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Final Semester Associate Degree Nursing Student Stress and Comprehensive NCLEX-RN® Predictor Exam Results

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Final Semester Associate Degree Nursing Student Stress and Comprehensive
NCLEX-RN® Predictor Exam Results

by

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Abstract

This study assessed perceived stress among graduating nursing students and explored the relationship between perceived stress and scores on a comprehensive NCLEX-RN® predictor exam. The goal was to provide data for educators to examine the correlation between student stress levels and comprehensive NCLEX-RN® predictor exam scores. Findings indicated that nursing students had higher than average stress levels based on established averages reported for the Perceived Stress Scale (PSS) three weeks prior to graduation. No relationship was found in regards to stress and ATI Comprehensive Predictor Scores administered two days after students completed the PSS questionnaire. Implications for nurse educators based on this finding suggested the importance of reassuring students about their potential to test effectively in spite of perceived stress.

Keywords: nursing students, stress levels, NCLEX-RN® predictor examinations

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CHAPTER I

Introduction

Nursing school can be a challenging time for students. Stress related to personal

and academic demands may have an impact on academic performance. Most curricula are

rigorous with challenging and time intensive assignments to prepare nursing students for

the National Council Licensure Examination for Registered Nurses (NCLEX-RN®).

Success on the NCLEX-RN® is of great importance because passing this exam

determines ability to practice as a Registered Nurse. Academic demands and high-stakes

testing may increase the stress of nursing students. Many programs utilize standardized

testing programs to assess student knowledge of nursing care. These tests and the risk of

not passing can be very stressful for students.

In addition to academic stressors, community college students typically have

work and family demands or other personal factors that may impact stress levels or their

performance in school. The purpose of this study was to assess perceived stress among

graduating Associate Degree Nursing (ADN) students and to explore the relationship

between perceived stress and scores on a comprehensive NCLEX-RN® predictor exam.

Significance

The NCLEX-RN® is a nursing board exam that provides the gateway between

education and practice. Candidates for the NCLEX-RN® must pass this exam in order to

practice as a Registered Nurse. Nursing programs require intense preparation for the

licensure examination for student success and for maintaining adequate NCLEX-RN®

pass rates. Methods of preparation may include adaptive quizzing, NCLEX-RN® study

guides, and standardized tests. Of these methods, one of interest is the use of standardized

testing. These tests may be used to identify students that may be at risk of failing the NCLEX-RN®. The Assessment Technologies Institute (ATI) testing package provides a comprehensive predictor exam, which tests nursing student knowledge in preparation for the NCLEX-RN®. The ATI Comprehensive Predictor has been found to indicate the potential for success on the licensure exam (Alameida et al., 2011).

Student stress or anxiety may have an impact on comprehensive predictor scores and potentially success on the NCLEX-RN® exam. Psychological stress may occur if an individual views an event as physically or emotionally overwhelming and the individual has the inability to cope (Cohen, Janicki-Deverts, & Miller, 2007). Physiologically, stress and anxiety cause negative affective states, "…which in turn exert direct effects on biological processes or behavioral patterns…" (Cohen et al., 2007, p. 1685). These physiologic responses can negatively affect test scores. Extensive data has been examined for nursing student stress, the NCLEX-RN®, and predictor examinations. However, there is a lack of data and research related to nursing student stress and scoring on a comprehensive predictor exam.

Purpose

The purpose of this study was to assess perceived stress among graduating ADN students and to explore the relationship between perceived stress and scores on a comprehensive NCLEX-RN® predictor exam. The goal was to provide data for educators to examine the correlation between student stress levels and comprehensive NCLEX-RN® predictor exam scores. Information regarding stress and testing will be important to nurse educators in planning stress relieving strategies that may improve performance on the predictor and ultimately the NCLEX-RN® exam.

Theoretical or Conceptual Framework

Lazarus and Folkman (1984) define psychological stress as "…a particular 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" (p. 19). Stress may also be referred to as "...a complex series of subjective phenomena, including cognitive appraisals..., stress emotions, coping responses, and reappraisals. Stress is experienced when the demands of a situation tax or exceed a person's resources and some type of harm or loss is anticipated" (Lyon, 2012, p. 11).

In addition, "…stress arises when a person perceives a situation as threatening or demanding while he or she does not have an appropriate coping response…" (Al kaladeh & Abu Shosha, 2012, p. 45). These factors may impact physical and psychosocial health of nursing students. Lazarus and Folkman "…link stress-related variables to health related outcomes. All of the constructs in their transactional model, when taken together, affect adaptational outcomes" (Lyon, 2012, p. 10).

The Transactional Model referenced by Lazarus and Folkman in 1984 serves as the theoretical framework to examine perceived stress by nursing students in relation to being in the final weeks of the semester and the NCLEX-RN® comprehensive predictor exam. In this model, there are five types of major variables on which the theory is founded. These include: "…stress, appraisal, coping, person and environmental antecedents of stress and coping, and short- and long-term adaptational outcomes" (Lazarus & Folkman, 1984, p. 306). Specifically, the Transactional Model focuses on stress, appraisal, and coping (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) suggested that baseline conditions of the person's life affect which of many transactions

will be viewed as a hassle or as uplifting. Events that may be perceived as stressful are not a reflection of what has actually happened, but depend on how the experiences are appraised by the individual (Lazarus & Folkman, 1984). The appraisal process involves asking an individual "…to describe a particular stressful encounter and then to evaluate the extent to which each of a number of stakes is involved in that encounter" (Lazarus & Folkman, 1984, p. 315). The reaction of the individual in a situation he or she appraises as stressful is the act of coping. Coping refers to "…specific thoughts, feelings, and acts rather than to what a person reports he or she might or would do" (Lazarus & Folkman, 1984, p. 317). Examining the correlation between student stress levels and comprehensive NCLEX-RN® predictor exam result scores may assist educators with determining how students appraise a situation as stressful and how educators may assist the students with coping. *Figure 1* depicts incorporation of the Transactional Model of Stress in a Concept, Theory, and Empirical Measure diagram based on the components of this study.
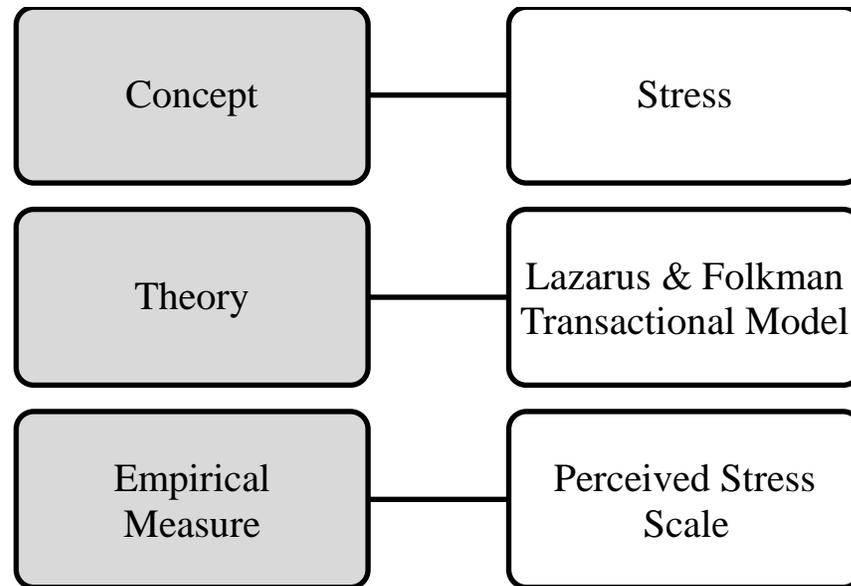
Figure 1. Concept, Theory, and Empirical Measure Model.

