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The Relationship Between Nursing Students' Test-Taking Motivation and the Exit Examination Score

Lorraine Coalmer

THE RELATIONSHIP BETWEEN NURSING STUDENTS' TEST-TAKING MOTIVATION AND THE EXIT EXAMINATION SCORE

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Lorraine Coalmer

Indiana University of Pennsylvania

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Indiana University of Pennsylvania
School of Graduate Studies and Research
Department of Nursing and Allied Health Professions

We hereby approve the dissertation of

Lorraine Coalmer

Candidate for the degree of Doctor of Philosophy

2/12/2016 Signature on File
Kristy S. Chunta, Ph.D.
Associate Professor of Nursing and Allied Health Professions, Chair

2/12/2016 Signature on File
Elizabeth A. Palmer, Ph.D.
Professor of Nursing and Allied Health Professions

2/12/2016 Signature on File
Susan G. Poorman, Ph.D.
Professor of Nursing and Allied Health Professions

ACCEPTED

Signature on File
Randy L. Martin, Ph.D.
Dean
School of Graduate Studies and Research

Title: The Relationship Between Nursing Students' Test-Taking Motivation and the Exit Examination Score

Author: Lorraine Coalmer

Dissertation Chair: Dr. Kristy S. Chunta

Dissertation Committee Members: Dr. Elizabeth A. Palmer
Dr. Susan G. Poorman

A primary objective of nursing students and nursing programs includes first-time success on the NCLEX-RN®. As the nursing shortage continues, it is essential to have qualified nursing graduates pass the NCLEX-RN®. One approach some nursing programs have chosen to implement regarding augmenting nursing students' probability of success on the NCLEX-RN® includes the administration of an exit examination. This exit examination is tailored to mimic the NCLEX-RN® blueprint; thereby this examination may reveal the nursing students' readiness for the NCLEX-RN®.

The purpose of this study was to determine if there was a relationship between nursing student test-taking motivation and exit examination score. In addition, this study explored if demographic variables and type of nursing program influenced test-taking motivation in the nursing student. The Expectancy-Value Theory of Achievement Motivation guided this study using a model to assess the nursing students' expectations and belief of success on the exit examination.

A quantitative, descriptive correlational design was used to assess nursing student test-taking motivation when taking the exit examination. The convenience sample included 150 senior nursing students from two academic institutions in one Midwest state that were required to take an exit examination in their last semester of school. The *Student Opinion Scale (SOS)* was utilized to examine the motivational concepts of effort and importance on the exit examination.

This study revealed that a moderate correlation existed between nursing student Total motivation score and exit examination score. Further statistical analysis revealed that the only demographic variable of grade point average (GPA) demonstrated a small correlation with Total Motivation Score on the *SOS*.

The results of the study offer nurse educators and nursing programs insight regarding nursing student preparedness for the NCLEX-RN ®. The implications of this study may be used by nurse educators when deciding whether a nursing student is ready to take the NCLEX-RN ® or be required to complete extensive remediation before taking the NCLEX-RN®. Future studies should examine specific motivational factors that influence test-taking motivation in nursing students

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"When I am less than I should be
And I just can't face the day
When darkness falls around me
And I just can't find my way
When my eyes don't clearly see
And I stumble through it all

You I lean upon, you keep me strong
And you raise me when I fall

You are there when I most need you
You are there so constantly
You come shining through
You always do
You are always there for me

When life brings me to my knees
When my back's against the wall
You are standing there right with me
Just to keep me standing tall
Though a burden I may be You
don't weary, you don't rest You
are reaching out to carry me, And
I know I'm heaven blessed
.
You are there when I most need you
You are there so constantly
You come shining through
You always do
You are always there for me

You are there when I most need you
You are there so constantly
You come shining through
You always do
You are always there for me

You are there when I most need you (you are there)
You are there so constantly (so constantly)
You come shining through
You always do
You are always there for me
For me"

SONGWRITERS: BRENDAN GRAHAM, ROLF LOVLAND

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CHAPTER ONE

INTRODUCTION

Primary objectives for nursing students after graduating are to pass the National Council Licensure Examination for Registered Nurses (NCLEX-RN®) on the first attempt and obtain a license as a registered nurse (RN). First-time success on the NCLEX-RN® is not only a concern for nursing graduates, but nurse educators and nursing program administrators as well. Pressure by accrediting bodies and State Boards of Nursing to produce acceptable first time pass rates on the NCLEX-RN® has influenced some nursing programs to take a proactive approach in an attempt to maximize their first time pass rates. This approach includes the use of a comprehensive assessment and review program throughout the nursing curriculum.

Comprehensive assessment and review programs are commercially available standardized assessment programs that are focused on the use of remediation resources. These programs can assist nursing students and nurse educators with evaluating nursing students' ability to retain, apply, and synthesize content material pertinent to the NCLEX-RN®. In addition, these programs can assist with identifying areas of content weaknesses prior to taking the NCLEX-RN®. Finally, taking a comprehensive assessment prior to taking the NCLEX-RN® allows the student time to remediate the deficient content areas. Studies have shown that the use of the comprehensive assessment and review programs can positively influence NCLEX-RN® results (English & Gordon, 2004; Norton, Relf, Cox, Farley, Lachat, Tucker, & Murray, 2005; Sifford & McDaniel, 2007). Thus, some nursing programs have placed considerable confidence in the results of the standardized assessments. So much so, that nursing students may be unable to progress or graduate from the nursing program based on their inability to obtain the

designated benchmark score on these assessments (Heroff, 2009; Morrison, Free, & Newman, 2002; Nibert et al., 2003; Noel, 2009; Spurlock, 2006; Spurlock & Hanks, 2004).

Furthermore, some nursing programs have implemented progression and graduation policies based on the nursing students' performance on one or all of the standardized assessments available in the assessment and review program. Although the National League for Nursing (NLN) has strongly cautioned about the implementation of progression and graduation policies based on one evaluative assessment, some nursing programs continue to do so. According to the *NLN Vision: Fair Testing Imperative in Nursing Education document* (2012a), of the nursing schools that completed the survey, one-third of nursing schools require a minimum score (benchmark score) on a standardized assessment to progress in the nursing program, 20 % of nursing schools require the achievement of the benchmark score on an exit examination to graduate, and 12 % of nursing schools will not send the students' information to the State Board of Nursing for the nursing graduates to be eligible to take the NCLEX-RN®, unless they have met a pre-determined benchmark score.

An important component of the assessment and review program includes an exit examination. Some commercially available exit examinations available are the Health Education Systems, Inc. (HESI) Exit Exam, Assessment Technologies Institute® (ATI®) RN Comprehensive Predictor, the National League for Nursing (NLN) NCLEX Readiness Examination, and Kaplan Exit Examination. The exit exam is the only standardized assessment that mimics the NCLEX-RN® blueprint. In addition, this examination is the only one in the comprehensive assessment and review program that provides a probability of passing the NCLEX-RN® score. The exit examination can be administered alone or as a part of a standardized comprehensive assessment and review program. One purpose for administering

this examination involves the identification of nursing students' preparedness for the NCLEX-RN®.

Some nurse educators spend a considerable amount of time and effort maximizing nursing students' performance on the exit examination. However, the nurse educator must take into consideration whether the results of the exit examination are accurate, especially since the educator is not the one who constructed the exit examination. In addition to ensuring accurate interpretation of examination results, nurse educators should identify the factors that may have affected nursing students' test performance. Some factors may include test-taking anxiety, time allotted for the test, race or gender, self-esteem, the stakes or consequences associated with the exam, and student test-taking motivation during the examination (Alam, 2013; Palumbo & Steele-Johnson, 2014; Sundre, 2000).

According to Sundre (2000), test-taking motivation is correlated with student performance on an examination. If a student is not motivated to perform well on an examination, the results may not accurately reflect students' achievement level or knowledge retention. In addition to considering the student's motivation, the educator must consider the consequences or stakes associated with the examination. Barry, Horst, Finney, Brown, and Kopp (2010) declared that it is expected that test-taking motivation in high-stakes situations (grades, progression in a program of study, or graduation) is expected to be high due to the consequences associated with the results. Conversely, test-taking motivation is most likely to be low in low-stakes situations where there are no or minimal consequence related to the student results (Barry et al., 2010).

Although it is assumed high-stakes will increase the students' test-taking motivation, there is a gap in the nursing literature that supports this assumption. Regardless of whether the

stakes for the exit examination are high or low, evaluation of test-taking motivation is crucial for the nurse educator to interpret nursing students' skill and ability appropriately. Simply put, the identification of nursing students' test-taking motivation may assist with accurate interpretation of the students' examination results (Barry et al., 2010).

The purpose of this study is to examine the relationship between nursing student test-taking motivation and the exit examination score. In addition, this study will describe the relationship of nursing student test-taking motivation and the exit examination score among various demographic variables such as age, race, gender, and grade point average (GPA). This chapter will include background information, statement of the problem, purpose of the study, research questions/hypothesis, overview of methodology, conceptual framework, definition of terms, and significance of the study.

Test-Taking Motivation

Identification of test-taking motivation is integral to accurate assessment of students' knowledge and ability (Sundre, 2000). The phenomenon of test-taking motivation refers to the effort that is exhibited by the student while taking a test. Studies have shown that a positive correlation exists between student motivation and performance on an examination (Cole & Bergin, 2005; Sundre & Moore, 2002; Thelk, Sundre, Horst, & Finney, 2009). Therefore, increased student motivation results in increased test performance. The identification of nursing students' test-taking motivation on the exit examination can help the nurse educator with accurate interpretation of nursing students' knowledge level and readiness for NCLEX-RN®.

Factors That May Influence Test-Taking Motivation

Several factors have been identified in the literature that may influence students' test-taking motivation. These factors may include the students' gender, age, grade point average

(GPA), and stakes or consequences of the examination (Leaper, Farkas, & Brown, 2012; Egli, Bland, Melton, Czech, 2011; Pi-Yueh, Mei-Lan, & Chia-Kai, 2011).

One important factor to consider when identifying the relationship between test-taking motivation and exit examination results is whether there are consequences or stakes associated with the examination. Barry et al. (2010) discussed how the consequences of an examination might affect the test-taking motivation of the student. The higher the consequences associated with the examination, the higher the level of motivation reported by the student. Conversely, if no meaningful consequences are associated with the examination, test-taking motivation and effort may be more unpredictable (Barry et al., 2010). Furthermore, low levels of test-taking motivation can result in inaccurate assessment of student competency (Wise & DeMars, 2005).

One recommendation to increase test–taking motivation included increasing the stakes associated with the examination (Wise & De Mars, 2005). Since the NCLEX-RN® holds the highest consequence (the ability to practice as an RN) for the graduate nurse; some nursing programs have chosen to make the exit examination a high-stakes test. Therefore, it is crucial to identify the relationship between nursing students' test-taking motivation and exit examination score, since the exit examination attempts to mimic the NCLEX-RN® blueprint. One method to capture nursing students' test-taking motivation prior to taking the NCLEX-RN® would be to identify their level of test-taking motivation on the exit examination.

First Time NCLEX-RN® Pass Rates

This next section will review background information regarding the NCLEX-RN® pertinent to the current study. A direct measurement of educational effectiveness in nursing education includes first-time pass rates on the NCLEX-RN®. Other outcome measurements identified in nursing education include grade point average, individual course grades, critical thinking tests, and graduation.

However, first-time NCLEX-RN® performance remains a major focus for several different groups. These groups include healthcare institutions, nursing students, nursing programs, nurse educators, and healthcare consumers.

Healthcare institutions' primary concern regarding first-time NCLEX-RN® pass rates includes protecting the public that is served in their institutions. To practice nursing legally in the US and Canada, every nursing graduate must pass the NCLEX-RN® first. If a nursing graduate is unsuccessful on the NCLEX-RN®, the healthcare institution may not be able to guarantee or hold the nursing position for the unsuccessful graduate. This situation can result in vacant nursing positions and add to the current nursing shortage. Evidence has indicated that the nursing shortage directly results in higher patient- to-nurse ratios (Rosseter, 2012), which can lead to increased patient morbidity and mortality rates (Arnold, 2012; Needleman, Buerhaus, Pankratz, Leibson, Stevens, & Harris, 2011; Rosseter, 2012). Some healthcare institutions may not choose to invest the money or the time to orient a new graduate nurse that may potentially be unsuccessful on the NCLEX-RN®. The cost to orient a new nurse is approximately $ 96, 595 (Arnold, 2012) which includes the new employee's salary, the preceptor's salary, classroom and skills expenses, and nurse educators' salaries (Arnold, 2012).

Aside from the inability to obtain or keep a nursing position, nursing graduates may face subsequent decrease or loss of income. According to Bureau of Labor Statistics (2011), the mean salary of an RN employed in the United States is $ 69,110. If nursing graduates were unsuccessful on the NCLEX-RN®, they must wait before repeating the examination. This delay in eligibility, determined by individual State Boards of Nursing, may result in the loss of income for new graduates.

Other groups that may be concerned about first time NCLEX-RN® pass rates include nursing programs and program accreditors. Nursing programs may fear the loss of individual State Board of Nursing approval, national accreditation, and/or scholarly reputation. Even though accreditation is a

voluntary process for nursing programs, many choose to be accredited to exhibit quality and effectiveness within their programs (Keating, 2011). The achievement of programmatic accreditation indicates that at least the minimum quality of standards in a nursing program has been achieved (Keating, 2011). Two national accrediting bodies in nursing currently include the Accreditation Commission for Education in Nursing (ACEN) and the Commission on Collegiate Nursing Education (CCNE).

A major criterion that affects accreditation status for a nursing program includes the inability to meet or exceed the national three-year mean regarding first time pass rates on NCLEX-RN® (Spector & Alexander, 2006; ACEN, 2013a, ACEN, 2013b, CCNE, 2013). In addition to the loss of program accreditation, individual State Boards of Nursing may place a nursing program on probation if the first time NCLEX-RN® pass rates do not meet or exceed the required standards. Both of these consequences may directly result in the loss of potentially, qualified nursing students and further perpetuate the current nursing shortage.

Nurse educators also share concerns related to unsuccessful first time pass rates on the NCLEX-RN®. The loss of scholarly reputation and program integrity may be at stake for nurse educators if first time pass rates on NCLEX-RN® drop below the national average. A considerable amount of pressure exists for nurse educators to ensure that first time NCLEX-RN® results meet or exceed the national average from not only program administrators, but accrediting bodies as well (Jones & Bremner, 2008). Therefore, to maximize first time NCLEX-RN® pass rates, some nurse educators may choose to invest their time and effort with assisting nursing students preparing for the NCLEX-RN®. Some approaches nurse educators may use to assist nursing students with NCLEX-RN® preparation include mentoring, individual tutoring, and required remediation of content deficiencies identified on the exit examination (Heroff, 2009; March & Ambrose, 2010; Rogers, 2010).

Several groups of people are concerned about first time NCLEX-RN® pass rates; therefore, many nursing programs have chosen to take a proactive approach to NCLEX-RN® preparation. One approach includes the use of a comprehensive assessment and review program throughout the nursing curriculum. Some commercially available programs include those provided by Assessment Technologies Institute, Inc. (ATI®), Health Education Systems, Inc. (HESI), Kaplan, and the National League for Nursing (NLN). With these programs, nursing students and nurse educators are provided with detailed feedback on all the standardized examinations in addition to a probability of passing the NCLEX-RN® score on the exit examination. All of this information is to assist with identifying if nursing students are prepared adequately for the NCLEX-RN®.

NCLEX-RN® Revisions

To understand why the implementation of comprehensive assessment and review programs has occurred in some nursing programs better, it is important to review the major revisions that have taken place pertaining to the NCLEX-RN®. In 1982, the National Council for State Boards of Nursing (NCSBN®) changed the examination from a norm-referenced test to a criterion-referenced test (NCSBN®, 2010). A norm-referenced test compares the students' scores with other student's score; however, a criterion-referenced test is judged against a fixed set of criteria or learning outcomes (Billings & Halstead, 2009; Danielle, 2008; McDonald, 2013). A criterion-referenced test should demonstrate that the candidate has mastered the skills necessary to be licensed in that particular field of study (McDonald, 2013). Another revision included a new test plan that was developed and implemented based on an analysis of activities of a newly licensed RN (NCSBN®, 2011). Currently, the NCLEX-RN® test plan is revised every three years.

In 1986, NCSBN® began investigating the possibility of administering the NCLEX-RN® though the use of computerized adaptive testing (CAT) procedures (NCSBN®, 2010). It was not until April 1994 that the CAT procedure was first utilized for administering the NCLEX-RN®. The benefit for using the CAT approach includes that every candidate's test is unique and will adjust to his or her ability during the test. As the high ability nursing student progresses through the NCLEX-RN® and answers correctly, the questions become more difficult. This higher level of questioning may result in meeting consistent performance at a higher difficulty level resulting in passing the NCLEX-RN® in fewer questions (NCSBN, 2015).

Another revision based on practice analysis included the re-evaluation of the passing standard on the NCLEX-RN® since the initiation of CAT testing in 1994 (NCSBN, 2010). This re-evaluation has resulted in an increase in the passing standard has been increased for the past three NCLEX-RN® test plans. This increase has made passing the NCLEX-RN® more difficult for the first-time NCLEX-RN® candidate. The NCSBN Board of Directors decided that it was necessary to increase the difficulty based on the requirements that entry-level nurses possess. Today's entry-level nurse must have a greater knowledge base, skills, and abilities to practice (NCSBN®, 2013 a). Due to the increasing difficulty of the NCLEX-RN®, some nursing programs have chosen to implement the use of a comprehensive assessment and review program to assist with NCLEX-RN® preparation.

Comprehensive Assessment and Review Programs

Studies have indicated that the use of a comprehensive assessment and review program has positively affected NCLEX-RN® results (English & Gordon, 2004; Norton et al., 2005; Sifford & McDaniel, 2007). However, no studies identified the relationship between nursing student test-taking motivation and exit examination score or NCLEX-RN® performance. The

use of standardized comprehensive assessment and review programs has become commonplace in many nursing programs to prepare nursing students for the NCLEX-RN®. In a webinar presentation provided by Elsevier, Dr. Anne Young provided the prevalence of the use of standardized assessment and review programs. The use of these programs in specific nursing programs include 90% of associate degree programs, 72 % of Bachelor in Science of Nursing (BSN), and 89% of LPN programs (2010). Halstead (2013) declared that to graduate and take the NCLEX-RN®, nursing students in almost 20 % of nursing programs must obtain a minimum score on the standardized assessments.

Several standardized comprehensive assessment and review programs are currently available. Some of the commercially available programs include ATI®, HESI, or the NLN assessments. One incentive for nursing programs to utilize a standardized assessment and review program includes the ability to assess student learning throughout the curriculum. In addition, standardized testing programs may provide the nursing student immediate feedback on his or her performance on the standardized tests and identify areas of content weakness. More importantly, the use of a standardized assessment and review program allows the nursing student the opportunity to remediate content weaknesses prior to taking the NCLEX-RN®. Finally, one test in the standardized assessment testing programs (ATI®, HESI, & NLN), an exit examination, provides nursing students and programs a probability of passing the NCLEX-RN® score. This probability score will ultimately help nursing students and nurse educators identify if the nursing students are prepared to take the NCLEX-RN®.

Exit Examination

The exit examination, which is part of standardized comprehensive assessment and review program, is an examination that mimics the NCLEX-RN® blueprint. As a result, some nursing

programs have chosen to administer this examination to identify nursing students' readiness for the NCLEX-RN®. Typically, this examination is administered at or near the end of the nursing curriculum. The purpose of the precise timing of this exam is to identify nursing students' preparedness for the NCLEX-RN® (Davenport, 2007; English & Gordon, 2004; Morrison, Free, & Newman, 2002; Nibert, Young, & Britt, 2003; Sifford & McDaniel, 2007; Spector & Alexander, 2006).

One purpose for administering the exit examination includes the identification of nursing students' specific content weaknesses and strengths. In addition, this examination will provide nursing students a score that identifies their probability of passing the NCLEX-RN®. Based on this information, nursing students and nurse educators can have the opportunity to remediate content weaknesses prior to taking the NCLEX-RN®. Even though research has shown that the use of the comprehensive assessment and review programs positively affect NCLEX-RN® results (English & Gordon, 2004; Norton et al., 2005; Sifford & McDaniel, 2007), a recent trend regarding the exit examination has developed that warrants careful consideration for nursing faculty.

Some nursing programs have decided to use the exit examination as a criterion for rigorous progression and remediation policies, thereby making this examination a high-stakes test. Students' ability to graduate, and/or eligibility to take the NCLEX-RN® may be based on the results of this one examination (Carr, 2011; Heroff, 2009; National League for Nursing, 2012; Nibert et al., 2003; Norton, Relf, Cox, Farley, Lachat, Tucker, & Murray, 2005; Poorman, Mastorovich, Liberto, & Gerwick, 2010; Sifford & McDaniel, 2007). According to the *NLN Vision: Fair Testing Imperative in Nursing Education document* (2012a), guidelines were provided for faculty when making the decision to make the exit examination a high-stakes test.

Recommendations included evaluating the reliability and validity of the assessment being utilized, using multiple sources of evidence when developing policies related to progression and graduation, and educating students about the purpose of administering the assessment. This trend, however, has not taken into consideration whether nursing students were motivated to perform well on the exit examination. Thus, a gap in the literature exists that addresses nursing student test-taking motivation on the exit examination.

Students' level of test-taking motivation does affect the students' test performance (Cole & Bergin, 2005; Sundre & Moore, 2002; Thelk et al., 2009). Therefore, without knowing whether nursing students were motivated to perform well on the exit examination, results may not be reflective of nursing students' true knowledge and preparedness for the NCLEX-RN®. Ultimately, progression policies or the inability to take the NCLEX-RN® may be the severe repercussions of inaccurate assessment of students' readiness for the NCLEX-RN®. Furthermore, there may be nursing students that have failed a course or were unable to graduate based on the results of this one exam. This practice can only perpetuate the nursing shortage because potential RNs may be delayed or never have the opportunity to take the NCLEX-RN®.

