the profession in the future" (NSNA, 2015). The organization's core values include: leadership and autonomy, quality education, advocacy, professionalism, care, and diversity. The NSNA provides a forum for nursing students to become actively involved in their future profession and give voice to the concerns facing our newest generation of nurses.

Since 2008, the NSNA has conducted an annual survey of its members who are graduating seniors. A 70 plus item survey has evolved over time and is emailed each fall to a

sample of NSNA past members who have recently graduated (within 5 to 9 months) from their nursing programs. The prior annual surveys between 2013 and 2015 yielded over 6,000 responses per year (Feeg & Mancino, 2015). The web-based survey is voluntary, anonymous (although students can provide an email contact for further follow-up with an incentive offered), and takes fifteen to twenty-five minutes to complete. The measures within the annual assessment include demographic and employment information, areas of specialization, plans for future education and, if respondents are employed, questions about support from the workplace, social media, mentors, and stresses in the new job (Feeg & Mancino, 2015).

Sample Size

The NSNA Annual New Graduate Survey provides a robust database that reaches new graduate nurses on national level. Consistency within the survey tool over the three-year timeframe for this study allows for uniform comparisons between the three groups. Careful analysis of three cross-sections of the annual survey between 2013 through 2015 determined if new graduate stressors have changed over time. The most recent, 2015 survey was utilized to analyze the influence of the four variables reported by new graduates: if their academic program adequately prepared them for their first position, participation in a nurse residency program, level of participation in clinical simulation in their undergraduate program, and prior clinical experience.

Sample Inclusion/Exclusion Criteria

Inclusion criteria for study participants was: new graduate registered nurses who have secured an entry level position as a registered nurse in an acute care setting and limited to new graduate respondents of the NSNA survey within the first year of clinical practice.

Instrumentation

In 2013, the researcher had the opportunity to discuss observations related to new graduate stress in the clinical environment with the leadership of the National Student Nurses' Association. After identifying stress as a pertinent concept to operationalize related to the transition of new graduate nurse to professional nurse, the researcher began to design an instrument that would capture clinical stressors within the annual new graduate survey. A review of the literature in the EBSCO and CINAHL databases was conducted. Keywords used to search included: stress, stressor, transition, and change. The conceptual definition of stressor for the purpose of this study is a perceived demand from the environment, which comprises both external stimuli and the perceptual processes of individual experiencing the event (Lazarus & Folkman, 1984).

Survey items were developed from a comprehensive review of the literature on new graduate transition into practice focusing on characteristics of the work environment which influence the transition process (Casey et al., 2004; Dyess & Sherman, 2009; Hoffart, Waddell, & Young, 2011; Kovner et al., 2007; Morrow, 2009; Pellico et al., 2009; Phillips, Esterman, Smith, & Kenny, 2012) and from the researcher's prior experiences with new graduate nurses transitioning into professional practice within the acute care environment.

Various researchers have sought to identify sources and characteristics of stress for new graduates transitioning into practice. Casey and colleagues (2004) explored the difficulties and stresses of new graduate nurses transitioning from the student to RN role. Themes consistently identified included: a lack of confidence in performing skills, critical thinking and clinical knowledge; concerns about peer relationships; struggling with the dependence and independence of the new graduate RN role; frustration with the work environment; lack of organizational

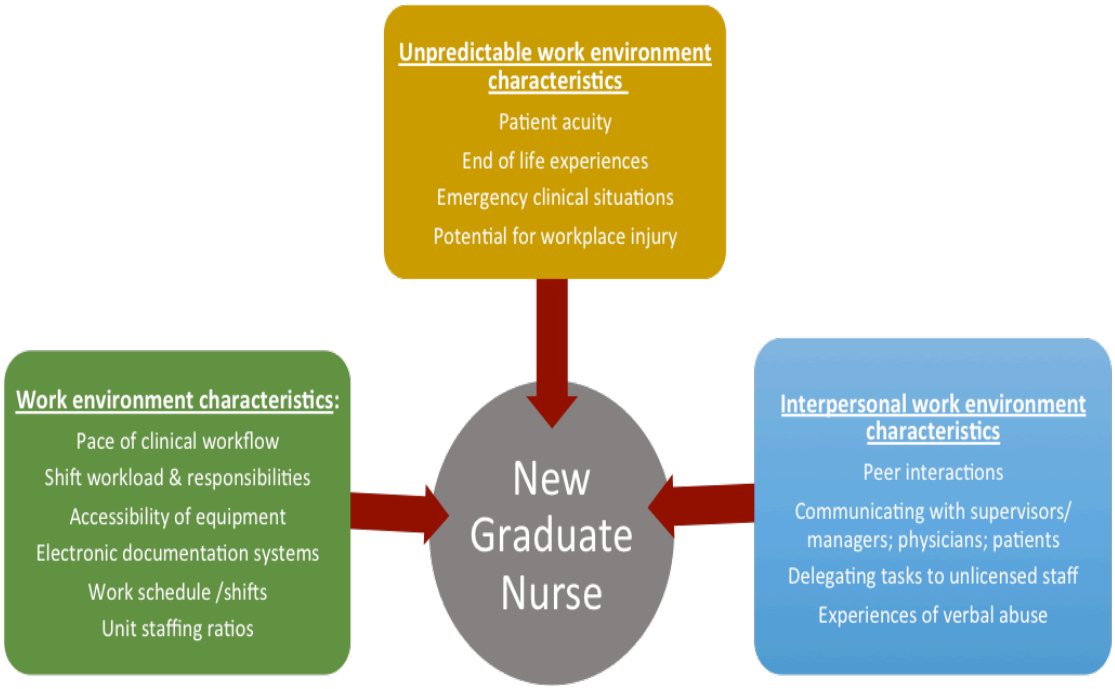
skills; and a lack of experience in communicating with physicians (Casey et al., 2004). Clarke and Springer (2011) identified new graduate stress stemming from the fear of making a mistake that would cause harm to a patient, feeling unprepared for the professional RN role, and having unsupportive preceptors.

Dyess and Sherman (2009) reported that new graduate RN transition experiences included challenging communication with heath care team members, concerns about delegating to unlicensed staff, occurrences of horizontal violence, and professional isolation. Morrow (2009) recognized that stressors experienced by new graduate nurses include: lack of experience and organization, workload, interactions with team members, interruptions, new situations, and lack of support. Kovner and colleagues (2007) explored newly licensed RN's attitudes toward their first work setting. Concerns that emerged included: workload, potential injury, and working relationships (Kovner et al., 2007). Gray-Toft and Anderson (1981) developed the Nursing Stress Scale to measure the frequency of work-related sources of stress for nurses. Their instrument contained seven subscales that included: death and dying, conflict with physicians, inadequate preparation, lack of support, conflict with other nurses, workload, and uncertainty concerning treatment (Gray-Toft & Anderson, 1981).

Survey items for this study were developed with the intention to measure new graduate nurses perceptions of stressors within the clinical acute care environment. Eighteen items were constructed for inclusion in the National Student Nurses' Association (NSNA) Annual New Graduate Survey starting in 2013. A four-point Likert scale was used to remain consistent with other survey items within the Annual New Graduate Survey. When individual stressors were compiled, they were categorized into three domains of work setting stressors: (1) work

environment (WE) characteristics, (2) interpersonal work environment (IP) characteristics, and (3) unpredictable work environment (UP) characteristics (Figure 2).

Figure 2. Model of Clinical Work Setting Stressor Categories



Content Validity

Content validity is an essential component of instrument development (Waltz, Strickland, & Lenz, 2010). As the experience of stress and stressors is within the affective domain, an abstract construct, expert input was sought to ensure content validity of the survey items. Survey items were incorporated into a four-point ordinal scale. Seven nursing experts were invited to review the instrument based on their respective expertise and knowledge as nurse educators who lead and facilitate new graduate RN programs in acute care settings. Six were masters prepared and one, doctorally prepared. The experts were given specific instructions and informed that the

instrument was designed to discriminate between individuals regarding their self-ratings for the level of stress they are experiencing from the eighteen items proposed as clinical stressors.

The experts were provided with the conceptual definition of clinical stressor and asked to provide feedback on the following: (1) *Item content*- the experts were asked if each item adequately reflected a clinical stressor that might be experienced by new graduate nurses in acute care. (2) *Item style*- the experts were asked if the items were constructed and written clearly. If not, experts were asked how they would restate them. (3) *Comprehensiveness* – the experts were asked if the items represent all stressors that new graduates may encounter within the clinical environment and queried if other items should be added. They were requested to suggest items that should be included. (4) *Redundancy* – the experts were asked if items should be deleted because they are duplicates of others. (See Appendix A)

Five out of the seven experts returned the review within the specified timeframe. The Content Validity Index (CVI) was calculated for each item of the scale to analyze efficacy of the individual items on the survey as seen in Table 1. The I-CVIs were calculated as the number of experts giving the item a rating of 3 or 4 divided by the number of experts (Polit & Beck, 2012). This presents the items as either relevant or not relevant. Polit, Beck, and Owen (2007) advise that I-CVIs should be .78 or greater to reduce the risk of chance agreement of experts. Item I-CVIs for the survey items were either 1.00 or .80, which reflect acceptable values.

Table 1.

Content Validity Index

Item	Expert Rater 1	Expert Rater 2	Expert Rater 3	Expert Rater 4	Expert Rater 5	I-CVI
1. Pace of clinical workflow	4	4	4	4	4	1.00
2. Shift workload & responsibilities	4	4	4	4	4	1.00
3. Peer interactions	4	4	2	4	4	.80
4. Communicating with Physicians	4	4	4	4	4	1.00
5. Communicating with Supervisors/ Managers	4	4	4	4	4	1.00
6. Delegating to unlicensed staff	4	4	4	4	4	1.00
7. Patient acuity	4	4	4	4	4	1.00
8. End of life experiences	4	4	4	4	4	1.00
9. Emergency clinical situations	4	4	4	4	4	1.00
10. Verbal abuse	4	4	4	4	4	1.00
11. Availability/accessibility of equipment	4	4	3	4	4	1.00
12. Electronic documentation systems	4	4	2	4	4	.80
13. Work schedule	4	4	4	4	4	1.00
14. Unit staffing ratios	4	4	4	4	4	1.00
15. Potential for workplace injury	4	4	4	4	4	1.00
16. Communicating with patients	4	4	4	4	3	1.00
17. Working 12 hour shifts	4	4	4	4	4	1.00
18. Working night shifts	4	4	4	4	4	1.00
S-CVI /Ave = 17.6/18						97.8
S-CVI/UA = 14/18						77.8

Calculation of the S-CVI universal agreement (UA) was used to determine efficacy of the scale in total. When utilizing the universal agreement method of content validity analysis, 14 out of eighteen items received a "4" rating by all experts which reflects an S-CVI/UA of 77.8. In contrast using the average method yields a S-CVI of 97.8. Polit et al. (2007) identify that a scale should have a S-CVI average of greater than or equal to 0.90 and I-CVIs of greater than or equal to .78 in order to be judged to have excellent content validity. Based on expert feedback, items were left unchanged. A copy of the final version of the survey instrument is attached (Appendix B).

Data Collection and Management

As the study is a secondary analysis, data have already been collected through the NSNA annual new graduate survey process. De-identified data from three years of the NSNA annual new graduate survey (2013, 2014, and 2015 surveys) were provided to the researcher in three separate SPSS files. The files were password protected and kept on a secure computer only accessed by the researcher. Initial new graduate responses in the 2013 data set was 5,703, in the 2014 dataset was 8,248, and in the 2015 data set was 5,596. Prior to data analysis, examination and cleaning of the data was conducted to assess and ensure the completeness, quality, usability, and appropriateness of the data for answering the proposed research questions. Cases for respondents who did not meet the study definition for new graduate nurses and variables not pertinent to the research study were deleted in preparing data files for analysis. Data were examined to detect extreme or unusual entries and missing data. Cases that included missing data for the eighteen stressor survey items and RN respondent attributes (Gender, age, and education) were eliminated to ensure complete data for these key study variables.

To prepare the data for analysis, variables were transformed and recoded to fit the analytical needs of the study. The eighteen work setting stressor survey items were categorized into the three subscales entitled: work environment (WE) characteristics, unpredictable work environment (UP) characteristics, and interpersonal work environment (IP) characteristics. A Stress Average measure and Stress Sum measure were created to reflect total stress scores for new graduate respondents. Using both scores allowed for conducting analyses that could best minimize the disadvantage of choosing one calculation over another when both had some limitations. Prior healthcare experience was recoded as a categorical variable with "0" reflecting no prior healthcare experience and "1" reflecting prior healthcare experience as any of the following positions: LPN, EMT, medical assistant, certified nursing assistant, home care aide, radiology technician, laboratory technician, military medic, respiratory therapist, paramedic, or surgical technician. New graduate level of participation in clinical simulation was transformed into a dichotomous variable quantifying simulation timeframes as "less than 10%," "greater than 10%." Finally, after data were cleaned and prepared in the three individual files (2013, 2014, and 2015), a file appending all three years into one stacked data set was created for analysis of stressors over time.

Data Analysis

All data from the NSNA surveys from 2013 through 2015 were analyzed in the Statistical Package for Social Sciences (SPSS) software program version 22. Data analysis was performed based on the specific research questions with descriptive statistics comparisons of frequencies, percentages, and mean scores. The level of significance was set at the traditional value used for social science research at $p \leq 0.05$. In order to examine internal consistency of the survey instrument, a Cronbach's alpha was calculated on each of the stressor subscales and the total

stressor scales. Correlation analyses and one-way ANOVAs were used to examine the relationships between new graduate RN attributes and their self-reported perceived stress scores (sum of stress, work environment characteristic subscale, interpersonal work environment characteristic subscale, and unpredictable work environment characteristic subscale). Independent sample t-tests and one-way ANOVAs were conducted to evaluate the influence of four antecedent variables (academic preparation, level of clinical simulation, prior healthcare experience, and participation in a nurse residency program) on reported stressors. Finally, linear regression analyses were conducted to assess the degree of the four antecedent independent variables to assess for potential predictive effect on the dependent outcome variable of reported stress.