Research Questions

The purpose of this study was to examine the following research questions:

1. What are the stress levels of Associate Degree Nursing (ADN) students three weeks prior to graduation?

2. Is there a relationship between the ADN students' stress levels and Comprehensive ATI Predictor Exam scores?

The hypothesis is that students with higher stress levels will have lower scores on the Assessment Technologies Institute (ATI) RN Comprehensive Predictor Exam, indicating a lower probability of passing the NCLEX-RN®.

Definition of Terms

- Stress. Lazarus and Folkman (1984) define psychological stress as "…a particular 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" (p. 19).

- NCLEX-RN®. This term references the National Council Licensure Examination for Registered Nurses. It is a success or failure examination, which determines if candidates who take the exam may practice as a Registered Nurse (Spurlock, 2006).

- ATI Comprehensive Predictor Exam. The Assessment Technologies Institute (ATI) Comprehensive Predictor is a standardized examination that assesses student learning and mastery of nursing-related content. The content of the exam corresponds with the NCLEX-RN® test blueprint.

Summary

Nursing students experience stress related to life and academic stressors (Ahern & Norris, 2011). According to Davenport (2007), students must undergo a comprehensive testing plan in order to be prepared and successful on the NCLEX-RN®. The purpose of this study was to assess the perceived stress among a sample of graduating ADN students and to explore the relationship between perceived stress and scores on a comprehensive NCLEX-RN® predictor exam. The goal was to provide data for educators to examine the correlation between student stress levels and comprehensive NCLEX-RN® predictor exam scores. Information regarding stress and testing will be important to nurse educators in planning stress relieving strategies that may improve performance on the predictor and potentially the NCLEX-RN® exam.

CHAPTER II

Literature Review

The purpose of this study was to assess perceived stress among graduating ADN students and to explore the relationship between perceived stress and scores on a comprehensive NCLEX-RN® predictor exam. The goal was to provide data for educators to examine the correlation between student stress levels and comprehensive NCLEX-RN® predictor exam result scores. Information regarding stress and testing will be important to nurse educators in planning stress relieving strategies that may improve performance on the predictor and ultimately the NCLEX-RN® exam. Most nursing programs require students to take a comprehensive NCLEX-RN® predictor exam to forecast the students' success on the NCLEX-RN® exam. Success on the NCLEX-RN® determines the ability for nursing school graduates to practice nursing. The relationship between stress levels and results of a comprehensive predictor exam were explored.

Review of Literature

The purpose of the literature review was to gather information, examine previous studies on similar topics, and organize themes that relate to the research questions. The following sources were used to locate literature related to the research questions: Cumulative Index for Nursing and Allied Health Literature (CINAHL), the Education Resource Information Center (ERIC), Health and Psychosocial Instruments (HaPI), Health Source: Nursing/Academic Edition, and ProQuest Nursing & Allied Health Source. The following keywords were utilized for the literature search: nursing students, Associate Degree Nursing students, stress, stressors, high-stakes testing, final semester,

test anxiety, NCLEX-RN® preparation, community college students, community college student stressors, and comprehensive predictor exams.

Stress and Sources of Stress among Nursing Students

Nursing students experience several different types of stress during their education including academic and clinical sources (Alzayyat & Al-Gamal, 2014). Alzayyat and Al-Gamal (2014) conducted a comprehensive review of studies related to undergraduate nursing students during their clinical education and aimed to compare them with academic year placement, cultural background, and the positive or negative impact of stress. The settings were various and included research related to Taiwanese, Turkish, Spanish, and British nursing students. Samples also varied and included purposive, convenience, and random sampling techniques. Methods included researching four databases to avoid bias and studies that utilized different instruments to assess stress levels. In their research, Alzayyat and Al-Gamal (2014) found that nursing students experience various degrees of stress throughout their clinical education. Additionally, there is a need for further research related to the beneficial aspects of clinical education and coping strategies for students to manage stress.

Sources of stress tend to vary according to the student's placement within nursing school. Öner-Altiok and Üstüsn (2013) examined sources of stress among second year nursing students. The study aimed to answer the question "…what are the second year students' individual and social sources of stress during their clinical and theoretical training?" (Öner-Altiok & Üstüsn, 2013, p. 761). The study was completed at Adnan Menderes University with a sample of 15 second-year Turkish nursing students. The research design was a qualitative phenomenological study with interviewing techniques.

Öner-Altiok and Üstüsn (2013) found four common themes that contributed to stress in nursing students: clinical training, theoretical education, social life issues, and personal life issues. The results indicated that nursing students experience various types of stress.

In addition to stress, depression and anxiety may occur during nursing education. In the clinical setting, nursing students may experience high levels of stress and anxiety related to feeling unprepared, lack of experience in the hospital environment, or the fear of making a mistake (Chernomas & Shapiro, 2013). Outside of the clinical setting, academic factors, such as exams, overload of classwork and preparation, grades, and not meeting family expectations may put nursing students at risk for depression. Other personal sources of stress may include financial concerns and lack of free time. Chernomas and Shapiro (2013) sought to investigate the prevalence of stress, depression, and anxiety, and the relationship to quality of life among undergraduate nursing students through an online survey. Students enrolled in a baccalaureate nursing program (n=437) in a Canadian university completed the Depression Anxiety Stress Scales (DASS) instrument, a demographic questionnaire, Quality of Life Questionnaire, and an open-ended question to elaborate on personal stress, depression, and anxiety. Student responses indicated that stress, depression, and anxiety are "…commonly occurring negative affective states in young adults that can affect learning and success in a professional nursing program" (Chernomas & Shapiro, 2013, p. 264). Faculty can respond with understanding and direct nursing students to the appropriate resources to learn more about coping strategies.

Nursing students may also experience feelings of burn-out during their education.

During the final year of education in particular, clinical sources, exams, and balancing

family life can contribute to these feelings. Gibbons (2010) hypothesized there are

correlations between origins of stress and burn-out in nursing students. Coping

mechanisms were also explored. A convenience sample of 171 nursing students in their

final year were utilized for the study. Each student completed The Index of Sources of

Stress in Nursing Students (ISSN), The Generalized Self-Efficacy Scale, The Maslach

Burn-out Inventory, The Marlowe-Crowne Social Desirability, and The Brief COPE

instruments. Findings suggested that sources of stress may influence student well-being

and ultimately their performance, which has a direct impact on practice and patient safety

(Gibbons, 2010). Gibbons (2010) concluded that faculty support may help students avoid

burnout and facilitate learning.

A wide array of stressors that may contribute to burn-out among nursing students

include examinations, assessments, lack of free time, time pressures, and lack of

experience. "Given the impact of stress in the nursing profession, it is imperative that

attempts are made to understand the factors that give rise to it and which are critical to

good coping in nursing students" (Gibbons, Dempster, & Moutray, 2011, p. 623). The

aim of the study by Gibbons et al. (2011) was to explore sources of stress, coping

strategies, and the effect on the well-being of nursing students based on data carried out

in a previous study. A convenience sample of 171 students were surveyed through a

General Health Questionnaire, course, and career satisfaction. The students surveyed

were final-year students who had more academic and clinical experience. Nursing

students that used avoidance coping strategies such as alcohol could have adverse effects

on clinical and academic performance. Overall, sources of student stress must be

identified because both student well-being and attrition have an effect on future nursing practice and patient safety (Gibbons et al., 2011).