The literature is replete with studies demonstrating that the lack of motivation on an examination does not accurately reflect students' cognitive ability (Barry et al., 2010; Cole & Bergin, 2005; Thelk et al., 2009). In addition, Wise and DeMars (2005) stated that the lack of motivation depicts an inaccurate representation of students' competence. If student test-taking motivation on the exit examination is not identified, a threat to the validity of the test results may exist. Ultimately, the results of the exit examination may not reflect what the nursing student truly knows prior to taking the NCLEX-RN®. Furthermore, nursing students' score on the exit examination may result in nursing students from progressing in the nursing program, failure of

the nursing course that they are currently in, or a delay in the ability to take the NCLEX-RN®. Therefore, it is essential to identify nursing students' test-taking motivation on the exit examination.

Statement of the Problem

The use of exit examinations has become commonplace in many nursing programs. However, in recent years, a number of nursing programs have chosen to use the exit examination as a criterion for progression and remediation policies (Heroff, 2009; Morrison, Free, & Newman, 2002; Nibert et al., 2003; Noel, 2009; Spurlock, 2006; Spurlock & Hanks, 2004). Such criteria for not achieving the pre-determined benchmark score on the exit examination includes the inability to progress to the next course in the nursing program, dismissal from the program, or the inability to graduate or to take the NCLEX-RN®. This practice can only perpetuate the nursing shortage that is prevalent.

According to the 2011 NLN Annual Survey, of those who responded to the survey, one-third of nursing schools require a minimum score (benchmark score) on a standardized assessment to progress in the program, 20 % of nursing schools require the achievement of the benchmark score to graduate, and 12 % of nursing schools will not send the information to the State Boards of Nursing for graduate nurses to be eligible to take the NCLEX-RN® unless the benchmark score has been achieved (NLN, 2012a). Although the NLN cautions against implementing these actions, they did provide recommendations for faculty and program deans or chairs, if they choose to do so. Some of the recommendations include the use of multiple sources of evidence to evaluate nursing student competence when developing progression or remediation policies, requiring extensive data regarding the reliability and validity of the assessments used in

the program, and review progression and remediation practices that align with the fair testing practices (NLN, 2012a).

Even though some nursing programs have adopted policies regarding the exit examination, it is still unknown if nursing students are motivated to do well on the exit examination. Due to the lack of existing literature that examines nursing students' test-taking motivation on the exit examination, further research is warranted. Examining nursing student test-taking motivation on the exit examination may assist with making accurate inferences about student learning and preparedness for the NCLEX-RN®.

Purpose

The purpose of the current study is to determine if a relationship exists between nursing student test-taking motivation and the exit examination score. A considerable amount of literature addresses various serious consequences based on nursing students' performance on the exit examination (Heroff, 2009; Morrison, Free, & Newman, 2002; Nibert et al., 2003; Noel, 2009; NLN, 2012a; Spurlock, 2006; Spurlock & Hanks, 2004). However, no empirical studies were found that identify nursing students' level of motivation when taking the exit examination. This study is intended to provide a description of the relationship between test-taking motivation and the exit examination scores with quantitative data analysis. These findings may assist the nurse educator and nursing students with appropriate interpretation of the exit examination scores, accurate identification of the nursing students' preparedness for the NCLEX-RN®, and maximization of nursing student performance on the NCLEX-RN®. This information may help with the retention of qualified nursing students that are eligible to take the NCLEX-RN® and ultimately help meet the current nursing shortage needs

Overview of Methodology

A descriptive, correlational approach will be used to explore the relationship between nursing students' motivation and student scores on the exit examination. The study will use the *Student Opinion Scale (SOS)* tool to assess nursing students' test-taking motivation. A convenience sample from nursing programs in one Midwest state will be used. For the purpose of this study, the sample will include pre-licensure nursing students within two nursing education programs (Associate and Baccalaureate).

Research Questions

The research questions and hypotheses for this study are:

1. What is the relationship between the exit examination score and nursing students' Total Motivation, Effort, and Importance Scores on the *SOS*?

   H_1: The higher exit examination scores will positively correlate with a higher level of Total Motivation Scores on the *SOS*.

   H_2: The higher exit examination scores will positively correlate with a higher level of Importance Scores on the *SOS*.

   H_3: The higher exit examination scores will positively correlate with a higher level of Effort Scores on the *SOS*.

2. Is there a significant difference in the mean Total Motivation, Effort, and Importance Scores on the *SOS* for high-stakes and low- stakes groups that have taken the exit examination?

   H_1: The high- stakes groups will have higher Total Motivation Scores on the *SOS* than the low-stakes groups.

   H_2: The high-stakes groups will have higher Importance Scores on the *SOS* than the

low-stakes groups.

H_3: The high- stakes groups will have higher Effort Scores on the *SOS* than the low-stakes groups.

3. Is there a significant difference in mean exit examination scores for high-stakes and low-stakes groups?

H_1: Nursing students exit examinations that are determined high-stakes will have higher exit examination scores than those nursing students whose exit examinations are determined low- stakes.

4. What is the relationship between Total Motivation Score on the *SOS* and the demographic variables (age, race, gender, GPA)?

H_1: There is a positive correlation between nursing students 23 years old or older and higher Total Motivation Scores on the *SOS* than those nursing students under 23 years old.

H_2: There is a positive correlation between Caucasian students and higher Total Motivation Scores on the SOS than nursing students of other races.

H_3: There is a positive correlation between female students and higher Total Motivation Scores on the *SOS* than male nursing students.

H_4: There is a positive correlation between nursing students with a GPA greater than 3.5 and higher Total Motivation Scores on the *SOS* than students with a GPA less than 3.5.

5. What is the relationship between Exit Examination Score and the demographic variables (age, race, gender, GPA)?

H_1: There is a positive correlation between nursing students 23 years old or older

and higher exit examination scores than those nursing students under 23 years old.

H_2: There is a positive correlation between Caucasian students and higher exit examination scores than nursing students of other races.

H_3: There is a positive correlation between female students and higher exit Examination Scores than male nursing students.

H_4: There is a positive correlation between nursing students with a GPA greater than 3.5 and higher Exit Examination Scores than students with a GPA less than 3.5.

6. Is there a significant difference in the mean exit examination scores for the Associate Degree Nursing (ADN) and Bachelor of Science in Nursing (BSN) programs?

H_1: Nursing students in the ADN programs will have higher exit examination scores than those nursing students in BSN programs.

7. Is there a significant difference in the mean Total Motivation, Effort and Importance Scores on the *SOS* for ADN and BSN programs?

H_1: Nursing students in the ADN programs will report higher Total Motivation Scores on the *SOS* than those nursing students in BSN programs.

H_2: Nursing students in the ADN programs will report higher Effort Scores on the *SOS* than those nursing students in BSN programs.

H_3: Nursing students in the ADN programs will report higher Importance Scores on the *SOS* than those nursing students in BSN programs.

Conceptual Framework

This next section will provide an overview of the conceptual framework that will be utilized for the study. The expectancy-value theory of achievement motivation asserts that the amount of effort that people are willing "to expend on a task is the product of (a) the degree to

which they expect to succeed at the task, and (b) the degree to which they value the task and value success on the task" (Green, 2002, p. 990). Wigfield and Eccles (2000) explained that these expectancies (the expectation to succeed) and values (task value) guide the students' achievement behavior. These achievement behaviors include "performance, effort, and persistence" (p. 69). Therefore, if the student values the task (i.e. test) and expects success, this should lead to increased performance and effort with determination to complete the task. Thus, if nursing students value the exit examination this should correlate with an increase in the students' score.

However, in addition to identifying the students' value and an expectation of success, Wigfield and Tonks (2002) declared that one must take in to consideration societal influences on the students. Expectancy-value theory of achievement motivation asserts that relationships are a vital aspect of its theoretical framework. The attitudes, beliefs, and behaviors of the people (such as teachers, parents, peers) that students are associated with may assist in the evolution of students' expectancies for success and task values. It is still unknown whether nursing students are motivated to do well on the exit examination. Once this information is identified in this study, nurse educators can then assist future nursing students with exit examination preparation through motivational strategies such as faculty mentoring, journaling, tutorials, and self-directed student activities, if needed (McGann & Thompson, 2008).

Definition of Terms

This section will include definitions of terms that are relevant to the proposed study. The following definitions include:

Associate Degree in Nursing (ADN) is defined as a two year program of study in nursing at a community college that permits the graduate the eligibility to take the NCLEX-RN® ("Associate Degree in Nursing", 2009).

Bachelor of Science in Nursing (BSN) is defined as a four-year program of study in nursing at a university or college that permits the graduate nurse the eligibility to take the NCLEX-RN®.

Exit examination is a comprehensive assessment that mimics the NCLEX-RN® blueprint that may be administer individually or part of a comprehensive assessment and remediation program. This examination helps identify the nursing student's readiness to take the NCLEX-RN®. This examination is typically administered at or near the end of a nursing program and given on a computer or as a paper and pencil exam (ATI®, n.d.).

Graduate nurse is someone that has successfully met all the requirements of a nursing program and is eligible to take the NCLEX-RN® examination ("Graduate nurse", n.d).

High-stakes test- "test scores are used to determine punishments (such as sanctions, penalties, funding reductions, negative publicity), accolades (awards, public celebration, positive publicity), advancement (grade promotion or graduation for students), or compensation (salary increases or bonuses for administrators and teachers)" ("Hidden Curriculum", 2014)

Low-stakes test- "are used to measure academic achievement, identify learning problems, or inform instructional adjustments, among other purposes" ("Hidden Curriculum", 2014). There are no or minimal consequences associated with the students' results.

Motivation - Merriam-Webster (n.d.) defines motivation as "a force or influence that causes someone to do something".

National Council Examination Registered Nurse (NCLEX-RN®) is a mandatory comprehensive examination a graduate nurse must pass to practice as an entry-level registered

nurse. This examination is a computer adaptive test (CAT) that ends when the level of the test-taker's competency is determined (NCSBN, 2013b).

National Council of State Boards of Nursing (NCSBN) is a non-profit organization whose purpose is to provide an organization through which boards of nursing act and counsel together on matters of common interest and concern affecting the public health, safety, and welfare, including the development of licensing examinations in nursing (NCSBN, n.d.).

Standardized assessment and review program is a program that includes standardized tests to assess nursing student learning throughout the nursing curriculum. In addition, the program offers tools to assist with remediation of identified content weaknesses (ATI®, n.d.).

Student Opinion Scale (SOS) is a 10 item self-report tool assessing student motivation in testing situations. (Sundre, 2007; Sundre & Moore, 2002).

Test-taking motivation includes the level of effort that a student puts forth to identify what the student truly knows with regard to the content that is being covered on the test (Wise & DeMars, 2005).

Significance of the Study

Due to the aging registered nurse workforce coupled with the fact that over 75,587 qualified applicants to nursing programs have been turned away, a crucial nursing shortage remains (American Association of Colleges of Nursing [AACN], 2012). The nursing shortage is anticipated to continue to worsen and this makes it necessary to assist any potential nurses with succeeding in the nursing program. However, a trend in some nursing programs has emerged that may affect the pool of potential nurses. This trend includes the administration of the exit examination as a high-stakes test. Some nursing programs have utilized the results of the exit

examination as a criterion for the ability to graduate or progress in the nursing program, even though the NLN strongly cautions against this.

Some high-stakes for nursing students that do not attain the benchmark score on the exit examination may include the inability to graduate and a delay or inability take the NCLEX-RN® (Heroff, 2009; Morrison, Free, & Newman, 2002; Spurlock, 2006; Spurlock & Hanks, 2004). Additionally, high-stakes for nurse educators regarding unsatisfactory exit examination scores may include increased workload for tutoring and remediation of content weaknesses, increased effort to assist nursing students with NCLEX-RN® preparation, and the concern for the integrity of the nursing program's first time NCLEX-RN ® pass rates.

Some programs, on the other hand, have chosen to administer the exit examination with no consequences associated with the students' results (low-stakes). However, regardless of the stakes, high or low, it is necessary to identify the students' test-taking motivation regarding the exit examination. If a student is not motivated to do well on the exit examination, it may not reflect the students' true knowledge and preparedness for NCLEX-RN®. Therefore, it is necessary to identify nursing students' test-taking motivation on the exit examination to interpret the nursing students' scores accurately. If the test results are interpreted accurately, the nurse educator can implement strategies to help maximize nursing students' motivation, if necessary. This information can assist future nursing students with maximizing their motivation and performance on the exit examination. Subsequently, nursing students' can graduate and be eligible to take the NCLEX-RN®, thereby helping the current nursing shortage needs.

A study that addresses the relationship between nursing students' test-taking motivation and the exit examination score is warranted. A gap in the nursing literature exists that examines the relationship between nursing students' test-taking motivation and exit examination score.

Although the literature is robust with data regarding test-taking motivation in other disciplines, no empirical studies were identified in nursing education. The identification of nursing students' test-taking motivation on the exit examination may transform some nursing programs' approach when determining whether remediation, a delay in eligibility to take the NCLEX-RN®, or the inability to graduate from the nursing program is warranted. Furthermore, because low test-taking motivation may not reflect nursing students' acquisition or retention of knowledge, it is concerning that some schools choose to implement progression and graduation polices based solely on one standardized assessment examination.

As previously stated, the NLN (2012a) strongly recommends that nursing programs proceed cautiously when implementing progression and or graduation policies based on the results of a single examination. Therefore, the identification of the relationship between nursing students' test-taking motivation and the exit examination score may alter the approach that some nursing schools take based on nursing students' results. Findings from this study can assist nurse educators with determining whether the nursing students' exit examination scores were truly reflective of their knowledge level and retention.

In addition, the results of this study may help nurse educators when determining whether progression or graduation policies, based on the exit examination score, should be implemented. Furthermore, the study's findings may provide nurse educators the information necessary to create an environment that may increase nursing students' test-taking motivation on the exit examination, if necessary. Finally and most importantly, if test-taking motivation is identified, nursing programs and nurse educators will be able to more accurately assess nursing students' ability and skill on the exit examination and, ultimately the preparedness of nursing students' to take NCLEX-RN®

Summary

This study will explore the relationship between nursing students' test-taking motivation and the exit examination score. This chapter included the background, problem statement, purpose of the study, overview of methodology, research questions, and hypotheses, overview of the conceptual framework, definition of terms, and significance of the study. The next chapter will include a review of the literature regarding concept of test-taking motivation, the conceptual framework of Expectancy-value theory of achievement motivation, comprehensive assessment and remediation programs, and an overview of the research using the *Student Opinion Scale (SOS)* tool.

CHAPTER TWO

LITERATURE REVIEW

Chapter 2 begins with a discussion regarding the expectancy–value theory of achievement motivation model and its application in education. Next, the chapter discusses motivation in education and describes the relationship between motivation and test performance. Additionally, the chapter reviews the literature regarding the NCLEX-RN® and the use of assessment and remediation programs in nursing programs. The chapter concludes with a review of the literature regarding the development and application of the tool, *Student Opinion Scale (SOS*), intended for this study.

Expectancy-Value Theory of Achievement Motivation Model

The expectancy-value theory of achievement motivation model was chosen as the theoretical perspective for this study because the framework encompasses the importance (value) and the student's belief in his or her ability to complete a task (expectancy) based on the student's motivation (Wise & DeMars, 2005). While this theory has been used extensively to study student motivation in various educational settings (Chen & Chen, 2012; Eccles & Wigfield, 1995; Eccles, Wigfield, Harold, & Blumenfeld, 1993; Tao, Solmon, & Xiangli, 2012; Xiang, McBride, Guan, & Solmon, 2003; Xihe & Ang, 2013; Zan, Lee, & Harrison, 2008), it has not been used to identify the relationship between nursing student test-taking motivation and the exit examination score. The next section will provide an overview of the evolution of the expectancy-value theory of achievement motivation, existing research using this theory, and its application to motivation.

Expectancy-Value Theory of Achievement Motivation Model

In order to discuss the expectancy-value theory of achievement motivation, it is necessary to discuss the model's origins. Expectancy-value theory of achievement motivation model was derived from Vroom's (1964) expectancy theory, which is a motivational theory. Vroom's theory introduced three variables: expectancy, instrumentality, and valence. Expectancy is defined as one's certainty that the effort that is put forth on a task will result in the desired result. For example, if a nursing student studies and prepares for a course examination, the theory suggests he or she will achieve the desired score on the examination. The second variable, instrumentality, is one's belief that he or she will receive a reward based on performance of a task. If the nursing student achieves the desired score on class examinations, he or she will receive the desired course grade. Finally, the valence model posits that the assumed attractiveness of a particular outcome surpasses the attractiveness of all of the other potential outcomes (Geiger & Cooper, 1996). Simply put, if the nursing student values the satisfaction in performing his or her best on an examination, he will achieve the desired score.

Several theorists (Atkinson, 1957, 1964; Eccles, Adler, Futterman, Goff, Kaczala, Meece, & Midgley, 1983; Feather, 1992; Pintrinch, 2004; Wigfield & Eccles, 2000) have expanded Vroom's theory further. However, Eccles et al.'s (1983) model is the conceptual framework being utilized for this study. Although this model was originally developed to explain the differences in mathematic engagement and achievement regarding gender in school children, it has been used to explain students' expectancies and values influence achievement choices in a variety of age groups and academic environments (Hood, Creed, & Neumann, 2012;. The major difference between Atkinson's (1964) expectancy-value theory and Eccles et al.'s (1983) expectancy-value theory of achievement motivation model is that the expectancy and

value components are more intricate and are tied to a more diverse group of psychological, social, and cultural factors in Eccles et al.'s model (Eccles & Wigfield, 2002). Eccles et al.'s model delineates three components to the subjective task value. These components include incentive and attainment value, utility value, and cost (Wigfield & Eccles, 2002).

The attainment value encompasses the importance of doing well on a task. For example, the nursing student that studies for the exit examination will perform well on the examination. How the task is associated with future plans describes the utility value. The nursing student recognizes that his or her performance on the exit examination will reflect his or her readiness to take the NCLEX-RN®. Finally, what one may have to give up and the energy necessary to complete the task reveals the cost. Costs for the nursing student preparing for the exit examination could include lack of time for establishing or maintaining personal relationships and mental and physical fatigue from studying. An individual's choice of an option is based on the value and belief of success (expectancy) of that particular activity (Eccles & Wigfield, 2002). Figure 1 illustrates the most recent model of the expectancy-value theory of achievement motivation model (Wigfield & Eccles, 2002).

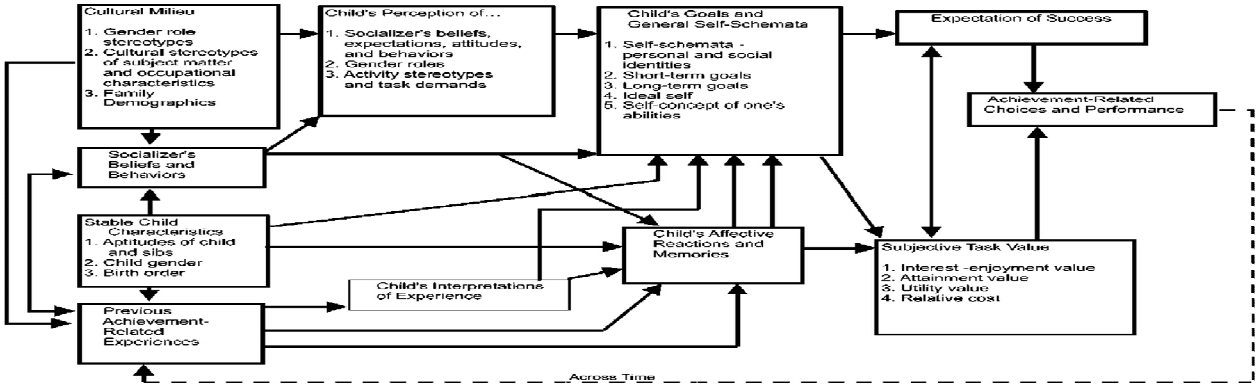

Figure 1. Expectancy–Value Theory of Achievement Motivation model. From "Movational beliefs, values, and goals" by Eccles, J. and Wigfield, A. (2002). *Annual Review of Psychology, 53*(1), p. 119.

Application of the Expectancy–Value Theory of Achievement Motivation Model in Education

The expectancy-value theory of achievement motivation model has been used extensively in the study of children, adolescents, and college students' performance and motivation (Chen & Chen, 2012; Eccles, Wigfield, Harold, and Blumenfeld, 1993; Wigfield & Eccles, 1995; Xihe & Ang, 2013; Zhu, Sun, Chen, & Ennis, 2012). One longitudinal study examined elementary and middle school students' performance and motivation from 10 different elementary schools (Eccles et al., 1993). Eccles et al., (1993) studied first, second, and fourth graders (*N*= 865) regarding their beliefs, ability, and value of specific activity domains such as mathematics, music, sports, and reading. Gender differences in school-aged children with regard to math and language arts abilities were identified. Boys valued and believed in their sport and mathematics capabilities. However, girls valued and believed in their abilities with regard to reading and music activities. Interestingly, the findings revealed that as schooling progresses the gender differences for mathematics narrow while the language arts increase (Eccles et al., 1993). Findings from this study suggest that gender differences do exist in educational beliefs, values,

and ability. Therefore, it is necessary to identify from this study if there are any gender differences in nursing students' test-taking motivation while taking the exit examination.

In similar study, Eccles and Wigfield (1995) studied adolescents (*N*=742), grades five through twelve, regarding their perceived math abilities using the expectancy-value model of achievement motivation as the theoretical framework. The adolescents were assessed once a year for two consecutive years using the *Self- and Task-Perception* questionnaire. This 19-item tool addressed adolescents' beliefs, attitudes, and value perceptions regarding their ability to succeed in math (Eccles & Wigfield, 1995). The confirmatory factor analysis (CFA) showed that beliefs, attitudes, and values concepts are distinct from each other. Furthermore, achievement-related beliefs are comprised of three task values: importance, interest, and perceived utility (Eccles & Wigfield, 1995). Finally, the study revealed that the adolescents place value on a task when they are interested in doing well and believe that they are good at that task. A limitation to this study is that this tool may not be applicable to other students, only those in mathematics courses.

In another study of adolescents, Chen and Chen (2012) studied ninth graders *(N*=195) using the expectancy-value theory of achievement motivation. However, this study was conducted to identify the relationship between the student's expectancy-value constructs and physical activity behavior associated with their energy balance (EB) knowledge. EB knowledge is a concept that is directly tied to change in body weight. If the energy is imbalanced, this will lead to weight increase. Therefore, the researchers wanted to identify if the student understood EB and engaged in behaviors that resulted in balance between energy intake and expenditure.

