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Use of Standardized Tests Within Nursing Education Programs

Irene Coons
University of Nevada, Las Vegas, deepher2000@cox.net

USE OF STANDARDIZED TESTS WITHIN NURSING EDUCATION PROGRAMS

By

Irene Virginia Colson Coons

Bachelor of Science in Nursing
Lake Superior State University
1993

Master of Science in Nursing
University of Phoenix
2001

Post-Master's Certificate in Nursing Education
University of Nevada, Las Vegas
2006

Graduate Certificate in Forensic Nursing
University of California, Riverside
2010

A dissertation submitted in partial fulfillment of the requirements for the
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Irene Virginia Colson Coons

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Michele Clark, Ph.D., Committee Chair

Lori Candela, Ed.D., Committee Member

Nancy Menzel, Ph.D., Committee Member

Marcia Ditmyer, Ph.D., Graduate College Representative

Kathryn Hausbeck Korgan, Ph.D., Interim Dean of the Graduate College

May 2014

ABSTRACT

This study explored the use of standardized tests within nursing programs. Standardized tests have been used within nursing programs for several decades (Shultz, 2010), but recently their use has increased. This rise in utilization may be related to the need for nursing programs to satisfy various accreditation requirements, including annual state board of nursing pass rates. However, standardized tests are not without controversy. For example, some believe that the tests can be detrimental to minority nursing students (Spurlock, 2006). Therefore, the purpose of the study was to assess how and why standardized tests are utilized within nursing programs.

Literature was reviewed which detailed the use of standardized tests within the K–12 educational system and within nursing programs. In addition, two theoretical frameworks were included within this study. The first was the Academic Quality Improvement Program (AQIP). The second framework was Quality and Safety Education for Nurses (QSEN).

This research study utilized a descriptive correlational design, conducted via an online survey administered by Qualtrics. A sample of 199 persons in the position to manage or oversee pre-licensure nursing programs within the western one-third of the United States completed the study. The survey was comprised of researcher-created questions and the previously established *Nursing Competencies Survey*.

The average subject was female, 56.5 years old, white, not of Hispanic origin, and held an MSN. The majority of the program directors reported that their respective nursing programs offered an associate's degree of nursing and identified themselves as belonging to a public college or university. The majority of the program directors (92%) indicated that their nursing programs did use standardized tests and applied scores toward final

course grades (65.3%). However, high-stakes testing was found to have occurred within a minority of the nursing programs in this study. Inconsistencies were noted among the nursing programs with regard to who determined the test benchmarks and percentages to award based on test results.

Results from the linear regression model indicated that only *beginning practice* had a significant positive relationship with competencies *presented in nursing programs*. This regression model accounted for 33% of the variance in competencies presented within nursing programs ($R^2 = 0.331$). No evidence of curricular narrowing was found.

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CHAPTER 1

FOCUS

Introduction

In order to be recognized as a registered nurse (RN), a person must first graduate from a nursing program and then pass a licensing exam. Licensure is the process by which state boards of nursing grant permission to an individual to engage in nursing practice after ascertaining that the applicant has attained the knowledge and skills necessary for independent decision-making—that is, it confirms that he or she is minimally competent. All state boards of nursing recognize the National Council Licensure Examination for Registered Nurses (NCLEX-RN®) as the exam that indicates whether newly graduated nurses have the requisite knowledge and skills to provide patient care ("About the NCLEX," 2013). Currently, the National Council for State Boards of Nursing (NCSBN) determines what content will be included in the NCLEX-RN® and sets the nationally recognized passing standard. The passing standard is increased every few years, and some contend that passing the NCLEX-RN® is more difficult today than in the past (Boivin, 2010).

With the requirements set forth by the NCSBN for newly graduated nursing students to pass the NCLEX-RN®, nursing faculty constantly seek out assessment and evaluation methods that accurately reflect the knowledge gained in courses as well as help students successfully pass their licensure exam. These methods include but are not limited to teacher-made tests and assignments. Furthermore, many nursing programs now incorporate standardized tests within their curricula as an additional evaluation method. The addition of standardized tests within nursing programs has been primarily attributed

to the desire to ensure that students can pass the NCLEX-RN® (Herrman & Johnson, 2009; Morrison, Adamson, Niebert, & Hsia, 2004).

The decision to incorporate standardized tests within nursing programs must be well-thought-out (Halstead, 2013). When creating policies involving standardized tests, nursing faculty must take into consideration advice from experts in the field of education measurement (Spurlock, 2006). In addition, the goals and expectations associated with the implementation of standardized testing must be in line with nursing programs' missions, philosophies, and frameworks (Jones & Bremner, 2008).

Initially, standardized nursing tests were designed to be a diagnostic tool used within programs. The results were used to help nursing faculty identify students' weaknesses and develop remediation plans in order to increase the likelihood of successfully passing the NCLEX-RN® (Oermann & Gaberson, 2009). Because standardized tests are being used more frequently within nursing programs, the purpose of this study was to assess how these tests were incorporated into the curricula and how they affected the quality of nursing education. As Benner, Sutphen, Leonard, and Day (2010) write, the current nursing shortage makes it tempting to graduate nurses quickly; however, one cannot discount the need for better-educated nurses. The overall quality of nursing education must continue to develop to best meet student needs and the future health care needs of the patients they will care for. As such, nursing programs must be committed to educating nurses to function within a diverse, complex health care setting (e.g., core competencies) and not be focused only on enabling students to pass the NCLEX-RN® (e.g., minimal competencies).

Background

Standardized tests have been a part of the American educational system since the mid-1800s ("Standardized Tests," 2013) and have been used within nursing programs for the past 60 to70 years (*NLN Testing Services*, n.d.; Shultz, 2010). Nitko and Brookhart (2011) define a standardized test as one in which "the procedures, administration, materials, and scoring rules are fixed so that as far as possible the assessment is the same at different times and places" (p. 514). There are multiple professions that require a candidate to pass a standardized licensing exam prior to practice. These professions include but are not limited to, law, medicine, and nursing.

As of 1989, the passing standard for the NCLEX-RN® has been increased every three years. On April 1, 2013, the standard increased from -0.16 logits to 0.00 logits, and this passing standard will remain in effect until March 31, 2016 ("Passing Standard," 2013). The increase in the NCLEX-RN® passing standard may be a concern for some nursing faculty members because pass rates can affect the accreditation of nursing programs. It is not uncommon that, due to an increase in passing standards, nursing programs can experience an initial decrease in the number of graduates passing the NCLEX-RN® on their first attempt ("NCLEX Psychometrics," 2013). Regardless of the cause, a drop in NCLEX-RN® pass rates can impact the accreditation of nursing programs (Sauter, Gillespie, & Knepp, 2012). Furthermore, it is a major goal of every nursing program to graduate students who are able to pass the NCLEX-RN® on their first attempt. Rhoa, Shipman, Hooten, and Carter (2011) add that nursing programs have an *ethical responsibility* to ensure that students graduate from these programs and are able to pass the NCLEX-RN®. Given the possibility that standardized tests may be able to predict nursing students' abilities to pass the NCLEX-RN®, it is expected that more and

more nursing programs will continue to incorporate standardized tests into their curricula and view the tests as a measure of quality improvement (Holstein, Zangrilli, & Taboas, 2006).

However, nursing faculty must remember that the objective of a nursing education program is to provide students with a general education and to graduate competent, entry-level RNs. Nursing programs were not designed for the purpose of responding to one specific test (e.g., NCLEX-RN®) (Sauter et al., 2012). In addition, nursing programs and the faculty who work within them must realize that there is still a need to teach emerging competencies that are either not included or included too rarely on the standardized tests. For example, there are new competencies related to quality improvement, interdisciplinary collaboration, and leadership (IOM, 2011).