Prior to conducting statistical analyses, data were assessed to ensure they met the required assumptions. Data were considered to have a normal distribution if skewness and kurtosis values ranged between -1.0 and 1.0 (Huck, 2012). When conducting data assessment prior to statistical analyses, outliers were identified and removed from the final data set so there were no violations of the assumptions for planned statistical analyses. An approach using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) was originally considered for the data analyses. The EFA was run preliminarily on the eighteen items comprising the stressor scale (Appendix E). These techniques were not integrated in this study but will be discussed further in chapter 5.

Table 2.

Data Analysis Plan

Research Variables	Data Source	Data Analysis
Demographics: • Gender • Age • Race/Ethnicity • Education degree • Nursing Program Type	2013, 2014, and 2015 NSNA Surveys	Descriptive Statistics: • Frequency • Percentages • Mean • SD
Demographics: • Gender • Age • Education degree • Nursing Program Type	2013, 2014, and 2015 NSNA Surveys	• Independent t-test for gender • ANOVA for age, education degree, and nursing program type
Stressors: • Sum of Stress • Work Environment Subscale • Interpersonal Subscale • Unpredictable Subscale	2013, 2014, and 2015 NSNA Surveys	Reliability Analysis Correlation Analyses
Stress Scores 2013-2015: • Stress average • Stress Sum	2013, 2014, and 2015 NSNA Surveys	ANOVA
Antecedent Variables: • Academic Preparation • Preparation through clinical simulation • Prior Healthcare Experience • Participation in Nurse Residency Program	2015 NSNA Survey	Independent t-tests Post Hoc Bonferroni Linear Regression

Protection of Human Subjects

Study approval was obtained from the Institutional Review Board (IRB) at Molloy College in compliance with institutional ethical standards and federal regulations for the protection of human subjects as defined in the Code of Federal Regulations 45 C.F.R.

§46.101(b)(4) prior to the annual survey process for each year. The study is exempt because it involves the collection and study of existing data and the information has been recorded in a manner that the respondents cannot be identified either directly or through identifiers linked to the subjects. Students participating in the initial NSNA survey were informed that the results of the survey would be helpful in workforce planning and policy development as well as influencing NSNA's programs and member services. The respondents are informed yearly by the NSNA that the annual survey is confidential and that their email address is not shared or released to anyone without their consent. No separate consent form was used as completion of the online annual survey provides the participant's implied consent. All data utilized by the researcher was collected routinely and was de-identified for this researcher for analysis.

Potential Risks

The risks to participants from participation in this study are not more than minimal risk expected in daily life. The individual's anonymity and confidentiality is maintained with all data being numerically coded within SPSS. The NSNA solely maintains the database information that includes student membership information and e-mail.

Potential Benefits

Participants may benefit from participation in this research study by gaining insight into the research process knowing they have contributed to the understanding about stress in the workplace. In addition, they provided valuable information regarding sources of stress in new graduate nurses that may guide future decisions about this process.

Methodological Limitations

The researcher has carefully considered the advantages and disadvantages of using secondary data analysis for this study. Analysis of large data sets has emerged as a sound research method, providing unprecedented opportunities to "test nursing theories, generate knowledge for practice, and evaluate patient and nursing outcomes" (Magee, Lee, Giuliano, & Munro, 2006, p. 550). It is essential for researchers to be familiar with the data set when drawing on secondary data analyses through a comprehensive assessment of the data set's applicability to address the research question, the data's quality, and the technical usability of the data (Polit & Beck, 2012).

One disadvantage of secondary analyses includes that the survey design as well as data collection has already been completed. Researchers characteristically do not participate in the planning and data collection process. Unique to this study is that the researcher had the opportunity to contribute the eighteen survey items exploring new graduate RN stressors to the National Student Nurses Association (NSNA) Annual New Graduate Survey in 2013. These items remained included in the NSNA annual survey in 2014, 2015, and 2016. Variables of interest to the researcher were included in the data set.

Another limitation of secondary data is that variables are restricted to items, which were originally collected within the survey. A thorough assessment of the NSNA data set was conducted by the researcher to determine the appropriateness of additional variables for inclusion within the research questions. Ensuring a conceptual match exists "between the data and the research question(s) will guard against threats to validity and reliability and will increase the ability to generalize the findings" (Magee et al., 2006, p. 551).

Secondary data analysis offers several advantages in obtaining high quality data, opportunities to explore data over time, and the ability to attain a large national sample of new graduate nurses in a cost-effective manner. The benefits to utilizing preexisting data to address the research questions in this study outweigh the disadvantages. The content and quality of the NSNA data set aligns with the theoretical foundations of the study and provides an opportunity to uncover new knowledge related to the transition of new graduate nurses.

Summary

In this chapter, the methodology for the quantitative, descriptive cross-sectional research study using secondary data analysis of the National Student Nurses' Association Annual New Graduate Survey data was presented. The variables of interest were chosen based on a review of relevant literature with the intention to explore new graduate RN stress over time and identify factors influencing the perceived stressors of new graduate nurses transitioning into acute care practice. The data were collected over the previous three years and aggregated as de-identified sources for analysis. The stress measure had been developed by the researcher and was subjected to careful content validity testing. All variables to answer the research questions were downloaded and analyzed using SPSS version 22.

CHAPTER 4: Findings

Introduction

This chapter presents the characteristics of the sample and the results of data analysis. The purpose of this non-experimental, descriptive, cross-sectional design study was to explore the relationship among new graduate nurses' perception of work environment stressors based on selected individual factors (age, gender, education, program type), and to identify trends over a three year period in these factors and stress outcomes. Additionally, the study examined three antecedents that may facilitate or inhibit the new graduate's perception of stress: (a) the new graduate perception that their undergraduate program prepared them for the expectations of their first job, (b) the degree of integration of simulation within the new graduate's academic nursing program, and (c) prior clinical work experience. Lastly, the study explored the influence of participation in a nurse residency program on the perceived stress of new graduate nurses. The findings of the study are reported in three sections: a general description of the data, reliability of the instrument, and findings stemming from the eight specific research questions.

General Description of the Data

Sample Characteristics

The sample for the final data set was composed of 8,061 new graduate RNs who responded to the annual National Student Nurses' Association (NSNA) Annual New Graduate Survey between the three years of 2013 through 2015. For those research questions focused on the respondents of the 2015 NSNA Annual New Graduate Survey, the sample subset was 2,419. The sample characteristics of interest in this study of new graduate nurses include: respondent

age, gender, ethnicity, educational degree, and nursing program type. These characteristics are displayed in Tables 3 through 7.

Gender

Predictably, females comprised the majority of the sample. For the cumulative three-year survey period, 90.7% of the respondents were female (n=7,311) and 9.3% respondents were male (n=750). Of the 2015 survey respondents, 90.6% were female (n=2,192) and 9.4% were male (n=227). The distribution by gender closely reflects the composition of the current nursing workforce by gender. Sample demographics by gender are displayed below in Table 3.

Table 3.
Sample Characteristics for Gender (*n= 8061*)

Wave Year	Gender	Frequency	Percent
2013	Male	221	9.2
	Female	2185	90.8
	Total	2406	100.0
2014	Male	302	9.3
	Female	2934	90.7
	Total	3236	100.0
2015	Male	227	9.4
	Female	2192	90.6
	Total	2419	100.0

Age

For the cumulative three-year survey period of 2013 through 2015 (n=8,061), new graduate nurses 28 years and younger represented 58.3% of the sample. New graduates between age 29 and 38 represented 26.3% of the sample and those who were age 39 and over represented 15.4% of the sample. Of the 2015 survey respondents, the sample composition by age was similar (n=2,419). New graduate nurses 28 years and younger represented 61.0% of the sample, new graduates between age 29 and 38 represented 25.4% of the sample, and those who were age

39 and over represented 13.6% of the sample. This representation by age differs from the general nursing workforce where nurses younger than age 30 represent only 9.5% of the RN workforce (NCSBN, 2016a). This is not surprising as these respondents were, in fact, new nurses. Sample demographics by age group are displayed below in Table 4 and appear to be similar over the three years.

Table 4.
Sample Characteristics for Age (*n=8061*)

Wave Year	Age	Frequency	Percent
2013	Under 22	438	18.2
	23-28	954	39.7
	29-38	627	26.1
	39 and Over	387	16.1
	Total	2406	100.0
2014	Under 22	592	18.3
	23-28	1241	38.3
	29-38	881	27.2
	39 and Over	522	16.1
	Total	3236	100.0
2015	Under 22	454	18.8
	23-28	1021	42.2
	29-38	614	25.4
	39 and Over	330	13.6
	Total	2419	100.0

Race/Ethnicity

In terms of race/ethnicity for the cumulative three-year survey period of 2013 through 2015, new graduate nurse respondents were primarily Caucasian (80.1%) with the remaining 19.2% of respondents representing minority groups. Of the 2015 survey respondents, 78.5% of respondents were Caucasian with 21.5% representing ethnic minorities. The National Council of State Boards of Nursing (NCSBN, 2016a) reports that minority groups comprise about 19.5% of the general nursing workforce but are increasingly represented in newly licensed nurses and

younger age RNs. An increase in the percentage of ethnic minorities is demonstrated in survey respondents from 17.5% in 2013 to 21.5% in 2015. Sample demographics by race/ethnicity are displayed below in Table 5.

Table 5.
Sample Characteristics for Race/Ethnicity (*n=8061*)

Year	Ethnicity	Frequency	Percent
2013	American Indian or Alaskan Native	14	.6
	Asian	108	4.5
	Black or African American	105	4.4
	Caucasian	1974	82.0
	Hispanic or Latino	119	4.9
	Mixed Race	64	2.7
	Native Hawaiian or Pacific Islander	8	.3
	Total	2392	99.4
	System Missing	14	.6
		2406	100.0
2014	American Indian or Alaskan Native	17	.5
	Asian	178	5.5
	Black or African American	157	4.9
	Caucasian	2557	79.0
	Hispanic or Latino	192	5.9
	Mixed Race	102	3.2
	Native Hawaiian or Pacific Islander	10	.3
	Total	3213	99.3
	System Missing	23	.7
		3236	100.0
2015	American Indian or Alaskan Native	21	.9
	Asian	144	6.0
	Black or African American	117	4.8
	Caucasian	1886	78.0
	Hispanic or Latino	145	6.0
	Mixed Race	75	3.1
	Native Hawaiian or other Pacific Islander	14	.6
	Total	2402	99.3
	System Missing	17	.7
		2419	100.0

Education

The educational degrees of new graduate nurse respondents included for the cumulative three-year survey period of 2013 through 2015, reflect BSN as the most prevalent degree. Demographic data reveals that 62.2% of respondents graduated with an initial Baccalaureate degree or higher. Of the 2015 survey respondents, 32.8% graduated with a diploma or an associates degree, and 68.2% with a Bachelors degree or higher. Sample demographics by education degree attainment are displayed in Table 6.

Table 6.
Sample Characteristics for Education (*n=8061*)

Wave Year	Degree	Frequency	Percent
2013	Diploma & ADN	933	38.8
	BSN pre-licensure	1421	59.1
	Master's & Doctoral	39	1.6
	RN to BSN	13	.5
	Total	2406	100.0
2014	Diploma & ADN	1189	36.7
	BSN pre-licensure	1972	60.9
	Master's & Doctoral	45	1.4
	RN to BSN	30	.9
	Total	3236	100.0
2015	Diploma & ADN	794	32.8
	BSN pre-licensure	1574	65.1
	Master's & Doctoral	51	2.1
	Total	2419	100.0

Nursing Program Type

In exploring the nursing program types attended by the new graduate nurse respondents for the cumulative three-year survey period of 2013 through 2015, it is noted that the majority, 63.2% attended public programs. The next most frequently reported programs attended were private, not-for-profit programs at 21.4%, followed by private, proprietary (for-profit) programs

at 10.5%. Of the 2015 survey respondents, 60.6% attended public programs, 21.5% attended private, not-for-profit programs, and 11.2% attended private, proprietary (for-profit) programs. Interestingly, increased numbers of respondents in the 2014 and 2015 surveys (over 6%) were unable to identify the type of nursing program they attended. Sample demographics by nursing program type are displayed in Table 7.

Table 7.
Sample Characteristics for Nursing Program Type (*n=8061*)

Wave Year	Nursing Program type	Frequency	Percent
2013	Public (state and community colleges)	1573	65.4
	Private not-for-profit	532	22.1
	Private proprietary for-profit	275	11.4
	Unknown	26	1.1
	Total	2406	100.0
2014	Public (state and community colleges)	2054	63.5
	Private not-for-profit	673	20.8
	Private proprietary for-profit	304	9.4
	Unknown	205	6.3
	Total	3236	100.0
2015	Public (state and community colleges)	1467	60.6
	Private not-for-profit	520	21.5
	Private proprietary for-profit	270	11.2
	Unknown	162	6.7
	Total	2419	100.0

Reliability of the Measurement Instrument

An instrument's reliability refers to the degree of consistency with which it measures the intended attribute (Polit & Beck, 2012). The most commonly reported method to estimate

reliability is Cronbach's coefficient alpha (α). The range of values for Cronbach's alpha ranges from .00 to 1.00 with higher values representing higher internal consistency (Polit & Beck, 2012). Coefficient alpha of .70 has been identified as acceptable for new scales (DeVellis, 2003).

The individual questions related to workplace stressors were scored on a scale of 0 to 3 with 0 representing "not applicable," 1 representing "not stressful," 2 representing "somewhat stressful," and 3 representing "very stressful." The total possible sum of stress scores for the eighteen survey items could range from 0 to 54. During data cleaning procedures, examination of the data revealed a pattern of respondents reporting "not applicable" to multiple survey items, suggesting that they may not have been working as an RN in an acute care setting. To ensure a better-informed analysis of data, cases were excluded where respondents answered less than fifteen out of the eighteen-stressor survey items.

In order to examine if the eighteen-stressor questions within the NSNA annual new graduate survey were internally consistent, a Cronbach's alpha was run for the cumulative three-year survey period of 2013 through 2015. The alpha was .84 (n=8,061) indicating a relatively high level of internal consistency for the eighteen-item scale with this specific three-year sample. In exploring the reliability of the most recent 2015 survey, the overall alpha value was .86 (n=2,419), reflecting good internal consistency in the 2015 survey sample. The only item that might have slightly affected the overall alpha coefficient was *working night shifts*, showing a higher coefficient alpha (α=.85) if the item was deleted. However, since working night shift has been reported as a stressor for nurses in the literature, the item was not omitted from the analyses for this study. The item-total statistics for the overall annual NSNA Survey stressor items from 2013 through 2015 are displayed in Table 8.