Chen and Chen (2012) utilized the *Expectancy-Value Questionnaire (EVQ).* This tool contains 11 items to measure the expectancy-value constructs. Five of the items measure

expectancy beliefs and six measure task values. In addition, the *EVQ* has two open-ended questions that measures cost. Chen and Chen's study (2012) revealed that the *EVQ* demonstrated acceptable construct validity (Cronbach's alpha .76 to .84). Furthermore, findings from the study demonstrated that students' expectancy beliefs and interest assisted with in-class physical activity were positively correlated (r=.32), but negatively correlated with cost (r=-.41) (Chen & Chen, 2012) thus supporting the constructs of expectancy and interest value from the expectancy-value theory of achievement motivation. A major limitation to this study involved the use of one site only; therefore, generalization of the findings remains a concern.

In another study that used the expectancy-value theory of motivation as the framework and the *EVQ*, Zhu, Sun, Chen, and Ennis (2012) conducted a cross–sectional study to examine measurement invariance of the *EVQ* in the realm of physical education. This sample included third to fifth graders (N=811) from 13 elementary schools and sixth through eighth graders (N= 903) from 13 middle schools. Results demonstrated that the *EVQ* maintained construct validity (Cronbach's alpha .67-.89 for elementary students and .65-.89 for middle school students) and internal reliability in elementary and middle school physical education students. Therefore, this tool is valid and reliable when studying elementary and middle school physical education students using the expectancy-value theory of achievement motivation.

A similar study, Xihe & Ang (2013), examined the relationship between physical activity participation and expectancy–value motivation and achievements. However, in this study only middle school students (N=854) participated. Results of this study demonstrated that the *EVQ* revealed high reliability again, the reliability coefficient Rho (r) was .916. Psychomotor achievement facilitated the relationship between expectancy-value and physical activity participation. Psychomotor skills were significant predictors of after school physical activity

participation ($\beta = .139$, $p < .05$) and the students' expectancy beliefs predicted psychomotor achievements ($\beta = .153$, $p < .05$) (Xihe & Ang, 2013). Although these studies (Zhu et al., 2012; Xihe & Ang, 2013) were conducted to provide reliability data of the *EVQ,* they did measure students' task values and expectancy beliefs, which further support the use of the expectancy-value theory of achievement motivation for this study.

In addition to children and adolescents, the expectancy-value theory of achievement motivation has been used as a theoretical framework for studying college students (González-Moreno, 2010; Hood, Creed, & Neumann, 2012). Hood et al. (2012) examined university students' (N=149) attitudes and achievement of those enrolled in a psychology statistic course. The model explained 40% of the variance in achievement in the course. Results revealed that past performance in other statistic courses (22%) and effort (8%) and expectancies (2%) made direct contributions to achievement in the statistic course. The use of one specific group of students in one geographical area may limit the generalizability of results. Replication of the study in other geographical and other academic realms is warranted.

González-Moreno (2010) studied higher education students like Hood et al. (2012). However, this study utilized graduate students (N=56) from three different music programs (two were land–based and one was a distance program) in Mexico. The study examined personal and environmental factors that negatively or positively influenced the students' motivational beliefs. Like Eccles et al. (1993), gender differences were identified regarding student motivation. Data analysis indicated that female students valued graduate school ($t(46) = -3.05$, $p = 0.01$), while the male students held a higher expectation of success ($t(47) = 2.78$, $p = 0.01$). Positive influences on motivation included career development, increased income, and the requirement of an existing job. Negative influences on motivation included the cost of study (like Chen & Chen's study,

2012), time requirements for study, and lack of support and communication, in addition to high expectations from the students' advisors (González-Moreno, 2010). These findings further support that positive motivational beliefs (value and expectancy) positively influence student achievement.

Summary

The literature is robust with studies that examine primary, secondary, and higher education students using the expectancy-value theory of achievement motivation (Chen & Chen, 2012; Eccles, Wigfield, Harold, and Blumenfeld, 1993; González-Moreno, 2010; Hood, Creed, & Neumann, 2012; Wigfield & Eccles, 2000; Xihe & Ang, 2013; Zhu, Sun, Chen, & Ennis, 2012, however, as evidenced by the review of the literature, nursing education lacks empirical evidence addressing the use of the expectancy-value theory of achievement motivation model. Of the presented studies, six were from the discipline of education with regard to children and adolescents and two were from college students. It is unknown if a relationship between nursing student test-taking motivation and the exit examination score using the expectancy-value theory of achievement motivation exists.

Because many nursing programs require nursing students to take an exit examination prior to taking the NCLEX-RN®, understanding the nursing students' task value of the examination and expectation of success is vital. Further research needs conducted to determine if nursing students do not value the exit examination because they feel that they will not do well. Finally, this study seeks to identify if a relationship between student motivation and the exit examination score does exist using the theoretical framework of expectancy-value theory of achievement motivation model. Ultimately, the results of this study may assist nurse educators

and nursing programs with valid interpretation of the nursing students' performance (results) on the exit examination and preparedness for the NCLEX-RN®.

Motivation in Education

The next section will provide a discussion on the concept of motivation as it pertains to educational settings. In addition, this section will identify the relationship between motivation and test performance. Finally, the differences in student motivation in high-stakes and low-stakes examinations will be identified.

Understanding a student's level of motivation is essential to make valid assumptions regarding the student's performance. A lack of motivation by the student, may not reflect the student's knowledge acquisition and abilities accurately (Barry, Horst, Finney, Brown, and Kopp, 2010; Wise & DeMars, 2005; Zerpa, Hachey, Barneveld, & Simon, 2011). Therefore, it is pertinent to first explore the concept of motivation in educational settings first.

Pintrich (1999) conducted a correlational study that addressed the concepts of self-efficacy and task value and their relationship to self-regulated learning. Self-regulated learning was defined as the integration of various strategies (either cognitive or metacognitive) such as rehearsal, elaboration, organization, self-regulation, and performance (Pintrich, 1999). There were two samples included in this research. The first sample included 1,000 middle school students followed over a three year period. The other sample included 3,000 college students at two different times.

Three motivational beliefs of self-efficacy, task value beliefs, and goal orientation were examined using correlational and regression analyses. A positive relationship was found between self-efficacy and self-learning. Both groups of students (college and middle school) with higher self-efficacy scores were more likely to be cognitively engaged in learning. The

subgroup of self-regulation showed the strongest relationship in both middle school (r=0.29-0.67) and college students (r=0.12-0.58). In addition, a positive correlation was identified in those students that reported a higher level of interest and task value, and those students were more apt to use self-regulated learning strategies. Although, task value revealed a positive relationship, the relationship was not as strong as self-efficacy, especially with performance capabilities. Middle school students' self-efficacy score regarding performance (r=0.19-0.38) demonstrated higher correlations than the task value scores (r=0.17-0.30). College students' performance results were similar to that of the middle school students (self-efficacy r=0.27-0.45; task value r=0.03-0.20) (Pintrinch, 1999).

Finally, the third motivational belief of goal orientation addressed in the study demonstrated a strongly positive relationship with mastery goals (middle school students r=0.38-0.73; college students r= 0.20-0.40). Mastery goals refer to mastering the task using self-imposed standards. If the student chooses a goal to learn, they will be more prone to utilize various strategies to achieve the goal. Another goal orientation, extrinsic goals, such as achieving a good grade or pleasing others revealed a negative relationship (middle school students r= -0.31-(-.41); college students r= -0.03-0.06) (Pintrich, 1999). Although the use of extrinsic goals may influence achieving a good grade for the student, the student may not have achieved comprehensive learning (Pintrich, 1999). Attaching extrinsic goals to an examination may not result in comprehensive learning for the student. For example, nursing faculty may assign a grade (to motivate the students extrinsically) to the nursing students' performance on the exit examination. However, this practice may result in a negative effect of the students' performance. Ultimately, this may not reveal what nursing students may know.

In another study that examined what motivated students to learn motivation, Weinstein (2010) studied undergraduate students in a general psychology course (*N*=156). The study used an 18 item survey with a five point Likert scale (1= minimally agree to 5= maximally agree) to rate the factors that motivate the students to learn. An analysis of variance (ANOVA) was conducted to explore the impact of age (< 23 years and > 23 years) on what motivates college student to learn. Results revealed the most significant factor for that influenced the greater than 23 years old group motivation was the professor's knowledge (*M*=4.5) as compared to the less than 23 year old group (*M*=3.5). Other motivational factors for the greater than 23 years group included the motivational level of the professor (*M*=4.4), high quality teaching (*M*=4.2), and the professor's sense of humor (*M*=3.9) (Weinstein, 2010). The least motivational factor between both groups included faculty members that are mentors to the students (*M*=1.7). A major concern about this study is that no data regarding reliability and validity of the scale was provided.

Similarly, Egli, Bland, Melton, and Czech (2011) studied the influence of age on students' motivation with regard to physical activity. One mid-sized university was used as the study site using 156 different sections of physical activity classes (*N*= 2,199). The cross-sectional, descriptive study examined other factors, besides age (gender and race), to identify if there were differences in exercise motivation. The instrument used for the study was a modified version of the Exercise Motivation Inventory (EMI), called the EMI-2. This tool measured the students' motive for exercise, including intrinsic factors (challenge, affiliation, enjoyment, and revitalization) and extrinsic factors (appearance, management of weight, avoidance of ill health, and competition). Cronbach's alpha for the EMI-2 for overall motivation was .966. The subscales ranged from .929 (competition) to .0729 (health pressures).

Findings of Egli et al.'s (2011) study revealed that the two top motivators for all groups were positive health (M=3.86, SD=1.03) and ill health avoidance (M=3.42, SD= 1.15). The difference in motivation with respect to gender was that males were motivated more by intrinsic factors (strength, positive health, and enjoyment, $p< .005$) and females were more motivated by extrinsic factors (weight management and appearance, $p<.05$)). Students that were under 20 years old were motivated by health pressure ($p<.002$) and avoidance of health issues ($p< .020$) whereas students' > 20 years old were motivated by affiliation ($p<.036$). Finally, an ANOVA showed significant differences between races. Caucasians were more likely than African-Americans to use exercise for stress reduction ($p<.007$). African-American students were more motivated to exercise due to health pressures ($p=.000$) and avoidance of ill health ($p=.000$) (Egli et al., 2011). A major limitation of this study was that it was conducted at one university and may not be generalizable to other populations. However, results of this study provided valuable information on the various variables that may influence student motivation.

Although motivational differences in age, race, and gender have been found in research, it is still unknown if these variables influence nursing student motivation on the exit examination. Furthermore, this research describes how to motivate students, however, it does not describe if the students were motivated or not. A significant gap in the literature remains pertaining to nursing and motivation. Research needs to begin by determining if nursing students are motivated when taking the exit examination. The following section will address motivation as it pertains to nursing students.

Motivation in Nursing Education

The literature is limited with regard to nursing students and test-taking motivation. The search did identify a study conducted in Italy that examined nursing student motivation and the

type of nursing program the student chose to attend (Zampieron, Buja, Dorigo, Bonso, & Corso, 2012). Zampieron et al. (2012) utilized a cross-sectional approach to examine nursing students' (N=215) motivation when choosing an educational pathway of either pediatrics or general nursing, utilizing a motivational tool developed by Zysberg & Berry (2005). Results revealed that those students who chose the pediatric pathway attended a college preparatory high school (p<0.01) while those students that chose the general pathway had previous work experience (p<0.01). A major concern regarding this research is the lack of reliability and validity data regarding the tool utilized. In addition, this study was only conducted at one university in Italy, thus generalizability of the results remains a concern.

In an inductive, descriptive qualitative study regarding student motivation, Bengtsson and Ohlsson (2010) examined medical and nursing students' (N=31) motivation for studying. Both groups of students found that being self-motivated, having a committed professor, and having discussions with other students were factors important for learning. The differences between the groups were that the medical students were more interested in learning for life while the nursing students were more focused on their exams.

An interpretive, descriptive qualitative study by Burgess, Reimer-Kirkham, and Astle (2014) examined the motivation of nursing students (N=9) when choosing an international clinical experience. This study used an interpretive descriptive approach. Findings revealed emerging themes that included developing global awareness, engagement, and citizenship and social justice.

The effect of various pedagogical approaches on nursing student motivation was also identified in the literature (Baes, Remolado, Jan Michael, Livera, & Decatoria, 2013; Gagnon, Gagnon, Desmartis, & Njoya, 2013). Baes et al., (2013) examined the use of multi-media as a

method to increase nursing student motivation. However, no discussion was provided that identified the sample size, methodology that was utilized, or what theoretical background was used as the framework for the study. In addition, there was no explanation as to which type of multi-media was used for this action study, and thus, significantly limiting the generalizability of the results.

Another similar study, Gagnon et al. (2013) examined the impact of blended teaching using traditional lectures and internet-based tutorials on undergraduate nursing students (N=102) in a research course. The control group received the traditional face-to-face lecture and the intervention group received blended instruction including traditional lecture and internet-based tutorials. Three outcomes were being examined in this study. These outcomes included knowledge acquisition, satisfaction, and self-learning readiness. The tool, the Self-Directed Learning Readiness Scale for Nursing Education (SDLRNE) utilized for this study was an adaptation of a previous tool, the Self-Directed Learning Readiness Scale (SDLR). The SDLRNE revealed high internal consistency with Cronbach's alphas of .83 for satisfaction and .94 for SDLR. In addition to the SDLRNE, a mandatory satisfaction questionnaire that is required by the college was given at the end of the course. However, no reliability data for this tool was provided.

Findings from the analysis of covariance (ANCOVA) revealed that although the teaching method had no impact on knowledge acquisition, satisfaction, and self-learning readiness, an interaction effect was identified between students' motivation level and teaching method. The unmotivated students in the intervention group performed better on their exams than those unmotivated students in the control group ($17.2 \pm .9$ vs. $14.5 \pm .6$, $p = .01$). (Gagnon et al., 2013). Motivation was the only factor that significantly affected student satisfaction ($p = .0005$).

This study supports the assertion that motivation does affect test performance. However, this study was conducted at one site using a convenience sample, thus limiting the generalizability of the findings. Further research that supports these findings is warranted.

Summary

A discussion in this section regarding motivation in nursing was presented. Previous research has examined motivation in relation to type of nursing program, studying, international clinical experiences, and teaching. Although the findings help to better understand motivation in relation to these various concepts, a gap still exists in relation to nursing students and whether they are motivated or not when taking an exit exam. One study supported that motivation affected test performance but further research needs to determine if there is a relationship between nursing student test-taking motivation and the exit exam. It is still unknown if nursing students are motivated while taking the exit examination. Therefore, identification of the relationship between student test-taking motivation and test performance first is necessary. The next section will present literature that discusses the relationship between test-taking motivation and test performance.

Relationship between Test-taking Motivation and Test Performance

The next section will identify the current literature regarding motivation and test performance. The Standards for Educational and Psychological Testing (American Educational Research Association [AERA], 1999) recommend that information regarding test-taking motivation be identified and used in the interpretation of test scores. Even though the Standards are over 15 years old, they are still considered the authoritative source regarding test development and validation (AERA, 1999).

Research, outside of nursing, has shown that a relationship exists between motivation and test performance (Wise & DeMars, 2005; Wolf & Smith, 1995). Literature has revealed that higher motivated students consistently outperformed lower motivated participants (Cole & Bergin, 2005; Liu, Bridgeman, & Adler, 2012; Tella, 2007; Wise & De Mars, 2005). Wise and DeMars (2005) conducted a meta-analysis of 12 studies regarding motivation and test performance. Results revealed that a significant difference between the motivated and unmotivated students' existed. The motivated students performed more than one-half standard deviation higher than the unmotivated students did (Wise & DeMars, 2005).

Cole and Bergin (2005) studied college students at four higher education institutions (*N*= 1,118) that completed the *College BASE* examination. This examination is a low-stakes examination general education test. The instrument used for the study was a 26-item survey that revealed an internal consistency reliability of .808. Findings demonstrated that overall test-taking effort or motivation moderately correlated with test performance *(r*=.471). Furthermore, significant differences were found between the two groups, low test-taking effort and high test-taking effort on all sub tests and composite scores on the *College BASE*. The largest mean difference noted was on the science subtest. The high effort group (*n*=385) scored 80 points higher than their low effort counterparts (*n*=343) on the science subtest. Like Egli et al.'s (2011) study, effort by gender showed differences. Females reported more effort on the English, math, and composite *College BASE* scores, whereas the males reported more effort in the social studies subject area. These results support the assertion that test-taking effort is associated with test performance.

In another correlational study by Zerpa, Hachey, Barneveld, and Simon (2011), the expectancy–value theory of achievement motivation was utilized to examine the relationship

between students' examination scores and their estimated ability on the examination. The sample (*N*=43,562) included ninth grade students that were required to take a large-scale mathematics assessment. After the mathematics assessment was complete, the students were asked to complete the 11-item *Education Quality Accountability Office* (*EQAO*) self-report questionnaire.

A principal component analysis (PCA) was conducted on the *EQAO* self-report questionnaire. The PCA revealed a two-component model reflecting motivation (task-values and effort) on the *EQAO* self-report questionnaire. Even though results revealed that task-values (*DF* 41491.13, *F* (8790.70), $p<.00$) and effort (*df* 41549.10, *F* (256.85), $p<.00$) were significant predictors of academic achievement, it only accounted for 17.90 % of the variance. Hierarchal linear model (HML) was used to assess the students' component scores (task-value and effort) and their estimated performance on the large-scale assessment. The total variance explained by the model as a whole was 34.69%, leaving 65.31% of the variance unaccounted for by the HLM model (Zerpa et al., 2011). These findings contrasted the results of Cole and Bergin (2005) and suggested that other factors may influence the students' academic achievement besides motivation. A limitation of this study was that the researchers did not take into account how low motivation affects the students' individual responses, only the *EQAO's* self-report questionnaire overall score. The researchers did not analyze the effect of motivation on each item of the *EQAO* self-report questionnaire. Therefore, motivation could have been a factor on one of the items on the questionnaire. Further research is warranted evaluating each item and the influence motivation may have on the item.

In another study that examined how student motivation impacts test results, Liu et al., (2012) studied undergraduate students (*N*=757) from three different academic institutions

(community college[*n*=118], master's university[*n*=299], and a research university[*n*=340]). All the students completed a standardized outcomes assessment; however, they were randomized into three different testing situations. The testing situations included three motivational conditions: a Control group (no one but the research team will see the results), Personal group (scores can be released to professors and potential employers), and Institutional group (scores will be averaged with all other students, could affect how the institution is viewed, and ultimately affect the students' achievement of a diploma).

The Personal and Institutional groups, at all three institutions, revealed a major impact on student motivation and performance. The performance difference between students in the Control and Personal groups were as large as .68 standard deviations. However, the Personal conditions in all three educational institutions had the highest levels of motivation on the *SOS* (Personal (*M*= 3.89), Institutional (*M*= 3.81), control (*M*= 3.61). Finally, the largest difference in scores noted were the sophomore to senior gain (college learning gain) after adjusting for SAT® scores. A general linear model (GLM) revealed varied results. Depending on the test format and motivational condition, the results ranged from negative gain (-0.23 SD) to significant gain (0.72 SD) across the motivational conditions (Liu et al., 2012). These findings support the assertion that motivation does influence test results. However, a limitation of the study includes the concern regarding the generalizability of the results to specific academic program learning. This study only assessed broad learning outcomes to evaluate college learning. Additional studies that address specific domains of education are warranted to identify if motivation influences test performance.

Keklik and Erdem-Keklik (2012) conducted a correlational survey study on a convenience sample of high school math students (*N*=318) from two public high schools in Turkey. The

purpose of the study was to identify if students' motivation and learning strategies predicted math achievement. The first part of the study utilized a two-way multivariate analysis of variance (MANOVA) to identify whether the students' scores on the learning strategies subscales of the *Motivated Strategies for Learning Questionnaire (MSLQ)* varied among the independent variables of gender, grade level, and parents' level of education. Like Egli et al.'s (2011) and Cole and Bergin's (2005) studies, findings revealed that gender differences existed. Female students had four factors that were significant in predicting mathematics achievement: self-efficacy, time and study environment, test anxiety, and extrinsic goals [F (4,137) =23.137; p=.000], accounting for 54% of the variance in mathematic achievement. Males had five factors that were significant in predicting mathematics achievement: task value, effort regulation, self-efficacy, organization, and metacognitive [F (5,252) =31.750; p=.000], accounting for 39% of the variance in mathematic achievement. In addition, grade level demonstrated significant results from the regression analysis. For ninth graders, task value significantly predicted mathematic achievement [R= .448, R^2=.200, R^2, adj=.196, F (1,165) =41.354 p=.000]. Tenth graders revealed that self-efficacy, organization, effort regulation, and peer learning [R= .690, R^2=.477, R^2 adj = .458, F (4,114) =25.947 p=.000]. Finally, eleventh graders revealed 12 factors that predicted mathematic achievement: intrinsic, organization, peer learning, learning contract, metacognitive, extrinsic goal, task value, critical thinking, time and study environment, effort regulation, rehearsal and elaboration [R= .906, R^2=.822 R^2, adj=.806, F(12,141)=54.119, p=.000] (Keklik & Erdem-Keklik, 2012).

The second part of the study included the conduction of a MANOVA to determine which of the nine learning strategies (rehearsal, elaboration, organization, critical thinking, peer learning, effort management, help seeking, metacognition, time and study environment) differed

with regard to gender and grade level (Keklik & Erdem-Keklik, 2012). Results did differ according to gender ($p<.05$) showing that rehearsal [$F(1.316) = 11.810$, $p=.000$, $r^{2=}.053$], organization [$F(1.316)=16.153$ $p=.000$, $r^{2=}.049$], elaboration [$F(1.316)=17.594$, $p=.001$, $r^{2=}.036$], metacognition [$F(1.316)=39.374$, $p=.001$, $r^{2=}.035$], help seeking [$F(1.316)=11.388$, $p=.000$, $r^{2=}.053$], effort management [$F(1.316)=15.250$, $p=.000$, $r^{2=}.046$], time and study environment [$F(1.316)=27.447$, $p=.000$, $r^{2=}.080$] were higher for females than males. With regard to motivation, the findings demonstrated only a difference in grade level [F (2,312) =19.65, $p=.001$, $r^{2=}.112$]. Eleventh graders had the highest motivation level of all the grades ($M=137.08$, $SD=15.793$) (Keklik & Erdem-Keklik, 2012).