Impact

Across the country, some nursing programs may be utilizing standardized tests as a form of high-stakes testing. According to the National League for Nursing (NLN), high-stakes testing is the requirement to obtain a benchmark or specific score on a standardized test in order to graduate or write the NCLEX-RN® ("About the NLN," 2011). Approximately 20% of nursing programs now have progression policies that mandate that students meet a benchmark on a commercially-constructed standardized test to qualify for graduation (NLN Board of Governors, 2012; Santo, Frander, & Hawkins, 2013). In addition, one in three pre-licensure nursing programs requires students to meet a minimum score on a standardized test in order to progress (NLN Board of Governors, 2012).

Given that certain levels of standardized test results have been correlated to successful, first-time NCLEX-RN® pass rates, some progression policies have been developed that prevent students who are deemed to be at-risk of failing the NLCEX-RN® from graduating (Spurlock, 2006). On the other hand, while a test may be valid and reliable as written, when used for a purpose for which it was not intended (such as a high-stakes test), the validity is compromised (Spurlock, 2006). The Nevada State Board of Nursing (2012) no longer allows nursing programs in the state to utilize a standardized test for the purpose of determining whether a student has successfully completed a nursing education program. This type of regulation varies from state to state. According to Miyo Minato of the California State Board of Nursing, it is up to each individual nursing program in California to decide whether it wants to incorporate high-stakes testing (personal communication, March 14, 2013). Pamela Randolph with the Arizona Board of Nursing stated that there are no regulations regarding high-stakes testing use within the State of Arizona at this time, but she noted that it is discouraged (personal communication March 15, 2013). Even the NLN dictates that nursing faculty should not require students to obtain a minimum score on a standardized test in order to progress, as one test cannot possibly encompass the total objectives or content presented within an entire curriculum ("About the NLN," 2011). Also, Oermann and Gaberson (2009) recommend utilizing multiple assessment methods whenever evaluating student performance. A standardized test is only one method by which to evaluate student competence. Nonetheless, some nursing programs utilize scores on standardized tests to block progression to graduation.

While high-stakes testing can no longer be used in one specific Southwest state to block graduation, preventative testing still occurs in other states. Standardized tests may be incorporated into individual courses within nursing programs (e.g., final exam), but they may not be incorporated as a form of high-stakes testing. For example, Health Education Systems, Inc. (HESI) tests can be used as the final exam in nursing courses, saving faculty valuable time ("HESI Testing," 2011). The issue then becomes how and why nursing programs are incorporating standardized tests into their curricula and courses. Faculty must be knowledgeable about why a standardized test was created and what it is intended to measure (e.g., to remediate students or to ensure mastery of content). Also, use of a standardized test does not negate faculty responsibility to provide formative and summative feedback to students throughout a course. For example, faculty should not rely on standardized tests to eliminate students who do not achieve a predetermined benchmark score instead of maintaining this responsibility themselves. Finally, Oermann and Gaberson (2009) remind faculty that they need to interpret results from standardized tests correctly and advise against incorporating scores obtained by students on standardized tests into course grades.

Despite the fact that standardized test companies provide little information in their materials regarding how to convert standardized test scores into an exam grade or exam points, some nursing programs attempt to do so. Assessment Technology Inc. (ATI) (2010) writes that faculty members must be cautious when using content-specific assessments for high-stakes testing (e.g., points other than extra credit) and ensure that the tests are fully in line with course curricula if points are to be awarded. In addition, faculty must be aware that the grade from a standardized test is often based on how others

performed as well (i.e., norm-referenced). It is worth noting that while the standardized tests utilized may be norm-referenced, the NCLEX-RN® utilizes a criterion-referenced standard in which a panel of expert nurses determines the passing standard (Kappel, 2013; Oermann & Gaberson, 2009; "Passing Standard," 2013).

Nursing programs must be driven by identified curricular objectives as determined by faculty and the need to graduate competent nursing students. Faculty must not be motivated to teach to the standardized test alone, although some faculty may be tempted to do so to ensure that students meet minimum benchmarks and can progress or obtain points toward a course grade. As mentioned previously, nursing program curricula should foster skills and abilities in students that are not necessarily tested on the NCLEX-RN®, such as leadership and nursing research. Also, if points or progression are related to performance on a standardized test, faculty must be cognizant of content that may be on the test but is not normally covered within the course. For example, a fundamentals of nursing standardized test may include questions about intravenous access and care; however, that may not be a skill taught in all fundamentals of nursing courses nationwide. Curricula should not be driven by questions on standardized tests, especially if a concept is not considered by faculty to be appropriate to include until later in the nursing education program. Faculty need to be aware of what is included on the tests and take that into consideration if a course grade is dependent upon test performance.

However, Jacobs and Koehn (2006) have written that some students may not take standardized tests seriously and will assign importance to the exam only once there are consequences for poor performance. This is in congruence with the *HESI Educator Support Manual* (2010): "Faculty sets policy but we strongly adhere to classic test theory,

which suggests that testing without consequences is a waste of time" (p. 119). Faculty must consider how to best assess NCLEX-RN® readiness and content mastery in a fair manner while also ensuring that students give proper gravity to their performance on standardized tests.

Advantages. Some institutions found standardized tests to be extremely useful. For example, when one hospital orientation program responded to decreased NCLEX-RN® pass rates among its newly hired graduate nurses by instituting standardized tests in hospital orientation courses, it obtained positive outcomes regarding NCLEX-RN® pass rates (Richards & Stone, 2008). Another benefit of standardized tests in nursing programs is that the items are highly scrutinized and are often written by those considered to be experts within their field(s). For example, HESI test items are psychometrically sound and are pilot-tested prior to their actual use on a test (Elsevier, 2010). This can be beneficial given that some research indicates that teacher-made test questions often contain flaws and test lower forms of thinking such as recall or comprehension (Tarrant, Knierim, Hayes, & Ware, 2006). Additional benefits of standardized tests include the fact that students perceive them to be fair, they are able to quickly provide useful information, they focus on important aspects of a curriculum, and they are objective ("Pro & Con Arguments," 2013).

Many standardized tests come with either an online or paper-and-pencil option. One benefit of the online tests is that students can receive immediate feedback instead of having to wait for their tests to be scored manually. In addition, students who are introduced to computerized tests early in their nursing education program will become more comfortable with the computerized testing format (Seldomridge & DiBartolo,

2004), which is how the NCLEX-RN® is administered. Taking a computerized test for the first time could be stressful to students, especially if it is their NCLEX-RN® exam.

Disadvantages. The use of standardized tests within schools and higher education systems is not without its challenges. Teachers may teach to the test instead of teaching pertinent material, multiple-choice questions may encourage a simplistic way of thinking, students may become good at test-taking but still lack practical knowledge, standardized tests can be costly, and the test may not accurately reflect the quality of instruction provided ("Pro & Con Arguments," 2012). For example, teachers in one Seattle high school decided to boycott giving a standardized test because their teaching evaluations would be based on how their students performed on the test and because they believed they had insufficient time to adequately prepare their students to take the test (Kaminsky, 2013). In addition, standardized tests may be oppressive particularly to minorities and may facilitate segregation to occur based on students' scores (Grant, 2004). There is little in the literature that speaks to how standardized tests are unbiased and would not be harmful to minority nursing students or those who speak English as a second language (Spurlock, 2006). Within nursing, this can be especially concerning given that African Americans, Asian Americans, and Hispanic Americans are already underrepresented within nursing programs (Benner et al., 2010).