Table 8.
Item-Total Statistics of Annual NSNA Survey Stressor Items 2013-2015 (N=8061)

Stressor	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Pace of clinical workflow	28.83	43.62	.51	.57	.83
Shift workload/responsibilities	28.74	43.43	.53	.59	.83
Peer interactions	29.54	43.75	.49	.33	.83
Communicating with MDs	29.08	43.66	.45	.29	.84
Communicating with Supervisor/Manager	29.43	43.32	.52	.37	.83
Delegating to unlicensed staff	29.46	43.64	.43	.23	.84
Patient acuity	28.88	43.49	.49	.37	.83
End of Life experiences	29.32	43.56	.32	.19	.84
Emergency clinical situations	28.77	43.96	.36	.27	.84
Verbal abuse	29.85	42.33	.37	.22	.84
Equipment availability/accessibility	29.37	43.25	.48	.32	.83
EMR Documentation Systems	29.43	43.61	.44	.24	.84
Work Schedule	29.35	42.91	.54	.36	.83
Unit staffing ratios	29.05	42.64	.49	.36	.83
Potential for workplace injury	29.53	43.07	.49	.33	.83
Communicating with patients	29.65	44.07	.51	.32	.83
Working 12 hour shifts	29.57	43.02	.46	.31	.84
Working night shifts	29.61	43.29	.30	.24	.85

The three subscales reflecting the domains of work setting stressors: work environment (WE) characteristics, interpersonal work environment (IP) characteristics, and unpredictable work environment (UP) characteristics were also examined for internal consistency. The Cronbach's alpha was .77 for the eight items in the work environment subscale reflected an acceptable level of internal consistency. Only one item on the WE stressor subscale, *working night shifts* would increase coefficient alpha to .79 if deleted. The Item-total statistics for the work environment (WE) subscale is illustrated in Table 9.

Table 9.
Item-Total Statistics for the Work Environment Subscale (*N*=2419)

Stressor	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Pace of clinical workflow	12.42	10.60	.52	.55	.74
Shift workload/responsibilities	12.34	10.51	.54	.57	.74
Equipment availability/accessibility	12.97	10.69	.43	.25	.76
Electronic Documentation Systems	12.96	10.66	.45	.24	.76
Work Schedule	12.92	10.13	.59	.38	.73
Unit staffing ratios	12.63	10.13	.51	.34	.74
Working 12 hour shifts	13.07	10.02	.55	.34	.74
Working night shifts	13.11	10.09	.33	.26	.79

Cronbach's alpha was .74 for the six items in the interpersonal characteristics subscale reflecting an acceptable level of internal consistency. The Cronbach's value for the stressor *verbal abuse* was the only item that would increase the alpha coefficient for the entire IP subscale to α= .76 if deleted. Since verbal abuse has been reported in the literature to increase stress, the item was included in the analyses. The Item-total statistics for the interpersonal (IP) subscale is illustrated in Table 10.

Table 10.
Item-Total Statistics for Interpersonal Characteristics Subscale (N=2419)

Stressor	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Peer interactions	7.86	5.95	.56	.33	.68
Communicating with MDs	7.41	5.99	.47	.27	.70
Communicating with Supervisors/Managers	7.75	5.75	.59	.38	.67
Delegating to unlicensed staff	7.77	5.84	.49	.26	.69
Verbal abuse	8.13	5.37	.35	.13	.76
Communicating with patients	7.94	6.19	.51	.28	.69

Cronbach's alpha was low (α = .58) for the four items in the unpredictable characteristics (UP) subscale. The Cronbach's value for the stressor of *potential for workplace injury* was the only item that would improve the alpha coefficient to α = .60 if deleted. However, the item was retained in the subscale to capture a known stressor in the literature. Overall, this subscale has the weakest reliability of the measures and results should be interpreted cautiously. The Item-total statistics for the unpredictable work environment (UP) subscale is illustrated in Table 11.

Table 11.
Item-Total Statistics for Unpredictable Characteristics (N=2419)

Stressor	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Patient acuity	5.60	2.62	.44	.22	.46
End of Life experiences	6.02	2.17	.36	.15	.52
Emergency clinical situations	5.47	2.42	.45	.24	.44
Potential for workplace injury	6.24	2.87	.23	.06	.60

Answering the Research Questions

The purpose of the study is to identify sources of work environment stress and their severity as stressors reported by new graduate registered nurses during the first year of clinical practice in acute care. The aim of this secondary data analysis was to explore the relationship among new graduate nurses' perception of work environment stressors based on selected individual factors (age, gender, education, program type), and to identify trends over a three year period in these factors and stress outcomes. The study sought to examine three antecedents that may facilitate or inhibit the new graduate's perception of stress: (a) new graduate perception that their undergraduate program prepared them for the expectations of their first job, (b) the degree of integration of simulation within the new graduate's academic nursing program, and (c) prior clinical work experience. Finally, the study explored the influence of participation in a nurse residency program on the perceived stress of new graduate nurses. This section will present the proposed research questions, the hypotheses tested, and the results of hypothesis testing.

What demographic attributes influence new graduate RN perception of stress during the first year of clinical practice in an acute care setting?

The first group of questions ascertained whether the demographic variables of age, gender, education, and program type influenced the perception of stress by new graduate respondents during the first year of clinical practice in an acute care setting. Three hypotheses were tested. To answer the questions, stress sum averages were calculated as the dependent variables for the three stressor subscales of work environment (WE) characteristics, interpersonal (IP) work environment characteristics, and unpredictable (UP) work environment characteristics that comprise the eighteen-item stressor survey within the annual NSNA New Graduate Survey.

Hypothesis One was tested:

> H_0: There is no difference between new graduate RN attributes (age, gender, education, program type) and RN reported stress of clinical work environment characteristics (pace of clinical workflow, shift workload and responsibilities, availability/accessibility of equipment, work schedule, unit staffing ratios).
>
> H_1: There is a difference between new graduate RN attributes (age, gender, education, program type) and RN reported stress of clinical work environment characteristics (pace of clinical workflow, shift workload and responsibilities, availability/accessibility of equipment, work schedule, unit staffing ratios).

An independent samples t-test was conducted to compare stress score means for work environment (WE) characteristics between male and female new graduate survey respondents. There was a significant difference between male (M=1.83, SD= .39) and female (M=1.88, SD=0.41) WE stress score means (t [7696]= -2.79, p=.005). Female stress scores were significantly higher than male respondent scores.

A one-way ANOVA was conducted to compare the effect of age, education level, and nursing program type on new graduate RN respondent reported work environment stressors. There was a significant effect at the p<.05 level for age group (F[3, 7694] = 4.67, p=.003). Post hoc comparison using the Bonferroni test indicated that the mean WE stress score for new graduate respondents over 39 years old were higher than those respondents in the under 22 (M=1.85, SD=.40) and 23 to 28 year old age groups (M=1.87, SD=.40). The 29 to 38 year old age group did not significantly differ from the other three age groups.

The effect of respondent education was found to be statistically non-significant (p=ns). Respondent education included four levels: diploma and ADN, BSN, masters and doctoral degrees, and RN to BSN graduates. The effect of nursing program type was also found to be statistically non-significant (p=ns). Respondent nursing school program types included four

levels: public, private not-for-profit, private-proprietary, and unknown. The results for statistics for testing of Hypothesis 1 are displayed in Tables 12 through 16.

Table 12.
WE Subscale Group Statistics for Gender (*N*=7698)

	Gender	N	Mean	Std. Deviation
WE Mean Stress	Male	702	1.83	.39
	Female	6996	1.88	.41

Table 13.
Independent Samples t-test WE Subscale by Gender

	t	df	Sig. (2-tailed)
WE Mean Stress	-2.79	7696	.005

Table 14.
WE Subscale ONE-WAY ANOVA: Education/ Degree Type

WE Mean Stress	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.92	3	.31	1.87	.133
Within Groups	1261.41	7694	.16		
Total	1262.33	7697			

Table 15.
WE Subscale ONE-WAY ANOVA: Program Type

WE Mean Stress	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.18	3	.06	.36	.782
Within Groups	1262.15	7694	.16		
Total	1262.33	7697			

Table 16.

WE Subscale ONE-WAY ANOVA and Post Hoc Comparisons for Age Group

Age	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.29	3	.76	4.67	.003
Within Groups	1260.04	7694	.16		
Total	1262.33	7697			

Multiple Comparisons - Bonferroni

(I) Age	Mean Stress	(J) What is your age?	Mean Difference (I-J)	Std. Error	Sig.
Under 22	1.85	23-28	-.01	.02	1.000
		29-38	-.02	.01	.793
		39 and Over	-.06*	.02	.002
23-28	1.87	Under 22	.01	.01	1.000
		29-38	-.01	.01	1.000
		39 and Over	-.04*	.01	.011
29-38	1.88	Under 22	.02	.01	.793
		23-28	.01	.01	1.000
		39 and Over	-.04	.02	.098
39 and Over	1.91	Under 22	.06*	.02	.002
		23-28	.04*	.01	.011
		29-38	.04	.02	.098

*. The mean difference is significant at the 0.05 level.

A Pearson's correlation coefficient (r) between the work environment stressor subscale and respondent age as a continuous variable was examined. A weak but significant positive correlation (r=.04, $p<.001$) was identified as illustrated in Table 17.

Table 17.
Pearson's Correlation Coefficients between WE Mean Stress and Age (*N*=7698)

WE Mean Stress	Pearson Correlation	.040**
	Sig. (2-tailed)	<.001

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

There is sufficient evidence to support rejection of the null hypothesis based on a difference of new graduate RN respondent perception of clinical work environment stressors based on gender and age.

Hypothesis Two was tested:

H_0: There is no difference between new graduate RN attributes (age, gender, education, program type) and RN perception of interpersonal work environment characteristics (peer interactions, communicating with physicians, communicating with supervisors/managers, communicating with patients, delegating to unlicensed staff, verbal abuse).

H_1: There is a difference between new graduate RN attributes (age, gender, education, program type) and RN perception of interpersonal work environment characteristics (peer interactions, communicating with physicians, communicating with supervisors/managers, delegating to unlicensed staff, verbal abuse).

An independent samples t-test was conducted to compare stress score means for interpersonal work environment (IP) characteristics between male and female new graduate survey respondents. There was a significant difference between male (M=1.51, SD= .40) and female (M=1.61, SD=0.41) IP stress score means (t [7973]= -6.40, p<.001). Female stress scores were significantly higher than males. The results are displayed in Table 18 and 19.

Table 18.
IP Subscale Group Statistics for Gender (*N*=7975)

	Gender	N	Mean	Std. Deviation
IP Mean Stress	Male	742	1.51	.40
	Female	7233	1.61	.41

Table 19.
Independent Samples t-test IP Subscale by Gender

	t	df	Sig. (2-tailed)
IP Mean Stress	-6.40	7973	<.001

A one-way ANOVA was conducted to compare the effect of age, education level, and nursing program type on new graduate RN respondent perception of interpersonal work environment stressors. There was a significant effect at the $p<.05$ level for age group [$F(3, 7971) = 46.93$, $p<.001$]. Post hoc comparison using the Bonferroni test indicated that the mean IP stress score for new graduate respondents under 22 years old were different (higher) than those respondents in the 29 to 38 year old age group (M=1.67, SD=.41) and those in the 39 and over group (M=1.52, SD=.02). Post hoc comparisons for the 23 to 28 year old age group indicated the mean IP stress score was different (higher) than those respondents in the 29 to 38 year old age group (M=1.56, SD=.41) and those in the 39 and over group (M=1.52, SD=.40). These results are displayed in Table 20.

Table 20.
IP Subscale ONE-WAY ANOVA and Post Hoc Comparisons for Age (*N*=7975)

IP Mean Stress	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23.59	3	7.86	46.93	<.001
Within Groups	1335.76	7971	.17		
Total	1359.36	7974			

Multiple Comparisons - Bonferroni

(I) Age	Mean Stress	(J) Age	Mean Difference (I-J)	Std. Error	Sig.
Under 22	1.67	23-28	.03	.01	.094
		29-38	.11*	.01	<.001
		39 and Over	.15*	.02	<.001
23-28	1.64	Under 22	-.03	.01	.094
		29-38	.08*	.01	<.001
		39 and Over	.12*	.01	<.001
29-38	1.56	Under 22	-.11*	.01	<.001
		23-28	-.08*	.01	<.001
		39 and Over	.04	.02	.073
39 and Over	1.52	Under 22	-.15*	.02	<.001
		23-28	-.12*	.01	<.001
		29-38	-.04	.02	.073

*. The mean difference is significant at the 0.05 level.

The Pearson's correlation coefficient (r) between the interpersonal work environment stressor subscale and respondent age as a continuous variable was examined. A weak significant negative correlation (r=-.129, p<.001) was identified as illustrated in Table 21.

Table 21.

Pearson's Correlation Coefficients between IP Mean Stress and Age (*N*=7975)

IP Mean Stress	Pearson Correlation	-.129**
	Sig. (2-tailed)	<.001

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

The ANOVA analysis exploring differences in perceived interpersonal work environment stressors by education level resulted a significant effect at the $p<.05$ level ($F[3, 7971] = 13.57$, $p<.001$). Post hoc comparison using the Bonferroni test indicated that the mean IP stress score for new graduate respondents graduating from BSN programs (M=1.63, SD=.41) were different (higher) than respondents graduating from Diploma and ADN programs (M=-1.57, SD=.41). Those graduating pre-licensure from Masters and Doctoral programs and those in RN to BSN programs did not differ from the other groups.

There was no significant difference noted in IP stress score means based on new graduate nurses by nursing program type. These results for statistical testing of Hypothesis 2 are displayed in Tables 22 and 23. There is sufficient evidence to support rejection of the null hypothesis based on a difference of new graduate RN respondent perception of interpersonal work environment stressors based on gender, age, and education, but not for program type.

Table 22.