Although the results of Keklik and Erdem-Keklik's study (2012) support earlier research regarding gender and age differences on motivation and learning strategies (Cole & Bergin, 2005; Egli et al, 2012), a major limitation was identified. This study only used a convenience sample was from two Turkish high schools. Therefore, the results of the study may not be generalizable to the population of U.S. nursing students. However, these findings suggest that it is essential to identify if any age or gender differences related to the relationship of nursing student test-taking motivation and exit examination score exists.

In a similar study examining motivation and gender, Tella (2007) studied the influence of motivation on mathematic achievement in high school students. The investigation was conducted to examine if any differences in gender and level of motivation affects mathematic achievement. The sample ($N=450$) included 10 schools in Nigeria. The tool (*Motivation for Academic Performance Questionnaire (MAPQ)* is a modified instrument that was derived from two other tools (*Motivation for Occupational Preference* (Bakare, 1977) and *Motivation for*

Academic Study Scale (Osiki, 2001) for this study. The modified tool did yield a Cronbach's alpha of 0.85.

Findings from the study demonstrated that a significant difference in the impact of motivation on academic achievement between male and female students existed (t.cal. = 9.4; t. crit. 1.96; df=448, p=0.05). There was also a significant difference in academic achievement of the highly versus lowly motivated students (t.cal. = 8.05; t. crit. 1.96; df=449, p=0.05). The higher motivated students outperformed the lower motivated students. These findings support the previous findings of Wise and DeMars, (2005), Cole and Bergin (2005) and Liu et al. (2012). A limitation of this study is that the results may not be applicable to students studying another subject besides math.

In a similar correlational study to Keklik and Erdem-Keklik's (2012), Radovan (2011) wanted to discover if a relationship existed between students' (N=319) self-regulated learning and success in a distance learning program. Like Keklik and Erdem-Keklik's study (2012), Radovan utilized the *MSLQ* to assess what motivational factors influenced learning in a distance learning program. Results revealed that of the motivational factors assessed (task value, intrinsic goal, extrinsic goals, test anxiety, self-efficacy, and control beliefs) and the learning factors (elaboration, effort regulation, metacognition, help seeking, and time organization), two motivational and one learning strategy positively influenced the grade. The motivational predictors of grade include self-efficacy (β= .147, p>.05) and intrinsic goal orientation (β= .14, p>.05). Effort regulation was the strongest predictor (β= .23, p<.01) of self-regulated learning and success in a distance learning program (Radovan, 2012). Only distance learning students were utilized for this study, it is concerning if the results are applicable to all students. The literature has shown that there are gender differences regarding motivation (Cole & Bergin,

2005; Egli et al., 2011; Tella, 2007) and the sample for this study had 236 females and 86 males. It is uncertain if these results will be able to be replicated due to the unevenness of the sample.

Summary

The relationship between motivation and test performance has been documented extensively (Cole & Bergin, 2005; Keklik & Erdem-Keklik, 2012; Liu et al., 2012; Tella, 2007; Wise & De Mars, 2005). Prior research has noted that increased levels of motivation have resulted in increased test performance (Cole and Bergin, 2005; Liu et al., 2012; Wise and DeMars, 2005). Therefore, as educators it is necessary to enhance student motivation to maximize test performance.

One approach to enhance student test-taking motivation may involve increasing the consequences associated with the examination. Some researchers have contended that the higher consequences associated with an examination (high-stakes), the higher reported motivation on those assessments rather than an examination with no consequences (Napoli & Raymond, 2004; Nichols & Berliner, 2008; Wise & DeMars, 2005). While the nursing education literature is robust with increasing the consequences on standardized tests in nursing programs to enhance NCLEX-RN® performance (Carr, 2011; Davenport, 2007; Heroff, 2009; Norton, Relf, Cox, Farley, Lachat, Tucker, & Murray, 2006; Poorman, Mastorovich, Liberto, & Gerwick,2010; Santo, Frander, & Hawkins, 2013; Sifford & McDaniel, 2007) , a gap in the literature exists that identifies if nursing student are motivated or not by increasing the test consequences.

High-stakes versus low-stakes testing. The assessment of student learning outcomes has become a priority for educators and administrators to ensure that student learning has taken place. There are multiple methods of assessing student learning such as portfolios, classroom assessments, and examinations (Cole & Bergin, 2005). However, one approach educational

institutions may utilize to assess student-learning outcomes is through the administration of standardized exams. The administration of a standardized exam provides a direct measurement of student learning (Cole & Osterlind, 2008) and can assess whether students have mastered the content area. However, the individual educational institution decides whether the standardized exam is considered high-stakes or low-stakes for the student.

A low-stakes exam has no consequences associated with how the student performs on the exam. Therefore, due to the lack of meaningful consequences, the level of motivation for a low-stakes test may be more variable (Barry et al., 2010). To make valid inferences related to results on a low-stakes exam, the level of motivation must be taken into consideration (Eklöf, 2007). Researchers have contended that if an exam was deemed low-stakes, the student will put forth less effort on the exam (DeMars, 2000; Sundre & Kitsantas, 2004; Wise & DeMars, 2005). Conversely, Abdelfattah (2010) found that even though the test was determined to be low-stakes, the students did put forth a moderate (75%) effort for the exam. Breslawski (2011) found that the most frequently cited factor (60%) that motivated students to do well on a low-stakes exam was personal pride.

Abdelfattah (2010) examined ninth graders' level of motivation on a low-stakes examination using the *Student Opinion Scale* (*SOS)*. The students (N=727) were randomly selected from 20 classes in 11 different schools to take either a mathematics or science examination. Immediately after the students completed the examination, they completed the *SOS*. This tool measured student effort and importance of the completed examination. Results revealed that the *SOS* score showed a moderate correlation with overall test performance with both math and science examinations on a low stakes examination (r=.297, $p < .01$ and r=.290, $p < .01$) (Abdelfattah, 2010). Like the previously mentioned studies (Cole and Bergin, 2005; Liu

et al., 2012; Wise and DeMars, 2005), the higher level of reported student motivation, the higher mean student performance on the math and science examinations.

On the other hand, a high-stakes exam is associated with academic or other meaningful consequences for the student regarding his or her performance on the exam. One purpose of assigning an exam as high-stakes is to encourage the students to be motivated and put forth his or her best effort during the exam; thereby, hopefully revealing the students' true academic achievement (Nichols & Berliner, 2008). Cole and Osterlind (2008) described the possible consequences that are associated with designating an exam as high-stakes such as exams are counted as a grade, not being admitted into a college based a specific score on the Scholastic Aptitude Test (SAT) or American College Test (ACT) exam, or the inability to be accepted in a particular course of study. Several common consequences of high-stakes exams in nursing programs include the inability to progress in the nursing program, graduate, or have a delay in eligibility to take the NCLEX-RN® based on the student's performance on a standardized exam, such as the exit examination (Heroff, 2009; Morrison, Free, & Newman, 2002; Spurlock, 2006; Spurlock & Hanks, 2004).

Understanding the differences in test performance with regard to high and low-stakes test consequences is essential for the nurse educator to know before designating an examination as high-stakes or low-stakes. In a study by Sundre and Kitsantas (2004), the predictive power of motivation and self-regulated strategies on various testing conditions was examined. The students (N=62) were taking an undergraduate psychology of personality course and were required to complete examinations in four different testing conditions. The testing situations included two multiple-choice examinations, one that was designated as high-stakes and the other as low-stakes and two essay examinations, one that was designated as high-stakes and the other as low-stakes.

To assess self-regulated strategies, the tool *Self-Regulated Learning Interview Schedule (SRLIS*) and to assess student motivation the *SOS* tool was used, which was previously discussed in this chapter.

Because of the four different testing conditions, four regression analyses were conducted to assess the ability of self-regulated strategies or motivation to predict academic achievement. Findings revealed that motivation was a significant factor in predicting test performance in a low-stakes situation. In particular, the essay examination provided a significant effect (t=3.27, p<.01). Conversely, in high-stakes testing situations, findings revealed that neither motivation nor self-regulation strategies predicted student academic achievement, (R^2 = .07, F (2, 59) = 2.37, p=.10) (Sundre & Kitsantas, 2004).

In another study that examined the differences in motivation between high-stakes and low-stakes testing conditions and test performance, Cole and Osterlind (2008) studied college students' motivation and performance on the *College BASE* exam. The study (N=1318) included two groups that consisted of students who were assigned to take a general education test under either a low-stakes versus a high-stakes condition. Results revealed that test consequences matter, like Wolf and Smith's (1995) and Wise and DeMars' (2005) previous studies. The MANCOVA revealed, after controlling for gender and ACT/SAT scores, that there were significant differences in performance on the *College BASE* examination in high stakes versus low stakes testing situations, especially in the math component (high-stakes M= 319.75, F(37.07), r^2 0.027); low- stakes M= 292.22, F(37.07), r^2 =0.027) of the *College BASE*. The authors suggested that the low- stakes group performed less than the high-stakes groups due to the lack of motivation. However, no assessment of the students' motivation level was identified in the study. Furthermore, there may have been other confounding factors besides motivation affecting the low-stakes group, such

as the lack of knowledge or test anxiety issues. Another limitation identified in the study was the high-stakes group included college students from one state whereas the students in the low-stakes group were enrolled at any institution that uses the *College BASE* exam (Cole & Osterlind, 2008). These limitations affect generalizability of the findings.

Similar to Sundre and Kitsantas' study (2004), Napoli and Raymond (2004) found that the designation of a test as high-stakes (graded) versus low-stakes (ungraded) affected test performance. Students (N=80) in a community college introductory psychology course were tested under two different testing conditions, graded (n=46) and un-graded (n= 34). A significant difference in test scores was noted between the graded (M=64%) and ungraded (M=43%) groups. The graded group produced higher scores on the test than the ungraded group (t (78) =5.62, p<.001) (Napoli & Raymond, 2004). A major limitation of this study was that the authors did not identify either groups' (graded vs. ungraded) level of motivation while taking these tests. As noted in previous research, student motivation does have an effect on test performance. Findings from this research suggested a relationship between graded vs. ungraded tests and test performance exists; however, it is unclear how motivated the students were to take the exam. Therefore, it is necessary to examine the relationship between nursing motivation and exit examination score, since a significant gap in the literature regarding this relationship was identified.

Although some literature supports the designation of a test as high-stakes to increase motivation (Cole & Osterlind, 2008; Nichols & Berliner, 2008; Wise & DeMars, 2005), Hayden (2011) claimed that high-stakes assessments may have a negative effect on student motivation. The negative effects of a high-stakes exam could include feelings of incompetence and helplessness (Hayden, 2011). These effects on student motivation may lead to decreased student

effort that may eventually lead to a decrease in performance on the assessment (Abdelfattah, 2010; Hayden, 2011). Kearns (2011) discovered that students who were unsuccessful on a high-stakes exam "felt degraded, humiliated, stressed, and shamed by the test results" (p. 118). The feelings noted from prior high-stakes exam performances/experiences could lead to a lack of motivation for the nursing student on the exit examination. Ultimately, the lack of motivation could result in an invalid reflection of the student's knowledge and ability.

Summary

High-stakes testing has been documented in primary and secondary education (Kearns, 2011; Nichols & Berliner, 2008; Reich & Bally, 2010) and nursing education (Heroff, 2009; Morrison, et al., 2002; Spurlock, 2006; Spurlock & Hanks, 2004). Student motivation on a low-stakes exam has been studied (Cole & Bergin, 2005; Thelk, Sundre, Horst, & Finney, 2009). It is known that increasing the stakes of an exam may increase student performance (Napoli & Raymond, 2004; Sundre & Kitsantas, 2004). However, what is still unknown is if nursing students are motivated on the exit examination. In addition, it is not known if there is a difference in reported levels of motivation in the different testing conditions of high-stakes versus low-stakes with regard to the exit examination. Therefore, further research is warranted to assess nursing students' test-taking motivation while taking the exit examination. This research can provide the nurse educator information for valid data interpretation of the nursing students' performance on the exit examination. Ultimately, this information will assist the nurse educator and nursing student with preparation for the NCLEX-RN®.

Background Information Relevant to the Study

This next section will provide an overview of the NCLEX-RN®, assessment and remediation programs, exit examinations, and research involving the development and application of the *Student Opinion Scale (SOS).*

NCLEX-RN®

Every graduate nursing student is required to pass the NCLEX-RN® to ensure that the public is protected (National Council of State Boards of Nursing [NCSBN®], n.d). The NCLEX-RN® was developed to ensure competency of the entry-level nurse into the nursing profession. All 50 states and 5 United States territories' State Boards of Nursing require the nursing graduate to pass the NCLEX-RN® to obtain RN Licensure (McDonald, 2013). The NCSBN® is responsible for developing the national licensure exams for Registered Nurses (NCLEX-RN®) and Practical Nurses (NCLEX-PN®).

The NCLEX-RN® test plan has four categories of client needs: Safe Effective Care Environment, Health Promotion and Maintenance, Psychosocial Integrity, and Physiological Integrity (McDonald, 2013; NCSBN, 2012). There are integrated processes incorporated throughout the client needs categories that focus on Nursing Process, Caring, Communication and Documentation, Teaching/Learning (McDonald, 2013; NCSBN®, 2013).

The NCLEX-RN® has undergone several changes over the years. Initially, the NCLEX-RN® was a norm-referenced examination, but was later changed to a criterion-reference test from a norm-referenced test (NCSBN®, 2010). A norm-referenced test compares the students' scores with other student's score; however, a criterion-referenced test is judged against a fixed set of criteria or learning outcomes (Billings & Halstead, 2009; McDonald, 2013). A criterion-referenced test should demonstrate that the candidate has mastered the skills necessary

to be licensed in that particular field of study (McDonald, 2013). This change is relevant, because the primary goal of the NCLEX-RN® is to reflect an entry-level nurse's minimum competency required for nursing practice (McDonald, 2013).

In 1986, NCSBN® began investigating the possibility of administering the NCLEX-RN® though the use of computerized adaptive testing (CAT) procedures (NCSBN®, 2010). It was not until April 1994 that the CAT procedure was first utilized for administering the NCLEX-RN®. The purpose and benefit for using the CAT approach included that every candidate's test is unique and the computer program adjusts to the candidate's ability.

To align the NCLEX-RN® blueprint and current nursing practice, the National Council of State Boards of Nursing (NCSBN®) conducts a nursing practice analysis on newly licensed, entry-level nurses every three years (NCSBN®, n.d). The results of the nursing practice analysis influences how the NCLEX-RN® test plan is developed (McDonald, 2013). Because of this practice analysis, the passing standard on the NCLEX-RN® has been increased for the past three (since 2004) NCLEX-RN® test plans. Today's novice nurse must possess a greater knowledge base, skills, and ability to practice than previously (NCSBN, 2013a). Because of the increases in the passing standard and increased difficulty of the NCLEX-RN®, some nursing programs have adopted the practice of using an assessment and remediation program throughout the nursing curriculum to assist with NCLEX-RN® preparation.

Assessment and Remediation Programs

The use of assessment and remediation programs has become commonplace in nursing programs. Several assessment and remediation programs are currently available for nursing students including Assessment Technologies Institute® (ATI®), Elsevier's Health Education Systems, Inc. (HESI), and National League for Nursing (NLN) assessments. According to the

2011 NLN Annual Survey, one-third of RN programs mandate that the nursing students achieve a pre-set score on a standardized assessment to continue in the nursing program. Furthermore, 20 % of nursing programs require nursing students to achieve a benchmark score on an exit examination to graduate, and 12 % will not release the nursing students' names to the State Boards of Nursing for licensure until the benchmark score is met (NLN, 2012a).

One reason nursing schools may utilize an assessment and remediation program is to assess student learning throughout the curriculum. In addition, these programs may be able to provide the student with immediate feedback on their performance, identify areas of content weakness, and predict students' probability of passing the NCLEX-RN®. More importantly, the use of an assessment and remediation program may provide the nursing student time to remediate content weaknesses prior to taking the NCLEX-RN® (ATI®, n.d.).

Although abundant literature supports the use of assessment and remediation programs in pre-licensure nursing programs, the research is varied among the specific assessment and remediation programs. The majority of publications pertaining to the ATI® assessment and review program were primarily descriptive regarding the implementation of the assessment and review program and the effect on the programs' NCLEX-RN® results (Davenport, 2007; Heroff, 2009; Jacobs & Koehn, 2006; Mosser, Williams, & Wood, 2006; Norton, Relf, Cox, Farley, Lachat, Tucker, & Murray, 2006).

Ukpabi (2008) conducted a correlational study to identify which assessment test(s) in the assessment and remediation program predicted NCLEX-RN® success. Nursing graduates (N=22) from one university were required to take all 13 ATI® and five NLN assessments for inclusion in the study. Eleven out of the 18 variables (13 ATI assessment tests, 5 NLN assessment tests) were considered significant in predicting NCLEX-RN® success or failure (Ukpabi, 2008).

Ukpabi (2008) found correlations with NCLEX-RN® performance and ATI® test scores in Critical Thinking (Wilks lambda =.696, F =8.736, p= 0.008), Test of Essential Academic Skills (TEAS) Comp (Wilks lambda=.771, F =6.603, p=.024), Nursing Fundamentals (Wilks lambda =.643, F =11.119, p=.003), Mental Health (Wilks lambda =.752, F =8.736, p=.18), Pharmacology (Wilks lambda =.746, F =6.816, p=.017). In addition to the ATI® examinations, the NLN's Adult I, Adult II, and Pediatrics (p<.005 to p<.05) revealed significant correlations as well. These findings were relevant because many nursing programs have chosen to integrate the use of assessment and remediation programs in their curriculum and it is necessary to identify which tests were integral to the nursing students' success on the NCLEX-RN®.

Some concerns regarding Ukpabi's (2008) study were the small sample size and that it was conducted at one nursing program, which may limit the generalizability of the results. Another concern is that Ukpabi (2008) asserts that NCLEX-RN® success is best predicted by the grades in these particular courses (Pharmacology, Fundamentals, Mental Health, Adult I and II, and Pediatrics) however, no statistical analyses were conducted to support this claim.

Unlike Ukpabi's results (2008), Trofino (2013) found that there was no statistical effect on NCLEX-RN® first attempt pass rates and results on a pre-admission test such as the ATI® TEAS test (p=.36). This pilot study included a sample (N=75) of nursing students from one Associate Degree nursing program in Pennsylvania. However, results did reveal that a correlation existed between the students' grades in two nursing courses, pharmacology (p=.0003) and advanced medical-surgical nursing (p=.002) and NCLEX-RN® success. Because this pilot study was conducted at one small associate degree program, the concern for generalizability of results for other types of nursing programs exists. Replication of this study with a larger sample and representation from all types of nursing programs is warranted.

Another study also examined the effect of using standardized assessment and remediation programs on NCLEX-RN® performance. Yeom (2013) investigated the predictability of specific standardized exams (adult medical–surgical, fundamentals for nursing, pharmacology, maternal–newborn, nursing care of children, mental health, community health, and leadership and management). The sample included (N=151) baccalaureate nursing from one nursing program that were required to take the ATI Content Mastery Series. All mean scores of the standardized tests in the ATI ® Content Mastery Series were higher in the group that passed the NCLEX-RN® on the first attempt (n=118) than those who did not (n=33). In addition, findings revealed that all of the standardized examinations proved statistically significant except the Fundamentals (p=.62) and Care of the Children (p=.759) with regard to predicting NCLEX-RN® success. Logistic regression showed that the Adult medical-surgical (β=.115, odds ratio of 1.112), community (β=.096, odds ratio of 1.101), and pharmacology (β=.084, odds ratio of 1.087), examinations were effective in predicting NCLEX-RN® success but not failure (Yeom, 2013). A limitation of the study includes an uneven sample size. There was a considerable difference in numbers between the groups. Another concern regarding this study was the lack of identification of whether these students received remediation prior to NCLEX-RN®. Furthermore, there was no discussion about the nursing students' motivation with regard to taking the standardized tests or NCLEX-RN®.

In a similar study to Yeom (2013), Uyehara, Magnussen, Itano, and Zhang (2007) examined factors that may predict nursing program success or withdraw and NCLEX-RN® success. The sample (N=280) included 224 students that graduated and 56 that withdrew from the program. Of the graduated students, 212 out of 218 (97.25%) reported they passed the NCLEX-RN® on the first attempt. The best predictor of NCLEX-RN® success was the NLN Adult Health Comprehensive Test (N = 217, r = .41, p < .0001) (Uyehara et al., 2007). There

were no significant predictors identified regarding program success or withdraw. The findings from both studies (Uyehara, Magnussen, Itano, and Zhang, 2007; Yeom, 2013) suggest that some of the standardized examinations in the assessment and remediation programs were significant in predicting NCLEX-RN® success. This information is essential for the nurse educator due to the increasing trend of the use of assessment and remediation package these programs in the nursing programs.

In addition to using an assessment and remediation programs to assist with NCLEX-RN® success, some nursing programs have developed progression and remediation programs based on the results of the standardized examinations. In one study, Lauer and Yoho (2013) conducted a survey of a random sample of 154 nursing programs that use the Elsevier's HESI Exit Exam (E^2) in their nursing program. Only sixty-six (42.86%) deans or directors responded. The sample included 3,758 nursing students.

Of the participating nursing schools, 43 (65.15 %) designated that a pre-determined benchmark score on Elsevier's E^2 was required and 42 schools (63.64%) require the students to re-take an equivalent version of the E^2 if the benchmark is not met (Lauer & Yoho, 2013). Remediation was required in 47 schools (71.21 %) prior to taking the retest. The number of retests of the E^2 varied from one to three attempts (69.05%) to four or more attempts (28.57%) (Lauer & Yoho, 2013).

Only 38 (57.58%) of the 43 schools that designated a benchmark score on the E^2 identified consequences associated with the inability to achieve the benchmark score. The students (n=2373) that have consequences associated with the E^2 had higher mean scores on the E^2 (t= 12.08, M=880.24, p< .01) than those who did not have consequences (M=833.76). In addition, those students that were required to remediate (n=2641) mean E^2 scores were significantly higher

(t = 6.265, M=870.77, p = < .01) than those students (n=1,117) who attended nursing programs that remediation was not required (M=844.99). The three most frequently mentioned consequences of not achieving the required benchmark score included: delayed or inability to graduate (44.74%), delaying or denying approval to take the NCLEX-RN® (39.47 %), and failing the course (15.79%) (Lauer & Yoho, 2013).