Jimenez, Navia-Osorio, and Diaz (2010) sought to identify the variances between new and progressed nursing students' reports of stress and health by utilizing the Perceived Stress Scale (PSS) and Biopsychosocial Response Scale (BPSRS). The researchers examined types of stressful events as experienced by students during clinical practice, common biopsychosocial responses of students, and degrees of stress as perceived by students (Jimenez et al., 2010). Among the sample of 357 nursing students, it was found that there were no differences in the year of study and measure of stress. Findings suggested that novice nursing students experience more clinical stress and experienced students experience more academic stressors. Some notable biopsychosocial responses perceived by students included somatic anxiety (e.g. chest pressure), psychic anxiety (e.g. feeling worried and nervous), depressive symptoms (e.g. feeling blue and depressed), cognitive symptoms (e.g. feeling light-headed), and neuro-vegetative symptoms (e.g. nausea and vomiting) (Jimenez et al., 2010). Nurse educators must be aware of curriculum and clinical stressors of students and design teaching to alleviate some of these concerns.

The NCLEX-RN® and Comprehensive Predictor Exams

The nursing literature supported the use of standardized testing throughout the nursing curriculum with the goal of improving NCLEX-RN® scores and improving student confidence in testing. Passing the NCLEX-RN® exam is a measure of student and nursing program success (Davenport, 2007). Early implementation of content-area review examinations may assist students at high-risk of failure in preparation for the

NCLEX-RN® exam. Preparing students throughout the curriculum with standardized testing and remediation programs, such as Assessment Technologies Institute (ATI), can be helpful with passing the NCLEX-RN®. A commitment to implementing a comprehensive plan for NCLEX-RN® success would provide support and interventions for nursing graduates that may not be successful on their first attempt (Davenport, 2007). Davenport (2007) noted that further study is needed to determine if benchmark scores should be linked to progression and/or graduation.

Nursing students at high risk of failing the NCLEX-RN® should be identified early in their education in order to facilitate the remediation process and promote NCLEX-RN® success. Alameida et al. (2011) questioned if a significant relationship exists between the ATI predictive probability and first-time pass success on the NCLEX-RN®. In a sample of 589 Bachelor's Degree, satellite Bachelor's Degree, or Master's entry students, Alameida et al. (2011) found ATI predictive probability and first-time NCLEX-RN® pass rates success are related. Alameida et al. (2011) found the mean ATI predictive probability score that indicated first-time pass success was 80.47 (SD=22.75) and the mean that indicated first time failure was 36.36 (SD=28.26). All scores in these clusters were 100% predictive of success or failure on the NCLEX-RN® (Alameida et al., 2011). Alameida et al. (2011) also noted that students who took the exam more seriously performed better on the ATI RN Comprehensive Predictor.

Nursing Students Faced with a High-Stakes Test

Many schools of nursing are implementing progression policies to ensure NCLEX-RN® pass rates are at an acceptable level. These policies inhibit students that are predicted to fail the NCLEX-RN® from taking the examination by means of

preventing completion of a nursing program (Spurlock, 2006). A variety of tests may be used to evaluate a student during a nursing program and range from unit exams to high-stakes tests. Proctored examinations may be considered high-stakes tests if they are used to determine if a nursing student will graduate. Spurlock (2006) explored the use of standardized testing in nursing education and reported that some nursing programs utilize standardized tests as a single predictor to determine academic decisions (Spurlock, 2006). In addition, exams may predict success on the NCLEX-RN® and may help raise NCLEX-RN® pass rates by enforcing remediation prior to taking the NCLEX-RN®. The standardized exams should not be used alone to make an academic decision, but in combination with a faculty assessment of NCLEX-RN® success (Spurlock, 2006). Student outcomes are dependent on student accountability and high-quality education from faculty. Progression tests should be reviewed by faculty to determine their benefits, as well as potential negative consequences (Spurlock, 2006).

Nursing student stress can reach its climax when high-stakes testing determines pass or failure. Røykenes, Smith, and Larsen (2014) examined how requiring a flawless drug-calculation test may impact nursing student stress levels. The researchers used a combined quantitative and qualitative research design to explore student feelings about a particular high-stakes test. Two hundred and three students completed a survey that combined the Reaction to Test Anxiety, Math Anxiety, and Self-efficacy instruments. Six students participated in the interview focus group. The findings indicated that nursing students experienced high levels of test anxiety months before the drug calculation test, some students reported a low mathematics self-concept and high test anxiety, and high test anxiety may interfere with the ability to learn (Røykenes et al., 2014).

Nursing Student Test Anxiety and Interventions

The concept of test anxiety has broad implications for numerous populations at any level of education (Gibson, 2014). Due to high-stakes testing and nursing school curriculum demands, test anxiety may be more prone to arise in nursing students. Gibson (2014) utilized a concept analysis "…to provide a clear definition of test anxiety across many disciplines with a focus on the nursing education perspective as a foundation for the recognition of test anxiety, and a direction for future research" (p. 275). Cases were developed using the Walker and Avant method to examine the structure and function of the concept of stress and how it can change over time to explain the significance stress and how it applies to nursing education (Gibson, 2014). The defining attributes of test anxiety included the source, the feeling of fear or worry, test-taking abilities, physical signs (e.g. palpitations, trembling, headaches, etc.), and cognitive aspects (e.g. forgetfulness) (Gibson, 2014). Model cases were used to illustrate test anxiety through its defining attributes. Test anxiety will continue to be an important aspect of nursing education because of high-stakes testing.

Test anxiety can increase stress levels, negatively affect academic performance, increase the probability of cheating, and decrease motivation (Beggs, Shields, & Janiszewski-Goodin, 2011). Guided reflection is an intervention used by faculty to assist students with redirecting their negative thoughts that may inhibit academic success. The technique uses exercises, such as deep breathing, meditation, or journaling to decrease stressors (Beggs et al., 2011). Incorporation of guided reflection in the educational setting was recommended as a method for reducing test anxiety.

Community College Student Stress

The American Association of Community Colleges (AACC) reported that community colleges are instrumental in providing the opportunity for postsecondary education among many minority, low income, and first-generation college students. "Community colleges also provide access to education for many nontraditional students, such as adults who are working while enrolled. The average age of a community college student is 29, and two thirds of community college students attend part-time" (American Association of Community Colleges, 2015, para. 2). Associate Degree nursing students who represent this student population could experience stress related to employment, financial difficulties, and lack of family support.

Seago, Keane, Chen, Spetz, and Grumbach (2012) investigated factors that predict success of nursing students from community colleges in California. In a sample of 738 students, the average student age was 31 years, most students were women, married, had children, were U. S. born, and had parents who attended college (Seago et al., 2012). "Most students said they had adequate financial support, but reported missing class often or sometimes because of work" (Seago et al., 2012, p. 494). Seago et al. (2012) found that academic self-confidence and school environment were the two major predictors of graduation success.

In 2008, the American Association of Community Colleges reported that 11.5 million students were enrolled in community colleges and adolescents (21 years old and younger) accounted for 43% of the population (Ahern & Norris, 2011). Stress and its effects are noted by all types of postsecondary institution students. Feelings associated with stress may include feeling hopeless, overwhelmed, exhausted, sad, or depressed

(Ahern & Norris, 2011). In a sample of 166 adolescent community college students, the study found that participants noted moderate levels of stress that increase their risk for experiencing physical and psychological problems (e.g. difficulty sleeping, feeling nervous, etc.) (Ahern & Norris, 2011).

Lifetime event exposure can be difficult for community college students. In a study by Anders, Frazier, and Shallcross (2012), the researchers compared stressful events in a sample of community college students (n=242) and university students (n=842). Community college students reported experiencing almost all events (e.g. motor vehicle accident, stalked, threatened, etc.), which may contribute to anxiety, depression, and stress (Anders et al., 2012). Faculty at the community college level are more likely to have students that experience potentially traumatic events or a variety of stressful events. Counseling and recognition of these experiences are essential (Anders et al., 2012).