IP Subscale ONE-WAY ANOVA and Post Hoc Comparisons for Education/Degree

IP Mean Stress	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.91	3	2.30	13.57	<.001
Within Groups	1352.45	7971	.17		
Total	1359.36	7974			

Multiple Comparisons Bonferroni

(I) Type of nursing degree program graduated from?	(J) Type of nursing degree program graduated from?	Mean Difference (I-J)	Std. Error	Sig.
Diploma & ADN (M=1.57)	BSN	-.06*	.01	<.001
	Master's & Doc	.03	.04	1.000
	RN to BSN	-.09	.07	1.000
BSN (M=1.63)	Diploma & ADN	.06*	.01	<.001
	Master's & Doc	.09	.04	.078
	RN to BSN	-.03	.07	1.000
Master's & Doc (M=1.54)	Diploma & ADN	-.03	.04	1.000
	BSN	-.09	.04	.078
	RN to BSN	-.12	.07	.640
RN to BSN (M=1.66)	Diploma & ADN	.09	.07	1.000
	BSN	.03	.07	1.000
	Master's & Doc	.12	.07	.640

*. The mean difference is significant at the 0.05 level.

Table 23.
IP Subscale ONE-WAY ANOVA Program Type Statistics for Program Type

IP Mean Stress	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.77	3	.26	1.50	.213
Within Groups	1358.59	7971	.17		
Total	1359.36	7974			

Hypothesis Three was tested:

H_0: There is no difference between new graduate RN attributes (age, gender, education, program type) and RN perception of unpredictable work environment characteristics

(patient acuity, end of life experiences, emergency clinical situations, potential for workplace injury).

H_1: There is a difference between new graduate RN attributes (age, gender, education, program type) and RN perception of unpredictable work environment characteristics (patient acuity, end of life experiences, emergency clinical situations, potential for workplace injury).

An independent samples t-test was conducted to compare stress score means for unpredictable work environment (UP) characteristics between male and female new graduate survey respondents. There was a significant difference between male (M=1.85, SD= .44) and female (M=1.97, SD=0.44) UP stress score means (t [7778]= -7.01, p<.001). Mean female stress scores were significantly higher than male scores. Results are displayed in Tables 24 and 25

Table 24.
UP Subscale Group Statistics for Gender (N=7780)

	Gender	N	Mean	Std. Deviation	Std. Error Mean
UP Mean Stress	Male	727	1.85	.44	.02
	Female	7053	1.97	.44	.01

Table 25.
Independent Samples t-test UP Subscale by Gender

	t	df	Sig. (2-tailed)
UP Mean Stress	-7.01	7778	<.001

A one-way ANOVA was conducted to compare the effect of age, education level, and nursing program type on new graduate RN respondent perception of unpredictable work environment stressors. There was a significant effect at the p<.05 level for age group (F[3, 7776] = 51.67, p<.001). Post hoc comparison using the Bonferroni test indicated that the mean UP stress score for new graduate respondents under 22 years old (M=2.02, SD=.40) were

different (higher) than those respondents in the 29 to 38 year old age groups (M=1.90, SD=.45) and the over 39 age group (M=1.86, SD=.45). Mean UP stress scores for the new graduate respondents in the 23 to 28 year old age group (M=2.00, SD=.43) were different (higher) than those respondents in the 29 to 38 year old age groups and the over 39 age group. The under 22-year-old age group and 23 to 28 year old group did not significantly differ from each other. The results for statistics for testing of Hypothesis 3 are displayed in Table 26.

Table 26.
UP Subscale ONE-WAY ANOVA and post hoc Comparisons for Age

UP Mean Stress	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	28.94	3	9.65	51.67	<.001
Within Groups	1451.6	7776	.19		
Total	1480.621	7779			

Multiple Comparisons - Bonferroni

(I) Age	Mean Stress	(J) Age	Mean Difference (I-J)	Std. Error	Sig.
Under 22	2.02	23-28	.03	.01	.243
		29-38	.12*	.02	.000
		39 and Over	.17*	.02	.000
23-28	2.00	Under 22	-.03	.01	.243
		29-38	.09*	.01	.000
		39 and Over	.14*	.02	.000
29-38	1.90	Under 22	-.12*	.02	.000
		23-28	-.09*	.01	.000
		39 and Over	.05*	.02	.025
39 and Over	1.86	Under 22	-.17*	.02	.000
		23-28	-.14*	.02	.000
		29-38	-.05*	.02	.025

*. The mean difference is significant at the 0.05 level.

Pearson's correlation coefficients (r) between the unpredictable work environment stressor subscale and respondent age as a continuous variable was examined. A weak significant negative correlation (r=-.14, p<.001) was identified as illustrated in Table 27.

Table 27.
Pearson's Correlation Coefficients between UP Mean Stress and Age (*N*=7780)

Variable		Age
UP Mean Stress	Pearson Correlation	-.14**
	Sig. (2-tailed)	<.001

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

There was a significant effect at the $p<.05$ level for education group ($F[3, 7776] = 32.59$, $p<.001$). Post hoc comparison using the Bonferroni test indicated that the mean UP stress score for new graduate respondents graduating from BSN pre-licensure programs (M=1.99, SD=.42) were different (higher) than respondents who graduated from diploma and ADN programs (M=1.89, SD=.46). Those graduating pre-licensure from Masters and Doctoral programs and those in RN to BSN programs did not differ from the other groups. Results are displayed in Table 28.

Table 28.
UP Subscale ONE-WAY ANOVA and post hoc Comparisons for Education

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.38	3	6.13	32.59	<.001
Within Groups	1462.24	7776	.19		
Total	1480.62	7779			

Multiple Comparisons Bonferroni

(I) Type of nursing degree program graduated from?	(J) Type of nursing degree program graduated from?	Mean Difference (I-J)	Std. Error	Sig.
Diploma & ADN (M=1.89)	BSN pre-licensure	-.10*	.01	<.001
	Master's & Doc	-.02	.04	1.000
	RN to BSN	-.02	.07	1.000
BSN pre-licensure (M=1.99)	Diploma & ADN	.10*	.01	<.001
	Master's & Doc	.08	.04	.277
	RN to BSN	.08	.07	1.000
Master's & Doc (M=1.92)	Diploma & ADN	.02	.04	1.000
	BSN pre-licensure	-.08	.04	.277
	RN to BSN	.00	.08	1.000
RN to BSN (M=1.92)	Diploma & ADN	.02	.07	1.000
	BSN pre-licensure	-.08	.07	1.000
	Master's & Doc	.00	.08	1.000

*. The mean difference is significant at the 0.05 level.

Table 29.

UP Subscale ONE-WAY ANOVA for Program Type

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.799	3	.266	1.399	.241
Within Groups	1479.822	7776	.190		
Total	1480.621	7779			

There was no significant difference noted in UP stress score means based on new graduate nurses by nursing program type as seen in Table 29. There is sufficient evidence to support rejection of the null hypothesis based on a difference of new graduate RN respondent perception of unpredictable work environment stressors based on gender, age, and education, but not by nursing program type.

Hypothesis Four was tested:

H_0: There are no differences between new graduate RN reports of clinical stressors over time (Annual NSNA New Graduate Survey 2013-2015).

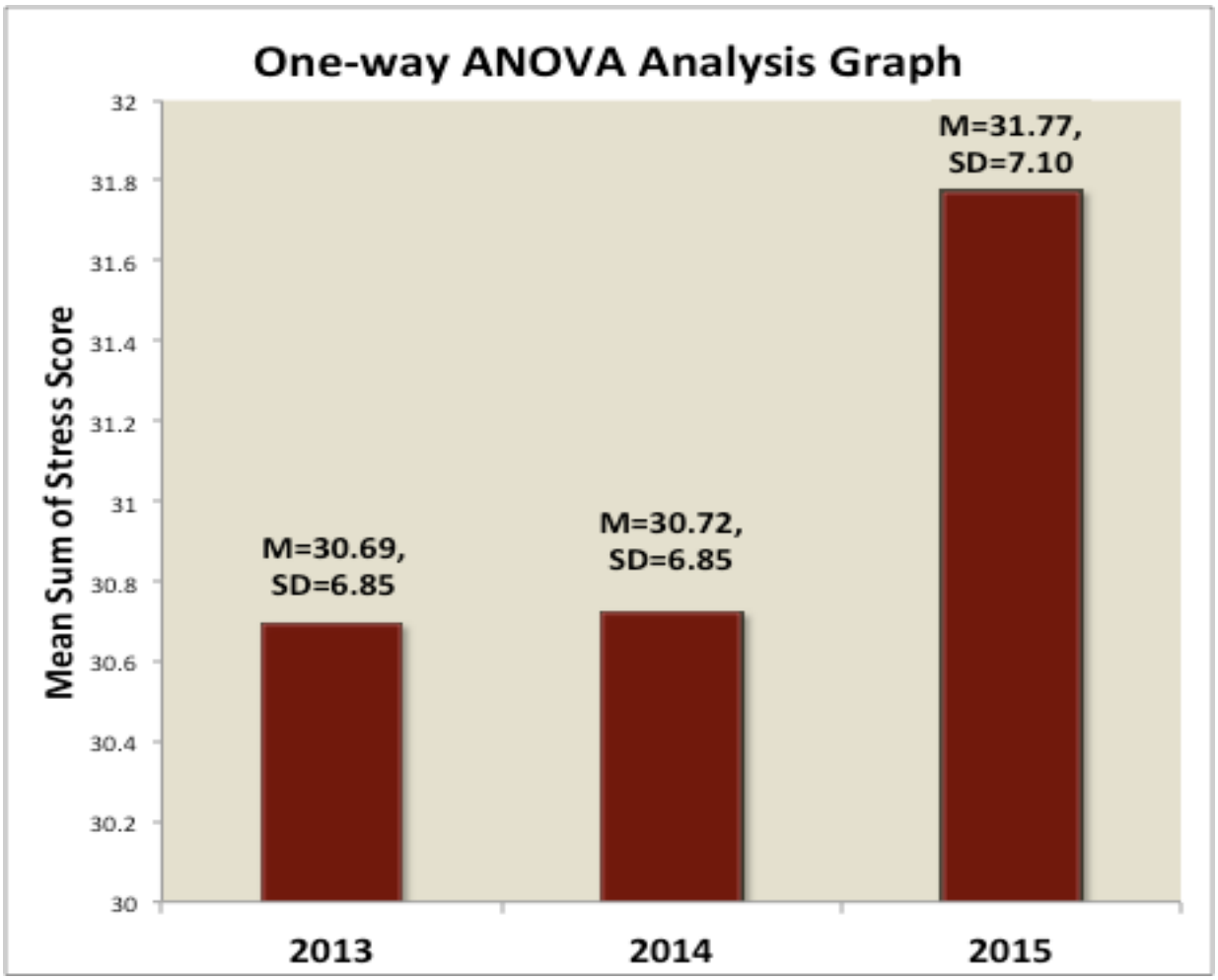
H_1: There are differences between new graduate RN reports of clinical stressors over time (Annual NSNA New Graduate Survey 2013-2015).

Careful analyses of three cross-sections of the annual NSNA New Graduate Survey between 2013 through 2015 determined if new graduate stressors have changed over time (*N*=8061). Table 30 presents the total number of respondents in each survey year and the mean sum of stress and mean stress scores for this sample of new graduate respondents over those three years. The range of stress sums were a minimum of zero to a maximum of 54 for the eighteen stressor items included in the NSNA Annual New Graduate Surveys. The sums of stress increased in each of the three survey years with a mean sum of stress of 31.77 in 2015 as the highest of all three years. (See Figure 4) Stress score means ranged from a minimum of .83 to a maximum of 3.0. Mean stress scores also increased in each of the three survey years with a mean of 1.77 in 2015 reflecting the highest mean score of all three years.

Table 30.
Descriptive Statistics: Sum of Stress and Stress Average 2013-2015

		N	Mean	Std. Deviation	Std. Error
Sum	2013	2406	30.69	6.85	.14
Of	2014	3236	30.72	6.85	.12
Stress	2015	2419	31.77	7.10	.14
	Total	8061	31.03	6.94	.08
Stress	2013	2406	1.71	.38	.01
Average	2014	3236	1.71	.38	.01
	2015	2419	1.77	.39	.01
	Total	8061	1.72	.39	.004

Figure 3. *Mean Sum of Stress Scores 2013 to 2015*



The reliability of the overall eighteen-item stressor scale was consistent over the three-year period with a relatively high internal consistency as seen in Table 31.

Table 31.

Reliability Statistics for 18 Stressor Items 2013-2015

wave year	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
2013	.90	.90	18
2014	.90	.91	18
2015	.86	.87	18

A One-way ANOVA was conducted to determine if there was a difference in stress sum for NSNA new graduate respondents by year. The analysis of variance showed that the sum of stress differences among the three years was significant (F[2, 8058]=19.99, p<.001). Post hoc comparison using the Bonferroni test indicated that the mean sum of stress in the 2015 survey sample respondents differed from 2013 (MD=1.08, SE=.20) and 2014 (MD=1.05. SE=.19) respondents. There was no significant difference between the 2013 and 2014 groups. Results are reported in Table 32. Based on these analyses, there is sufficient evidence to support rejection of the null hypothesis based on a difference of reported stress (sum of stress scores) in new graduate nurse survey sample respondent between the years of 2013 through 2015.

Table 32.

ONE-WAY ANOVA: Sum of Stress 2013 through 2015 (*N*=8061)

		Sum of Squares	df	Mean Square	F	Sig.
Sum of Stress	Between Groups	1917.08	2	958.54	19.99	<.001
	Within Groups	386387.65	8058	47.6		
	Total	388304.74	8060			

Multiple Comparisons - Bonferroni

Dependent Variable	(I) wave year	(J) wave year	Mean Difference (I-J)	Std. Error	Sig.
Sum of Stress	2013	2014	-.03	.19	1.000
		2015	-1.08*	.20	<.001
	2014	2013	.03	.19	1.000
		2015	-1.05*	.19	<.001
	2015	2013	1.08*	.20	<.001
		2014	1.05*	.19	<.001

*. The mean difference is significant at the 0.05 level.