Lauer and Yoho (2013) also reported the most frequent remediation strategies used to assist the nursing student with enhancing E^2 scores. These included: HESI NCLEX-RN® Review Manual a remedial course (39.39%), tutoring (30.30 %), HESI online review (27.27 %), and lastly a faculty-defined remedial course (25.76%) (Lauer & Yoho, 2013).

Likewise, Morrison et al. (2002) examined seven nursing programs that had implemented progression and remediation policies based on the results of the E^2. After the implementation of the progression and remediation policies, six of the seven programs demonstrated significant increase (p=.001 for five programs and p=.05 for one program) in NCLEX-RN® results (increased by 9-41%) (Morrison et al., 2002). Unlike, Lauer and Yoho (2013), no data exists that reflects what the remediation consisted of in these programs. This is a significant limitation to this study. It is uncertain which remediation strategy or strategies, if any, were effective in influencing the results of this study.

Summary

The literature shows that the use of some assessment and remediation programs are effective in assisting nursing students with NCLEX-RN® preparation (Lauer & Yoho, 2013; Morrision et al., 2002; Ukabi, 2008; Yeom, 2013). In addition, there is considerable literature regarding the implementation of an assessment and review program using ATI® and its effect on the programs' NCLEX-RN® results (Davenport, 2007; Heroff, 2009; Jacobs & Koehn, 2006;

Mosser, Williams, & Wood, 2006; Norton, Relf, Cox, Farley, Lachat, Tucker, & Murray, 2006). However, a gap in the literature includes the lack of reliability and validity studies on ATI® standardized assessments, like consistent validation studies on Elsevier's E^2 (Zweighaft, 2013). Only one study was retrieved that identified the relationship between ATI® predictive probability and first time pass rates on NCLEX-RN® (Alameida, Prive, Davis, Landry, Renwanz-Boyle, & Dunham, 2011). However, there is a major concern regarding the literature on the validation of the Elsevier's E^2. Several of the researchers were employed by HESI when the validity studies were conducted.

Only one study was retrieved that utilized the NLN testing services (Ukpabi, 2008). Like ATI, there were no reliability and validity studies identified. Even though, the NLN testing services offers proctored and non-proctored examinations (like ATI and HESI) to be utilized throughout the nursing curriculum, the NLN does not recommend a benchmark/minimum score on their assessment tests. The NLN does encourage faculty to compare their students' performance with that of nursing students in a similar program (National League for Nursing, n.d.). Even though the *NLN Research Priorities in Nursing Education for 2012-2015* (NLN, 2012b*)* recommends identifying reliable and valid tools for educational measurement and evaluation, the literature search did not reveal any empirical evidence the NLN testing services were a reliable and valid tool to assess nursing student learning. Interestingly, even though the NLN has declared that it is necessary to use reliable and valid tools for measuring student achievement, a significant gap in the literature exist regarding the NLN testing program.

Exit Examinations for Predicting NCLEX-RN® Success

A direct measure of educational effectiveness in a nursing program may be through the administration of an exit examination. This examination is usually the final examination of the

assessment and review programs that is administered to nursing students prior to graduation. This examination can be used with the assessment and remediation program or given alone. The exit examination is unique because it provides the nursing student with a probability of passing score on the NCLEX-RN® and scores the student on specific content areas. Most importantly, the nursing student who does not achieve the pre-determined benchmark score can be identified as at- risk for failure on the NCLEX-RN®. These students can then be prescribed a remediation plan related to their identified weaknesses.

Many nursing programs have utilized an exit examination to assess program evaluation, assess essential knowledge and content retention and gaps, and as a method to identify student preparedness for the NCLEX-RN®. In addition, some programs have selected to use the exit examination results as a guide for remediation prior to taking the NCLEX-RN® (Davenport, 2007; English & Gordon, 2004; Morrison et al., 2002; Nibert, Young, & Britt, 2003; Sifford & McDaniel, 2007), while others have chosen to use the exit examination scores as criteria for eligibility to graduate or take the NCLEX-RN®. Furthermore, some potential employers are asking for the nursing graduates' score when determining if they will be hired or not. However, the Joint Committee on Testing Practices in the *Code of Fair Testing Practices in Education* has declared that test users should "avoid using tests for purposes other than those recommended by the test developer unless there is evidence to support the intended use or interpretation" (2005, p.25). The focus of the exit examination is to assist nursing students and faculty in identifying content weaknesses and provide time for remediation interventions prior to taking the NCLEX-RN®.

As previously stated, literature exists that supports the correlation of exit examination results and the probability of passing the NCLEX-RN® (Davenport, 2007; English & Gordon, 2004; Sifford & McDaniel, 2007). However, for some assessment and review programs, it is

uncertain which benchmark score determines the likelihood of passing the NCLEX-RN®. Elsevier's E^2 is the only exit examination that has an empirically supported benchmark score (Lauchner et al., 2008; Newman et al., 2006; Yoho, Young, Adamson, & Britt, 2007; Zweighaft, 2013). If a nursing student attains the benchmark score on Elsevier's E^2, it is highly predictive the student will be successful on the NCLEX-RN® (Lauchner et al., 2008; Morrison, Adamson, Nibert, & Hsia, 2008; Newman et al., 2006; Nibert, et al., 2003; Yoho et al., 2007; Young, 2010).

Elsevier's HESI has numerous publications that support Elsevier's E^2 claims regarding reliability and validity of the exam. These studies have demonstrated that the E^2 is highly accurate (96.36 %- 99.16 %) in predicting NCLEX-RN® success (Langford & Young, 2013; Lauchner et al., 2008; Newman et al., 2006; Nibert, et al., 2003; Yoho et al., 2007; Young, 2010; Young & Willson, 2012; Zweighaft, 2013). In addition, a score or 900 or greater on the E^2 identified students as those who are predicted to pass the NCLEX-RN® (Young & Willson,2012).

In the ninth annual validity study of Elsevier's HESI's E^2, Zweighaft (2013) investigated the impact of administering HESI's Specialty Examinations (critical care, pediatrics, fundamentals, pharmacology, maternity, psychiatric, and leadership) on E^2 scores. Findings revealed that those programs that used the HESI Specialty Examinations demonstrated significantly higher scores on the E^2 than those who did not. The mean E^2 scores for the students who had taken at least one or more of the HESI Specialty Exams was 865.7 versus 837.3 for those who did not complete the specialty exams ($p \leq 0.0001$) (Zweighaft, 2013).

Morrison et al. (2008) described in detail how the Elsevier's E^2 was determined valid and reliable using classical test theory as the foundation. Currently four versions of the exit examination are available to nursing students. The reliability coefficients of these exams ranged from 0.86 to 0.99 (Morrison et al., 2008). The E^2 was found to be accurate (96.36% to 98.46%)

in predicting NCLEX-RN® success. However, this data was from 2003. The NCLEX-RN® blue print has changed several times since then. Yoho et al. (2007) and Newman et al., (2006) did find similar results to Morrison et al.'s (2008) study regarding the accuracy in predicting NCLEX-RN® success using the Elsevier's E^2. In addition to assessing the nursing students' probability of passing the NCLEX-RN®, some nursing programs have linked the nursing students' exit examination performance in conjunction with program progression and graduation policies (Heroff, 2009; Mosser, Williams, & Wood, 2006; Nibert et al., 2003; Noel, 2009; Spurlock, 2006; Spurlock & Hanks, 2004). Again, the concern that was previously stated regarding the E^2 research remains; Elsevier employed the majority of researchers when the research was conducted.

In research other than Elsevier's, one study did identify a mean probability of passing score for ATI®'s Comprehensive Predictor Exam. Alameida et al. (2011) conducted a correlational study (*N*=589) to identify if a relationship exists between nursing course GPA, overall GPA, nursing program type, score on ATI® RN Comprehensive Predictor, ATI® predictive probability and first-time success on NCLEX-RN®. In addition, the researchers wanted to determine a mean predictive probability of passing score on the ATI® Comprehensive Predictor (exit examination) that is associated with passing the NCLEX-RN® on the first attempt. Because there were two versions of the ATI® RN Comprehensive Predictor given, the groups were analyzed separately (Version 3.0, *n*=367; Forms A and B, *n*=222).

Exit examination results for Version 3.0 demonstrated a moderate to high correlation (r>=.30) with first time NCLEX-RN® success with the following variables: ATI predictive probability, GPA, and five nursing course (health assessment, pharmacology, medical–surgical nursing, pathophysiology, and community/public health nursing) (Alameida et al., 2011). Chi square analysis revealed that GPA was significantly linked to first-time NCLEX-RN®

success (x^2=187.26, *df*=97, *p*<0.001). In addition, a chi square goodness-of-fit test indicated a significant association between the ATI predictive probability for Version 3.0 and first-time NCLEX-RN® success (x^2=119.68, *df*=11, *p*<.001) (Alameida et al., 2011)

Exit examination results for Forms A and B also demonstrated a moderate to high correlation (*r*>=.30) with first time NCLEX-RN® success with the following variables: ATI predictive probability, GPA, and six nursing course (health assessment, pharmacology, medical–surgical nursing, pathophysiology, medical-surgical practicum, and community/public health nursing) (Alameida et al., 2011). Chi square analysis revealed that GPA was significantly linked to first-time NCLEX-RN® success (x^2=150.04, *df*=69, *p*<0.001). In addition, a chi square goodness-of-fit test indicated a significant association between the ATI predictive probability for Forms A and B and first-time NCLEX-RN® success (x^2=136.54, *df*=40, *p*<.001) (Alameida et al., 2011). Finally, both versions of the ATI® Comprehensive Predictor revealed a mean probability score of 80.47(*SD*=22.75) for first time passing and 36.34 (*SD*=28.26) for first time failure on NCLEX-RN® (Alameida et al., 2011).

Summary

Elsevier has had consistent data that supports the validity and reliability of their E^2 (Langford & Young, 2013; Lauchner et al., 2008; Newman et al., 2006; Yoho et al., 2007; Zweighaft, 2013). However, several of the researchers were employed by HESI when this research was completed. Regarding the use of a faculty pre-determined benchmark score on the exit examination using NLN or ATI® assessment and review programs, further research is needed due to the significant lack of empirical evidence regarding these programs.

Numerous reports regarding the use of ATI®'s assessment and review program as an intervention to prepare for NLCEX-RN® were noted in the literature (Alameida et al., 2011;

Davenport, 2007; Heroff, 2009; Jacobs & Koehn, 2006; Norton et al., 2006). However, no research was identified that addressed the reliability and validity of any of the ATI® examinations. Future research is warranted regarding the reliability and validity of the specific ATI® examinations.

Most importantly, no literature was retrieved that identified if a relationship between nursing student test-taking motivation and exit examination score exists. Previous research has shown that the level of motivation does affect test performance. Therefore, further research is necessary to identify the nursing students' level of motivation when interpreting the exit examination results. If not, these results may not truly reflect the students' knowledge acquisition and skill. Furthermore, this may result in harsh consequences for nursing students such as dismissal from the nursing program, inability to graduate, or a delay submitting the necessary paperwork to take the NCLEX-RN®. In addition, inaccurate representation of the students' ability on the exit examination may result in the unnecessary implementation of a remediation plan that will involve the student's and the faculty's time. Ultimately, this may result in increased faculty workload and possibly perpetuate the nursing shortage.

Student Opinion Scale (SOS)

This *SOS* tool was designed to assess student level of test-taking motivation during a testing situation using the expectancy-value theory of achievement motivation as the framework. The *SOS* has been administered to more than 15,000 students over 10 years in various low-stakes general education assessment testing at James Madison University (Thelk et al., 2009). In addition to the extensive research conducted at James Madison University, Liu et al., (2012) used the *SOS* to assess student motivation in different testing conditions (high-stakes versus low-stakes). Abdelfattah (2010) used the *SOS* to examine ninth graders' level of motivation on a

low–stakes examination that revealed a moderate correlation between test-taking motivation and test performance. Sundre and Kitsantas (2004) found that test-taking motivation was a significant factor in predicting test performance using the *SOS*.

As noted in the previously discussed research, the designation of an examination as either high-stakes or low-stakes results in different test-taking motivation and test performance (Sundre & Moore, 2002). When the *SOS* tool was administered in a high-stakes situation, the students reported consistently higher levels of effort and importance (Sundre & Moore, 2002). This tool has been used in low-stakes testing conditions (Abdelfattah, 2010) and in both high-stakes and low–stakes testing conditions in higher education (Liu et al., 2012; Sundre & Kitsantas, 2004). However, no nursing studies were found that used the *SOS*.

Conclusion

Test-taking motivation is a significant factor to identify when interpreting test results. The literature review revealed that test-taking motivation is an important element that could either positively or negatively affect academic performance. Research using expectancy-value model of achievement motivation regarding the exit examination in nursing is unexplored. Research revealed that the expectancy-value model of achievement motivation has been widely documented in the academic world, more commonly in child and adolescent students. No empirical evidence was discovered that utilized the expectancy-value model of achievement motivation as the theoretical framework regarding nursing students' motivation. Based on the review of the literature, a gap remains in the literature regarding the relationship between nursing student test-taking motivation and exit examination score using the expectancy-value model of achievement motivation as the conceptual framework. Therefore, research is warranted to

identify the relationship between nursing student test-taking motivation and exit examination score.

Chapter Summary

This chapter reviewed the literature relevant to this research study. The literature review was subdivided into sections. First, the chapter began with a discussion regarding the conceptual framework, the expectancy–value theory of achievement motivation model. In addition, an overview of the evolution of the conceptual framework was provided. The application of the expectancy-value theory of achievement motivation in education was discussed. Next, the chapter provided a discussion regarding the concept of motivation in education. The relationship between motivation and test performance was identified. In addition, the differences between a high-stakes and low- stakes exams were identified. The next section of the chapter addressed the background information necessary for the current study. This information included the NCLEX-RN® and the use of assessment and remediation programs including an exit examination used in nursing programs. Finally, the chapter included a literature review regarding the development and application of the *SOS* identifying student motivation in relationship with test performance.

The next chapter will include the research design for the current study, sampling methods and size, data collection methods, instruments, data analysis, and the protection of human subjects.

CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

This chapter presents the design and research methodology that was used to describe the relationship between nursing students' motivation and the exit examination score. The chapter includes a description of the research settings, sampling methods, instruments, data collection procedures, protection of human subjects and data analysis.

Research Design/Method

The design selected for this study was a quantitative, descriptive correlational approach to investigate the relationship between nursing students' test-taking motivation and the exit examination score. The purpose of this research design was to identify if a relationship between the variables exists (Polit & Beck, 2012). Correlational design was appropriate for this study since little was known about the relationship between nursing students' test-taking motivation and the exit examination score. A concern regarding the use of a correlational design included the potential threat to internal validity due to the inability to identify the cause and effect of the variables. There may be other explanations for the relationship between the variables, such as a third variable that was not identified prior to the study. However, research has not examined the relationship between nursing students' motivation and the exit examination score; therefore, this type of research design was applicable to begin exploration on this topic.

Setting and Sample

The setting for this study included four different nursing programs in a Mid-Western state (two Associate and two Baccalaureate). The purpose for selecting participants from four sites was to increase the ability to generalize the findings to represent the intended population (Polit & Beck, 2012). The sample was derived from a convenience sample of pre-licensure nursing

students within Associate or Baccalaureate programs. Inclusion criteria for the study included participants who were: 1) currently enrolled in a nursing program (Associate or Baccalaureate); 2) in the final year of a nursing program that required taking an exit examination; and 3) 18 years or older. Participants were excluded from the study if they were: 1) not currently enrolled in a nursing program (Associate and Baccalaureate); 2) not in the final year of a nursing program that required taking an exit examination; 3) under the age of 18; and 4) enrolled in nursing programs other than an Associate or Baccalaureate program.

Sample Size/Power Analysis

The research questions required correlational analysis to explore the relationship between nursing students' and exit examination scores. To estimate the required sample size, a power analysis was completed. Nursing studies commonly use an effect size of .20 to .40 (Polit & Beck, 2012). With a medium effect size of .30, using a high probability (power of .80) and 5% level of significance, results of the power analysis revealed that a sample size of 85 participants was needed for the study (Polit & Beck, 2012).

Sample Recruitment

After obtaining Institutional Review Board (IRB) approval, all nursing program chairs/directors were contacted via email to inform them of the study and the desire to have their nursing students participate in the study. Recruitment of participants occurred on the campus on the designated day that the exit examination was given. The researcher was employed at one of the Associate Degree nursing programs. However, to avoid any concerns regarding coercion of participants, the researcher used another faculty member (research assistant), that was not involved in the students' nursing course where the exit examination was administered. To recruit potential participants at the other sites, an initial email was sent to the chair/director of the

other Associate and both Baccalaureate nursing programs to provide information of the purpose of the study and request for potential participants.

Instruments

This study used a demographic questionnaire and the *Student Opinion Scale (SOS)*. As previously discussed in Chapter Two, some common demographic variables may have an influence on test-taking motivation. Based on these findings, a demographic questionnaire was developed by the researcher (See Appendix A). The demographic data was analyzed to identify if a relationship exists among demographic variables (age, race, gender, and GPA) and the exit examination scores. Determination of whether the exit examination was considered high-stakes or low-stakes was provided by the instructors that were administering the exit examination. Data generated from this information determined if a relationship between test-taking motivation and the stakes of the exit examination existed. Descriptive statistics and frequencies were used to describe the sample and summarize the data. Furthermore, descriptive statistics were used to check for any violation of assumptions for the statistical tests used for the research questions. Data was screened for errors prior to analysis.

In addition to the demographic data questionnaire, the study participants completed the *SOS* (See Appendix B*)*. The *SOS* was developed and has been used extensively with standardized general education assessments at James Madison University to measure student motivation during testing. The *SOS* is a self-report tool designed to assess test-taking motivation in low-stakes or non-consequential assessments. The *SOS* is an adaptation of a previously developed tool by Wolf and Smith (1995). The previous tool, the *Motivation Questionnaire (MQ)*, consisted of eight Likert-type questions that focused on how motivated students were on the current test they were taking (Wolf & Smith, 1995).

Sundre (1999) found that the *MQ* represented two factors: importance and effort exerted on the test. Sundre added two more items to the original *MQ* and named the new scale, the *Student Opinion Scale* (*SOS).* These new items addressed motivation in low-stakes testing circumstances. The *SOS* consists of 10 items using a five-point Likert scale with responses ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). The 10 items are grouped into two subscales that evaluate importance and effort on the test. Each subscale of the *SOS* consists of five questions.

The first subscale consists of questions that address the importance of the task and the second subscale examines the amount of self-reported effort expended on the task (Sundre, & Moore, 2002). The Importance subscale identifies the value of the task (Thelk, Sundre, Horst, & Finney, 2009) and is related to the task value element of the expectancy-value theory (Sundre, 2007). The Importance scale is calculated by adding the responses to questions 1,3,4,5 and 8 (Sundre & Moore 2002; Thelk, Sundre, Horst, & Finney, 2009). The higher the Importance scale, the more the student valued the examination. The Effort subscale is calculated by adding the remaining items (2, 6, 7, 9 and 10) (Sundre, & Moore, 2002). The maximum score on either subscale is 25. The higher the score on the subscale of Effort, the more the student was engaged in performing well on the examination (Sundre, 2007). The higher the score on the subscale for Importance suggests the student believed that is was important to perform well on the examination (Sundre, 2007). Finally, the Total Motivation Score is calculated by adding all 10 responses. The maximum Total Motivation Score is 50. Because some of the items are negatively worded (items 3, 4, 7, and 9) they must be reverse coded prior to data analysis. The items on the *SOS* were specifically designed to incorporate the theoretical framework of Eccles

et al. (1983) expectancy-value model of achievement motivation (Thelk et al., 2009), which is the framework for this study.

Reliability

The *SOS* has been administered to more than 15,000 students over 10 years in various low-stakes general education assessment testing at James Madison University (Thelk, Sundre, Horst, & Finney, 2009). Sundre and Moore (2002) and Thelk et al. (2009) reported that the reliability values for Total, Importance (0.80 to 0.89), and Effort (0.83 to 0.87) scales on the *SOS* have been in the .80s consistently. Furthermore, when the subscales are assessed individually the reliability is not decreased (Sundre & Moore, 2002). Thus, in low-stakes testing circumstances, the *SOS* is a reliable tool. In contrast, the *SOS* was found to be not as reliable in high-stakes testing situations. When the stakes are high, students reported similar levels of effort and importance. These similar levels of effort and importance resulted in a decrease in variability of responses (Sundre & Moore, 2002) which directly resulted in a decrease in the reliability of the tool (Thelk et al., 2009).

Even though students in high-stakes testing circumstances report higher effort and importance, the use of the *SOS* to assess nursing student motivation on the exit examination is warranted. No literature exists that assess the nursing student level of motivation on an exit examination. Although the mean scores rise significantly, variability is reduced, and reliability drops when using the *SOS* tool in a high-stakes circumstance, this is still evidence that supports the validity of the tool (D. Sundre, personal communication, November 24, 2014). Ultimately, this evidence can provide an accurate representation of the students' effort and perception of importance regarding the exit examination.

Validity

Sundre and Moore (2002) utilized Benson's (1998) three critical stages in the construct validation process when developing the *SOS* instrument. "Each stage builds upon the others and contributes to the strength of the overall inquiry into the quality of the measure" (Thelk et al., 2009, p.130). First, the substantive stage represents the application of a theoretical framework to describe the construct (Sundre & Moore, 2002). The *SOS* contains two subscales, Importance and Effort. Each of these subscales relates to task motivation (Sundre & Moore, 2002). The Importance factor is associated with the task value component of the expectancy-value theory (Sundre & Moore, 2002). The Effort subscale reflects the determination and diligence a student put forth to complete the exam (Sundre & Moore, 2002). Although a positive moderate correlation (r = .410 or higher) exists between the two constructs of Effort and Importance within low-stakes consequences; Sundre and Moore (2002) stated the two constructs are distinct.