Nursing Student Stress, Personal Health, and Interventions

Nursing students are faced with academic, clinical, and outside factors that may contribute to stress. Galbraith and Brown (2011) completed a comprehensive literature review and investigated the effectiveness of interventions in reducing stress in student nurses. Interventions that successfully demonstrate an improvement in the measure of stress tend to have a strong theoretical basis. Findings also suggested that educators should incorporate relaxation techniques and cognitive reappraisal into nursing education to alleviate stress (Galbraith & Brown, 2011).

Nursing students need support during their education and times of increased stress. Engagement in this support by faculty will assist with facilitating learning by students (Clark & Pelicci, 2011). Clark and Pelicci (2011) reviewed the outcomes of a

Life Balance and Stress Management course to help nursing students cope with stress. Nursing students that are in various places on the ladder of nursing education may benefit from such a course to balance life, academics, and prepare to be a practicing clinician. Clark and Pelicci (2011) found that the course was not only to teach students about the negative effects of stress, but also to transform their beliefs, assumptons, and behaviors. Nursing students are in need of support and useful tools to support and manage their stress so that they can effectively care for others (Clark & Pelicci, 2011).

If stress becomes a chronic issue, students should consider seeking help. Stress is viewed based on the situation itself and how the individual handles the situation. Galbraith, Brown, and Clifton (2014) administered a cross-sectional questionnaire survey to a sample of 219 nursing students to examine attitudes toward developing mental illness and help seeking. The majority of participants (74.9%) reported they experienced either social, personal, or occupational life stress (Galbraith et al., 2014). Many students believed stress should be acknowledged and handled, but stress should be disclosed to family or friends rather than colleagues or professionals (Galbraith et al., 2014). Educators and current employers of nursing students should be non-judgmental and willing to help or counsel those students faced with stress.

Unacknowledged stress may have a long-term effect on nursing students. Klainin-Yobas et al. (2014) examined the relationship between stress, poor physical health, and psychological distress in nursing students. "Stressful situations may initially affect psychological well-being and provoke various emotional reactions, which subsequently produce deleterious effects on physical well-being" (Klainin-Yobas et al., 2014, p. 1295). Student responses to questionnaires (n=335) indicated stress should be

properly assessed and monitored throughout nursing education, and students with high

levels of stress reported poor physical health and psychological distress (Klainin-Yobas

et al., 2014). Students should also be offered and aware of counseling services that are

available if they experience stress-related symptoms (Klainin-Yobas et al., 2014).

In another study, Curtis (2014) showed that students experienced vulnerability

and uncertainty when they learned the emotional requirements of providing

compassionate care as a nurse. A sample of 19 nursing students participated in in-depth

interviews to assess readiness to assume the role as a Registered Nurse. Students

expressed concerns about boundaries for emotional engagement, emotional labor,

emotional distress, and seeking sources of support (Curtis, 2014). "Student nurses are at

risk of not upholding the professional expectations of compassionate practice unless

improvements are made in their emotional support…" (Curtis, 2014, p. 220). Support for

coping and emotional engagement is required and can begin at the academic level.

Unattended stress may affect a nursing student's educational experience. Faculty

are key to recognizing stress and assisting future nurses with surviving the rigorous

nursing school curriculum (Reeve, Shumaker, Yearwood, Crowell, & Riley, 2013).

Classroom activities, laboratory/simulation activities, study time, and clinical preparation

all contribute to nursing student stress. A sample of 107 undergraduate nursing students

were given five different surveys to assess methods of stress support. Faculty

encouragement, family support, alcohol consumption, and peer interactions were

common themes for social support (Reeve et al., 2013).

Summary

Stress among nursing students can have a negative impact on educational outcomes (Galbraith et al., 2014). Specifically, stress can influence student test performance with anxiety leading to poor scores on standardized tests used to predict success on NCLEX-RN® (Davenport, 2007). Poor scores on standardized tests may lead to additional stress on the actual NCLEX-RN® exam leading to a delay in obtaining a license to practice nursing. Alzayyat and Al-Gamal (2014) found that nursing students experience various degrees of stress throughout their clinical education. Öner-Altiok and Üstüsn (2013) found four common themes that contributed to stress in nursing students: clinical training, theoretical education, social life issues, and personal life issues. The results indicated that nursing students experience various types of stress. A wide array of stressors that may contribute to burn-out among nursing students include examinations, assessments, lack of free time, time pressures, and lack of experience. Community college students may have more potential for stress due to work and family responsibilities (Seago et al., 2012).

The nursing literature supported the use of standardized testing throughout the nursing curriculum with the goal of improving NCLEX-RN® scores and improving student confidence in testing. Passing the NCLEX-RN® exam is a measure of student and nursing program success (Davenport, 2007). Some programs are using standardized examinations to decide student progression and NCLEX-RN® preparedness (Spurlock, 2006). Røykenes et al. (2014) found that requiring a flawless drug-calculation test may increase nursing student stress levels. Test anxiety will continue to be an important aspect of nursing education because of high-stakes testing. Advantages of the use of

standardized assessments include the ability to predict a student's success on a licensure examination (Spurlock, 2006) whereas negatives may include high test anxiety that may affect learning and performance (Røykenes et al., 2014).

Nursing students need support during their education and times of increased stress. Faculty engagement in providing this support will help facilitate learning by students (Clark & Pelicci, 2011). Unattended stress may affect a nursing student's educational experience. Faculty are key to recognizing stress and assisting future nurses with meeting the expectations of a rigorous nursing school curriculum (Reeve et al., 2013). Interventions to decrease student stress included the following: incorporation of guided reflection in the educational setting (Beggs et al., 2011), relaxation techniques and cognitive reappraisal (Galbraith & Brown, 2011), counseling from educators willing to help students (Galbraith et al., 2014), and offering of counseling services that are available (Klainin-Yobas et al., 2014).

The literature yielded a lack of evidence related to research and scholarly articles that directly examines nursing student stress and NCLEX-RN® comprehensive predictor test results. The purpose of this study was to assess perceived stress among graduating ADN students and to explore the relationship between perceived stress and scores on a comprehensive NCLEX-RN® predictor exam.

CHAPTER III

Methodology

The purpose of this study was to assess perceived stress among graduating ADN students and to explore the relationship between perceived stress and scores on a comprehensive NCLEX-RN® predictor exam. The goal was to provide data for educators to examine the correlation between student stress levels and comprehensive NCLEX-RN® predictor exam result scores. Information regarding stress and testing will be important to nurse educators in planning stress relieving strategies that may improve performance on the predictor and ultimately the NCLEX-RN® exam.

Study Design

A descriptive, correlational study was designed to quantitatively assess the relationship between perceived stress and NCLEX-RN® predictor exam scores in a convenience sample of ADN students three weeks prior to graduation. A demographics questionnaire was used to describe the study sample. Student stress was measured using the Perceived Stress Scale-10 (PSS-10) and the ATI Comprehensive Predictor was used to determine the potential for NCLEX-RN® success. The hypothesis was that students with higher stress levels will have lower scores on the ATI Comprehensive Predictor Exam indicating a lower probability of passing the NCLEX-RN®. Ratings obtained from the nursing students' individual responses on the demographics survey, the PSS-10, and the ATI Predictor Exam percentages provided data for this study. Fifty-four students were invited to participate in this study. From that group, a final sample size of 49 was obtained.