Hypothesis Testing for Antecedent Variables and New Graduate Residency

In exploring factors that may influence new graduate RN perception of stress during the first year of clinical practice in an acute care setting, the combined 2013 through 2015 NSNA survey was utilized to analyze the influence of four variables reported by new graduates: (a) if their academic program adequately prepared them for their first position, (b) participation in a nurse residency program, (c) level of participation in clinical simulation in their undergraduate program, and (d) prior clinical experience.

Correlation and regression analyses were conducted to determine if the four independent variables were predictive of new graduate RN stress**.** Prior to conducting the analysis, data were assessed to ensure the assumptions for regression were met, including: independence, normal distribution, linearity, homoscedasticity, and multicollinearity. Of the four independent variables in the proposed regression model, academic preparedness and level of simulation were statistically significant in their relationship with the outcome variable of perceived stress.

Hypothesis Five was tested:

H_0: There are no differences in the perception of clinical stressors by new graduate nurses who believe that their nursing education program adequately prepared them for what to expect in their first positions influence the perception of clinical stressors.

H_1: There is a difference in the perception of clinical stressors by new graduate nurses who believe that their nursing education program adequately prepared them for what to expect in their first positions influence the perception of clinical stressors

When asked if they believed that their nursing program prepared them for what to expect in their first nursing position, the majority of new graduate respondents (70.7%) believed that their program prepared them. In contrast, 29.0% of the respondents did not believe that their nursing program prepared them for what to expect in their first nursing position. New graduate respondents that did not believe their nursing education adequately prepared them for their first

nursing position reported higher Stress Sum scores (M=33.76, SD=7.34) than their counterparts who believed their program adequately prepared them (M=30.91, SD=6.83) as shown in Table 33. An independent samples t-test was conducted to compare the sum of stress in new graduate respondents who felt their nursing education program adequately prepared them for their first position with new graduates who felt that their nursing education program did not prepare them adequately. There was a significant difference in the sum of stress scores for respondents who felt their nursing program adequately prepared them for their first position (t[2394]=9.08, p<.001).

Table 33.
Independent Samples t-Test for nursing education preparation (N=2419)

	Do you feel that your nursing education adequately prepared you for what to expect in your first nursing position?	N	Mean	Std. Deviation	Std. Error Mean
Stressor Sum	No	702	33.76	7.34	.28
	Yes	1694	30.91	6.83	.17

		t	df	Sig. (2-tailed)
Stressor Sum	Equal variances assumed	9.081	2394	.000

A simple linear regression was calculated to predict the sum of stress based on the new graduate nurse respondent's belief that their academic nursing program prepared them for their first position as an RN. A significant regression equation was found (F[1,2394]= 82.46, p<.001), with an R^2 of .033. Respondents predicted sum of stress is 33.76 and stress decreases by 2.85 points if they feel their program prepared them. The results for the linear regression are displayed in Table 34.

Table 34.

ANOVA and Linear Regression Model Summary: Education Preparation

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4019.48	1	4019.48	82.46	<.001
	Residual	116694.73	2394	48.75		
	Total	120714.21	2395			

a. Dependent Variable: Stressor Sum

b. Predictors: (Constant), *Do you feel that your nursing education adequately prepared you for what to expect in your first nursing position?*

Linear Regression Model Summary[b]

						Change Statistics			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.182[a]	.033	.033	6.98174	.033	82.460	1	2394	<.001

a. Predictors: (Constant), *Do you feel that your nursing education adequately prepared you for what to expect in your first nursing position?*

b. Dependent Variable: Stressor Sum

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	33.758	.264		128.109	<.001
	Do you feel that your nursing education adequately prepared you for what to expect in your first nursing position?	-2.846	.313	-.182	-9.081	<.001

There is sufficient evidence to support rejection of the null hypothesis based on a difference in the perception of clinical stressors by new graduate nurses who believe that their nursing education program adequately prepared them for what to expect in their first nursing position.

Hypothesis Six was tested:

H_0: There are no differences between new graduate level of participation in clinical simulation and reported stress scores.

H_1: There is a difference between new graduate levels of participation in clinical simulation and reported stress scores.

When asked about the level of clinical simulation in their nursing program the majority of new graduate respondents (80.0%) responded with estimates of levels of simulation greater than ten percent. In contrast, 20.0% responded having levels less than ten percent. New graduate respondents reporting greater than ten percent simulation reported higher stress sum scores (M=31.98, SD=7.10) than their counterparts who reported less than ten percent simulation (M=30.97, SD=7.03) as shown in Table 35. An independent samples t-test was conducted to compare the sum of stress in new graduate respondents reporting levels of clinical simulation in their nursing program greater than ten percent and those reporting less than ten percent. There was a significant difference in the sum of stress scores for respondents reporting greater than ten percent clinical simulation and respondents who identified they had less than ten percent clinical simulation. (t[2410]=-2.78, p<.005). Those respondents with simulation experiences reported significantly higher stress than those with less than 10% simulation in their programs.

Table 35.

Independent Samples t-Test for level of simulation in academic program

	More Than 10% Simulation	N	Mean	Std. Deviation
Stressor Sum	.00	480	30.9729	7.02882
	1.00	1932	31.9772	7.10027

	t	df	Sig. (2-tailed)
Stressor Sum	-2.779	2410	.005

A simple linear regression was calculated to predict stress based on new graduate nurse respondents' report of the level of clinical simulation in their nursing program. A significant regression equation was found ($F(1, 2410)=7.72$, $p=.005$), with an R^2 of .003 reflecting that those new graduates with less than ten percent of clinical simulation in their programs reported lower stress levels as displayed in in Table 36. The respondent's predicted sum of stress is 30.97 and stress increases by 1.00 for levels of simulation greater than ten percent in clinical programs.

Table 36.

ANOVA and Linear Regression Model Summary: Simulation

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	387.80	1	387.80	7.72	.005[b]
	Residual	121013.65	2410	50.21		
	Total	121401.44	2411			

a. Dependent Variable: Stressor Sum

b. Predictors: (Constant), MoreThan10% Simulation

Linear Regression Model Summary[b]

					Change Statistics			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.057[a]	.003	.003	7.08612	.003	7.723	1	2410	.005

a. Predictors: (Constant), MoreThan10% simulation

b. Dependent Variable: Stressor Sum

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	30.973	.323		95.762	.000
	MoreThan10% Simulation	1.004	.361	.057	2.779	.005

There is sufficient evidence to support rejection of the null hypothesis based on a difference of between new graduate levels of participation in clinical simulation and reported stress scores.

Hypothesis Seven was tested:

H_0: There are no differences in the perception of clinical stressors by new graduate nurses with prior healthcare experience.

H_1: There is a difference in the perception of clinical stressors by new graduate nurses with prior healthcare experience.

The 2015 NSNA survey question identifying if survey respondents had previous healthcare experience, includes experience as an LPN, EMT, medical assistant, certified nursing assistant, home care aide, radiology technician, laboratory technician, military medic, respiratory therapist, paramedic, or surgical technician. The majority of new graduates in the 2015 sample (84.1*%)* identified they had prior healthcare work experience (n=1,881). Conversely, 15.9% of the respondents indicated that they had no prior healthcare work experience (n=355). An independent samples t-test was conducted to compare the sum of stress in new graduate respondents reporting they had prior healthcare work experience and respondents reporting they had no prior healthcare work experience as shown in Table 37. There was no significant difference in the sum of stress scores for respondents reporting they had prior healthcare work experience (M=31.15, SD=7.34) and those who reported they had no prior healthcare work experience (M=31.76, SD=6.98), (*p*=ns).

Table 37.

Independent Samples t-Test for prior healthcare work experience (*N*=2236)

	PriorHealthcare (HC) Experience	N	Mean	Std. Deviation
Stressor Sum	No Prior HC Exp	1881	31.77	6.98
	Prior HC Work Experience	355	31.15	7.34

	t	df	Sig. (2-tailed)
Stressor Sum	1.507	2234	.132
	1.457	482.577	.146

A simple linear regression was calculated to predict stress based on new graduate nurse report of prior healthcare work experience. Although findings suggest that for respondents with prior HC experience, stress is decreased by .61 points, this predictor did not achieve significance (*B*=-614 SE=.407*, p*=.132). Statistical analyses for Hypothesis 7 failed to reject the null hypothesis (H_0). There are no differences in the prior healthcare experience of new graduate nurses and reported stress scores.

Hypothesis Eight was tested:

H_0: There are no differences between new graduate participation in a residency program and reported stress scores.

H_1: There is a difference between new graduate participation in a residency program and reported stress scores.

When asked about participation in an RN residency program, the majority of the 2015 sample of new graduate nurses (52.0%) reported they had participated in a residency program. In contrast, 48.0% reported not having participated in an RN residency program. An independent samples t-test was conducted to compare the sum of stress in new graduate respondents reporting they participated in an RN residency with those who did not participate in a residency. Although not significant, new graduate respondents in RN residency programs reported a slightly higher stress sum scores (M=31.94) than their counterparts who did not participating in RN residency programs (M=31.58) as shown in Table 38. This difference, however, was not significant.

Table 38.
Independent Samples T-Test participation in an RN residency program (*N*=2407)

	Was your orientation a new graduate RN Residency Program?	N	Mean	Std. Deviation
Stressor Sum	No	1154	31.58	7.42
	Yes	1253	31.94	6.76

t-test for equality of means

	t	df	Sig. (2-tailed)
Stressor Sum	-1.257	2405	.209

A simple linear regression was calculated to predict stress based on new graduate nurse report of participation in an RN residency training program. Regression analysis indicated that new graduate participation in an RN residency program was not significant as a predictor of stress (*B*=.125, SE=.314, *p*=.690). Analyses for Hypotheses 8 failed to reject the null hypothesis (H_0). There are no differences between new graduate participation in a residency program and reported stress scores.

Regression Model

Multiple linear regression analyses were conducted to explore the relationship between the perceived stress of new graduate nurses and potential predictors of work environment stress. Participation in an RN residency program and prior healthcare work experience did not contribute to the regression model. Two antecedent variables of academic preparation and participation in simulation and age were added to the regression model as a potential predictor of new graduate stress. As seen in Table 39, the model is statistically significant but accounts for only a small percentage of the variance (R^2 =.06).

Table 39. *Regression Model Summary: Educational Preparation, Simulation, and Age*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df2	Sig. F Change
1	.183[a]	.033	.033	6.978			2387	<.001
2	.196[b]	.039	.038	6.960	.005	13.15	2386	<.001
3	.246[c]	.060	.059	6.882	.022	55.36	2385	<.001

Summary

The purpose of this study was to explore the relationship among new graduate nurses' perception of work environment stressors based on selected individual factors (age, gender, education, program type), and to identify trends over a three year period in these factors and stress outcomes. The study examined three antecedents that may facilitate or inhibit the new graduate's perception of stress. Findings identified included:

- A significant increase in stress levels on new graduate respondents in the 2015 NSNA Annual New Graduate Survey in comparison with those participating in the 2013 and 2014 surveys
- Findings of a difference in new graduate RN respondent perception of clinical work environment stressors based on gender and age
- Findings of differences in new graduate RN respondent perception of interpersonal work environment stressors based on gender, age and education
- Findings of differences of new graduate RN respondent perception of unpredictable work environment stressors based on gender, age, and education

- The three independent variables simultaneously entered into the proposed regression model were statistically significant but explain only 6% of the variance of the dependent variable sum of stress.

CHAPTER 5: Discussion

Introduction

In this chapter, the research findings and the strengths and limitations of the study will be discussed. The implications of the study findings in relation to education, practice, and research are presented. How the findings of the study may contribute to Afaf Ibrahim Meleis' Transition Theory (2010) and Richard Lazarus and Susan Folkman's (1984) Transactional Model of Stress and Coping will also be considered.

Discussion of Findings

The study was designed to answer eight specific research questions related to new graduate RN perception of stress during the first year of clinical practice in an acute care setting. The first three questions explored potential demographic attributes of sample respondents influencing their perception of stress during the first year of clinical practice in an acute care setting. Stress was measured using the eighteen work setting stressor survey items from the NSNA annual new graduate survey. The survey items were categorized into the three subscales proposed as the dimensions of clinical work setting stressors for this study: work environment (WE) characteristics, unpredictable work environment (UP) characteristics, and interpersonal work environment (IP) characteristics. The fourth question examined trends in new graduate stress means and sum of stress over a three-year period between 2013 through 2015. The final four questions examined four independent variables to determine if they could facilitate or inhibit the new graduate's perception of stress.

The eighteen-item stressor scale within the NSNA annual new graduate survey was assessed for internal consistency. The coefficient alpha results for the overall scale had a

relatively high level of internal consistency for both 2015 and for the specific three-year sample for 2013 through 2015. In further exploring the reliability of the three subscales, the Cronbach's alpha values showed acceptable levels of internal consistency for the work environment and interpersonal subscales. One item specific for stress related to working night shifts on the WE subscale would improve the internal consistency of the scale if removed and one item specific for verbal abuse would improve the internal consistency of the IP subscale if removed. The coefficient alpha for the UP subscale was low. One item specific for stress related to potential for workplace injury would increase the internal consistency if removed. Additional psychometric analyses beyond the Exploratory Factor Analysis (See Appendix E and F) should be done to refine the instrument for future studies.

Demographics

The study used a purposive sample of new graduate nurses responding to the NSNA annual new graduate survey for the period of 2013 through 2015. New graduate members of the National Student Nurses Association were judged to be representative of the population of new graduate nurses and represented a wide geographic area across the United States, which strengthened the external validity of the study. The demographic characteristics of the study sample are consistent with the current composition of the nursing workforce in terms of gender and ethnicity. Expectedly, females comprised the majority of the new graduate sample. The sample ethnicity was primarily caucasian but increasing percentages of ethnic minorities were noted in the new graduate sample that mirrors the increasing representation of minorities in the general U.S. nursing workforce (NCSBN, 2017). The Educational composition of the new graduate sample varies from the general nursing workforce in that over 62% of the new

graduates in the sample hold a BSN degree in comparison to 55% of the practicing RN workforce who hold a BSN or higher degree (NCSBN, 2017).