The second stage in the validation process involved internal validation of the instrument. Internal validity infers that the independent variable (test-taking motivation) influences the outcome (exit examination score) (Polit & Beck, 2012). Sundre and Finney (2002) conducted a confirmatory factor analysis to assess whether the two- factor model or a one-factor model was appropriate. Sundre and Finney (2002) found that Item one on the *SOS* was problematic and removed it, and found that the two-factor structure without Item 1 was a better fit than a one factor model. In another confirmatory factor analysis, Thelk (2006) found that under a high stakes or consequential testing circumstance, two-factor model fit better than one as well. However, Thelk (2006) found that Items 3, 4, 8 were problematic in high-stakes circumstances. Thelk proposed that when the testing circumstances were high-stakes there might be a ceiling effect for Items 3, 4, 8. This effect can result in low variability and ultimately result in low

correlations. Even though the variability decreases in high stakes situations, because students report higher levels of effort and importance, it is providing evidence regarding the validity of the tool. Thus, the *SOS* will be utilized in its entirety for this study.

The final stage, external validation, is concerned about the generalizability of the inferences (Polit & Beck, 2012). Literature supports that the consequences of a test affects test-taking motivation (Sundre & Moore, 2002). The higher the consequences, the higher reported effort and importance which results in a decrease in variability of scores and ultimately decreased reliability. Sundre and Kitsantas (2004) gave two versions of a test to undergraduate students in two testing situations, high-stakes and low-stakes. In the low-stakes testing situation, test-taking motivation varied the most.

The reliability and validity are certain when the tool is used in low-stakes testing situations. However, due to recent trends in nursing programs, it may be difficult to find a program that administers the exit examination in a low-stakes situation. The literature asserts that during high-stakes testing situations, the higher reported effort is identified and a decreased correlation between the constructs occurs. This decrease in correlation only supports what the tool was meant to assess, the two constructs of Effort and Importance. Previous research suggests the higher the stakes, the more effort and importance the examination is to the student. Regardless of examination stakes, no literature was found that describes nursing student motivation and the exit examination score. Therefore, it is essential to identify if a relationship exists first.

Procedures

IRB approval was obtained from Indiana University of Pennsylvania (IUP) and the participating institutions prior to data collection. As stated during sample recruitment, each

institution's department chair/director received an email describing the study and requesting permission to allow data collection at the school. The department chair/directors agreed to allow data collection and contact information for the course instructors that administered the exit examination was provided. Once permission to contact the course instructors was granted, an informative letter or e-mail was sent to the course instructors describing the study and requesting a time to meet, either face-to-face or via phone, to further discuss the study. During this meeting, the researcher asked the course instructors if the exit examination that was administered in their program was considered either high-stakes or low-stakes. Finally, because it was necessary to administer the *SOS* immediately after taking the examination, the researcher established the dates and times when the course instructors were administering the exit examination and was on campus during those times.

Prior to the nursing students taking the exit examination, the researcher or research assistant addressed the students about being a participant in a nursing research study. Due to the nature of the study, motivation, the potential participants were not fully informed of the study until after completing the exit examination. If the participants were informed that the research study was examining test-taking motivation prior to taking the exit examination, this may have affected the participants' responses.

Once a student completed the exit examination and exited the testing environment, the researcher/research assistant asked the student if he or she would be willing to participate in the research study. Interested participants were directed to a nearby room, where the researcher and/or research assistant were waiting. The survey sites were away from the testing areas, so that students testing were not distracted. In the nearby room, snacks were offered and every 15 minutes the researcher reviewed informed consent with interested participants. Every participant

received a cover letter that explained the purpose of the study, risks and benefits of the study, and the researcher's contact information. In addition, the potential participants were informed that their participation was voluntary and did not affect their course grade or exit examination results in any way. The participants were informed that the survey should take 10 to 15 minutes to complete. The students that chose to participate in the study, the informed consent was signed (See Appendix C).

Once informed consent was obtained, the researcher/research assistant distributed the surveys to the participants. The participants were told not to place any personally identifiable information on the survey. Only in the one Associate degree program (where the researcher was employed) the research assistant distributed the surveys to the participants. The researcher trained the research assistant on correct administration of the survey and established interrater reliability. For those participants that did not remember their exit examination score, a laptop was available to the students in the room where they were filling out the survey to access their results. The researcher or research assistant remained in the room during data collection to answer any questions regarding the study. The completed surveys were placed in an envelope. To maintain confidentiality of the participants' responses, the researcher/research assistant sealed the envelope after data collection was completed.

Incentives

To increase participation at each study site, one $50.00 BP gift card was raffled off to those who chose to participate. If the participants chose to partake in the study, they received a raffle ticket after returning their completed survey. The participants needed to provide contact information **(**either email or phone number) so that the course instructor was able to notify the winner. The raffle ticket was placed in separate, secured box. After all the participants

completed the surveys and submitted their raffle ticket, a ticket was drawn from the box by the researcher/research assistant. The gift card was left with the course instructor to give to the winner.

Ethical Considerations

To ensure participant confidentiality, no personally identifiable information was placed on the survey. The paper surveys were returned to the researcher and placed in an envelope. To ensure compliance with federal regulations, all data collected was kept in a locked file or on a password protected USB flash drive in the primary investigator's locked office for a period of three years. There were no physical, psychological, and legal risks associated with this study.

Data Analysis

The data was analyzed using the Statistical Package for the Social Sciences software, SPSS® version 22. First, the researcher developed a codebook in a Microsoft Word file on the researcher's password protected computer to define and label the variables. The codebook was stored in several places. First, the codebook was stored on the researcher's password protected computer. This computer was stored in a locked office that only the researcher had access. Next, the codebook was stored on a password protected USB flash drive that was also stored in a locked cabinet in the researcher's office. Finally, the codebook was stored on a personal computer that was password protected in the researcher's home.

All participants' survey responses were entered into SPSS® for data analysis. The data was screened prior to data analysis for data entry errors. The researcher ran frequencies for the categorical variables to determine any outliers. To screen for errors with the continuous data, descriptive statistics were run prior to data analysis.

Research Question One

Research question one explored the relationship between the exit examination score and nursing students' Total Motivation, Effort, and Importance Scores on the *SOS*. Descriptive statistics were analyzed to assess the distribution of the *SOS* subscale (Importance and Effort). Mean scores and standard deviations were identified for each subscale. The Pearson Product-Moment Correlation Coefficient (*r*) examined the strength and direction of the relationship between Total Motivation score, Effort and Importance subscales and the exit examination score. This statistical test was appropriate because the variables, the *SOS* Motivation Score, Effort and Importance subscales and exit examination score (probability of passing the NCLEX-RN® score) are continuous. Prior to performing Pearson Product-Moment Correlation, a scatterplot was generated to assess for violation of the assumptions of normality, linearity, and homoscedasticity (Pallant, 2010). No violation of linearity existed, a Spearman Rank Order Correlation (rho) was not conducted to determine the strength and direction of the relationship. No violation of homoscedasticity existed; therefore, the researcher did not need to search for unknown variables that may account for the variability and include those variables in the data analysis.

Research Question Two

Research question two explored the difference between mean Total Motivation scores, Importance and Effort subscales for the high-stakes and low-stakes groups. An independent t-test was conducted to determine if there was a significant difference in the mean scores for the high-stakes and low-stakes groups (Pallant, 2010).

Research Question Three

Research question three explored the difference between mean exit examination scores for the high-stakes and low-stakes groups. An independent t-test was conducted to determine if there was a significant difference in the mean exit examination scores for the high-stakes and low-stakes groups (Pallant, 2010).

Research Question Four

Research question four explored if a relationship exists between nursing students' Total Motivation Scores, Effort, and Importance Subscale Scores on the *SOS* and the demographic variables (age, race, gender, and GPA). Descriptive statistics were analyzed to assess the distribution of the Total Motivation Scores, Effort, and Importance Subscale Scores and standard deviations were identified. The Pearson Product-Moment Correlation Coefficient (r) examined the strength and direction of the relationship between the Total Motivation Scores, Effort, and Importance Subscale Scores and the demographic variables. A one-way analysis of variance (ANOVA) was conducted to compare the differences in the demographic variables to determine if there were significant differences in Total Motivation Scores, Effort, and Importance Subscale Scores across the demographic variables.

Research Question Five

Research question five explored if a relationship exists between nursing students' exit examination scores on the *SOS* and the demographic variables (age, race, gender, and GPA). Descriptive statistics were analyzed to assess the distribution of the exit examination scores and standard deviations were identified. The Pearson Product-Moment Correlation Coefficient (r) examined the strength and direction of the relationship between the exit examination scores and the demographic variables. A one-way analysis of variance (ANOVA) was conducted to

compare the differences in the demographic variables to determine if there were significant differences in exit examination scores across the demographic variables.

Research Question Six

Research question six explored the difference between mean exit examination scores for Associate and Bachelor nursing programs. An independent t-test was conducted to determine if there was a significant difference in the mean exit examination scores for the Associate and Bachelor nursing program groups (Pallant, 2010).

Research Question Seven

Research question seven explored the difference between mean Total Motivation, Effort and Importance scores, Importance and Effort subscales for Associate and Bachelor nursing program groups. An independent t-test was conducted to determine if there was a significant difference in the mean scores for the Associate and Bachelor nursing program groups (Pallant, 2010).

Summary

The purpose of this study was to explore and analyze the relationship between nursing students' test-taking motivation and the exit examination score. This chapter included a description of the research design and methodology utilized for this study. Other sections of this chapter included: setting and sampling methods, recruitment of participants, instruments that will be used for the study, ethical considerations, and data analysis. Chapter four presents the results of the statistical analysis and a discussion of the findings

CHAPTER FOUR

RESULTS

This chapter presents the results of the statistical analysis of this study's data. First, the chapter describes the sample of the study. Descriptive statistics that summarize age, race, gender, grade point average, and exit examination scores are discussed. Next, data analyses regarding each research question are described. The total motivation score of the sample is identified. Finally, the relationship between test-taking motivation and the exit examination score is examined.

Sample Description

The survey was distributed to 185 participants who met the inclusion criteria as previously discussed in Chapter Three. Only 154 eligible participants chose to complete the survey. The final sample size consisted of 150 participants (81.1% % of eligible participants) due to four surveys had incomplete data and were not included in the analysis. Demographic data that describes the sample is presented in Table 1. The sample was primarily female (88%) and also included 12 % male. The ages for the participants ranged from 19 to 46 (M= 26.7, SD= 6.36). Of the 150 participants, one chose not to report his/her age. The majority of participants were Caucasian (90%) and between the ages of 21 and 25 (62%). The majority of subjects were enrolled in a Bachelor's nursing program (56%) and 44% were enrolled in an Associate nursing program. Finally, 136 (90.7%) participants reported that their exit examinations were high-stakes and 14 (9.3%) reported that their exit examinations were low-stakes.

Table 1

Demographic Characteristics of the Sample (N=150)

Variable	*n*	%
Gender		
Female	132	88
Male	18	12
Age		
</= 23	58	38.7
24-26	42	28.0
27+	49	32.7
Ethnicity		
White	135	90
Hispanic or Latino	6	4
Black or African American	5	3.3
Native American or American Indian	0	0
Asian or Pacific Islander	1	.7
Other	3	2

Further demographic data was collected regarding grade point average and the exit examination score. The reported grade point averages ranged from 2.5 to 4.0 (*M*=3.36, *SD*=.37). Of the 150 participants, two chose not to report their GPA. The scores for the exit examination ranged from 9% to 99% probability of passing the NCLEX-RN® (*M*= 83.89, *SD*= 16.10). Table 2 provides a detailed summary of these variables.

Table 2

Frequency Distribution of Selected Variables

Variable	*n*	%
Grade Point Average		
</=3.2	51	34.7
3.21-3.50	47	31.9
3.51+	49	33.3
Exit Examination Score (Probability of passing the NCLEX-RN® Score)		
</= 82%	53	35.3
83-93%	49	32.7
94%+	48	32.0

Finally, descriptive statistics were calculated to assess the distribution of the Total Motivation Score and each Subscale score (Effort and Importance) on the *SOS.* The Total Motivation Scores ranged from 14 to 50 (*M*=39.79, *SD*= 6.09). The scores of the Subscale of Effort ranged from 9 to 25 (*M*=19.45, *SD*= 3.36) and the Subscale of Importance ranged from 5 to 25 (*M*=20.22, *SD*= 3.49). Table 3 displays a detailed summary of these scores.

Table 3

Descriptive Statistics for Student Opinion Scale

Variable	*n*	*M*	*SD*	Range	Skewness	Kurtosis
Total Motivation Score						
	150	39.79	6.09	14-50	-.790	1.01
Effort Subscale						
	150	19.50	3.36	9-25	-.368	-.343
Importance Subscale						
	150	20.22	3.49	5-25	-.989	2.07

Research Question One

Research question one examined the relationship between the exit examination score (the probability of passing the NCLEX-RN® score) and nursing student Total Motivation Scores, Effort, and Importance Subscale Scores on the *SOS.* The levels of Total Motivation, Effort and Importance were measured in three ways, thus resulting in three hypotheses for question one. The hypotheses state that the higher exit examination scores will positively correlate with higher levels of Total Motivation, Effort and Importance Subscales.

The relationship between the variables was investigated using Pearson Product-Moment Correlation Coefficient. Preliminary analyses were performed to ensure no violation of the assumptions or normality, linearity, and homoscedasticity. The scatterplots for Total Motivation Score, Effort, and Importance Subscales and exit examination scores revealed linear patterns as illustrated in Figures 2, 3, and 4. Data from the correlations are presented in Table 4. To control

for a Type I error due to multiple tests for this study, Bonferroni correction was applied and the alpha was adjusted to .05/3 for cases where there were three tests analyzed and .05/4 when four tests were analyzed.

All three hypotheses were supported. Results indicated a medium positive correlation between Total Motivation Score on the *SOS* and the exit examination score, r=.311, n=150, p<.001. In addition, a medium positive correlation between Effort Subscale Scores on the *SOS* and the exit examination score, r=.350, n=150, p<.001, was demonstrated. Finally, a small positive correlation was revealed between Importance Subscale Scores on the *SOS* and the exit examination score, r=.198, n=150, p=.015. These findings suggest that higher Total Motivation, Effort and Importance Scores are associated with higher exit examination scores.

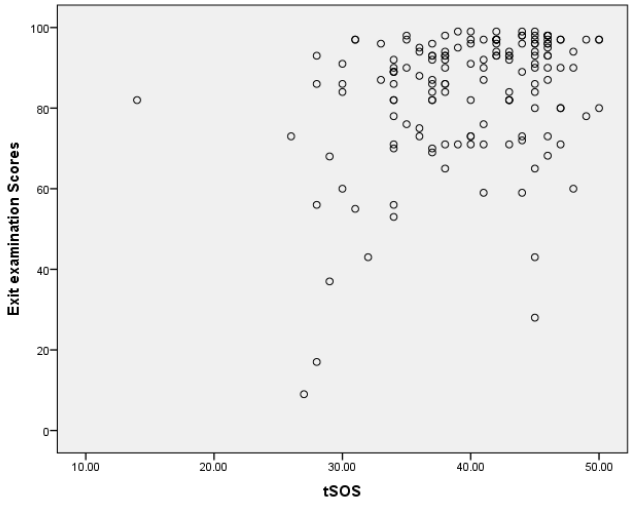

Figure 2. Scatterplot exploring the relationship between Total Motivation Score on the *SOS* and the Exit Examination Score (probability of passing the NCLEX-RN®).

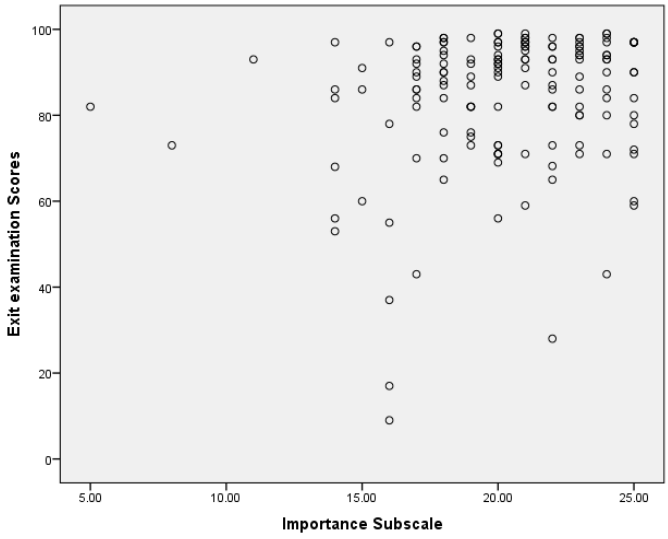

Figure 3. Scatterplot exploring the relationship between Importance Subscale Score on the *SOS* and the Exit Examination Score (probability of passing the NCLEX-RN®).

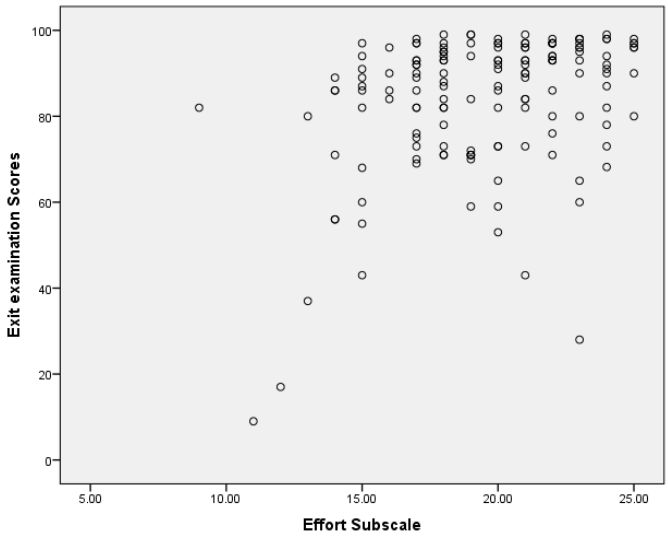

Figure 4. Scatterplot exploring the relationship between Effort Subscale Score on the *SOS* and the Exit Examination Score (probability of passing the NCLEX-RN®).

Table 4

Correlations for Exit Examination Scores (the probability of passing the NCLEX-RN® scores) and Nursing Student Total Motivation Scores, Effort and Importance Subscale Scores on the SOS

		Total *SOS*	*SOS* Importance	*SOS* Effort
Exit Examination Score	Pearson Correlation	.311**	.198*	.350**
	Sig. (2-tailed)	<.001	.015	<.001
	N	150	150	150

Note: Strengths of correlations: small (.10 – .29), medium (.30 - .49), and high (.50 – 1.0) (Cohen, 1988); ** Correlation is significant at the 0.01 level (2-tailed).* Correlation is significant at the 0.05 level (2-tailed).

Research Question Two

Research question two explored the difference between mean Total Motivation scores, Importance, and Effort Subscales for the high-stakes and low-stakes exit examination groups. The differences in Total Motivation, Effort and Importance Scores for high-stakes and low-stakes groups were measured in three ways, thus resulting in three hypotheses for question two. These hypotheses state that the high-stakes groups will have higher Total Motivation, Effort and Importance Scores.

Independent t-tests were conducted to compare the Total Motivation scores, Importance, and Effort subscales for the high-stakes and low-stakes exit examination groups. There was no significant difference between high-stakes (M=40.01, SD=5.92) and low-stakes exit examination groups (M=36.29, SD= 6.39; t(147)=2.22, p=.028) for Total Motivation. In addition, no significant difference between high-stakes (M=19.65, SD= 3.24) and low-stakes groups (M=17.57, SD=3.88; t(148)=2.25, p=.026) for Effort Subscales nor between high-stakes (M=20.34, SD=3.47) and low-stakes groups (M=18.71, SD=3.29; t(148)=1.68, p=.096) for

Importance Subscale Scores existed. However, the results would have been significant for Total Motivation Score and Importance score at the standard alpha .05, but due to multiplicity of analyses the corrected alpha of .016 did not reveal significant results. None of the three hypotheses were supported. There were no statistically significant differences with Total Motivation, Effort or Importance Subscales on the *SOS* with regard to the stakes of the exit examination. Table 5 provides a detailed summary of the results from the t-tests.

Table 5

Results of t-tests and Descriptive Statistics for SOS Scale for High Stakes and Low-Stakes Groups

Outcome	Group						95% CI for Mean Difference			
	High-Stakes			Low-Stakes						
	M	*SD*	*n*	*M*	*SD*	*n*		*t*	df	Sig. (two-tailed)
SOS Total	40.01	5.92	135	36.29	6.39	14	.412, 7.03	2.22	147	.03
SOS Importance	20.34	3.47	136	18.71	3.29	14	-.293,-3.54	1.68	148	.096
SOS Effort	19.65	3.24	136	17.57	3.88	14	.25, -3.91	2.25	148	.026

Corrected alpha * $p<.016$

Research Question Three

Research question three explored the difference between mean exit examination scores for the high-stakes and low-stakes exit examination groups. The differences in exit examination scores for high-stakes and low-stakes groups were measured in one way, thus resulting in one hypothesis for question three. This hypothesis states that the high-stakes groups will have higher exit examination scores.

An independent t-test was conducted to compare the exit examination scores for the high-stakes and low-stakes exit examination groups. This hypothesis was supported. There was a significant difference between the groups on exit examination scores, at the standard alpha .05. The high-stakes group mean (*M*=86.20, SD=12.32) was higher than the low-stakes group mean *(M*=61.43, SD= 28.23) and the findings were statistically significant (*t* (13.5) =3.25, *p*=.006). The magnitude of the difference in the means (mean difference = 24.77, 95% CI: 8.37, 41.17) was a moderate effect (eta squared = .07). Table 6 provides a detailed summary of the results from the t-tests.

Table 6

Results of t-tests and Descriptive Statistics for Exit Examination Scores for High Stakes and Low- Stakes Groups

Outcome	Group						95% CI for Mean Difference			
	High-Stakes			Low-Stakes						
	M	*SD*	*n*	*M*	*SD*	*n*		*t*	df	Sig. (two-tailed)
Exit Examination Scores	86.2	12.32	136	61.43	28.23	14	8.37, 41.17	3.25	13.5	.006*

Corrected alpha * $p < .016$.