An additional disadvantage, which is either faculty-or policy-driven, is the length of time between being able to actually write the NCLEX-RN® and meeting the required benchmark score on an end-of-program standardized test (e.g., predictor test). If a student has not successfully met the benchmark score required for graduation, this will delay his or her ability to write the NCLEX-RN®, and more time will lapse as the student attempts

to pass the exit test. It is known that length of time can affect NCLEX-RN® pass rates. According to Eich and O'Neill (2007), those who waited longer from when they were *eligible* to test and actually took the NCLEX-RN® had higher rates of NCLEX-RN® failures. Also, Pennington and Spurlock (2010) found that those who took the NCLEX-RN® at "off-track" times (e.g., outside of summertime testing) failed the NCLEX-RN® more often. Among other reasons, this may be occurring due to progression polices (Pennington & Spurlock, 2010) such as those that require a benchmark be met on a standardized test before one can progress to graduation.

Various tests. While there is no mandate that nursing programs incorporate standardized tests within their courses, those that decide to do so often utilize tests and products from one of four companies: NLN Testing Services, Kaplan, HESI, or ATI. All offer and market professionally created materials to nursing programs. Of the four, the NLN is the only not-for-profit company (D. Ellis, personal communication, January 3, 2013).

Each company offers comparable products, typically some type of testing that measures nursing students' understanding of content within individual courses followed by a cumulative predictor test taken prior to graduation. All indicate that their tests are valid and reliable, although the specifics of this information may need to be requested from the company itself or searched for in the instructor support manuals. Most state that their tests are based on the NCLEX-RN® test blueprint, and most companies will also create customized tests (e.g., course-specific or exit exam) for a nursing program. General test blueprints or test specification tables may be provided to educators; however, the test blueprints vary in detail from company to company. While they may

match the NCLEX-RN® test blueprint, they may not match specific course objectives, and some educators may find the content areas described within the various blueprints to be too vague. When giving or using standardized tests, faculty may not have the ability to review the actual test blueprint with students. For example, HESI test blueprints are not provided unless requested by the nursing program, and HESI has requested that they not be shared with the students (C. Perna, personal communication, March 17, 2013). In addition, the companies use different methods to calculate scores. For example, Kaplan uses the Rasch approach which is a probabilistic model and is used for most student scoring procedures (Sanders, 2012). However, HESI uses the HESI predictability model (HPM), which takes into consideration the difficulty of each test item when determining a raw score (Elsevier, 2010).

Statement of the Problem

There is little literature published regarding how nursing programs have integrated standardized tests into their curricula. Most of what has been published focuses on the correlation of scores on standardized tests, academic and nonacademic factors, and NCLEX-RN® pass rates (Daley, Kirkpatrick, Frazier, Chung, & Moser, 2003). Some studies (Heroff, 2009) have even found that those predicted to fail the NCLEX-RN® based on standardized test scores passed and those predicted to pass failed instead. This may be due in part to an unintended consequence: those who score at a high level (i.e., expected to pass) may put no further preparation into studying for the NCLEX-RN® and then risk failing (Oermann & Gaberson, 2009). Also, despite recommendations not to use scores from standardized tests toward course grades or progression within a nursing education program, this Student Investigator (SI) suspects that many still do so; therefore,

this assessment can help determine how standardized tests impact curricula. Curricula should be driven by educational standards that meet minimal, entry-level competencies *as well as* core competencies such as leadership, quality improvement, and patient care outside acute care facilities (IOM, 2011).

Statement of Purpose

The purpose of this study was two-fold. First, this study evaluated how standardized tests affected nursing program curricula within a sample of nursing programs located in the western one-third of the United States. Second, this study evaluated how and why standardized tests were used within that same sample of nursing programs.

Research Questions

The following research questions guided this study:

1. Do a majority of nursing programs require students to pass a standardized exit exam to graduate?
2. What is the average number of courses within the nursing programs surveyed that use standardized tests as a portion of the final grade?
3. Who within the nursing programs surveyed determines the percentage that standardized test scores will contribute to final course grades?
4. Do a majority of nursing programs require passing a standardized test as a benchmark to progress into the next course or semester?
5. What are the most common ways in which nursing programs utilize standardized tests results?

6. Who within the nursing programs surveyed determines the standardized test benchmarks used for progression?
7. Do a majority of nursing programs use standardized test blueprints within their programs?
8. Which of the following factors contribute to competencies presented within nursing programs surveyed?
    a. Requirement to pass a standardized exit exam
    b. Faculty members' belief of competencies used in beginning practice
    c. Requirement of a benchmark for progression into the next course or semester
    d. Average number of courses that use standardized tests as a portion of the final course grade
    e. Average percentage that a standardized test score contributes when calculating final course grades
    f. Type of school

Significance

The utilization of standardized tests within nursing programs is a significant issue, and one that needs to be studied more thoroughly. This study attempted to fill the gap that exists. In many states, little oversight exists with regard to how and why nursing programs use standardized tests within the curricula. Within some nursing programs, a standardized test may be used as a method of providing meaningful feedback to a student regarding his or her ability to pass the NCLEX-RN®. However, within other nursing programs, there may be more punitive policies associated with poor performance on the

standardized test (e.g., failure of a nursing course). In addition, the community needs more knowledge regarding how and why standardized tests may be affecting course grades as well as how remediation practices and minimum benchmarks associated with standardized tests are decided upon, since they, too, are not consistently used from nursing program to nursing program. Ultimately, this study aimed to serve the nursing education system through generating a better understanding of how and why standardized tests are used within nursing programs. The knowledge gained from this study may help faculty and administrators within nursing programs make informed decisions regarding standardized test use or allow for future research to be generated from these findings.

Assumptions

1. Many nursing programs use exit exams to determine students' readiness for the NCLEX-RN®.
2. Many nursing programs use standardized tests within courses to determine students' mastery of course content.
3. Commercially-made standardized tests are valid and reliable.
4. Commercially-made standardized tests provide information regarding students' areas of strengths and weaknesses.
5. QSEN competencies are taught within nursing programs.
6. The greater the percentage that standardized tests determine a grade, the less time programs will have in presenting QSEN nursing competencies.

Limitations and Delimitations

Limitations may be theoretical or methodological and can affect the generalizability of a study (Burns & Grove, 2009). There are limitations to this study. Data was obtained from only those program directors who decided to complete the survey. An email with a link to the survey was sent to the entire population, but only those who replied comprised the sample; therefore, there was a lack of experimental design. In addition, the answers provided may not necessarily reflect actual practices but rather what the program directors believed or recognized should be occurring within nursing programs. The sample is comprised of individuals managing nursing programs located in the western one-third of the country; therefore, generalizability of results are not necessarily applicable to other regions of the United States. Finally, it can be difficult to study a phenomenon such as the use of standardized tests, as the measurements used to collect data were more subjective (e.g., never, rarely, or consistently) versus objective, such as when reporting blood pressure values (Polit & Beck, 2008).

Delimitations represent the boundaries of a research study. Unlike limitations, they are researcher-made inclusionary and exclusionary decisions (Dusick, 2011). Delimitations of this study included (a) pre-licensure nursing programs located in the western one-third of the U.S. that are fully approved by their state board of nursing and (b) that the participant is in the position to oversee or manage the pre-licensure nursing program (e.g., a program director, department head, and/or dean). Exact inclusion and exclusion criteria can be found in Chapter Four.