Answering the Research Questions

RN Attributes and Associated Stress

In this study, work environment stressors were explored based on selected RN attributes including age, gender, education, and nursing program type. Work environment stressors included pace of clinical workflow, shift workload and responsibilities, accessibility of equipment, electronic documentation systems, and work schedules. Testing of the first hypothesis found a significant difference between new graduate RN attributes of age and gender and RN perception of clinical work environment characteristics. The mean stress scores for female respondents in the sample were higher than the male respondents. Stress scores were noted to be higher in the 39 year old and over age group when compared with sample respondents in the under 22 year old and 23 to 28 year old age groups. As these work environment stressors reflect a physical domain of the work setting, the findings of increased mean stress scores by gender and age group may reflect a difference in the physical stamina and adaptability to these stressors based on gender and age.

Interpersonal work environment stressors included communicating changes in patient status with physicians, communicating with supervisors/managers, peer interactions, delegating tasks to unlicensed staff, communicating with patients, and experiences of verbal abuse. Testing of the second hypothesis found there is a difference between new graduate RN attributes (age, gender, and education) and RN perception of interpersonal work environment characteristics. Study findings revealed increased stress scores in females, younger respondents, and those that have a BSN. As these interpersonal stressors reflect communication skills, it is understandable

that younger nurses in the under 22 year old and 23 to 28 year old age groups may experience increased stress in varied interactions with physicians, supervisors, peers, delegating to unlicensed staff, and in experiences of verbal abuse. Sherman (2006) reports that new graduates within the millennial generation prefer immediate feedback and can become frustrated if their requests, e-mails, or phone communications are not answered quickly. Millennial nurses demonstrate effectiveness at multitasking and responding to visual cues but may be less skilled at person to person communications than other generations in the current workforce (Hershatter & Epstein, 2010).

Respondents with a BSN comprise the majority of the sample and their stress may be impacted by other factors not explored in this study. There may be a variation in the complexity of the work settings and hospital size where diploma and associate degree graduates are hired in comparison to BSN graduates. It has been reported that the majority of acute care organizations prefer to hire BSN graduates over associate degree nurses (NCSBN, 2017). Workplace stress may be due to lesser experience in the clinical hours of BSN students when compared to their Associate degree counterparts. Because BSN programs are longer, these new graduates may incur stress related to economic factors such as student loan debt in comparison with diploma and ADN graduates (NCSBN, 2017). Feeg and Mancino (2016) identified that 74% of new graduate nurses have student loans or financial aid.

Unpredictable work environment stressors included patient acuity, end of life experiences, emergency clinical situations, and potential for workplace injury. The varying and sometimes chaotic nature of professional practice settings are reflected in this domain. The third hypothesis was tested with findings suggesting there are differences between new graduate RN attributes (age, gender, and education) and RN perception of unpredictable work environment

characteristics. Female respondents again experienced higher levels of stress than males and younger respondents experienced higher levels of stress than older age groups. These findings may reflect differences in coping patterns, styles, and adaptability to unpredictable clinical situations based on gender, age, and education. Study findings of increased stress scores in respondents who graduated from BSN programs may be related to factors not fully explored in this study, including clinical time in their programs and economic factors previously mentioned.

Changes in Stressors Reported Over Three Years

Testing of the fourth hypothesis revealed there are differences between new graduate RN reported clinical stressors over time. Study findings related to the increased and progressive levels of stress between 2013 and 2015 is an important consideration for nurse leaders within practice settings. During this timeframe, the healthcare landscape was shifting by the enactment of the Patient Protection and Affordable Care Act (PPACA, 2010) with the major provisions of the statute taking effect in 2014. The tenets of the law were intended to increase access to health care, lower healthcare costs, and improve health outcomes. Healthcare policy has long been a subject of debate but the triad of these key components of access, cost, and quality remain a concern for all stakeholders.

With the number of uninsured Americans decreased from 16% in 2010 to a low of 9.1% in 2015, nurses were impacted as they delivered care to increased numbers of patients across varied settings of care (NCSBN, 2017). The inpatient value-based purchasing provisions in section 3001(a) of the Affordable Care Act, authorized the Centers for Medicare and Medicaid Services to use a quality data reporting infrastructure linked incentive payments to hospitals (PPACA, 2010). With these provisions, healthcare organizations incurred financial pressure to decrease hospital readmissions, eliminate hospital-acquired conditions, and achieve optimum

patient experience outcomes (Needleman, 2013). In a study by Buerhaus and colleagues (2012), a majority of nurses viewed the CMS initiatives as increasing their workload without corresponding increases in staffing or salary. Nurses in the same study identified an increasing numbers of quality improvement projects within their organizations aimed at improving outcomes and increasing hospital reimbursement, which they also viewed as increasing their workload. The findings of increasing stress scores in new graduate nurses during the period of 2013 through 2015 may reflect the dynamics of a reforming system on new nurses during their transition into acute care environments.

This association of major change in the hospital environment may have impacted all aspects of patient care and the pressures may have filtered down to the nursing staff and their day-to-day situations in the workplace. New graduate nurses would be the most vulnerable to feel the pressures of increased stress in the hospital environment. In this researcher's experience, the accelerating pace of the workflow, staffing challenges, and long hours impact preceptors, nurse educators, and nurse leaders in their abilities to effectively support new graduates. Organizational pressures often lead to competing priorities and shrinking resources. The challenge for educators and nurse managers is to find ways to minimize stressors and facilitate an effective learning environment for new graduates within the inherent complexities of their practice settings.

Predictors of Stress

Knowledge of the potential predictors of stress and individual new graduate attributes that influence their experience of stress are important so targeted interventions to diminish stress can be developed. The factors explored as potential predictors of new graduate stress in this

study included: new graduate RN belief that their nursing education program prepared them for what to expect in their first position, level of new graduate RN participation in clinical simulation, new graduate RN prior healthcare experience, and new graduate participation in a residency program.

Testing of the fifth hypothesis identified there is a difference in the perception of clinical stressors by new graduate nurses who believe that their nursing education program adequately prepared them for what to expect in their first positions influence the perception of clinical stressors. The study findings suggest that new graduate nurses who believe that their academic program prepared them for their first nursing position perceived lower stress levels than their counterparts who did not believe their program prepared them. Walker et al. (2015) identified that new graduate nurses with confidence in their skills are better able to cope with clinical stressor, multi-task, and are considered more work ready than new graduates without this confidence.

New graduate nurses in the sample attended varied academic programs including: diploma, associate degree, BSN, accelerated BSN, Masters, Doctoral, and RN to BSN. The BSN has been identified as the minimum educational requirement for registered nurses to ensure the development of core skills that include: critical thinking, leadership, case management, and health promotion (AACN, 2015 May 19). The majority of the 2015 sample respondents graduated with a BSN degree or higher (68.2%). As new graduates enter their first nursing positions in acute care settings, employers may unrealistically look for new nurses to "hit the ground running". (Morrow, 2009). Instead, readiness for practice should entail having reasonable expectation of new graduates as they enter the practice setting (Wolff et al., 2010). The concept of preparation as a "shared understanding provides a foundation on which to build greater collaboration in the

preparation, transition, and integration of new graduates into the nursing workforce" (Wolff et al, 2010, p. 10).

Testing of the sixth hypothesis revealed there is a difference between new graduate levels of participation in clinical simulation and reported stress scores. The study found that new graduates who were exposed to over 10% of their clinical experience using simulation reported greater levels of stress than those that were exposed to less than 10% clinical simulation. A closer look at the findings in comparison to recent literature may indicate some understanding of this. The National Council of State Boards of Nursing (2014) reports that simulation is widely used in a large majority (87%) of American nursing programs and provided evidence that the educational outcomes of nursing students with up to 50% of their clinical experiences was comparable to students with the majority of their clinical hours in traditional practicum. Students within the NCSBN study sample for all levels of simulation, rated themselves highly in the areas of "clinical competence, critical thinking, and readiness for practice" (NCSBN, 2014, p. S38).

To prepare nursing students for the demands of the healthcare environment, schools of nursing are unable to rely on the limitations of traditional hospital-based clinical practicum experiences. Nursing programs utilize varied modalities of simulation-based learning to facilitate skill development, utilizing low, medium, and high-fidelity simulation techniques. Cantrell, Meyer, and Mosack (2017) conducted an integrative review exploring nursing student experiences of stress during high-fidelity simulation. The authors cited that although students reported moderate to high stress level during simulation exercises, they also reported simulation to be a valuable learning experience (Cantrell et al., 2017). Alexander and colleagues (2015) reported that the quality of the simulation program and faculty expertise in simulation is of greater importance in determining the effectiveness of simulation than the overall number of

simulation hours. This study explored a general level of new graduate participation in simulation during their academic programs. Further research on the content of simulation programs beyond clinical skill development to communication and teamwork dimensions may be warranted.

Testing of the seventh hypothesis failed to reject the null hypothesis. There are no differences in the perception of clinical stressors by new graduate nurses with prior healthcare experience. Although prior healthcare experience was not a significant factor related to new graduate perception of stress, the conceptual view that prior work experience in the acute care environment could facilitate or inhibit the transition experience should be considered in future research designs. Varied healthcare experiences were included within the definition of prior healthcare experience in this secondary analysis of the NSNA data set. These prior experiences included: LPN, EMT, medical assistant, certified nursing assistant, home care aide, radiology technician, laboratory technician, military medic, respiratory therapist, paramedic, or surgical technician roles. In studying the transition and socialization of health care assistants to student nurses, Brennan and McSherry (2007) identified that students with a healthcare background faced different challenges than those without those experiences. New graduate prior work experience as a health care assistant has been reported as beneficial in building confidence and skills but may contribute to role confusion (Hasson et al., 2013). Refinement of this study definition for what constitutes prior healthcare experience and a closer examination of potential differences may yield new findings.

Testing of the eighth hypothesis failed to reject the null hypothesis. The study's findings related to participation in a new graduate residency program did not achieve significance but reflected higher mean stress scores for those who participated in new graduate residency transition programs. The benefits of RN residencies to increase competence and self-confidence

and decrease turnover rates in new graduates has been well documented (Dyess & Sherman, 2009; IOM, 2010; Ulrich et al., 2010). Residencies vary by organization and by clinical area. Of interest in this study is that only a little more than half of the sample respondents (52%) reported participating in a new graduate residency program. Residency programs are often developed in highly complex specialties and units with patients who are higher acuity. It may confound the expectation that residencies reduce stress when they may simply be more likely to exist in highly stressful environments.

Strengths

A strength of this study pertains to its contribution to nursing knowledge regarding stressors perceived by new graduate RNs transitioning into practice in acute care settings. As transition into practice remains a key concern for the nursing profession, it is imperative to seek information on factors that facilitate and inhibit transition experiences for new graduates. As nursing practice evolves within a complex and reforming healthcare system, nursing leaders will need to monitor practice environments to implement strategies to diminish stress and facilitate successful transitions for new graduate nurses.

Another strength of the study is the use of a diverse and robust national sample of new graduates in contrast to a majority of the current literature using small samples in specific or limited geographical locations. Secondary analysis of large data sets is a sound research method if researchers are familiar with the data set in seeking to address research questions. In this study, the researcher had a unique opportunity to contribute the 18 survey items exploring new graduate stressors to the NSNA Annual New Graduate Survey in 2013. These items continued to be included in the NSNA annual surveys in 2014 and 2015. The relatively high internal consistency of the eighteen-item survey scale is an additional strength of the study. Secondary data analysis

offered an advantage to explore these data over time and the opportunity to explore a large national sample of new graduate nurses transitioning into practice, in a cost-effective manner.

Limitations

A potential threat due to the use of the National Student Nurses Association New Graduate Survey is that it is a self-report measure in which respondents may not be entirely honest, accurate or complete in their responses. The sample was not randomly selected and was a purposive, convenience sample of those new graduate respondents willing to answer the annual new graduate survey. Interpretation of results must be considered in light of the large sample size.

Another limitation of the study is that specific stressors investigated within the study were confined to those within the clinical work environment of the respondents. The scope of the study was not expanded to stressors within personal, financial, spiritual, or other domains that may impact new graduates during their transition experiences. Nurses experience stress beyond the confines of their work environments extending to responsibilities and challenges within their personal lives (Wright, 2014).

A limitation of the secondary analysis of the data in this study is that variables were restricted to items originally collected within the survey. To compensate for this limitation, a thorough assessment of the NSNA annual new graduate survey was conducted to select additional variables for appropriate inclusion within the research questions.

A delimitation of the study is the exclusion of new graduates transitioning into practice settings outside the acute care environment. Another limitation is the narrow range of the Likert scale used to maintain consistency with the overall NSNA Annual New Graduate Survey. A

future consideration may be to expand the scale to a five-point format and refine survey items based on the study findings. The study findings have been interpreted within the stated limitations and delimitations.

Implications for Education

This study contributes to the knowledge base on the transition of new graduate nurses into professional practice. Readiness for practice and successful transitions for new nurses are fundamental concerns for educators in both academic and practice settings. Sources of nursing student stress differ from those of practicing nurses. Nursing student stress stems from the academic environment and corresponding curricula, workload, examinations, and clinical practicum. Clinical stressors for practicing nurses emerge from the work environment and resultant pace of work, changing workflows, evolving technologies, unpredictable situations, and interpersonal (Weick et al., 2009; Wright, 2014). The work environment remains as a key setting in facilitating successful transitions for new graduates. Ulrich et al. (2010) reported job related stress was most prevalent in younger, less experienced RNs. Although nurses are taught to provide care for patients there is minimal time dedicated in academic courses that focus on benefits of self-care to reduce stress and promote health (Blum, 2014). Educators in academic and practice settings are in unique positions to guide new nurses in their understanding of the innate stressors within their chosen profession and assist them to incorporate self-care modalities and stress reduction strategies that they can tap into throughout their careers (Blum, 2014).

This study has focused on the factors influencing the perception of stress by new graduates in acute care settings. Although the majority of registered nurses, an estimated 63.2%, practice in acute care organizations, nursing jobs are progressively shifting to community and nonhospital settings (HRSA, 2013 April; NYSBON, 2017). Expanding stakeholder knowledge

of the factors influencing the perceived stressors of transitioning nurses in varied settings will inform educators, preceptors, and nurse leaders on strategies to diminish the experience of stress during the transition period.