Setting and Sample

The setting was located in a rural area community college in the southwest region

of North Carolina. The ADN program is approved by the state Board of Nursing for a

total of 180 students. Data collection took place in a classroom setting in the nursing

education building. The ATI Comprehensive Predictor was administered electronically in

a computer lab proctored by a nursing faculty member at the community college on a

different date.

A convenience sample of 54 ADN students were approached three weeks prior to

graduation regarding participation in the study. Participants were selected based on

enrollment in the final semester of the ADN program and completion of the ATI

Comprehensive Predictor Exam. The sample represented a wide array of students ranging

from young to middle-age adults. Permission to solicit participants was obtained from the

director of the nursing program. Student participants had no prior contact with the

researcher.

Measurement Methods

Data collection tools consisted of a demographics instrument, the PSS-10, and the

ATI score report. The demographics instrument asked categorical information and

included: gender, ethnicity, and age. Data regarding student perception of stress was

measured using an instrument developed by Dr. Sheldon Cohen known as the Perceived

Stress Scale-10 Item (PSS-10). This instrument is based on the theoretical perspectives of

stress as introduced by Lazarus and Folkman (Al kaladeh & Abu Shosha, 2012). The

PSS-10 utilizes a Likert-scale and contains 10 questions to assess perceived stress over

the last month making it appropriate in assessing student stress just prior to taking the

comprehensive predictor. Questions four, five, seven, and eight on the instrument are positively rated questions in which the overall score is adjusted based on the student's response. Thus, after completing the questionnaire, the raw scores must be adjusted to reflect the positively rated items. "Internal reliabilities (Cronbach's α's) for the PSS-10 were .78 in the Harris Poll sample, and .91 in both the 2006 and 2009 eNation samples" (Cohen & Janicki-Deverts, 2012, pp. 1323-1324). In addition, "The test-retest reliability of the PSS-10 was assessed in four studies, and met the criterion of >.70 in all cases" (Lee, 2012, p. 122). This tool was available for non-profitable academic research without permission being requested from the author.

Comprehensive ATI predictor scores were used to assess potential for NCLEX-RN® success. The ATI RN Comprehensive Predictor Exam contained 180 questions that covered various areas of nursing content and was given over three hours. The exam was administered electronically in a group computer lab. Once completed, students received a score report that contained a percentage. This percentage represented a prediction of the student's chance of passing the NCLEX-RN® on the first attempt. The lead instructor for the course provided a report of scores that were used for this study.

<center>**Data Collection Procedure**</center>

After obtaining permission from the University's Institute Research Board (IRB), data was collected from three resources including a demographic questionnaire (see Appendix A), the PSS-10 (see Appendix B), and the ATI Comprehensive Predictor scores. Potential study participants were approached in a classroom setting prior to a nursing class lecture where the researcher reviewed the purpose for the study and informed consent (see Appendix C). Envelopes were distributed that contained the

consent form, demographics survey, and the PSS-10 instrument. Students who wished to participate in the study completed the instruments and students who did not wish to participate were allowed to leave the room. Participants completed the survey, placed them in the envelope, and returned the sealed envelope to the researcher. The envelopes were placed in a mobile file and were locked in a filing cabinet in the researcher's office. The researcher would keep the envelopes in the locked location until appropriate time elapsed.

The students were administered the ATI Comprehensive Predictor by the community college faculty member via desktop computer two days after completion of the PSS-10. The faculty member shared a paper copy of the ATI scores with the researcher one week following administration of the assessment. After the report sheet was obtained, the researcher combined the report with the completed surveys.

Protection of Human Subjects

An application to complete this study was submitted to the University's IRB and was approved prior to data collection. There were minimal to no risks to the participants in this research study. Mild test anxiety or anticipation could have occurred related to eliciting perceptions of student stress close to graduation time, administration of the ATI Comprehensive Predictor Examination, and the NCLEX-RN®. Any student exhibiting anxiety or stress related to completion of the questionnaire had the option of being referred to a school counselor. The benefit of this study was to potentially enable faculty to develop strategies to help relieve student stress in the future with the goal of improving ATI Predictor scores and subsequently NCLEX-RN® pass rates.

On the day of data collection, nursing students present in the nursing classroom were verbally informed of the purpose of the study along with their right to decline participation and permission to discontinue participation in the study at any time. Students were informed that there would be no penalties for not participating in this study. Students were advised that responses would have no effect on the course grade and that choosing not to participate would have no effect on the course grade. This information was also provided on the informed consent form. Members of the class that did not wish to participate in the study were allowed to leave the study setting with no repercussion.

Participants were required to include their name on the Perceived Stress Scale questionnaire to allow matching with their ATI Comprehensive Predictor scores. To shield their responses in the classroom, students were provided envelopes that could be sealed after inserting questionnaires following completion. Names were removed from the written surveys after they were matched with the ATI scores. In order to further protect student privacy and identity, all records of participation were given a group number that did not allow anyone (including the researcher) to personally identify the participant. All surveys were collected in the sealed envelopes and transported via confidential file to the researcher's private office for storage in a locked cabinet.

The data was organized on a Microsoft Excel Spreadsheet and the file was password encrypted. The researcher organized data according to student name, gender, ethnicity, age, individual responses to questions one through ten, the raw PSS-10 score, and the adjusted PSS-10 score. After completing the questionnaire, the raw scores of the students were adjusted by the researcher to reflect the positively rated items for questions

four, five, seven, and eight, which yields the final and adjusted PSS-10 score. After data

was collected from the surveys, the names on the instruments were removed and

shredded. Data was later retrieved to perform the statistical analysis. Following

completion of this research study, all data was submitted to University to be stored in a

locked cabinet for 10 years.

Data Analysis

Participant scores on the ATI Comprehensive predictor were printed by a lead

instructor of the ADN program and shared with the researcher. Student responses to each

question on the PSS-10 were coded by the researcher and matched with ATI predictor

scores and then entered in a Microsoft Excel Spreadsheet. After predictor scores were

entered, student names were removed from the ATI predictor report and were shredded.

All data was saved electronically on a spreadsheet and password protected. The

researcher consulted a statistician to analyze the data to determine if a relationship

existed amongst the variables of stress levels and ATI predictor exam results.

CHAPTER IV

Results

The purpose of this study was to assess perceived stress among graduating ADN students and to explore the relationship between perceived stress and scores on a comprehensive NCLEX-RN® predictor exam. The goal was to provide data for educators to examine the correlation between student stress levels and comprehensive NCLEX-RN® predictor exam result scores. Information regarding stress and testing will be important to nurse educators in planning stress relieving strategies that may improve performance on the predictor and ultimately the NCLEX-RN® exam. This chapter will report the data collected to answer the following research questions: (1) What are the stress levels of ADN students three weeks prior to graduation? and (2) Is there a relationship between the ADN students' stress levels and Comprehensive ATI Predictor Exam scores?

Sample Characteristics

On the day of data collection, 54 students were invited to participate in the study. Fifty-two of the 54 potential participants chose to complete the surveys for a response rate of 96%. Three students did not include their names on the completed instruments, so data from the ATI Predictor Exam could not be matched to the PSS-10 responses. Thus, of the 52 surveys completed, only 49 were able to be utilized. In the final sample of 49, there were 41 female students (84%) and eight male students (16%). One female and one male student preferred not to answer their age. The mean age in years for the sample was 32.5. The ethnicity representation was not widely distributed. There were two African-

Americans (4%), two Asians (4%), 43 Caucasians (88%), and two other (4%) ethnicities

represented in the sample (n=49). Table 1 provides descriptive statistics for the sample.