Definitions

The following terms represent the definitions used within this dissertation: Conceptual definitions provide connotative or theoretical meanings (Burns & Grove, 2009), and operational definitions are useful and provide meaning through the identification of actions or observations related to the concept(s) presented within this research study (Waltz, Strickland, & Lenz, 2010). Operational definitions will be presented in Chapter Four.

Benchmark. A point of reference from which measurements may be made; serves as a basis for comparison or evaluation ("Benchmark," 2013). A benchmark is data that is obtained, analyzed, and then compared to other sources of the same information (Waltz et al., 2010). An example of a benchmark would be a nursing program's yearly NCLEX-RN® pass rate (Boland, 2012).

Care-management. The ability of the nurse to manage a caseload of patients, problem-solve, set priorities, and visualize the big picture when working within the health care setting (Thomas, Ryan, & Hodson-Carlton, 2011). Competency category located on the *Nursing Competencies Survey*.

Community-based skills. Care provided in a variety of settings. The ability to properly coordinate referrals, understand health policy, and determine patients' eligibility for health care programs (IOM, 2011). Also includes understanding how health care programs and policies can impact patient outcomes (IOM, 2011). Competency category located on the *Nursing Competencies Survey*.

Competencies. Skills needed for an individual to function in the role of nurse and provide care to patients (Hyndman, 1999). "The knowledge, skills, abilities, and attitudes

a nursing graduate can be expected to demonstrate and are thought to be essential for proficiency in contemporary nursing practice" (Filer, 2001, p. 10).

Exit exam. A test given during the final semester or quarter of a nursing program. The results (i.e., scores) provide feedback regarding a student's predicted performance on the NCLEX-RN® (Harding, 2010). Evaluates a student's mastery of nursing content and informs about the need for remediation (Morrrison et al., 2004). Frequently, is a commercially-made, standardized test that is norm-referenced (Morrison et al., 2004; Oermann & Gaberson, 2009; Santo et al., 2013). An example of an exit exam is the E^2 (Morrison et al., 2004).

Intellectual. The ability to transfer knowledge gained into effective nursing care through correct use of procedures and standards as well as incorporation of evidenced-based practices (Thomas et al., 2011). Goes beyond knowledge to include recognizing the uniqueness of each patient and respect for their values (Oermann & Gaberson, 2009). Competency category located on the *Nursing Competencies Survey*.

Interpersonal. The ability to communicate with other health care professionals and collaborate, delegate, supervise, and seek support from team members in relation to providing patient care (Cronenwett et al., 2007; Thomas et al., 2011). Competency category located on the *Nursing Competencies Survey*.

Presented in nursing program. Represents how frequently a nursing faculty member perceives that a particular competency is taught within the nursing program; program competency (Filer, 2001; Hyndman, 1999). Skills identified as important for practice, which are incorporated into the nursing program (Hyndman, 1999). Specific

skills needed by the beginning RN to function competently in a variety of settings and within an ever-changing health care environment (Hyndman, 1999).

Progression policy. Nursing program policy that stipulates progression into the subsequent nursing course (English & Gordon, 2004; Heroff, 2009) or even graduation. May prevent students from writing the NCLEX-RN® based on predictions that they would fail should they attempt to take it (Spurlock, 2006). Policy frequently relies on a single test score, usually from a standardized test (e.g., E^2), to make a pass or fail prediction (Spurlock, 2006).

Remediation. Defined as any type of additional study used by students to prepare for retesting (Morrison, Free, & Newman, 2002). May include, but is not limited to, acquiring test-taking skills, learning relaxation techniques, developing critical thinking skills, attending review sessions (English & Gordon, 2004), using remediation packages through standardized testing companies (Davenport, 2007), creating a new course (Carr, 2011), participating in faculty and student mentoring, completing NCLEX-RN® practice questions, and creating individualized study plans (Pennington & Spurlock, 2010).

Safety. The ability to recognize when various factors (e.g., human or mechanical) have the potential to affect health care delivery as well as the ability of the heath care provider to correctly document or report those risks (Cronenwett et al., 2007). Competency category located on the *Nursing Competencies Survey*.

Standardized tests. "A standardized test is any examination that's (sic) administered and scored in a predetermined, standard manner" (Popham, 1999, p. 8). Usually used to make norm-referenced interpretations of students' achievements or knowledge (Oermann & Gaberson, 2009), often includes a comparison to a national

sample (Popham, 1999), and frequently commercially-made (Bourke & Ihrke, 2012; Popham, 1999). An example of a standardized test is the NLN's Basic Nursing Care I test.

Technical. The ability to use technology in a way that improves patient-centered care (e.g., use of electronic record systems to more effectively monitor patient outcomes) (Thomas et al., 2011). Includes ability to correctly employ technology (e.g., equipment) and perform nursing interventions (Oermann & Gaberson, 2009). Competency category located on the *Nursing Competencies Survey*.

Test blueprint. A tool that guides the test writer to develop items at appropriate levels and reflect the course objectives (Oermann & Gaberson, 2009).

Type of school. Three common classifications of nursing programs include public, private, and for-profit. Public nursing programs are those programs that received some funding from state tax-payers (Grove, 2013). Private nursing programs are those programs that are funded through private organizations (e.g., investments or private donors) and not from taxpayers (Grove, 2013). For-profit nursing programs are programs owned and governed by private corporations ("NCSL," 2013). Approximately 12% of post-secondary students enroll in a for-profit college or university ("NCSL," 2013).

Undergraduate nursing programs. According to the American Nurses Association, an educational pathway that culminates in one being able to write the NCLEX-RN®. It includes:

> Diploma in Nursing, once the most common route to RN licensure, is available through hospital-based schools of nursing. Associate Degree in Nursing (ADN) is a two-year degree offered by community colleges and hospital-based schools of

nursing that prepares individuals for a defined technical scope of practice. Bachelor of Science in Nursing (BS/BSN) is a four-year degree offered at colleges and universities. (“How to Become,” 2013)

Used in beginning practice. Represents how frequently a nursing faculty member perceives the competency to be used by beginning nurses within practice; practice competency (Filer, 2001). Skills needed by the beginning RN to competently function in a variety of settings and within an ever-changing health care environment (Hyndman, 1999).

Chapter Summary

In summary, this chapter has provided the basis for a study on the use of standardized tests within nursing programs. The importance, background, issues, purpose, problem statement, assumptions, limitations, definitions, and significance of the study were presented. Subsequent chapters will include a literature review, theoretical frameworks, and methodology.

CHAPTER 2

REVIEW OF LITERATURE

The literature review provided information over five sections that corresponded to the concepts and frameworks presented within this dissertation. The first section examined research regarding the use of standardized tests within the elementary, middle, and high school (K–12) educational system. The second section examined standardized test use within nursing programs. The third section explored research regarding AQIP within higher education, as concepts from it were relevant to the theoretical framework used within this dissertation. The fourth section focused on QSEN competencies within nursing programs because it, too, was relevant and its concepts were used for the theoretical framework and survey. Finally, the fifth section provided a summary and review of limitations regarding the scientific literature presented within this chapter.

State of Science

K–12. While the literature is limited with regard to standardized tests within nursing education, several articles and studies were available regarding their use in K–12 education. High schools first began utilizing standardized exit exams during the 1970s (Deerman et al., 2008). With the passage of No Child Left Behind on January 8, 2002, the funding that K–12 public schools received became dependent upon standardized test scores (Duckworth, Quinn, & Tsukayama, 2012). The use of standardized tests within these settings is not without controversy. For example, some arguments point out that students are being tested more than ever before, that standardized tests tend to measure superficial knowledge, that those who can afford preparation courses and private tutoring tend to perform better, and that norm-referenced tests were never intended to measure quality of instruction (Kohn, 2000). Deerman et al. (2008) added that teachers have

admitted to teaching to the test, becoming less creative in the classroom, and adjusting their classroom objectives to cover the test content.