Implications for Practice

This study has potential implications for the practice environment. The purpose of the study was to identify sources of work environment stress and their severity as stressors perceived by new graduate registered nurses during the first year of clinical practice in acute care. Stress within the clinical work environment has a negative effect on nurses, impacting their physical and psychological well-being, performance, and attitudes (Griffin & Clarke, 2011). It is important for nurse leaders in education and practice settings to recognize the varied stressors new graduates encounter in the contemporary clinical environment and how these stressors are changing over time. In recognizing RN attributes that may influence the transition process, educators and leaders in clinical settings can structure orientation programs and individualize stress reduction strategies based on the new nurses perception and response to stressors.

The work of achieving a dual imperative to reduce cost and improve outcomes relies on the work of registered nurses in the coordination of care, care delivery, patient and family education, and optimizing the patient experience within healthcare settings. As American healthcare continues on a journey of uncertain reform, nurse leaders must influence changes in the work environment to mitigate the stressors impacting new graduates and all practicing clinical nurses. The creation and sustaining of healthy work environments and implementing stress reduction strategies within varied practice settings warrant further study.

Implications for Research

The challenges new nurses continue to face during their initial transition into practice remains a strategic imperative for the nursing profession. Kramer (1974) coined the term "reality shock" over forty years ago, yet it is still relevant for the new graduate nurses of today. The implications of new graduates entering increasingly complex practice settings combined with the impending exit of experienced nurses from the "Baby Boom" generation over the next decade are a priority for consideration. Bleich et al. (2009, p. 160) identified the need for clear direction to "mitigate the impact that lost knowledge will have on organizational performance and patient outcomes."

The demands and pressures in acute care settings place demands on new graduate nurses that may be beyond their initial decision-making and critical thinking abilities (Clarke & Springer, 2012). Further exploration of the differences in the experience of stress by new graduates in varied specialties may uncover unique differences specific to practice settings. As the three variables of interest entered into this study's proposed regression model (age, academic preparation, and level of simulation) explained a small percent of the variability of the dependent variable sum of stress, further study and identification of model components is warranted.

An approach using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) was originally considered for analyses of these data. The EFA that was run on the eighteen items comprising the new graduate stressor scale can be seen in Appendix E and F. These techniques were not integrated in this study but are planned for a subsequent post-doctoral study to further explore and refine the psychometric properties of the new graduate RN stress scale.

Meleis' (2010) Transitions Theory

This study utilized Afaf Ibrahim Meleis's Transitions Theory as a guiding framework. The transition into practice for new graduate nurses is an educational transition within a situational context. Transition for new graduate nurses remains a challenge for the nursing profession, impacting healthcare organizations and affecting patient outcomes. Transition is a highly complex process that occurs over time, characterized by the individual new graduate nurse's engagement in the process, and enculturation into the role of the professional nurse (Meleis, 2010).

Meleis and colleagues (2000) identified that factors including meanings, expectations, level of knowledge and skill, environment, level of planning, and emotional and physical well-being may influence the quality of the transition experience and the consequences of transition for individuals. This study explored four variables, which might influence or predict new graduate RN perception of clinical stressors during their first year of clinical practice in acute care. The factors explored as potential predictors of new graduate stress included: new graduate RN belief that their nursing education program prepared them for what to expect in their first position, level of new graduate RN participation in clinical simulation, new graduate RN prior healthcare experience, and new graduate participation in a residency program. These personal conditions or antecedents to the transition may either facilitate or inhibit the transition process for the individual new graduate nurse. Further research to identify additional personal conditions that serve to facilitate or inhibit the transition process will expand on the findings of this research study.

Further research into additional transition conditions to determine facilitators and inhibitors of the process for new graduates is warranted. A closer look at critical points and

events during the transition process and identification of patterns of response may assist nurse educators and leaders to develop tactics to support new graduates as they face new situations within their practice environments. Through adaptation of practice settings to consistently engage facilitators of successful transitions and to minimize inhibitors, nurse leaders, educators, and preceptors can support new nurses through the transition process. This will ensure new graduate nurse connectedness with the chosen work environment and eventual role mastery as a professional RN.

Lazarus and Folkman's (1984) Transactional Model of Stress and Coping

Lazarus and Folkman's (1984) Transactional Model of Stress focuses on the imbalance between environmental demands on the individual and the resources and attributes that the individual has to cope with the demands. The transactional model approach emphasizes that individuals and groups differ in their sensitivity to different events, including their interpretation and response. It serves as an adaptive framework that aligns with transitions theory in the context of this study.

The two appraisal processes within the Transactional Model of Stress can be utilized to assist new graduates transitioning into practice to determine their capacity to manage the environmental demands they encounter (Lazarus & Folkman, 1984). The initial appraisal determines if the stress constitutes a threat to the individual and the secondary appraisal unfolds as the individual determines their personal coping resources to manage the environmental demands. In this study, stress was examined within the domains of work environment, interpersonal work characteristics, and unpredictable work characteristics.

Lazarus and Folkman's (1984, p. 32) theoretical model defines three types of primary appraisals: "irrelevant, benign-positive, and stressful". All are cognitive in nature. The benign-positive appraisal is viewed as enhancing the individual's well-being and when viewed in terms of transitions theory, may contribute as a facilitator to the transition experience. The stressful appraisal includes the elements of harm/loss, threat and challenge (Lazarus & Folkman, 1984). Harm/loss represents a definitive negative event whereas threat and challenge may vary by individual and foster anticipatory coping mechanisms. These appraisals influence how new graduates perceive the stressors they encounter within their clinical environment.

In the process of secondary appraisal, the individual employs existing coping options. It is the interaction of the appraisals that characterizes the degree of stress and the magnitude of the emotional reaction to the stressor (Lazarus & Folkman, 1984). In terms of transitions theory, the coping mechanisms used by the individual may serve to facilitate or inhibit their transition. Further research into how new graduates cognitively appraise stress within their clinical work environment and the specific coping strategies they use may contribute to increased knowledge on the modification of environmental stressors and effectiveness of stress management skills in new graduates.

Stress is inherent within the contemporary practice environment. As the workload, workflow, pace, and financial pressures evolve, nurse leaders may identify new stressors within varied practice settings. Leaders and educators can assist new graduate nurses in coping with the complexities and stress of their transition into the practice environment by assessing and influencing factors such as the controllability and the predictability of environmental stressors. As we experience an increase in the perception of stress by new graduate nurses over time, it will

be essential to incorporate stress reduction strategies in both academic and practice settings to ensure new nurses have the resources to manage stress effectively.

Conclusions

This study contributes to the knowledge base of research on new graduate RN transition into practice. It supports the importance of assessing new graduate RN attributes and their self-report of clinical work environment stressors that may inhibit or facilitate the transition experience.

- Identification of existing and emerging stressors in the clinical environment will be essential to facilitating successful transitions of new graduates nurses into practice
- Levels of new graduate self-reported stress have significantly increased from 2013 to 2015. It is imperative for nurse leaders in academia and practice settings to monitor this concerning trend and partner to implement strategies that diminish work environment stressors for new nurses.
- Although new graduate RN age, belief that their academic nursing program prepared them for their first position as a nurses, and levels of simulation in their clinical programs are not the sole predictors of new graduate stress, they do contribute to the model of stress.
- The findings from this study suggest the need for academic and practice settings to incorporate content on identification of workplace stressors and stress reduction modalities to support new graduates as they transition into complex practice environments. Stress appraisal and coping techniques can benefit registered professional nurses as a lifelong habit.

Summary

As a caring profession, nurses experience multiple stress in varied ways: physical workload, sharing in the suffering and grief of patients and families, and in frustrations related to the pace and resources available within their work environment (Aprasad, 2013). New graduate nurses need time and support to further develop coping methods. Further inquiry on how new graduates perceive or report stress levels during the transition period is of interest. Additional research will be useful to identify specific interventions that can minimize controllable stressors and provide appropriate support within diverse and expanding practice environments for new graduate nurses. As we witness new graduates entering into nontraditional practice environments for initial employment, it will be valuable to explore how stressors vary by setting.

Smooth transition into practice takes on an increasing importance in the current and uncertain era of healthcare reform. New graduates are entering practice environments that are infused with unprecedented pressures and challenges. Competing priorities, workforce demands, shrinking resources, and rapid changes complicate the new nurses' learning environment (National Advisory Council on Nurse Education and Practice [NAPNEC], 2010). Knowing the new graduate experience from these data is essential to develop meaningful interventions that will mediate stressful experiences and support the transition of new graduate nurses into professional practice. To positively influence education and practice environments, we must heed and learn from the voices of our new graduate colleagues - they are the future of the profession of nursing.

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Appendix A - Letter to Content Experts and Content Validity Grid

Eileen Mahler MSN, RN, NE-BC
2533 Columbus Avenue
Oceanside, New York 11572

March 1, 2016

Dear Education Colleague:

I am writing you to ask for your assistance and expertise in developing an instrument to evaluate clinical environment stressors, which may be perceived by new graduate nurses. The research I am conducting is part of the requirements for my Doctoral Dissertation at Molloy College. You were chosen to review this instrument because of your expertise and knowledge as an educator working with new graduate nurses. Your thoughtful input will help me to validate instrument items both individually and as a set. This instrument is designed to discriminate between individuals regarding their self-ratings for specific stressors within the acute care clinical environment. Please see the attached form for the definition of clinical stressors that is used for this tool.

During your review of the instrument, please provide feedback on the following:

- **Item content**- Does each item adequately reflect a clinical stressor that may be experienced by new graduate nurses in acute care?
- **Item style**- Are the items constructed and written clearly? If not, how would you restate them?
- **Comprehensiveness** – Do the items represent all stressors new graduates may encounter in the acute care clinical environment? Should others be added? If so, please suggest items that should be included.
- **Redundancy** - Should any items be deleted because they are duplicates of others?

Please use the attached form to rate the representativeness of each item to the concept of clinical stressors and provide additional feedback in the “comments” sections.

Thank you so much for taking the time to provide your expert review of this instrument. I would greatly appreciate return of the attached grid with your comments by March 25, 2016 by mail or e-mail. If you have any questions please feel free to contact me by phone at 516-632-4724 or by email at EMahler@lions.molloy.edu. I look forward to receiving your thoughtful review of my instrument.

Sincerely,

Eileen Mahler MSN, RNC, NE-BC

Enclosure

Content Validity Grid: In addition to reviewing for representativeness to the concept, please check for item redundancy and any areas that do not have items (please suggest items for missing areas). Thank you.

Clinical Environment Stressors	**Representativeness**
Conceptual/Theoretical Definition: **Clinical Stressor**: A perceived demand from the clinical work environment, which comprises both external stimuli and the perceptual processes of the new graduate nurse experiencing the event (Folkman & Lazarus, 1984). (*Transactional model of stress*) Survey respondents will be asked: ***Please rate the level of stress you are experiencing from the following*:**	**1** = The item is not representative of a clinical stressor which may be experienced by new graduate nurses **2** = The item needs major revisions to be representative of a clinical stressor which may be experienced by new graduate nurses **3** = The item needs minor revisions to be representative of a clinical stressor which may be experienced by new graduate nurses **4** = The item is representative of a clinical stressor which may be experienced by new graduate nurses.
1. Pace of clinical workflow	1 2 3 4 Comments:
2. Shift workload and responsibilities	1 2 3 4 Comments:
3. Peer interactions	1 2 3 4 Comments:
4. Communicating with Physicians	1 2 3 4 Comments:
5. Communicating with Supervisors/Managers	1 2 3 4 Comments:
6. Delegating to unlicensed staff	1 2 3 4 Comments:
7. Patient acuity	1 2 3 4 Comments:
8. End of life experiences	1 2 3 4 Comments:
9. Emergency clinical situations	1 2 3 4 Comments:

Clinical Environment Stressors	Representativeness
10. Verbal abuse	1 2 3 4 Comments:
11. Availability/accessibility of equipment	1 2 3 4 Comments:
12. Electronic documentation systems	1 2 3 4 Comments:
13. Work schedule	1 2 3 4 Comments:
14. Unit staffing ratios	1 2 3 4 Comments:
15. Potential for workplace injury	1 2 3 4 Comments:
16. Communicating with patients	1 2 3 4 Comments:
17. Working 12 hour shifts	1 2 3 4 Comments:
18. Working night shifts	1 2 3 4 Comments:

Clarity: Are the 18 items well written, distinct, and at an appropriate reading level for new graduate nurses? _____

____ Yes, the items are clear. (In the space below, indicate which items are clear):

____ No, some of the items are unclear. Please indicate which items are unclear and provide suggestions for clarifying them (use reverse side if needed).

Appendix B – N.S.N.A. Survey Questions

14. Please rate the level of stress you are experiencing from the following:

	Very Stressful	Somewhat Stressful	Not Stressful	N/A
Pace of clinical workflow	○	○	○	○
Shift workload and responsibilities	○	○	○	○
Peer interactions	○	○	○	○
Communicating with Physicians	○	○	○	○
Communicating with Supervisors/Managers	○	○	○	○
Delegating to unlicensed staff	○	○	○	○
Patient acuity	○	○	○	○
End of Life experiences	○	○	○	○
Emergency clinical situations	○	○	○	○
Verbal abuse	○	○	○	○
Availability/accessibility of equipment	○	○	○	○
Electronic Documentation Systems	○	○	○	○
Work Schedule	○	○	○	○
Unit staffing ratios	○	○	○	○
Potential for workplace injury	○	○	○	○
Communicating with patients	○	○	○	○
Working 12 hour shifts	○	○	○	○
Working night shifts	○	○	○	○

Please describe what YOU think is stressful about your job

35

1. Prior to entering nursing school were you any of the following?

	Yes	No
LPN/LVN	○	○
EMT	○	○
Medical Assistant/Technologist	○	○
Certified Nursing Assistant	○	○
Home Care Aide	○	○
Radiology Technician	○	○
EKG/ECG Technician	○	○
Laboratory worker	○	○
Massage Therapist	○	○
Military Medic/Corpsman	○	○
Respiratory Therapist	○	○
Paramedic	○	○
Pharmacy Technician	○	○
Surgical Technician	○	○
Dental Assistant/Hygienist	○	○
Unit Clerk	○	○
Veterinary Technician	○	○

Other (please specify)

18. Do you feel that your nursing education adequately prepared you for what to expect in your first nursing position?

- ◯ Yes
- ◯ No

Please explain why or why not?