Table 1

Descriptive Statistics of the Sample (n = 49)

Sample Population (n=49)		Sample Population (Percentage)		Mean Age (Years)		Ethnicity Representation (n=total for ethnicity)		Ethnicity Representation (as a percentage)	
Female	41	Female	84%	Female	31.8	African-American	2	African-American	4%
Male	8	Male	16%	Male	36	Asian	2	Asian	4%
						Caucasian	43	Caucasian	88%
Total	49	Total	100%	Mean age for both genders	32.5	Other	2	Other	4%
						Total	49	Total	100%

Major Findings

A professional statistician was consulted to perform statistical analysis of the data. This individual was provided with the adjusted PSS-10 scores and the ATI Predictor Exam results to determine appropriate statistical testing for the data analysis. Descriptive statistics were used to determine the stress levels of ADN students three weeks prior to graduation. The PSS-10 contains responses on a Likert scale of 0 to 4 with zero representing "never" experiencing this type of stress and four representing "very often" experiencing this type of stress. Descriptive data was used to measure stress levels of ADN students (n=49) three weeks prior to graduation. Responses on the PSS-10 ranged from 8 (lowest overall PSS-10 result) to 34 (highest overall PSS-10 result). The potential range of responses was $0-40$ for the instrument. Figure 2 provides a scatterplot graph illustrating the distribution of PSS-10 scores. Raw scores were adjusted to reflect the positively rated items (questions 4, 5, 7, and 8), which yields the final PSS-10 scores.
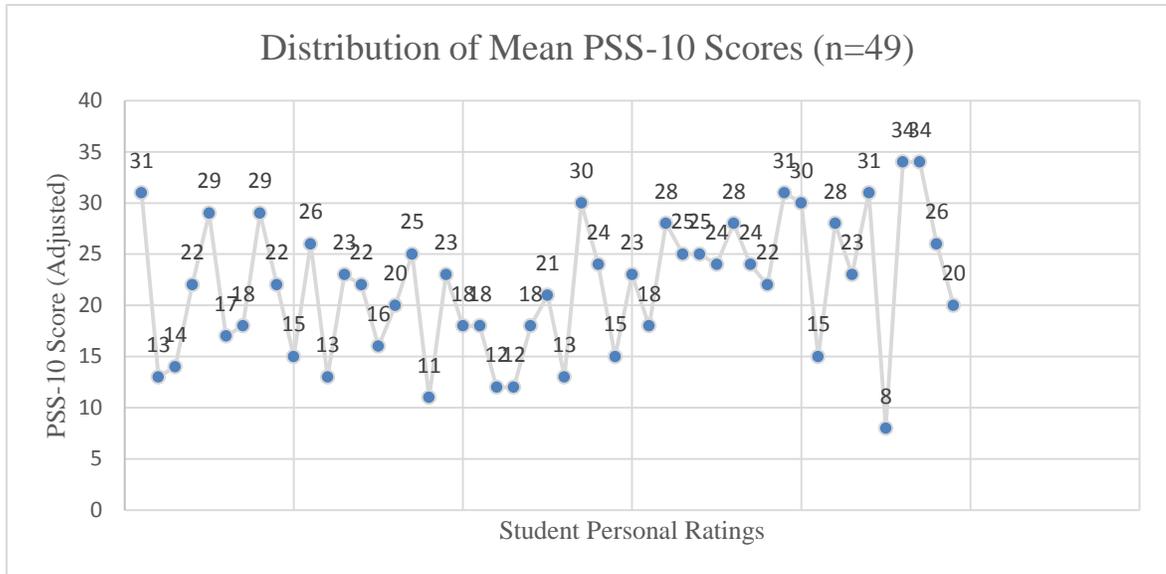
Figure 2. Distribution of Mean PSS Scores. This figure illustrates a scatterplot graph to show distribution of the adjusted PSS-10 scores.

The median PSS-10 score for the sample was 22 and the mode was 18. The mean PSS-10 group score was 21.8 (see Table 2). According to the normative data by Cohen and Janicki-Deverts (2012), the group mean of 21.8 can be interpreted as above average and represents the stress level of this sample of ADN students three weeks prior to graduation. Table 3 provides the mean rating for each question on the PSS-10 based on the 0 to 4 Likert scale.

Table 2

Descriptive Statistics of the Student Responses on the PSS-10 (n = 49)

PSS-10 Responses Range	PSS-10 Responses Mean	PSS-10 Responses Median	PSS-10 Responses Mode
Lowest 8	21.8	22	18
Highest 34			

Table 3

Mean Ratings of the PSS-10 Items

Question	Mean Rating
1. In the last month, how often have you been upset because of something that happened unexpectedly?	2.1
2. In the last month, how often have you felt that you were unable to control the important things in your life?	2.4
3. In the last month, how often have you felt nervous and "stressed?"	3.3
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	2.6
5. In the last month, how often have you felt that things were going your way?	2.2
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	2.3
7. In the last month, how often have you been able to control irritations in your life?	2.4
8. In the last month, how often have you felt that you were on top of things?	1.9
9. In the last month, how often have you been angered because of things that were outside of your control?	2.0
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	2.4

An examination of frequencies and means of responses for each question reveals more details regarding student stress (see Tables 4 and 5). The entire sample (100%) answered with a response of either 2 (Sometimes), 3 (Fairly Often), or 4 (Very Often) to question three regarding how often they felt nervous and stressed. Twenty-seven of the students (55%) indicated they felt nervous and stressed very often. Of this sample, 46 out of 49 (94%) responded with either 2 (Sometimes), 3 (Fairly Often), or 4 (Very Often) to question four regarding how often they felt confident to handle their personal problems. The lowest mean response of 1.9 was found on question eight. Thirty-seven of the students (76%) responded with either 0 (Never), 1 (Almost Never), or 2 (Sometimes) when asked in the last month, how often have they felt that they were on top of things.

Table 4

Student Frequencies of Responses to Questions 1-5 on the PSS-10

Question	Rating of 0 (Never)	Rating of 1 (Almost Never)	Rating of 2 (Sometimes)	Rating of 3 (Fairly Often)	Rating of 4 (Very Often)
1. In the last month, how often have you been upset because of something that happened unexpectedly?	2	10	21	11	5
2. In the last month, how often have you felt that you were unable to control the important things in your life?	3	7	14	18	7
3. In the last month, how often have you felt nervous and "stressed?"	0	0	10	12	27
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	3	20	20	6
5. In the last month, how often have you felt that things were going your way?	1	5	29	13	1

Table 5

Student Frequencies of Responses to Questions 6-10 on the PSS-10

Question	Rating of 0 (Never)	Rating of 1 (Almost Never)	Rating of 2 (Sometimes)	Rating of 3 (Fairly Often)	Rating of 4 (Very Often)
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	3	12	12	12	10
7. In the last month, how often have you been able to control irritations in your life?	0	5	20	22	2
8. In the last month, how often have you felt that you were on top of things?	2	14	21	12	0
9. In the last month, how often have you been angered because of things that were outside of your control?	1	11	19	11	7
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	4	7	15	11	12