Multiple studies pertaining to standardized test use within the K–12 system were reviewed. Significant findings included the following: (1) standardized test scores only provided one set of data at a specific point in time, but report card grades better reflected a student's overall ability to perform in the academic setting (Duckworth et al., 2012); (2) using tutors who are teachers of the subject and already known to the students can make remediation a more useful intervention (Rothman &Henderson, 2011); (3) students felt marginalized and became fearful about subsequent testing when they had performed poorly on standardized tests (Kearns, 2011); and (4) many variables affected how students performed on standardized tests, especially nonacademic factors such as parental education and household income (Paulson & Marchant, 2009).

In addition to the significant findings already mentioned, curricular narrowing has been reported as an issue caused by standardized testing. Maltese and Hochbein (2012) wrote that most standardized tests used within schools measure math and language skills since there is an emphasis placed on students doing well on these program directors, but this emphasis may be costing students the ability to do well in the sciences (i.e., curricular narrowing). These researchers conducted a longitudinal study that reviewed three groups of students and their performance on state standardized tests as well as on a college entrance exam. Findings supported their hypothesis that a narrowing of the curriculum may be occurring, as evidenced by science scores falling in schools considered to be "improving" on state math and language arts standardized tests. While caution is needed when interpreting the results, schools may not be fully preparing

students for college or to compete in a global workforce at a time when students need to be able to function within science, technology, engineering, and math fields (Maltese & Hochbein, 2012).

Some general limitations found within the K–12 articles included the following: (1) small sample sizes (i.e., conducted in only one school or program); (2) lack of an experimental design (i.e., students were selected based on performance); and (3) lack of discussion regarding data analysis (i.e., how missing data was handled and/or ensuring that assumptions were met). However, some of the studies (Maltese & Hochbein, 2012; Paulson & Marchant, 2009) did have large sample sizes ($n > 1,000$), which can improve generalizability. In addition, most of the studies used parametric statistics for data analysis that are statistically more powerful than nonparametric statistics (Polit & Beck, 2008).

Several issues addressed within the K–12 literature are pertinent to the use of standardized tests within nursing programs. For example, when nursing students do not pass standardized tests, an intervention such as remediation may be required. When planning remediation activities, faculty may want to draw from the literature that supports working with students one-on-one or in small groups (Rothman & Henderson, 2011) as opposed to having students self-remediate independently outside the classroom. Also, while the need to increase diversity within the nursing profession exists, nursing faculty must keep in mind that there are several nonacademic variables such as race and household income that may be linked to low performance on standardized tests (Paulson & Marchant, 2009). This may be especially true in nursing programs where many

students may be returning to school for a second career due to job loss or are receiving some financial assistance.

After failing a standardized test, some students may become more anxious, have further feelings of dread, or doubt their abilities to be successful in the future (Deerman et al., 2008), such as when writing the NCLEX-RN®. Nursing faculty must be diligent in recognizing the potential for curriculum narrowing to occur in nursing programs, which is what Maltese and Hochbein (2012) believed occurred in K–12 classrooms due to an overemphasis on standardized test content. This is a sentiment shared by Willis (2007), who stated that this generation of public school students—who could become the most-tested yet— may be the least knowledgeable student group. When the educational focus narrows to simply passing the standardized test, other competencies—such as those mentioned by the IOM— may be relegated to less important lecture topics. It is recommended that standardized test scores should be only one piece of data.

It should be noted that the literature does not support using standardized test scores to judge the quality of a teacher or teaching methods. Statistics can be seductive, so policymakers must keep that in mind when labeling a teacher, a district, or group of students as low-performing, since the accuracy of those comparisons can be very difficult to pinpoint (Paulson & Marchant, 2009).

Finally, nursing faculty need to keep in mind that while the standardized test score gives a glimpse of the student's performance at a particular time, grade point average may be a better indicator of the student's ability to perform long-term (Duckworth et al., 2012), such as throughout an entire nursing program.

Nursing programs. Limited published research exists regarding the use of standardized tests within nursing programs. This is consistent with the writings of multiple authors (DiBartolo & Seldomridge, 2005; Harding, 2010; Pennington & Spurlock, 2010), all of whom conducted systematic reviews on the topics of predictability of exit exams or interventions used to promote NCLEX-RN® success. Though several articles addressed standardized tests and nursing education, the articles tended to provide anecdotal evidence regarding changes in NCLEX-RN® pass rates after implementing curricular changes or standardized testing within nursing programs in response to decreased NCLEX-RN® pass rates such as Bonis, Taft, and Wendler (2007); Davenport (2007); Heroff (2009); Jacobs and Koehn (2006); March and Ambrose (2010); McQueen, Shelton, and Zimmerman (2004); and Norton et al. (2006).

Primarily, nursing programs implement standardized exit exams to protect their NCLEX-RN® pass rates, and most of the research published focuses specifically on the E^2 (Harding, 2010). In 2009, at least 1,000 nursing programs reported using the E^2 (Lavandera et al., 2011). HESI tests (i.e., E^2 and HESI Specialty Exams) are valid and reliable instruments (Nibert & Morrison, 2013; Morrison et al., 2004); however, it should be noted that some disagreement exists within the literature regarding the use of standardized tests and the need to predict NCLEX-RN® success. Specifically, some have written that perhaps it is more important to be able to predict who is most at risk of failing the NCLEX-RN® than who will pass (Spurlock & Hanks, 2004).

Accuracy of prediction. This opinion is consistent with the work published by Spurlock and Hunt (2008). These researchers studied one nursing program and found that the implementation of evidenced-based policy on standardized tests and progression did

not improve this nursing program's NCLEX-RN® scores. The study utilized a retrospective, correlational design and required a benchmark score of 850 (Spurlock & Hunt, 2008). With regard to the first E^2 scores, a statistically significant relationship was found regarding NCLEX-RN® outcomes ($r_{pb} = -0.275$, $p \leq 0.005$); however, no statistically significant relationship was found in the prediction of NCLEX-RN® outcomes if students took the E^2 multiple times. Spurlock & Hunt (2008) also discovered that additional attempts to obtain a score of 850 introduced error (spuriousness), which decreased the strength of the predictability. Spurlock and Hunt (2008) also found the most accurate E^2 score to be 650, as opposed to the previously set benchmark of 850. This means that the descriptors assigned to students by the E^2 (e.g., below-average probability of passing or grave danger of failing) were not very accurate because they were based on the benchmark of 850. Lavandera et al. (2011) added that when considering only E^2 scores, there are a significant number of students labeled at-risk who then go on to pass the NCLEX-RN® . Nurse educators should keep in mind that because NCLEX-RN® failures are relatively low in occurrence, predicting them tends to become more challenging (Spurlock & Hunt, 2008).

Young and Willson (2012) also found that the more times a student took the E^2, the less accurate it became in predicting NCLEX-RN® passage. However, these researchers found that even when students had to take the test three times to obtain the benchmark of 850, the ability to accurately predict passing was still very good—over 90%, in fact (Young & Willson, 2012). Consequences for not meeting the benchmark ranged from repeating the test to failure of the course (Young & Willson, 2012). This

study was more generalizable because it included 72 nursing programs and a total of 4,383 participants.