18. Please estimate how much of your clinical experience used simulation. Choose the one best answer that fits your experience.

- ◯ None
- ◯ Very little simulation
- ◯ Some clinicals (part simulation)
- ◯ Some clinicals (all simulation)
- ◯ Many clinicals (part simulation)
- ◯ Many clinicals (all simulation)
- ◯ All clinicals simulation

Comments:

9. Was your orientation a new graduate RN Residency Program?

- ◯ Yes
- ◯ No

Appendix C - Permission to Use Figure 1 Transitions: A Middle-Range Theory

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Appendix D –Letter of Approval from Molloy College IRB

Institutional Review Board
1000 Hempstead Avenue
Rockville Centre, NY 11571
www.molloy.edu

Tel. 516.323.3801
Tel. 516.323.3711

Date: August 3, 2016
To: Eileen K. Mahler, MSN
From: Kathleen Maurer Smith, Ph.D.
Co-Chair, Molloy College Institutional Review Board
Patricia Eckardt, Ph.D., RN
Co-Chair, Molloy College Institutional Review Board

SUBJECT: MOLLOY IRB REVIEW AND DETERMINATION OF EXEMPT STATUS
Study Title: Factors influencing the perceived stressors of new graduate nurses transitioning into acute care settings: A secondary data analysis.
Approved: August 3, 2016
Approval No: 05130108-0803

Dear Eileen:

The Institutional Review Board (IRB) of Molloy College has reviewed the above-mentioned research proposal and determined that this proposal is approved by the committee. It is EXEMPT from the requirements of Department of Health and Human Services (DHHS) regulations for the protection of human subjects as defined in 45CFR46.101(b). Please note that as Principal Investigator (PI), it is your responsibility to be CITI Certified and submit the evidence in order to conduct your research.

You may proceed with your research. Please submit a report to the committee at the conclusion of your project.

Changes to the Research: It is the responsibility of the Principal Investigator to inform the Molloy College IRB of any changes to this research. A change in the research may disqualify the project from exempt status.

Sincerely,

Kathleen Maurer Smith, Ph.D.

Patricia Eckardt, Ph.D., RN

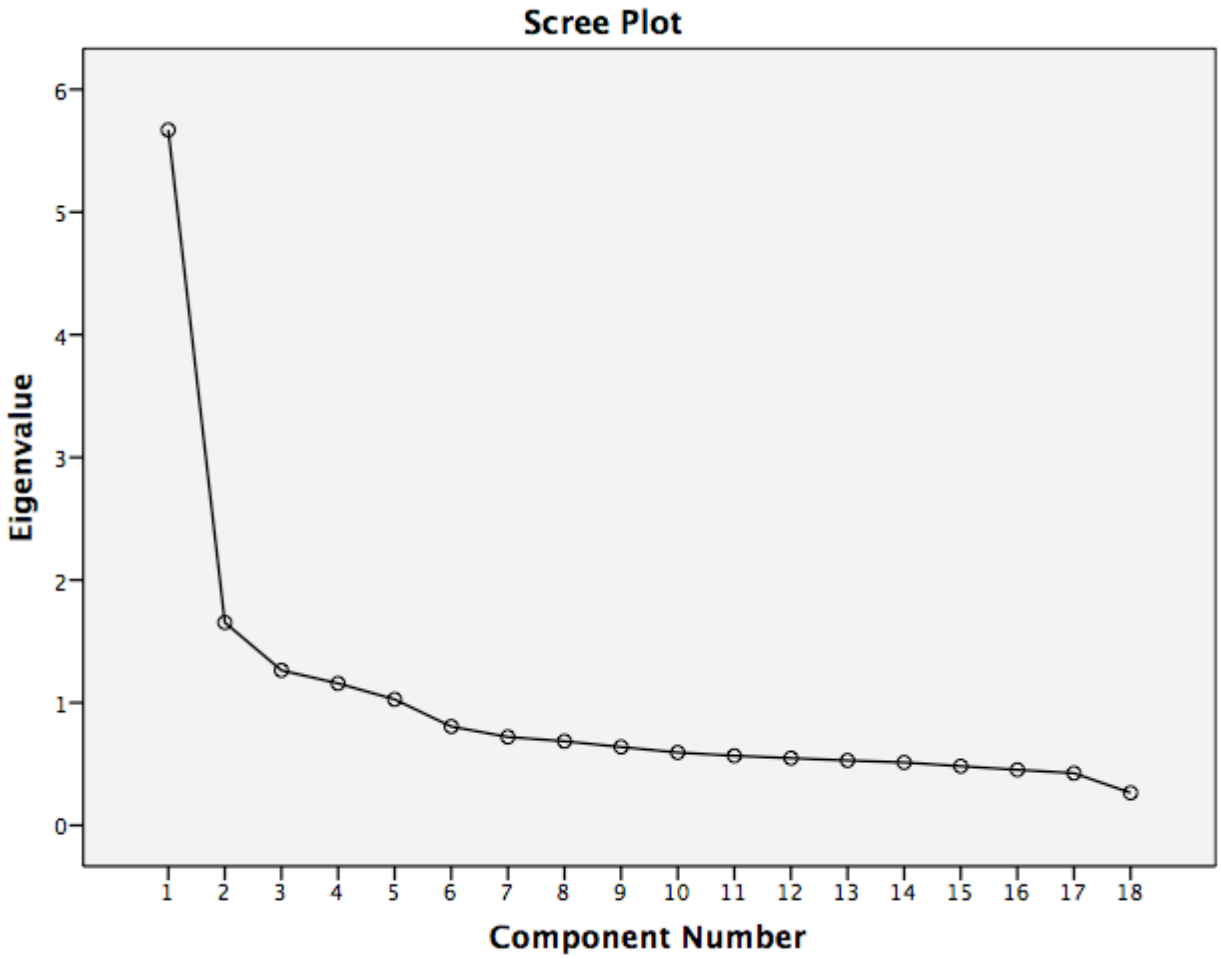
Appendix E – Exploratory Factor Analysis 18 Item Stressor Scale

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Stress Pace of clinical workflow	.820	.201	.110	.096	.087
Stress Shift workload and responsibilities	.840	.158	.126	.129	.057
Stress Peer interactions	.122	.693	.223	.132	.023
Stress Communicating with Physicians	.242	.736	-.026	.058	.099
Stress Communicating with Supervisors/Managers	.058	.722	.207	.186	.094
Stress Delegating to unlicensed staff	.085	.611	.223	.094	.142
Stress Patient acuity	.628	.124	.112	.081	.402
Stress End of Life experiences	.000	.149	.116	.107	.810
Stress Emergency clinical situations	.388	.100	.026	.049	.688
Stress Verbal abuse	-.125	.210	.604	.072	.246
Stress Availability/accessibility of equipment	.184	.192	.715	.021	.026
Stress Electronic Documentation Systems	.280	.289	.426	.167	-.085
Stress Work Schedule	.251	.177	.335	.624	.042
Stress Unit staffing ratios	.505	.022	.541	.169	-.025
Stress Potential for workplace injury	.141	.140	.715	.191	.057
Stress Communicating with patients	.048	.469	.389	.359	.091
Stress Working 12 hr. shifts	.237	.197	.170	.712	.043
Stress Working night shifts	-.035	.117	.008	.836	.107

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Appendix F – Exploratory Factor Analysis Scree Plot



Appendix G – EFA Correlations for 18 Stressor Items

Correlations

		Stress Pace of clinical workflow	Stress Shift workload and responsibilities	Stress Peer interactions
Stress Pace of clinical workflow	Pearson Correlation	1	.730**	.286**
	Sig. (2-tailed)		.000	.000
	N	2419	2419	2419
Stress Shift workload and responsibilities	Pearson Correlation	.730**	1	.261**
	Sig. (2-tailed)	.000		.000
	N	2419	2419	2419
Stress Peer interactions	Pearson Correlation	.286**	.261**	1
	Sig. (2-tailed)	.000	.000	
	N	2419	2419	2419
Stress Communicating with Physicians	Pearson Correlation	.300**	.294**	.398**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Supervisors/Managers	Pearson Correlation	.223**	.222**	.466**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Delegating to unlicensed staff	Pearson Correlation	.246**	.218**	.388**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Patient acuity	Pearson Correlation	.482**	.490**	.216**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress End of Life experiences	Pearson Correlation	.169**	.139**	.190**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Emergency clinical situations	Pearson Correlation	.347**	.342**	.150**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Verbal abuse	Pearson Correlation	.139**	.139**	.290**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419

Correlations

		Stress Communicating with Physicians	Stress Communicating with Supervisors/Managers	Stress Delegating to unlicensed staff
Stress Pace of clinical workflow	Pearson Correlation	.300**	.223**	.246**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Shift workload and responsibilities	Pearson Correlation	.294**	.222**	.218**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Peer interactions	Pearson Correlation	.398**	.466**	.388**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Physicians	Pearson Correlation	1	.465**	.334**
	Sig. (2-tailed)		.000	.000
	N	2419	2419	2419
Stress Communicating with Supervisors/Managers	Pearson Correlation	.465**	1	.398**
	Sig. (2-tailed)	.000		.000
	N	2419	2419	2419
Stress Delegating to unlicensed staff	Pearson Correlation	.334**	.398**	1
	Sig. (2-tailed)	.000	.000	
	N	2419	2419	2419
Stress Patient acuity	Pearson Correlation	.254**	.229**	.232**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress End of Life experiences	Pearson Correlation	.182**	.208**	.216**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Emergency clinical situations	Pearson Correlation	.247**	.191**	.173**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Verbal abuse	Pearson Correlation	.191**	.271**	.246**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419

Correlations

		Stress Patient acuity	Stress End of Life experiences	Stress Emergency clinical situations
Stress Pace of clinical workflow	Pearson Correlation	.482**	.169**	.347**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Shift workload and responsibilities	Pearson Correlation	.490**	.139**	.342**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Peer interactions	Pearson Correlation	.216**	.190**	.150**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Physicians	Pearson Correlation	.254**	.182**	.247**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Supervisors/Managers	Pearson Correlation	.229**	.208**	.191**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Delegating to unlicensed staff	Pearson Correlation	.232**	.216**	.173**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Patient acuity	Pearson Correlation	1	.279**	.414**
	Sig. (2-tailed)		.000	.000
	N	2419	2419	2419
Stress End of Life experiences	Pearson Correlation	.279**	1	.353**
	Sig. (2-tailed)	.000		.000
	N	2419	2419	2419
Stress Emergency clinical situations	Pearson Correlation	.414**	.353**	1
	Sig. (2-tailed)	.000	.000	
	N	2419	2419	2419
Stress Verbal abuse	Pearson Correlation	.113**	.179**	.126**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419

Correlations

		Stress Verbal abuse	Stress Availability/accessibility of equipment	Stress Electronic Documentation Systems
Stress Pace of clinical workflow	Pearson Correlation	.139**	.257**	.317**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Shift workload and responsibilities	Pearson Correlation	.139**	.253**	.308**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Peer interactions	Pearson Correlation	.290**	.298**	.289**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Physicians	Pearson Correlation	.191**	.229**	.240**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Supervisors/Managers	Pearson Correlation	.271**	.303**	.282**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Delegating to unlicensed staff	Pearson Correlation	.246**	.249**	.254**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Patient acuity	Pearson Correlation	.113**	.227**	.207**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress End of Life experiences	Pearson Correlation	.179**	.142**	.150**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Emergency clinical situations	Pearson Correlation	.126**	.164**	.135**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Verbal abuse	Pearson Correlation	1	.316**	.185**
	Sig. (2-tailed)		.000	.000
	N	2419	2419	2419

Correlations

		Stress Work Schedule	Stress Unit staffing ratios	Stress Potential for workplace injury
Stress Pace of clinical workflow	Pearson Correlation	.315**	.389**	.253**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Shift workload and responsibilities	Pearson Correlation	.331**	.437**	.267**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Peer interactions	Pearson Correlation	.334**	.232**	.292**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Physicians	Pearson Correlation	.219**	.200**	.189**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Supervisors/Managers	Pearson Correlation	.350**	.244**	.312**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Delegating to unlicensed staff	Pearson Correlation	.289**	.232**	.284**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Patient acuity	Pearson Correlation	.266**	.364**	.234**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress End of Life experiences	Pearson Correlation	.183**	.110**	.138**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Emergency clinical situations	Pearson Correlation	.199**	.188**	.162**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Verbal abuse	Pearson Correlation	.234**	.218**	.355**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419

Correlations

		Stress Communicating with patients	Stress Working 12 hour shifts	Stress Working night shifts
Stress Pace of clinical workflow	Pearson Correlation	.231**	.307**	.120**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Shift workload and responsibilities	Pearson Correlation	.221**	.323**	.136**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Peer interactions	Pearson Correlation	.391**	.289**	.200**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Physicians	Pearson Correlation	.307**	.261**	.177**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with Supervisors/Managers	Pearson Correlation	.435**	.298**	.241**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Delegating to unlicensed staff	Pearson Correlation	.378**	.248**	.175**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Patient acuity	Pearson Correlation	.235**	.253**	.123**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress End of Life experiences	Pearson Correlation	.209**	.170**	.144**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Emergency clinical situations	Pearson Correlation	.176**	.188**	.109**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Verbal abuse	Pearson Correlation	.273**	.199**	.181**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419

Correlations

		Stress Pace of clinical workflow	Stress Shift workload and responsibilities	Stress Peer interactions
Stress Availability/accessibility of equipment	Pearson Correlation	.257**	.253**	.298**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Electronic Documentation Systems	Pearson Correlation	.317**	.308**	.289**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Work Schedule	Pearson Correlation	.315**	.331**	.334**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Unit staffing ratios	Pearson Correlation	.389**	.437**	.232**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Potential for workplace injury	Pearson Correlation	.253**	.267**	.292**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Communicating with patients	Pearson Correlation	.231**	.221**	.391**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Working 12 hour shifts	Pearson Correlation	.307**	.323**	.289**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419
Stress Working night shifts	Pearson Correlation	.120**	.136**	.200**
	Sig. (2-tailed)	.000	.000	.000
	N	2419	2419	2419