To assess the relationship between student stress levels and ATI Comprehensive
Predictor Scores, a *t* test correlation coefficient was selected as appropriate for data
analysis. Statistical assumptions for the *t* test correlation coefficient were met. The first
part of the analysis was to determine if a relationship existed amongst PSS-10 scores and
ATI results with a direct comparison between the PSS score and the ATI score. The
actual correlation coefficient was -0.203, which is very poor and does not show a linear
correlation between the variables. Figure 3 illustrates the scatterplot graph used to
examine if a correlation exists between the ADN students' stress levels and their ATI
Comprehensive Predictor Exam scores. Two outliers in the ATI data existed, which were
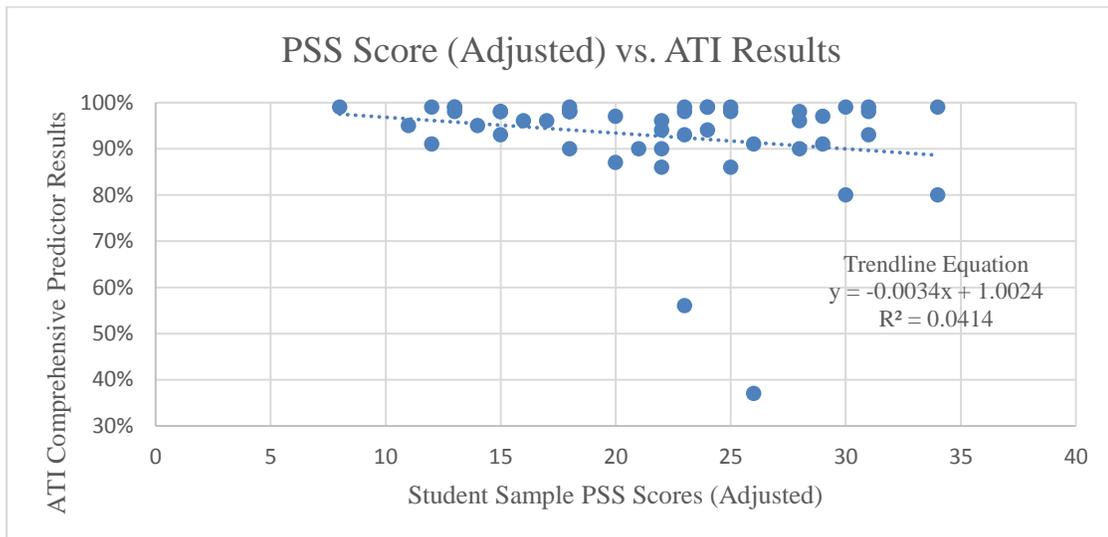37% and 56% respectively.

Figure 3. PSS Score (Adjusted) vs. ATI Results. This figure illustrates a scatterplot graph
of stress levels and ATI Comprehensive Predictor Exam scores.

The hypothesis that students with higher stress levels will have lower ATI scores was tested next. The hypothesis test compares the following: H_0: $p = 0$ vs. H_1: $p \neq 0$ (which is there is no correlation for =, vs. there is a correlation for $\neq$). The hypothesis was tested with 47 degrees of freedom (since n = 49) and tested at the traditional alpha level of significance ($\alpha = 0.05$). The critical values of ± 2.012 were utilized. The t test value, which is given by the formula: $t = r \times \sqrt{\frac{n-2}{1-r^2}}$, produced a test value of $t = -1.42$. Since this value is between -2.012 and 2.012, it is considered to be in the non-critical region. Thus, it can be concluded at $\alpha = 0.05$ level of significance, there is a 95% probability that there is no correlation between the stress levels and the ATI scores. The hypothesis that students with higher stress levels would have lower ATI Comprehensive Predictor scores was not supported.

Descriptive statistics were also obtained for the ATI data (see Table 6). The mean ATI for the sample (n=49) was 93%. This result implies that the overall percent probability that the class will pass the NCLEX-RN® on the first attempt is 93%. This is close to the program's desired 95% probability of passing the NCLEX-RN® on the first attempt. Scores on the ATI Comprehensive Predictor Exam ranged from 37% to 99%. Twelve students obtained a score of 99% and this value represented the mode. The median score was 96%.

Table 6

Descriptive Statistics of the ATI Predictor Results (n = 49)

	ATI Results Range	ATI Results Mean	ATI Results Median	ATI Results Mode
Lowest	37%	93%	96%	99%
Highest	99%			

Summary

The collected data provided information to determine: (1) What are the stress levels of ADN students three weeks prior to graduation? and (2) Is there a relationship between the ADN students' stress levels and Comprehensive ATI Predictor Exam scores? From the data provided, it was determined that the stress levels (according to the adjusted PSS-10 scores) of the ADN students sample (n=49) three weeks prior to graduation was 21.8 out of a range of $0 - 40$. A t test value of $t = -1.42$ was reported to determine the relationship between the student stress assessed by the PSS-10 and ATI Comprehensive Predictor scores. Since this value is between -2.012 and 2.012, it is considered to be in the non-critical region. Thus, it can be concluded at $α = 0.05$ level of significance, there is a 95% probability that there is no correlation between the stress levels and the ATI Comprehensive Predictor exam scores.

CHAPTER V

Discussion

The purpose of this study was to assess perceived stress among graduating ADN students and to explore the relationship between perceived stress and scores on a comprehensive NCLEX-RN® predictor exam. The goal was to provide data for educators to examine the correlation between student stress levels and comprehensive NCLEX-RN® predictor exam result scores. Information regarding stress and testing will be important to nurse educators in planning stress relieving strategies that may improve performance on the predictor and ultimately the NCLEX-RN® exam.

Implication of Findings

From the data collected in this study, the mean stress level of ADN students (n=49) three weeks prior to graduation was above average. According to Carnegie Mellon University (2015) "The Perceived Stress Scale is not a diagnostic instrument; there are no score cut-offs. There are only comparisons within your own sample" (para. 1). For comparison, normative data from large United States samples may be utilized. Cohen and Janicki-Deverts (2012) reported the mean PSS-10 score in a 2009 sample (n = 2000) was 15.21 whereas the mean for the sample (n=49) in this study was 21.78. Findings suggested that although the nursing students were experiencing stress, there was no significant relationship between stress scores and ATI Comprehensive Predictor scores. For nurse educators this study implies that student stress may not negatively influence standardized test scores at the end of the nursing program. In addition, stress may not have a significant impact on the student's probability of passing NCLEX-RN®.

Faculty may want to spend more time helping students review content instead of taking time to develop coping strategies for stress and test anxiety at this point in the nursing curriculum. Time is critical at the end of the program and this study helps inform faculty decision-making in how to best help students to be successful in taking the NCLEX-RN®.

Stress levels indicated on the PSS-10 are consistent with other studies that have demonstrated the presence of stress among nursing students (Alzayyat & Al-Gamal, 2014; Chernomas & Shapiro, 2013; Gibbons, 2010; Gibbons et al., 2011; Jimenez et al., 2010; Öner-Altiok & Üstüsn, 2013). Although stress levels did not correlate with ATI Comprehensive Predictor scores, test anxiety will continue to be an important aspect of nursing education because of high-stakes testing. Gibson (2014) stressed the need for faculty to engage in interventions to decrease test anxiety in students and prevent negative academic outcomes.

Question four on the PSS-10 is a positive-rated response. The question asks: in the last month, how often have you felt confident about your ability to handle your personal problems? Almost all of the sample felt that they could handle their personal problems either sometimes, fairly often, or very often. These findings may be particularly helpful for community college students who are typically more non-traditional students that may be balancing work and family life.

Application to Theoretical/Conceptual Framework

The theoretical framework developed by Lazarus and Folkman (1984) was utilized for this study. Lazarus and Folkman (1984) defined psychological stress as "…a particular 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" (p. 19). Students in this study expressed perception of their environment using the PSS-10 questionnaire that assesses psychological stress over the past month. The group as a whole reported experiencing some aspect of stress during the last months of an ADN program.

The Transactional Model referenced by Lazarus and Folkman (1984) examined the relationship between the variables of stress, appraisal, and coping. Appraisal is how an event is viewed and contains the interpretation and reaction of an individual (Lazarus & Folkman, 1984). In the Transactional Model, the three factors of stress, appraisal, and coping can be related to the findings. Appraisal of stress was expressed by these students, although evidence of effective coping was indicated. The majority of the sample felt that they could handle personal problems, which indicates coping.