In addition to an exit exam, Yoho, Young, Adamson, and Britt (2007) conducted a descriptive, longitudinal, and correlational study that compared standardized entrance and mid-curricular standardized HESI tests used within a two-year nursing program to NCLEX-RN® success rates. The tests studied included the Admission Assessment test (A^2), a HESI mid-curricular test, and the E^2. Of the entrance test(s) used, only the A^2 reading scores correlated to the HESI mid-curricular scores. The HESI mid-curricular scores were found to correlate with E^2 scores. First E^2 scores were 94.3% accurate with regard to predicting NCLEX-RN® success (Yoho et al., 2007).

Aside from exit exams and accuracy of predicting NCLEX-RN® success, some researchers have studied the predictive precision of standardized course content tests. Standardized course content tests are used at the end of individual courses (e.g., pediatrics or mental health nursing). Standardized course content tests are beneficial given that without a solid foundation, it can be difficult to learn new nursing concepts (Emory, 2013).

Emory (2013) conducted an exploratory study researching ATI's CMS and their ability to correlate with NCLEX-RN® success within a four-year nursing program. The three CMS tests included were pharmacology, mental health, and fundamentals of nursing. Data such as CMS scores, NCLEX-RN® results, age, and gender were analyzed through descriptive statistics, independent two-sample *t*-tests, and stepwise regression (Emory, 2013). Results of the *t*-tests found significant relationship between NCLEX-RN® results, pharmacology CMS scores, and fundamentals of nursing CMS scores.

Furthermore, upon stepwise regression, pharmacology remained significant ($p = .02$), with the pharmacology test able to correctly predict NCLEX-RN® results 73.7% of the time (Emory, 2013). However, in a separate study, Ukpabi (2008) found that fundamentals of nursing, mental health, pharmacology, medical-surgical I and II, and pediatric CMS tests were significant with regard to NCLEX-RN® success: $p < 0.003$ to $p < 0.05$. These two studies illustrate the complexity associated with prediction of NCLEX-RN® success given that variables (i.e., faculty competence and student demographics) differ between nursing programs.

General limitations noted among articles pertaining to standardized tests and prediction included (1) small sample sizes (e.g., one nursing program only); (2) inconsistent testing policies among the various studies (e.g., consequences for poor performance); (3) lack of experimental design (e.g., random selection); and (4) lack of a theoretical framework in which to guide the studies. It can also be difficult to generalize results from studies when the study took place in only one school (i.e. two-year program). However, standardized tests such as the E^2 have well established reliability and validity, which can increase the generalizability of results (Polit & Beck, 2008).

These studies are significant to nursing faculty for multiple reasons. First, faculty must be aware that while students can become successful in obtaining benchmark scores on subsequent exit exam attempts, they may be at greater risk for NCLEX-RN® failure than those who scored at the benchmark on their initial attempt. In addition, faculty may wish to consider whether the results they are most interested in are for those likely to pass or fail the NLCEX-RN®. Second, few studies exist that assess the impact of standardized course content tests since most seem to focus on exit exam results. There should be

interest from faculty in identifying those at risk for NCLEX-RN® failure early in a nursing program (Daley et al., 2003; Lavandera et al., 2011), for in doing so faculty and students can begin to work together sooner rather than later and increase the likelihood of first-time NCLEX-RN® success (Sayles, Shelton, & Powell, 2003).

Diverse populations. The literature is mixed regarding the accuracy of standardized tests among diverse student groups such as minority groups or others deemed to be at-risk. Minority students do fail the NCLEX-RN® more often than their white counterparts (De Lima, London, & Manieri, 2011; Sayles et al., 2003). However, Stuenkel (2006) found evidence that NLN achievement scores from NLN community health and NLN adult care tests were accurate predictors of NCLEX-RN® success among a diverse student population. Lavandera et al. (2011) added that no evidence was found to support that race, ethnicity, age, or immigration status affected timely licensure within their study of four-year nursing students and standardized tests.

Alameida et al. (2011) studied the predictive accuracy of standardized tests among a diverse student nurse population. Standardized tests are norm-referenced and questions exist regarding the applicability of results when working with diverse groups (Alameida et al., 2011). Linear regression results demonstrated a significant relationship between ATI predictive probability, grade point average, and first-time NCLEX-RN® success, whereas no significance existed between demographics and first-time NCLEX-RN® pass rates (Alameida et al., 2011). In addition, one group who took the ATI Comprehensive Predictor test was predicted to fail the NCLEX-RN® but did not. It was thought that because students received only 3% of their course grade based on taking the test, some students within that group did not take the test seriously (Alameida et al.,

2011). Other findings included that the ATI Comprehensive Predictor test would be used to make quality improvements within the program, such as curricular updates in which key content areas from the NCLEX-RN® are better incorporated into courses.

Limitations existed within this study. First, three tracks of students were included within the population due to the fact that they all followed the same curriculum. These included master's-entry students, those with previous four-year degrees, and traditional four-year nursing students. This study had a larger sample size (n > 500) but took place within only one nursing program and can decrease the generalizability of results. Also, since this study took place in a four-year nursing program, results may not accurately apply to two-year nursing programs. Finally, the exit exam version was updated in 2008, meaning that the data collected over the years came from multiple versions. One of the study's strengths was that the population was quite diverse, featuring individuals who identified themselves as Asian, non-Hispanic (38%), white, non-Hispanic (30.6%), African American (7.3%), Native American/Native Alaskan (0.8%), Native Hawaiian/Pacific Islander (1.2%), Hispanic (10.9%), and other individuals (4.1%) (Alameida et al., 2011).

Research studies on diversity and standardized tests are relevant to nursing faculty because it has been suggested that there is an increase in racially diverse students seeking entry into nursing programs (Dillard & Siktberg, 2012). As such, nursing programs invested in increasing racial and cultural diversity should be aware of the mixed findings from published literature regarding standardized test use. Nursing programs may want to take this into consideration when determining policies that are based on standardized test results, such as admission or progression. It has even been suggested that racially diverse

students have educational experiences not best measured by standardized tests (Finke, 2012).

Curriculum change. Studies sought also included standardized test performances, NCLEX-RN® passage, and curriculum changes. Standardized tests—or any test utilized—must be congruent with the curriculum and overall program philosophy. Given the rapid changes in both health care and the world in general, faculty must find ways to provide high-quality curricula while also employing sound educational principles (Dillard & Siktberg, 2012).

Bondmass, Moonie, and Kowalski (2008) compared scores from the Nurse Entrance Test (NET™) and 16 Educational Resources Inc. (ERI) tests from baccalaureate nursing graduates who either passed or failed the NCLEX-RN®. It can be difficult to apply the findings from research studies regarding HESI exit exams, as those studies often have samples that include a variety of nursing programs (Bondmass et al., 2008). The researchers stated that while published research on the use of other standardized tests exists, there are only a few that investigate the use of the NET™ and ERI tests within baccalaureate programs. In addition to integrating standardized testing within the nursing program, the researchers wrote that there was a need to revise the nursing program curriculum to better meet the needs of students as well as meet state mandates to increase enrollment. This study used a descriptive design with a convenience sample comprised of four nursing classes (Bondmass et al., 2008).

Findings included an 8.5% increase in pass rates associated with the revised curriculum. They also showed that 87.4% of graduates who passed the NCLEX-RN® had NET™ scores greater than 70% versus 55.6% of those who did not pass (X^2=11.57,

p=0.001). Composite scores for 13 of the 16 ERI tests were statistically significant for those who passed as compared to those who failed the NCLEX-RN® ($p \leq 0.000$-0.03) (Bondmass et al., 2008). Faculty are encouraged to keep in mind that national benchmarks for standardized tests may not be the most applicable when analyzing and determining cutoff scores or identifying students who are "at-risk" within a specific nursing program. This study found a large variance between the sample mean and national mean on the NET™ (Bondmass et al., 2008). These findings are similar to those of Morris and Hancock (2008), who also discovered that the use of standardized tests helped maintain NCLEX-RN® pass rates after the introduction of a new curriculum.