Research Question Four

Research question four explored if a relationship exists between nursing students' Total Motivation Scores, Effort, and Importance Subscale Scores on the *SOS* and the demographic variables (age, race, gender, and GPA). The relationship of Total Motivation, Effort and Importance and the demographic variable were measured in four ways, thus resulting in four hypotheses for question four. The hypotheses state that the student older than 23 years old,

Caucasian, females, and higher GPAs will positively correlate with higher levels of Total Motivation, Effort and Importance Subscales.

Preliminary analysis revealed age was nonnormal because most participants (38.7%) were younger than 23 years old (n=58). Figure 5 presents the data from the histograms reflecting the departure from normality for age. The relationship between the demographic variables was investigated using Pearson Product-Moment Correlation Coefficient. Preliminary analyses were performed to ensure no violation of the assumptions or normality, linearity, and homoscedasticity. Data from the correlations are presented in Table 8. Results indicated a small positive correlation between Total Motivation Score on the *SOS* and grade point average, r=.171, n=148, p=.038. In addition, a small positive correlation between Effort Subscale Scores on the *SOS* and GPA, r=.215, n=148, p=.009, was demonstrated. These findings suggest that higher Total Motivation and Effort Subscale Scores on the *SOS* are associated with higher grade point averages.

A one-way between-groups analysis of variance (ANOVA) was conducted to explore the impact of age on Motivation Scores, Effort, and Importance Subscale Scores as measured by the Student Opinion Scale (*SOS).* Participants were divided into three equally distributed groups according to their age (Group 1: 23 years old or less; Group 2: 24 to 26 years; Group 3: 27 years and above). There was no statistically significant difference at the adjusted p<.016 level in Total Motivation Scores on the *SOS* for the three age groups: F (2,145) =.033, p=.968. In addition, age did not reveal a significant difference on nursing student Effort subscale scores on the *SOS: F* (2,146) =.269, p=.764 or nursing student Importance subscale scores on the *SOS: F* (2,145) =.034, p=.967. Results of the ANOVA are reflected in Table 7. These results suggest that

nursing student Total Motivation, Effort or Importance on the *SOS* scores did not differ with regard to age.

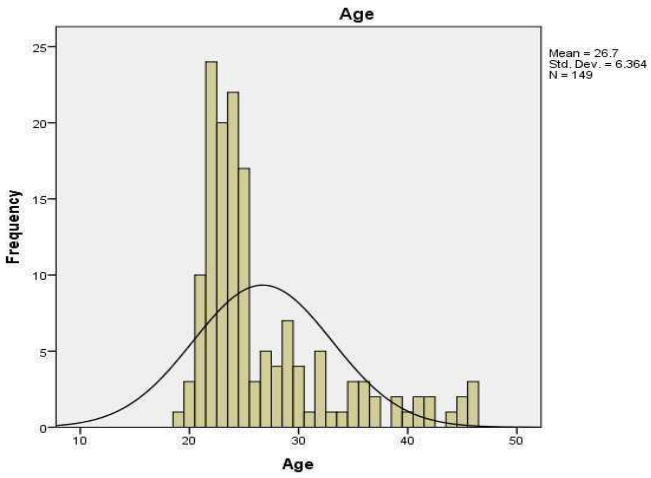

Figure 5. Histogram reflecting the distribution of age among the participants.

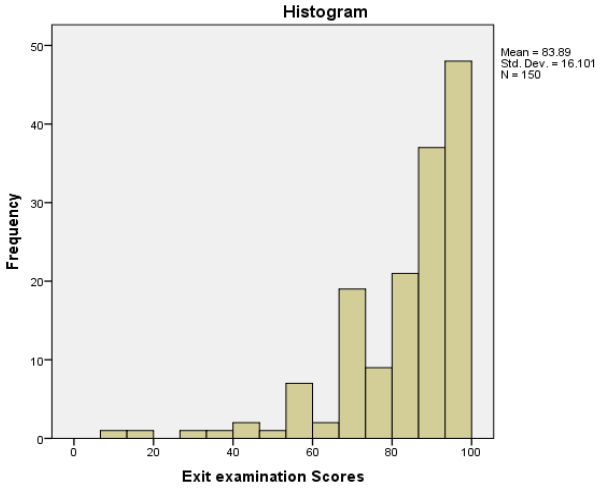

Figure 6. Histogram reflecting the distribution of Exit Examination Scores (probability of passing the NCLEX-RN®) among the participants.

Table 7

Results of Descriptive Statistics for Total Motivation Scores, Effort and Importance Subscales on the SOS and Age

	N	*M*	*SD*	95% CI
Total Motivation				
</= 23	58	39.52	5.33	38.12-40.92
24 – 26	41	39.54	5.23	37.89-41.19
27+	49	39.80	7.44	37.66-41.93
Effort Subscale				
</= 23	58	19.26	2.99	18.47-20.04
24 - 26	42	19.33	3.40	18.27-20.39
27+	49	19.71	3.70	18.65-20.78
Importance Subscale				
</= 23	58	20.26	3.04	19.46-21.06
24 – 26	41	20.17	2.54	19.37-20.97
27+	49	20.08	4.59	18.76-21.39

Table 8

Correlations for Total Motivation Score, Importance and Effort Subscales on the SOS and Demographic Variables

		Age	Ethnicity	Gender	Grade Point Average
Total Motivation Score	Pearson Correlation	.111	-.084	-.009	.171*
	Sig. (2-tailed)	.176	.308	.911	.038
	N	149	150	150	148
Effort Subscale	Pearson Correlation	.130	.098	.026	.215**
	Sig. (2-tailed)	.114	.231	.749	.009
	N	149	150	150	148
Importance Subscale	Pearson Correlation	.074	-.033	.003	.120
	Sig. (2-tailed)	.368	.685	.972	.145
	N	149	150	150	148

Note: Strengths of correlations: small (.10 – .29), medium (.30 - .49), and high (.50 – 1.0) (Cohen, 1988); **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Since GPA did reveal a small positive correlation with Total Motivation and Effort Subscale scores on the SOS, a one way between-groups analysis of variance (ANOVA) was conducted to explore the impact of GPA on Total Motivation Scores, Effort, and Importance Subscale Scores as measured by the Student Opinion Scale (*SOS).* Preliminary analyses were performed to ensure no violation of the assumptions or normality and homogeneity of variance. Participants were divided into three equal groups according to their GPA (Group 1: 3.2 or less; Group 2: 3.21-3.50; Group 3: 3.5 and above). There was no violation of the assumption of homogeneity of variance (*p* value for Total Motivation =.370; Effort Subscale *p* value = .215; Importance Subscale *p* value =.167). There was no statistically significant difference, at the

corrected $p<.016$ level, in Total Motivation Scores on the *SOS*: F (2,144) = 3.72, $p=.04$ or Importance Subscale Scores on the *SOS:* F (2,144) = 1.57, $p=.211$ for the three GPA groups. However, there was a statistically significant difference in Effort Subscale Scores for the three groups: F (2,144) = 4.99, $p=.008$. The actual difference in mean scores between the groups was a medium effect. The effect size, calculated using eta squared, was .06. Post hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 (GPA 3.2 or less) (M=18.49, SD=3.36) was significantly different from Group 3 (GPA 3.51 and above) (M=20.53, SD= 2.75). Group 2 (M=19.26, SD= 3.61) did not differ significantly from either Group 1 or 3. Results of the descriptive statistics and ANOVA are reflected in Tables 9 and 10. The only hypothesis that was supported in question four was the relationship between GPA and Effort Subscale scores. These results suggest that the higher the GPA group (group 3; 3.51 or greater) as compared to group 1 (<= 3.2) reported higher Effort Subscale scores on the *SOS,* but not the Total Motivation or Importance Subscale of the *SOS.*

Table 9

Results of Descriptive Statistics for Total Motivation Scores, Effort and Importance Subscales and GPA

	N	*M*	*SD*	95% CI
Total Motivation				
</= 3.2	51	38.51	6.30	36.74-40.28
3.21-3.50	47	39.04	6.43	37.15-40.93
3.51+	49	41.41	5.09	39.94-42.87
Effort Subscale				
</=3.2	51	18.49	3.36	17.55-19.44
3.21-3.50	47	19.26	3.61	18.20-20.31
3.51+	49	20.53	2.75	19.74-21.32
Importance Subscale				
</= 3.2	51	19.80	3.83	18.73-20.88
3.21-3.50	47	19.79	3.54	18.75-20.83
3.51+	49	20.88	3.03	20.01-21.75

Table 10

Results of ANOVA Total Motivation Scores, Effort and Importance Subscales and GPA

		Sum of Squares	df	MeanSquare	F	Sig.
Total Motivation	Between Groups	261.66	2	130.83	3.72	.027
	Within Groups	5062.34	144	35.16		
	Total	5324.00	146			
Effort Subscale	Between Groups	105.80	2	52.90	4.99	.008*
	Within Groups	1525.89	144	10.60		
	Total	1631.69	146			
Importance Subscale	Between Groups	38.22	2	19.11	1.57	.211
	Within Groups	1749.18	144	12.15		
	Total	1795.43	147			

Significant at corrected alpha * $p < .016$.

Research Question Five

Research question five explored if a relationship exists between nursing students' exit examination scores and the demographic variables (age, race, gender, and GPA). The relationship between exit examination scores and demographic variables in four ways, thus resulting in four hypotheses for question four. The hypotheses state the student older than 23 years old, Caucasian, females, and the higher GPA will positively correlate with higher exit examination scores.

Preliminary analysis revealed age was nonnormal because most participants were younger than 23 years old. As previously stated, figure 5 presents the data from the histograms reflecting the departure from normality for age. The relationship between the demographic

variables and exit examination scores was investigated using Pearson Product-Moment Correlation Coefficient. Preliminary analyses were performed to ensure no violation of the assumptions or normality, linearity, and homoscedasticity. Data from the correlations are presented in Table 11. The only hypothesis for question five that was supported was the relationship between GPA and exit examination scores. Results indicated a small positive correlation between exit examination score and GPA, r=.292, n=148, p<.001. None of the other demographic variables revealed a relationship with the exit examination score. These findings suggest that higher exit examination scores are associated with higher grade point averages.

Table 11
Correlations for Exit Examination Score (the probability of passing the NCLEX-RN® score) and Nursing Student Demographic Variables

		Age	Ethnicity	Gender	Grade Point Average
Exit Examination Scores	Pearson Correlation	.128	-.013	.071	.292**
	Sig. (2-tailed)	.119	.875	.386	.001
	N	149	150	150	148

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

Research Question Six

Research question six explored the difference between mean exit examination scores for the Associate and Bachelor nursing program groups. The differences in exit examination scores for Associate and Bachelor nursing program groups were measured in one way, thus resulting in one hypothesis for question six. This hypothesis states that the ADN group will have higher exit examination scores than those students in BSN programs.

An independent t-test was conducted to compare the exit examination scores for the Associate and Bachelor nursing program groups. There was no significant difference in exit

examination scores for Associate and Bachelor nursing programs, at the standard alpha .05. The Associate in Nursing student group (*M*=86.31, *SD*=10.76) did not differ from the Bachelor in Nursing student group (*M*=81.99, *SD*= 19.14; *t* (148) =1.75, *p*=.083). The magnitude of differences in the means (mean difference=4.32, 95% *CI*: -.573-9.21) was small (eta squared =.02). Table 12 provides a detailed summary of the results from the t-test. Results suggest that no significant differences between the groups of types of nursing program and exit examination scores exist.

Table 12

Results of t-tests and Descriptive Statistics for Exit Examination Scores for Associate and Bachelor Nursing Program Groups

Outcome	Group									
	Associate			Bachelor			95% CI for Mean Difference	*t*	df	Sig. (two-tailed)
	M	*SD*	*n*	*M*	*SD*	*n*				
Exit Examination Scores	86.31	10.76	66	81.99	19.14	84	-.573, -9.21	1.75	135.23	.083

*corrected $p < .016$.

Research Question Seven

Research question seven explored the difference between nursing students Total Motivation Scores, Effort, and Importance Subscale Scores on the *SOS* and type of nursing program. The differences in Total Motivation, Effort, and Importance Scores and ADN and BSN programs were measured in three ways, thus resulting in three hypotheses for question seven. This hypothesis states that the ADN groups will have higher Total Motivation, Effort, and Importance Scores.

Independent t-tests were conducted to compare the Total Motivation Scores, Effort, and Importance Subscale Scores as measured by the *SOS* for Associate and Bachelor nursing program. There was no significant difference in Total Motivation scores for Associate in Nursing student group (*M*= 40.78, *SD*=6.58) and Bachelor in Nursing student group (*M*= 38.76, *SD*= 5.48) nursing programs. Effort Subscale scores did not differ for Associate (*M*= 19.91, *SD*=3.55) and Bachelor (*M*= 19.12, *SD*= 3.15) nursing programs. Importance Subscale scores did not differ for Associate (*M*= 20.85, *SD*=3.83) and Bachelor (*M*= 19.68, *SD*= 3.13) nursing programs. The magnitude of the differences of the means for Total Motivation Scale (mean difference= 2.00, 95% *CI*: .046, -3.95) was small (eta squared =.02). The magnitude of the differences of the means for Effort Subscale (mean difference= .802, 95% *CI*: -.281, -1.89) was small (eta squared =.03). The magnitude of the differences of the means for Importance Subscale (mean difference= 1.15, 95% *CI*: .037, 2.27) was small (eta squared =.01). These results suggest that type of nursing program did not have an effect on nursing student Total Motivation, Effort or Importance on the *SOS*. The results of the t-tests are presented in Table 13.

Table 13

Results of t-tests and Descriptive Statistics for SOS Scale for Associate and Bachelor Nursing program groups

Outcome	Group						95% CI for Mean Difference			
	Associate			Bachelor						
	M	*SD*	*n*	*M*	*SD*	*n*		*t*	df	Sig. (two-tailed)
SOS Total	40.78	6.58	65	38.76	5.48	84	.046-3.95	2.02	147	.045
SOS Importance	20.85	3.83	65	19.68	3.13	84	.042-2.29	1.46	147	.042
SOS Effort	19.91	3.55	66	19.12	3.15	84	-.281-1.89	2.05	148	.146

* corrected $p < .016$.

Chapter Summary

This chapter presented the statistical analysis of this study's data set. A description of the sample was provided. The Total Motivation, Effort and Importance Subscale Scores were identified. The relationship between Total Motivation, Effort and Importance Subscale Scores and exit examination scores was examined. In addition, research questions addressing the difference between Total Motivation, Effort and Importance subscales and the stakes (consequences) of the exit examination, demographic variables, and type of nursing programs were examined. The next chapter presents a discussion pertaining to this study's results, implications for nursing education, and recommendations for future research.

CHAPTER FIVE DISCUSSION AND IMPLICATIONS

This chapter presents a discussion of the study's findings presented in Chapter Four in further detail. Furthermore, these findings were compared and contrasted with the literature in Chapter Two. The limitations and implications of this study are addressed. Finally, the chapter concludes with recommendations for future research. This study examined the relationship between nursing student test-taking motivation and the exit examination score. In addition, this study describes the differences between nursing student test-taking motivation and the exit examination score among various demographic variables such as age, race, gender, and grade point average (GPA), high or low-stakes of the exit examination and type of nursing program.

Discussion

This section presents a discussion of this study's findings. The first area discussed includes the sample's demographic characteristics. In addition, this section addresses the relationships between demographic characteristics, test-taking motivation, test consequences or stakes, exit examination scores, and types of nursing programs.

Demographic Characteristics

The demographic data analyzed for this study included age, race, gender and GPA. Of the participants completing the survey, ages ranged between 19 and 46 with the majority (62%) between the ages of 21 and 25. When examining race, 90% reported being Caucasian and 88% were female. The reported GPAs ranged from 2.5 to 4.0 with a mean GPA of 3.37. When comparing this study's demographic data with the NLN's (2012c) nursing education demographic report results revealed similarities with regard to gender. This study's sample consisted of 12% male, while the NLN's report consisted of 15% in ADN and 14% BSN "s

programs, respectively (NLN, 2013). However, this study's sample had a slightly higher male representation than the state that the study was conducted in. According to the Ohio Workforce Data Summary Report (Ohio Board of Nursing [OBN], 2015) only 8 % of currently working RNs in the state of Ohio are male. Finally, the gender differences in this study did reflect those of enrolled nursing students in baccalaureate programs according to the State Profile of the American Association of Colleges of Nursing (AACN, 2015).

Conversely, this study's sample of ethnic diversity did not reflect the results of the NLNs demographic report nor the Ohio Workforce Data Summary Report (OBN, 2015). Only 3.3% of this study's sample represented the African-American population. The NLN demographic report revealed that 12% BSN and 9% ADN nursing student population were African-American (NLN, 2013) and the Ohio Workforce Data Summary Report identified that 5.4 % nurses in Ohio were African –American (OBN, 2015). Finally, this study's sample underrepresented all the other ethnic groups reported in the NLN report; however, the study's sample did represent the demographics of the RNs working in Ohio.

Research question four explored if a relationship between nursing students' Total Motivation Scores, Effort and Importance Subscales on the *SOS* and the demographic variables of age, race, gender, and GPA exists. Results of question four revealed a small positive correlation between Total Motivation Score on the *SOS* and GPA (r=.171, n=148, p=.038). However, there were no statistically significant differences in Total Motivation Scores, or Effort or Importance Subscale scores with regard to age, race, and gender. These results suggest that age, race and gender were not associated with level of motivation. These findings are inconsistent with previous research discussed.

With regard to gender, this study revealed that there were no differences in Total Motivation Scores (r= -.009, n=150, p= .911), Effort Subscales (r= .026, n= 150, p=.749), or Importance Subscale (r= -.003, n=150, p= .972). These results are contradictory to those of Keklik and Erdem-Keklik (2012). Their study found that gender and age (grade level) did positively correlate with motivational differences. However, the difference in results for this study may be due to the age and type of student in Keklik and Erdem-Keklik's (2012) study. Their population included Turkish High school math students which are different from college age nursing students. Another difference between this study's and Keklik and Erdem-Keklik's results includes the instrument used to assess motivation. This study used the *SOS* and Keklik and Erdem-Keklik's (2012) study utilized the *MSLQ*. The *MSLQ* is an 81-item survey that assesses strategies for learning whereas the *SOS*, a ten-item survey, that evaluates whether the student put forth effort and valued the examination based on the Expectancy-Value theory of Achievement Motivation which was the framework utilized for this study.

Findings from this study also differed from previous research that examined motivation and gender. Egli et al. (2011) found that gender differences did exist regarding motivation in college students enrolled in a physical education class. The male students were more intrinsically motivated (p<.05) and female students were more extrinsically motivated (p<.05) to perform in a physical education class. The differences in each study's sample may be a possible explanation for the inconsistencies in the results. The participants of both of the comparison studies were non-nursing students.

Egli et al. (2011) utilized a convenience sample of 2,199 students enrolled in a college physical education class. Keklik and Erdem-Keklik's (2012) study utilized Turkish high school math students. Since this study did reveal a moderate correlation between test-taking motivation

and exit examination score, future studies should explore what factors motivate nursing students specifically. In addition, it would be interesting to investigate if gender differences regarding different motivational factors exist in nursing students.

In addition, question four revealed a small positive correlation between Effort Subscale Scores on the *SOS* and GPA, r=.215, n=148, p=.009, was demonstrated. These findings suggest that higher Total Motivation and Effort Subscale Scores on the *SOS* are associated with higher grade point averages. No studies were found that identify a relationship between Effort and GPA exists, however, previous research by Radovan (2012) found effort regulation was the strongest predictor (β= .23, p<.01) of self-regulated learning and success in a distance learning program. Future research should examine if GPA and effort are correlated in nursing students.

Exploration of the relationship between nursing student exit examination scores and the demographic variables of age, race, gender, and GPA was conducted. Results of question five revealed that no relationship existed between age, race, or gender and exit examination scores. However, a small correlation was identified between GPA and exit examination scores, r=.292, n=148, p<.001. These results concur with Alameida et al.'s (2011) correlational study. Alameida et al's (2011) study revealed that nursing program GPA and first-time NCLEX-RN® success were significantly related (X^2 =136.54, df=40, p<.0001). The results of this question support previous research by Radovan (2012) that revealed that student effort is strong predictor to success in a program. However, Radovan's sample did not include nursing students; therefore, it is uncertain if the results are reproducible in nursing students.

Test-taking Motivation and Exit Examination Scores

Question one sought to examine the relationship between the exit examination score and nursing students' Total Motivation, Effort, and Importance Scores on the *SOS*. Descriptive

statistics revealed that the Total Motivation Scores ranged from 14 to 50 (M= 39.66). A medium, positive relationship existed between Total Motivation Scores on the *SOS* and Exit Examination Scores (r=.310, n=149, p<.001), with higher reported levels of motivation associating with higher exit examination scores. Data in this study support previous research by Cole and Bergin (2005) who reported that test-taking motivation correlated (r=.47) with test performance. In addition, Abdelfattah (2010) using the same tool as this study (the *SOS)*, found a moderate correlation with test performance and level of motivation on math and science exams respectively (r=.297, p<.01 and r= .290, p<.01).

A medium, positive relationship existed between Effort Subscales Scores on the *SOS* and Exit Examination Scores (r= .350, n=150, p<.001), with high levels of reported effort associated with higher exit examination scores. Although there is nothing in the nursing education literature, educational literature by Thelk (2006) and Radovan (2011) points to the relationship between effort and test performance. Thelk (2006) revealed a medium, positive correlation between effort and test scores (r=.30) in graduating community college students. Furthermore, Radovan (2011) found that effort regulation while learning (β=.23, p<.001) was the strongest predictor that influenced course grade.

Further statistical analysis indicated a small, positive relationship existed between Importance Subscale Scores and exit examination scores (r=.196, n=150, p<.016). These results suggest that an increased self-report of valuing (importance) the test is associated with higher exit examination scores. Similarly, Thelk et al. (2009) found that an increased sense of importance resulted in increased test scores. Finally, this study's results further illustrate the need to enhance nursing student test-taking motivation when taking the exit examination.