The entire sample answered that they felt nervous and stressed either sometimes, fairly often, or very often. In addition, over one-third of the sample felt that they could not cope with all the things they had to do. The survey method gave the students an opportunity to appraise their personal stress. Each individual student reviewed the PSS-10 questions and rated their responses according to what was being asked and how they perceived their stress. Although these students were not questioned about specific causes of stress, sources of potential stress have been reported in the literature. The risk factors that may influence their perception of stress included: end of program stressors, such as final exams, standardized testing, and graduation. For second year students, sources of stress also encompass clinical practice, theoretical training, social, and personal lives (Öner-Altiok & Üstüsn, 2013). Additionally, anticipating passing the NCLEX-RN®

provided additional stress. The NCLEX-RN® is the gateway between being a student and being a nurse. Taking high-stakes assessments, such as the ATI predictor, at the end of the program increased test anxiety because students may fear they cannot graduate (Røykenes et al., 2014).

Limitations

Generalizability was limited due to the small sample size, convenience sampling, and the use of one particular setting. The study may have been strengthened if participants at other academic institutions with similar characteristics had been recruited. Another limitation included the lack of control of confounding variables that influenced stress and test taking. Statistical analysis was only completed between the two variables of PSS-10 scores and ATI Predictor Exam results without incorporating other variables that may have impacted stress or ATI scores.

Implications for Nursing

The following are implications for nurse educators in ADN programs based on findings of this descriptive study:

1. Be conscious of student stress in the last weeks prior to graduation due to the above average stress scores.

2. Develop a toolbox of coping strategies available for students that are experiencing stress leading to test anxiety. Although this study suggested no correlation between stress and ATI scores, faculty are obligated to provide the support needed to enhance each student's chance for success.

3. Provide encouragement and support to students prior to taking the ATI Comprehensive Predictor suggesting that even though they may be feeling

stressed, the data suggests there is no correlation to ATI scores. This information

could be very reassuring to students.

4. Identify students in jeopardy of not being successful on the NCLEX-RN® and

   assist them with early remediation.

5. Encourage peer support throughout the program. Consider that students with

   lower stress levels may be potential mentors for students with higher stress levels

   because they may perceive personal stressors differently than others.

Nurse educators are charged with the responsibility of identifying students experiencing

stress and referring them to appropriate counseling. Faculty are key to recognizing stress

and assisting future nurses with being successful in a rigorous nursing school curriculum

(Reeve et al., 2013). In addition, educators and current employers of nursing students

should be non-judgmental and willing to help or counsel those students faced with stress

(Galbraith et al., 2014). Nursing students need support during their education and times

of increased stress. Faculty are in a critical position to provide the encouragement and

advice to help students be successful.

Recommendations

Several recommendations for further study regarding nursing student stress and

comprehensive predictor examinations were proposed. Beneficial data could be obtained

by repeating the study at similar academic institutions to assess stress levels near

graduation and to determine if a relationship exists between stress levels and how well

students perform on a predictor exam. Utilizing a larger and more diverse sample may

lead to data saturation and possibly a closer correlation. In addition, other entry levels in

nursing education may benefit from a similar study. A researcher may consider

examining if a correlation exists between stress levels and ATI Predictor Exam scores

between practical nursing (PN) students or Bachelor of Science in Nursing (BSN)

students. These sample groups may experience other life factors that may influence their

responses and create a correlation between data. Demographic variables could be

correlated with stress scores in order to determine risk factors for increased stress. Lastly,

another study may focus on the Comprehensive ATI Predictor Exam versus an alternative

standardized predictor exam. The benchmarks may vary on the exams, which may alter

the results. Overall, nurse educators should continue to pursue evidence-based

interventions to promote student success.

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Appendix A

Demographics Collection Instrument

(Please complete the following demographics sheet. This corresponds with responses to the PSS-10 and ATI data. Please include this sheet in your return envelope for the student researcher. Information from this form is intended for summarizing and analyzing data. Thank you!)

1.) I am a (circle one):   **Male Student**   **Female Student**

2.) Which describes your ethnicity (circle):
      1.) African-American
      2.) Asian
      3.) Caucasian
      4.) Hispanic
      5.) Other (please specify): _____

3.) What is your age? _____   or   ☐ I prefer not to answer (check box
                                                                               if applicable)

Appendix B

Perceived Stress Scale-10 Item

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate how often you felt or thought a certain way by circling the correct response.

	Never	Almost Never	Sometimes	Fairly Often	Very Often
1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3. In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
5. In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8. In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9. In the last month, how often have you been angered because of things that were outside of your control?	0	1	2	3	4
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Appendix C

Informed Consent to Participate in Research

Informed Consent to Participate in Research

Introduction: The purpose of this form is to provide you as a potential participant with information to help you decide whether or not to participate in this research.

Invitation/Identification: Brittany Hudgins is a graduate student in the Masters of Science in Nursing Program at Gardner-Webb University and would like to invite you to participate in a research study. She is being guided in this research by Dr. Janet Arthurs.

Purpose: The purpose of this study is to: (i) explore the perceived stress among a sample of graduating Associate-Degree nursing students, (ii) measure the extent to which the nursing students perceive their stress related to their individual scores on a comprehensive NCLEX-RN® predictor exam; and (iii) provide data for educators to examine the correlation between student stress levels and comprehensive NCLEX-RN® predictor exam result scores.

Description of Research Study: If you decide to participate, then as a study participant, you will join a study that will research (i) What are the stress levels of Associate Degree Nursing (ADN) students three weeks prior to graduation? (ii) Is there a relationship between the ADN students' stress levels and Comprehensive ATI Predictor Exam scores?. You will be asked to complete the Perceived Stress Scale (PSS-10) questionnaire made up of 10 questions along with a brief demographics sheet. Your participation in this study will take no more than 10-15 minutes. Survey responses will have no effect on your course grade and choosing not to participate will have no effect on your course grade.

Risks and Benefits: There are minimum to no risks to you in this research study. Mild test anxiety or anticipation may occur related to eliciting perceptions of student stress levels close to graduation time, administration of the ATI Comprehensive Predictor Examination, and the NCLEX-RN®. Any student exhibiting anxiety or stress related to completion of the questionnaire will be referred to a school counselor. The benefit of this study is to potentially enable faculty to develop strategies to help relieve student stress in the future with the goal of improving ATI Predictor scores and subsequently NCLEX-RN® pass rates.

Confidentiality: All information obtained in this study is strictly confidential unless required by law. The results of this research may be used in reports, presentations, and publications, but the researcher will not identify you. Completion of the survey implies your consent for participation in the study. You will need to add your name to the Perceived Stress Scale questionnaire to allow matching with your ATI Comprehensive Predictor scores. Your name will be removed from the written surveys after they are matched with the ATI scores. In order to further protect your privacy and identity, all records of your participation will be given a group number that does not

allow anyone (including the researcher) to personally identify you. Following completion of this research study, all data will be turned in to GWU and will be stored in a locked cabinet for 10 years.

Compensation: This study does not involve any type of compensation.

Question/Contact Information: Please ask any questions you may have at this time. If you have questions about your rights as a participant in this research, or if you feel you have been placed at risk, please contact Brittany Hudgins at 828-748-5575; bhudgins@gardner-webb.edu and/or Dr. Janet Arthurs at 704-406-4384; jarthurs1@gardner-webb.edu

Disclaimer: Participation in this study is voluntary and participants can quit or withdraw from the study at any time without penalty.