Some limitations noted in the articles regarding curriculum changes and standardized test scores included (1) lack of experimental design (i.e., case study or descriptive correlational design); (2) use of nonparametric statistics (e.g., due to small sample sizes); and (3) that the studies both took place in one nursing program, which can limit generalizability of results. While not necessarily a limitation, NET™ and ERI tests are no longer being commercially produced.

It is relevant to include literature regarding curriculum revision and standardized tests. Nursing curricula are not static and can require revisions for a variety of reasons, including changes in health care policies or consistently low NCLEX-RN® pass rates. While the studies were somewhat different from each other, both found significant results regarding the correlation between curriculum revision and use of standardized tests helping a nursing program meet state board of nursing NCLEX-RN® pass rates, if not improve them significantly. In addition, both studies found that, overall, standardized

tests were able to accurately predict who would and who would not pass the NCLEX-RN®.

Multiple predictors. In addition to what has already been presented, additional literature studied multiple variables or predictors of NCLEX-RN® success. Studying the various predictors of student success is essential given that predictors can and do change in response to quality improvements made within nursing programs or shifts in policies and procedures (Sewell, Culpa-Bondal, & Colvin, 2008). However, nursing faculty must understand that no one set of predictors has ever been identified that applies equally to all nursing students or nursing programs (Stuenkel, 2006). For example, Simon and Augustus (2013) found statistical differences among predictors and the length of a given nursing program (e.g., two-year or four-year).

De Lima et al. (2011) conducted a retrospective study within a two-year nursing program. Multiple variables such as demographics, E^2, and academic performance were examined for their impact on NCLEX-RN® outcomes. Independent *t*-test results found that the scores on standardized admission tests, E^2, course grades in parent-child and mental health, and standardized test scores within those same two courses were statistically significant for those who would be successful on passing the NCLEX-RN® (De Lima et al., 2011). Nonsignificant findings included entering grade point average, grade point average upon graduation, and medical-surgical and fundamental course grades (De Lima et al., 2011).

In addition to the study reviewed above, multiple separate studies have identified factors which have impacted NCLEX-RN® pass rates. Significant findings have included age, status of student (e.g., transfer), cumulative grade point average at graduation

(Beeson & Kissling, 2001), prerequisite course grades (Higgins, 2005), nursing course grades (Beeson & Kissling, 2001; Lavendera et al., 2011), ethnicity, clinical competency (Crow, Handley, Morrsion, & Shelton, 2011), standardized nursing course content test scores (Crow et al., 2004; Yeom 2013), exit exams (Beeson & Kissling, 2001; Crow et al., 2004), and preadmission test scores (Crow et al., 2004; Higgins 2005; Sayles et al., 2003). Interestingly, Crow et al. (2004) conducted a national study and found that those programs using an exit test had NCLEX-RN® pass rates higher than the national average 57.6% of the time while those programs not using exit exams had rates higher than the national average 68.1% of the time.

Limitations that were noted among the articles pertaining to multiple predictors included (1) lack of experimental design (e.g., descriptive or retrospective); (2) lack of theoretical framework (i.e., lack of guidance for the studies); (3) only one study used a national sample (i.e., lack of generalizability of results); and (4) when a national sample was used, data was collected through a self-report survey, leading to potential bias with answers.

The research published on multiple variables, standardized test use within nursing programs, and the NCLEX-RN® is complex. Because variables may be used in one study and not in another, nurse educators can have a difficult time generalizing the findings (Crow et al., 2004). Faculty must keep in mind that teaching methods, learning environments, study designs, and types of nursing programs can vary along with the types of students enrolled. However, knowing what factors have already been identified in research studies can assist nursing faculty when concerns arise regarding student success and if decisions need to be made regarding appropriate interventions (e.g.,

remediation or admission criteria). This is especially important because interventions that are based on best practices can be helpful in ensuring that students are successful when resources may be limited (Lavandera et al., 2011).

Benchmarks and progression. Finally, literature was reviewed which explained the effects of benchmarks, progression, remediation, and standardized test scores. When a student fails to obtain a minimum benchmark on a standardized test, they may be labeled at-risk and required to remediate (Sifford & McDaniel, 2013). Currently, no national standards exist for determining benchmarks, remediation activities, and progression policies within nursing programs. Langford and Young (2013) found that, within their study, 65% of nursing programs used scores from exit exams to determine whether remediation was required. However, the remediation activities employed varied among the multiple nursing programs within the study.

Nibert, Young, and Britt (2003) studied how multiple nursing programs established exit exam benchmarks, progression policies, and remediation strategies. Administrators provided information through a questionnaire mailed to them. The three most common consequences of not meeting the set benchmark included denial of ability to graduate, assigning a failing grade in the capstone course, and withholding eligibility to sit for the NCLEX-RN® (Nibert et al., 2003). Several of the nursing programs required students to retake the exit test until the benchmark was achieved, but the minimum benchmark varied significantly from nursing program to nursing program.

Approximately 67% of the administrators said remediation policies existed within their programs, although for many there were no consequences if students did not remediate (Nibert et al., 2003). Of the programs that remediated, the most common

intervention used was a remediation course. Other interventions included computer programs, NCLEX-RN® prep books, tutoring, mock NCLEX-RN® exams, and the need to retake a nursing course (Nibert et al., 2003).

Nibert et al. (2003) wrote that a benchmark of 85 is an acceptable level to set, but added that other factors such as class size must be considered, with even one NCLEX-RN® failure strongly affecting smaller class sizes. English and Gordon (2004) added that within their nursing program, those unable to meet the 85 benchmark on a HESI custom exam after two attempts were remediated through review sessions and instructed in guided imagery as well as test-taking strategies. Each student who participated in these methods went on to pass the exam and progress to their senior year.

Similarly, Morrison et al. (2002) wrote that after implementation of progression policies, NCLEX-RN® passage improved by 9–41%, as reported by administrators they interviewed. This is consistent with Lauer and Yoho (2013), who found that E^2 scores were significantly higher when students were required to remediate, as opposed to those instances when remediation was merely a suggestion. While Newman, Britt, and Lauchner (2000) did not specify which remediation strategies were used by the various nursing programs within their study, findings indicated that the E^2 was most accurate when given in a *proctored setting* and that schools that used E^2 scores as the basis for remediation had fewer NCLEX-RN® failures than those who did not. It should also be noted that those students most in need of remediation tend not to remediate unless it is a mandatory requirement (Heroff, 2009).

Limitations noted among articles that studied multiple predictors included (1) lack of a valid/reliable data collection instrument which can decrease the generalizability of

results (i.e., self-report surveys or interviews); (2) lack of standard remediation strategies (i.e., may or may not be mandatory); (3) lack of experimental design; (4) lack of a theoretical framework; and (5) little information provided regarding data analysis (i.e., screening the data and choice of statistical analysis). One strength of these studies is that large sample sizes were often used and that data was obtained from multiple nursing programs.

While the literature is mixed regarding setting benchmarks and developing remediation interventions, reviewing said literature when making decisions involving standardized tests remains pertinent. Faculty members need to be aware of these inconsistencies and carefully consider how they are going to determine benchmark scores and remediation guidelines that would work best within their nursing program, as there may be a variety of factors influencing performance (e.g., a proctored setting). In addition, a variety of standardized tests are currently being utilized within nursing programs, all featuring differing score reports and recommended benchmarks. Faculty must stay up-to-date regarding changes in scoring, such as what occurred with HESI standardized tests. No longer are scores such as 85 reported; instead, 850 is now considered acceptable by many programs. Finally, careful consideration is needed, especially if progression policies are related to benchmarks, since nursing programs often set them according to vendor recommendations (Santo et al., 2013).