High-Stakes Versus Low-Stakes Testing

Research question two explored the difference in the mean Total Motivation, Effort and Importance Scores on the *SOS* for low and high-stakes testing groups. Descriptive statistics revealed that 90.7 % of the participants' exit examinations were designated as high-stakes. Independent t-tests were conducted and no significant differences were found between high-stakes (M=40.01, SD=5.92) and low-stakes exit examination groups (M=36.29, SD= 6.39; t(147)=2.22, p=.028) for Total Motivation. In addition, no significant differences between high-stakes (M=19.65, SD= 3.24) and low-stakes groups (M=17.57, SD=3.88; t (148) =2.25, p=.026) for Effort Subscales nor between high-stakes (M=20.34, SD=3.47) and low-stakes groups (M=18.71, SD=3.29; t (148) =1.68, p=.096) for Importance Subscale Scores were revealed. Therefore, regardless of test stakes, motivation levels were similar for this study. This study's results support the findings of Abdelfattah (2010) that found students put forth a moderate effort for their exam even though it was designated as a low-stakes test. However, these findings are inconsistent with prior research by Sundre and Kitsantas (2004) and Sundre and Moore (2002).

Sundre and Kitsantas (2004) found that in low-stakes testing situations, motivation was a significant predictor of test performance. However, in high-stakes testing situations, motivation did not contribute to test scores. Study sampling may have contributed to the inconsistencies in the results of this study compared to previous research. Sundre and Kitsantas' (2004) study comprised of 62 undergraduate psychology students, whereas this study consisted of 150 senior nursing students.

In another contrasting study, Sundre and Moore (2002) found that students consistently reported higher levels of Effort and Importance on the *SOS* in high-stakes testing situations than low-stakes testing situations. It seems surprising that test stakes revealed no difference in

motivation in this study with regard to the exit examination when previous studies have shown that test stakes revealed a significant influence on level of test-taking motivation (Cole & Bergin, 2005; Sundre & Moore, 2002; Thelk et al., 2009).

Perhaps it is not the consequence of the test that influences nursing students' motivation. Another conclusion could be drawn from these results. Although the nursing students did not know the intention of the research, they may have ascertained from how the questionnaire was worded that the study was examining the importance of the test that they just completed. Therefore, because the *SOS* is a self-report tool, the higher reported levels of effort and importance in both the high-stakes and low-stakes groups may be related to the nursing students wanting to please the researcher and their instructors by reporting exaggerated responses. The differing results when compared with previous research support the need for further motivational studies using nursing students.

Analysis related to question three examined the difference between mean exit examination scores for the high-stakes and low-stakes groups. Although there was no difference in reported levels of motivation between high and low-stakes groups, results did reveal a significant difference between high-stakes (M=86.20, SD=12.32) and low-stakes groups' (M=61.43, SD= 28.23; t (13.5) =3.25, p=.006) exit examination scores. These findings support the previous studies discussed in Chapter Two. Cole and Osterlind (2008) found significant differences in test performance in high versus low-stakes testing groups that were required to take a standardized general education assessment. Although the NLN does not recommend designating the exit examination (or any assessment) as high–stakes without appropriate evidence to support this decision, the results of this study did reflect a difference in nursing student exit examination scores based on the stakes of the examination. An explanation for the

difference in results (no difference in motivation, but a significant difference in exit examination scores between the low and high-stakes groups), includes the possibility that the lower motivated students over exaggerated their responses on the *SOS*. As identified in Chapter Two, exploration of test-taking motivation on the exit examination is limited in nursing education. Further investigation regarding nursing student test-taking motivation and the stakes of exit examination is warranted.

Type of Nursing Program

Descriptive statistics revealed that 44% of participants were enrolled in an ADN program, while 56% were enrolled in a BSN program. An independent t-test was conducted to compare exit examination scores for the ADN and BSN program groups. This study's results revealed that there were no differences between the ADN (M=86.31, SD=10.76) and BSN (M=81.99, SD=19.14; t (135.23) =1.75, p=.083). As identified in Chapter Two, no literature identifies if differences in exit examination scores in the ADN and BSN nursing programs exists.

A conclusion that could be drawn from the results of this question is that the type of nursing program a nursing student chooses to attend does not have an influence on student performance on the exit examination. One possible explanation of the results includes that other motivational factors influence nursing student test-taking motivation on the exit examination. A study by Khaila (2015) examined the relationship of moderating and mediating effects on academic achievement such as academic self-concept, intrinsic motivation, and test anxiety. Results revealed that academic achievement was positively influenced by intrinsic motivation. So with regard to this study, perhaps the nursing students were motivated to do well on the exit

examination as a sense of personal pride. Further exploration with regard to motivational factors on nursing student test performance is warranted.

This study also explored the differences between nursing student Total Motivation Scores and Effort and Importance Subscales on the *SOS* and type of nursing program**.** Independent t-tests showed that there were no differences in Total Motivation for ADN nursing students (M=40.78, SD=6.58) and BSN (M= 38.76, SD=5.48). Furthermore, Effort and Importance Subscales on the *SOS* did not differ for participants from ADN and BSN programs. These results suggest that type of program does not influence nursing student test-taking motivation. There were no previous studies that examined the differences of test-taking motivation among the different nursing programs. Only one study by Kyungrim, Duk Yoo, Sujin, & Myoung Soo (2006) examined nursing students enrolled in ADN, BSN, and RN-to-BSN nursing programs. This study explored the critical thinking skills of nursing students enrolled in the different nursing programs. Results revealed a significant difference in critical thinking skills among the programs (F=4.159, p< .017). The BSN students scored significantly higher than the ADN and RN-to-BSN students in every scale on both tools that were utilized for the study, the California Critical Thinking Disposition Inventory (CCTDI) and the California Critical Thinking Skills Test (CCTST). Perhaps, the critical thinking skills of the nursing students taking the exit examination should be investigated. However, this is only one study investigating critical thinking skills among the different nursing programs. Future studies examining if critical thinking skills and exit examination scores of nursing students reveal a relationship should be conducted.

Limitations

There were several limitations to this study. This study used a descriptive, correlational design. Since a correlational design cannot imply a causal conclusion, there may be alternative

explanations for the correlational findings of motivation and exit examination scores. Another limitation included the use of a convenience sample which did not allow for random selection of participants. An underlying assumption of this study was that the sample reflected the demographic characteristics of the US nursing student. However, this study recruited senior nursing students from four nursing programs located within one state. As a result, this study underrepresented the US nursing student population with regard to ethnic diversity, thereby limiting generalization of the results. In addition, the only demographic information for the state that the study was conducted in included already licensed RNs, not nursing students.

Another limitation to the study includes the use of a self-report tool. Therefore, it is uncertain to ascertain if the participants were being truthful with their responses. A participant may not want to reveal their demographic information because he/she may feel that this is too personal of information to share. For example, one participant in the study stated that he/she was "alien" under ethnicity. Another concern with regard to demographics is that the participants self-reported their GPAs; therefore, this information may not be accurate. Ultimately, this could have inadvertently affected how the participants were categorized thereby, influencing the overall results of the data.

An additional limitation of the study included the possibility of social desirability bias. Although, the primary researcher did not administer the *SOS* to her own students (a research assistant did), the students may have over-reported their levels of motivation. They may have answered the survey on how they believed the researcher wanted them to answer instead of how they truly felt regarding their levels of motivation. Finally, another limitation of the study was the timing of the administration of the survey. Due to how the *SOS* was developed, it is necessary to administer the tool immediately after taking the exit examination. The exit

examination is a lengthy (180 questions) test and students may be fatigued after taking the test. Therefore, this may have resulted incorrectly reporting their level of motivation as well, just to be finished with the examination.

Implications for Nursing Education

The purpose of this study was to identify if a relationship between test-taking motivation and exit examination scores exists. The results of this study can be used to provide nursing programs with insight and information concerning test-taking motivation and exit examination scores. The study results noted a moderate, positive relationship existed between increased test-taking motivation and exit examination scores. Results of this study should be used to focus on augmenting nursing students' level of motivation on the exit examination. The following section discusses the implications for nursing education, nurse educators, and nursing program administration in regards to test-taking motivation and exit examination scores.

Implications for Nurse Educators

The purpose of this study was to identify if a relationship between test-taking motivation and exit examination scores exist. The results of this study suggest that there is a relationship between test-taking motivation nurse educators must take into consideration that although increasing the stakes of the exit examination Many nursing students are required to take an exit examination during their course of study. This exit examination was developed to predict a students' success on the NCLEX-RN®, not to punish the student. However, these nursing students may be required to achieve a pre-determined benchmark score on the exit examination. Furthermore, if the student does not achieve the benchmark score on the exit examination, the consequences may include failure of the nursing course, a delay in eligibility for taking the NCLEX-RN®, or the inability to graduate. The results of this study revealed that test-taking

motivation was moderately correlated with exit examination scores. The higher reported levels of motivation resulted in higher exit examination scores. Therefore, nursing educators must emphasize the importance of positive motivation influence on test results. The nursing student should be aware of how the exit examination can reveal their strengths and weaknesses in specific content areas. This awareness will assist the nursing student in studying more efficiently for the NCLEX-RN®.

As previously discussed, the results of this study indicated that test-taking motivation was moderately correlated with exit examination scores. These results warrant further education of nurse educators in augmenting nursing student motivation on the exit examination. In addition to accurate interpretation of nursing students' exit examination scores, nurse educators should address strategies for enhancing nursing student motivation on the exit examination. If the nurse educator attempts to augment nursing student motivation, it may result in higher exit examination scores. Therefore, the implications for nursing faculty include the need to develop strategies for enhancing nursing student motivation when taking the exit examination.

Nurse educators need to communicate the importance of the exit examination to the students. This could be accomplished through several strategies. One strategy may include posting fliers or posters in the classrooms, hallways, and student lounges about the importance of the exit examination. The nurse educator may also address the importance of the exit examination in the nursing student newsletter. In addition, reminder motivational emails sent to the nursing students about the exit examination can be helpful as well. The nurse educator can provide tips for preparing for the exam such as adequate rest and nutrition, practicing NCLEX-RN® type questions, and reviewing previous performance on specialty proctored exams, and identifying weak content areas before taking the exit examination.

An additional approach is that the nurse educator can provide education during class to the students on why the exam is important and how having higher levels of test-taking motivation on the exit examination may enhance exit examination scores. In addition, nurse educators should inform nursing students that the exit examination is a useful learning tool for their preparation for taking the NCLEX-RN®.

Another tactic to increase motivation that has been recommended by Wise (2009) includes appealing to the students' "academic citizenship". This plea also enhances the importance of the test for the nursing student. If the nurse educator portrays a positive and motivational attitude about the exit examination, this will send a message to nursing students that this exit examination is important. In addition, the provision of incentives to increase the students' efforts on the exit examination may increase student motivation. Nurse educators can provide rewards such a spotlight article in the student newsletter, a pizza party or cake to celebrate the achievement.

A last strategy to enhance motivation involves increasing the stakes of the exit examination. This study revealed that the higher stakes students had higher scores, however, it is still uncertain what factors motivated nursing students on the exit examination. Nurse educators must carefully consider the consequences when deciding to designate the exit examination as high-stakes. Although the results from this study demonstrated that the level of reported test-taking motivation did not differ with regard to stakes of the examination, the exit examination scores between the two groups were significantly different. Thus, when considering an option to tie the achievement of a benchmark score to a course grade, the nurse educators must be judicious when using this as a strategy to enhance motivation.

If the nurse educator is unable to assist nursing students with increasing test-taking motivation on the exit examination, thereby increasing exit examination scores; it may result in increased workload for the nurse educator. Due to the underlying concern of maintaining or improving first-time NCLEX-RN® pass rates, some nurse educators and nursing programs have chosen to prescribe rigorous remediation plans for preparing for the NCLEX-RN®. It is plausible that this remediation may be unnecessary because the nursing student was not motivated to perform well on the exit examination, thus, ultimately not reflecting what the nursing student truly knows. Regardless, some nurse educators are obligated to assist nursing students in preparation to achieve the benchmark exit examination score.

Some remediation plans may include a minimum required number of practice questions, one-on-one meetings with the faculty, and repeated proctored testing. This remediation process can involve a considerable amount of time and effort for nursing students and nurse educators. Therefore, the knowledge of the nursing students' motivation during the exit examination may save time and effort of both nursing students and nurse educators.

Not only will the nursing student be required to complete extra preparatory work for the NCLEX-RN®, the nurse educator will need to spend more time meeting with the student. Some reasons may include the verification of the required remediation, individual tutoring in content areas that were identified as weak content areas on the exit examination, and provision of emotional support to those students who were unsuccessful on the first attempt on the exit examination. Since the results of this study did demonstrate a moderate, positive correlation regarding test-taking motivation and exit examination score, nurse educators and nursing programs must take this into consideration before implementing rigorous remediation and

progression policies based on the nursing students' exit examination scores alone. Ultimately, this practice may further perpetuate the nursing shortage that currently exists.

Implications for Nursing Program Administration

The study's conclusions should also be considered from a nursing program administration perspective. First, if a nursing program chooses to implement a rigorous remediation or progression policy based on the exit examination score alone, this may result in the dismissal of qualified, competent nursing students because of their poor performance on the exit examination. Some nursing programs have chosen to implement a mandatory remedial course if the students do not reach the designated score on the exit examination. This may involve increased costs for the nursing program by the need to hire another faculty member to present the remedial course. If nursing students are still unsuccessful achieving the benchmark score, this may result in a delay in graduating, progressing in the program, or taking the NCLEX-RN®. This practice may affect the nursing program's accreditation due to unacceptable graduation, retention or first-time NCLEX-RN® pass rates.

With the implementation of rigorous remediation plans, the increase in faculty workload, decreased time for faculty scholarship, and decrease satisfaction with work may result. While it may not be reasonable to expect nursing programs to research motivation, there are other ways to approach this issue. Faculty can benefit from reviewing the literature and attending educational programs about the pros and cons of exit examinations. This information can be brought to focus group meetings where dialogue can held to develop best practices. Faculty discussions can also be used to develop strategies for motivating students to do their best on the exit examination. Program decisions can be made about the consequences of exit examinations based on these best practices.

In summary, the findings of this research illuminate the nurse educators' role in accurately identifying nursing student preparedness for taking the NCLEX-RN®. Therefore as nurse educators plan to administer the exit examination, they should first consider using this study's information and enhance nursing students' test-taking motivation when taking the exit examination. Furthermore, as this study's results revealed, although there were no differences of self-reported levels of motivation, there was a significant difference in exit examination scores between the high-stakes and low-stakes groups. These findings support the previous results of Napoli and Raymond (2004), Nichols and Berlinger (2008) and Wise and DeMars (2005) where increasing the consequences of an examination increases test performance. However, if nurse educators and nursing programs intend to increase the stakes of the examination they must judiciously decide precisely what the stakes and the benchmark score for the exit examination include.

Recommendations

Recommendations can be made for future research. It is important to point out that no other study had been conducted examining test-taking motivation and exit examination using the Expectancy-Value Theory of Achievement Motivation as a framework at the time of this study. While these results contribute to the nursing education literature, future research is warranted. In the process of conducting the literature review and carrying out the study, other gaps were found leading to future research recommendations. Several studies revealed that increased test-taking motivation resulted in increased test performance. This study is the first to investigate the relationship between test-taking motivation and exit examination scores in nursing students.

The current study assessed test-taking motivation in one state; therefore, the results may not be generalizable to other geographical areas. Although four different nursing programs from

three academic sites were utilized for the study, future studies such include in other geographical areas (besides one state in the Midwest). In addition, although this study utilized three different academic sites and two different types of nursing programs (2 ADN and 2 BSN), three of the programs were from the same academic institution. Attempts should be made to recruit participants from different geographic areas and academic institutions enrolled in nursing programs throughout the US. This would enhance the possibility of a more diverse population to study.

Although there have been studies examining motivation in nursing (Baes et al., 2013; Bengtsson & Ohlsson, 2010) there remains a void in the literature regarding the correlation between test-taking motivation and exit examination scores specifically. Future studies should include the examination of the effects of pedagogical approaches on nursing student motivation.

In addition to addressing pedagogical influence on exit examination scores, additional research should focus on the specific motivational factors that may influence nursing students' motivation with regard to the exit examination in low- stakes situations. In addition, the tool utilized for this study, *SOS*, only identifies whether the student was motivated or not. It does not ascertain what specifically motivates the student. Therefore, future research using an instrument that examines what specifically motivates nursing students during testing.

In light of this study's findings, additional research is warranted that addresses nursing student test-taking effort and GPA. Future studies should

Conclusion

This study sought to expand the body of knowledge on nursing student test-taking motivation and exit examination score. Results of this study provide nurse educators and nursing programs with a foundational knowledge regarding nursing student test-taking motivation and

exit examination score. A moderate correlation was identified between nursing student test-taking motivation and exit examination score. Aside from deeming the exit examination high-stakes, it is still unknown is what other motivational factors influence nursing student test-taking motivation on the exit examination. Findings from this study support the importance of enhancing nursing students' test-taking motivation. Limitations for this study include lack of generalizability, student fatigue at the time of taking the survey, and incorrect reporting of level of motivation from the nursing students. Further research is needed to replicate this study and to continue to assess those factors that affect test-taking motivation on the exit examination

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Appendix A

Demographic Data Questionnaire

Please complete the following:

1. What is your gender?

    a. Female
    b. Male

2. What is your age? _____

3. What is your grade point average (GPA)? _____

4. Please specify your ethnicity.

    a. White
    b. Hispanic or Latino
    c. Black or African American
    d. Native American or American Indian
    e. Asian or Pacific Islander
    f. Other
    Please specify_____

5. What probability of passing the NCLEX-RN® score did you receive on this exit examination? (If you do not remember your score, please use the available laptop to retrieve your score).

    _____

Appendix B

Student Opinion Survey

Please think about the test that you just completed. Mark the answer that best represents how you feel about statements 1 through 10 below.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1. ___Doing well on this test was important to me.
2. ___I engaged in good effort throughout this test.
3. ___ I am not curious about how I did on this test relative to others.
4. ___I am not concerned about the score I receive on this test.
5. ___This was an important test to me.
6. ___I gave my best effort on this test.
7. ___While taking this examination, I could have worked harder on it.
8. ___I would like to know how well I did on this test.
9. ___I did not give this test my full attention while completing it.
10. ___While taking this test, I was able to persist to completion of the task.

Note. Items 3, 4, 7, and 9 are reversed scored prior to scoring. The Effort subscale is the sum of items 2, 6, 7, 9, and 10. The Importance subscale is the sum of items 1, 3, 4, 5, and 8.

Appendix C

Informed Consent Form (printed on IUP letterhead)

Project: The Relationship Between Nursing Students' Test-Taking Motivation and the Exit Examination Score

Principal Investigator: Lorraine Coalmer, Doctoral student (330) 480-2369

You are invited to participate in this research study. The following information is provided in order to help you to make an informed decision about whether or not to participate. If you have any questions please do not hesitate to ask. You are eligible to participate because you are a nursing student who is required to take an exit examination during your nursing program.

The purpose of this study is to explore the relationship between nursing students' test-taking motivation, using the *Student Opinion Scale (SOS*), and (probability of passing NCLEX-RN® scores) the exit examination score for nursing students. The identification of relationship between nursing students' motivation and the exit examination score will provide nurse educators and nursing programs valid information that will assist with the interpretation of nursing students' exit examination scores, knowledge acquisition, and readiness to take the NCLEX-RN®.

This study involves no risk to you. You will not be exposed to any physical, psychological, or legal risk not normally encountered in everyday life. A $50.00 BP gift card will be raffled off at each study setting for participating in the study. The gift card will be given to the winner by the course instructor after all participants have completed the surveys. Participation in this study will require approximately 10-15 minutes of your time.

Your participation in this study is voluntary and will not affect your course grade in any way. If you choose to participate, you may withdraw at any time by notifying the principal investigator. However, because there is no identifying information on your data, once it is collected it will become part of the research study. If you choose to participate, all information will be held in the strictest confidence. The information obtained in the study may be published in scientific journals or presented at scientific meetings but your identity will be kept strictly confidential.

If you have questions regarding the study please contact the Principal Investigator or Project Director:

If you are willing to participate in this study, please sign the statement below.

Principal Investigator: Lorraine Coalmer, Doctoral Student, Indiana University of Pennsylvania
226 Cross St.
Canfield, Ohio 44406
330-480-2369
xhbr@iup.edu

Project Director: Kristy Chunta PhD, RN, ACNS, BC
Associate Professor
Indiana University of Pennsylvania (IUP)
Nursing and Allied Health Professions
233 Johnson Hall
1010 Oakland Avenue
Indiana University of Pennsylvania
Indiana, PA 15705
(724) 357-2408
kchunta@iup.edu

If you are willing to participate in this study, please sign your name below. By signing your name, you are agreeing to take part in this study. Please understand that your responses are completely confidential and that you have the right to withdraw from the study at any time.

THIS PROJECT HAS BEEN APPROVED BY THE INDIANA UNIVERSITY OF PENNSYLVANIA INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN SUBJECTS (PHONE 724.357.7730).

Participant Signature Date	Principal Investigator Date

Appendix D

Letter of Permission for Use of the *SOS*

JMU

James Madison University
Center for Assessment and Research Studies [MSC 6806]

Memorandum

To: Researchers Requesting the *Student Opinion Scale (SOS)*

From: Donna Sundre

RE: Instructions for using the *SOS*

You have requested a copy of the *Student Opinion Scale (SOS)* to use in your research. I am pleased to provide you with a copy of the instrument and the scoring guidelines. This *SOS* is designed to provide two scores of test-taker motivation: Importance and Effort. The instrument should be administered immediately following completion of a test or tests. I have attached a copy of the scale and the scoring guidelines for your use.

The original reference for the *SOS* is

Sundre, D. L. & Moore, D. L. (2002). The Student Opinion Scale: A measure of examinee motivation. *Assessment Update, 14* (1), 8-9.

Another useful reference regarding the scale is:

Sundre, D. L. (1999, March). Does examinee motivation moderate the relationship between test consequences and test performance? Paper presented at the American Educational Research Association. Montreal, Canada [ED 432 588].

Sundre, D. L. & Finney, S. J. (2002, April). *Enhancing the validity and value of learning assessment: Furthering the development of a motivation scale*. Presented to the American Educational Research Association. New Orleans, LA. [Available for downloading and viewing at http://www.jmu.edu/assessment/].

In exchange for permission to use my scale, I'd appreciate your sending me a copy of any manuscripts that result from your use of the *SOS*, as I am always interested in seeing studies that use the scale. I thank you in advance for your cooperation, and I wish you success with your research.

Harrisonburg, Virginia 22807
(540) 568-6706
(540) 568-7878 Fax