Frameworks. Two theoretical frameworks were used within this study. The first was quality improvement and, more specifically, the AQIP model. The second framework was QSEN. Literature was reviewed to support the use of both as theoretical frameworks.

Quality improvement. Published research regarding the use of the AQIP model is limited, and even more so with regard to health care programs such as nursing. Much of what has been published is in the form of graduate dissertations or articles related to college or university accreditation processes. Nothing was found that specifically related the AQIP principles and standardized test use. Matthiesen and Wilhelm (2006) add that continuous quality improvement should be used within nursing programs because it is beneficial in determining how program evaluations are leading to improved patient care.

AQIP. One research study found used the AQIP model within a health sciences program. The researchers created an instrument based on the nine categories of the AQIP model and used it to evaluate the medical records programs within four Iranian universities (Yarmohammadian, Mozaffary, & Esfahani, 2011). Evaluation allows programs to determine areas of strengths and weaknesses; thus, this will be a benefit to students who are expected to graduate with complex skills and competencies (Yarmohammadian et al., 2011). Similarly, McAllister (2001) wrote that nurses need not possess finite knowledge upon graduation, but rather have the ability to function with minimal supervision, quickly learn new skills, and incorporate ethics, maturity, tolerance, and critical thinking within their practice.

Findings indicated that faculty had a favorable view of quality improvement with regard to the nine AQIP categories, and they did not differ greatly in their opinions among the four universities (Yarmohammadian et al., 2011). However, there was significant variance reported by the students, with some indicating that *faculty* are not current on best practices but instead continue to teach what they already know (Yarmohammadian et al., 2011). A major limitation of this study is that the instrument

was developed in the Persian language. While Cronbach's alphas were reported by the author (93.6 for students and 96.7 for faculty), the instrument may not translate well into English. Also, no information was included pertaining to how the sample was selected or how the data was analyzed. It can be difficult to generalize these findings as the research was conducted in another country and in programs unrelated to nursing.

Expounding upon the idea of appropriate assessment methods, data gathered to reflect quality improvement or learning within nursing programs must be collected via relevant instruments (Brown & Marshall, 2008), but this may not always be in the form of a standardized test. While standardized test scores provide only one set of data, they may be used within nursing programs with the belief that they will help students be successful on the NCLEX-RN®. High passage rates are often interpreted as a reflection of the quality of a nursing program (Oermann & Gaberson, 2009). However, for quality improvement to truly occur, schools must possess a quality mindset and have a mission in which their students achieve a distinctive higher quality of education (Spangehl, 2012). The literature published on standardized tests within nursing education often described factors related to NCLEX-RN® success, but little else was offered regarding how programs ensured that graduates possessed the competencies that reflect the paradigm shift called for by the IOM (2011), Benner et al. (2010), and Giddens et al. (2008), in which graduates are truly competent beyond simply passing the NCLEX-RN®. Instead, there are still many nursing programs that are teacher-centered and heavily content-laden, encouraging faculty to teach to the test, all the while feeling the pressures to ensure that graduates can pass the NCLEX-RN® (Hickey, Forbes, & Greenfield, 2010).

QSEN. Finally, literature utilized in this study reviewed QSEN implementation within nursing programs. Based on IOM recommendations and the need for a paradigm shift within nursing education, QSEN competencies have been developed in an attempt to better prepare nurses to care for patients with complex health care needs ("About QSEN," n.d.). QSEN competencies should be included within all aspects of nursing programs, but there is not always a consensus on how best to incorporate them. Barnsteiner et al. (2012) writes that QSEN competencies tend to be only minimally or moderately integrated into programs.

Barton, Armstrong, Preheim, Gelmon, and Andrus (2009) conducted a national Delphi study to determine leveling of QSEN competencies within nursing programs, with a goal of two-thirds of the respondents reaching a consensus after three rounds. Typical nursing programs move from simple to complex concepts in a linear manner that does not integrate complex patient issues early enough; when integrated, they are often introduced in an episodic manner (Barton et al., 2009). Fifteen QSEN pilot schools, 12 QSEN core faculty, and two QSEN advisors were eligible to participate in the computer-based questionnaire; nine of the sampled individuals responded for all three rounds. One hundred and fifty-two of the 162 Knowledge, Skills, and Attitudes (KSAs) achieved a two-thirds majority or higher consensus. Regarding when to introduce KSAs within a nursing program, the early phase (i.e., beginning of the nursing program) was indicated for patient-centered care and safety; informatics and evidenced based practice were recommended for early and intermediate phases of a nursing program (Barton et al., 2009). Quality improvement and collaboration were recommended for introduction during the intermediate phase, but complex quality improvement issues were

recommended to be integrated during the advanced phase of a nursing program (Barton et al., 2009).

A limitation of this study was that little information was provided regarding how those who were invited to participate were actually selected. Mention was made of a selection committee, but no further information was given regarding how one becomes nominated and would be considered for nomination. Also, the 18 "experts" who chose to participate came from only 16 states, which left many nursing programs and other states without representation.

These findings are significant because they demonstrate the need for construction of a QSEN competency foundation to begin early within a nursing program and be built upon throughout all courses. Curricular mapping for QSEN competencies must occur with evidence of the competencies threaded throughout all nursing courses (Cronenwett, Sherwood, & Gelman, 2009). In addition, nursing programs need to rethink teaching and testing strategies (i.e., effect a paradigm shift) for students, especially with regard to QSEN competencies and how QSEN content may be present on standardized tests. For example, if the requirement is to pass an exit exam, then faculty must be sure that they are adequately testing concepts such as QSEN and not solely those minimal competencies needed to pass the NCLEX-RN®. However, faculty themselves may not be familiar with QSEN competencies and how best to integrate them into courses (Disch, Barnsteiner, & McGuinn, 2013). This is supported by Sullivan, Hirst, and Cronenwett (2009), who found that newly graduated nurses recognized that QSEN education is important but also believed that they needed more in their nursing programs.

Chapter Summary

In summary, the findings obtained from research researching standardized test use were mixed and substantiate the need for further study. For example, faculty members need to consider what information they want to obtain from standardized tests. There is evidence to support the validity and reliability of standardized tests to predict NCLEX-RN® success, but it is limited in its ability to predict NCLEX-RN® failure. In addition, factors present within one nursing program (e.g., minority students or remediation policies) may not be present in another nursing program.

The literature demonstrated a lack of consensus among the various nursing programs studied regarding how standardized tests fit within curricula, including how much weight a standardized test would carry within a course or program. Also, there was little agreement when it came to how benchmarks and remediation interventions were determined. Nothing was found that addressed remediating students so that they not only passed the standardized test or NCLEX-RN® but also ensured that they possessed competencies such as those identified by QSEN and the IOM. In addition, no studies were located that addressed whether nursing programs had been assessed for curricular narrowing after making changes due to standardized test results.

There was a dearth of information regarding the involvement of students and faculty in the selection of standardized tests and decisions associated with those tests (e.g., deciding how much weight a test would carry in a course or how progression policies were determined). Including students' input can be beneficial when making changes within a nursing program (Jacobs & Koehn, 2004), and valuable insights can be obtained, such as what types of barriers students face with regard to standardized testing and remediation (Richards & Stone, 2008).

Furthermore, care must be taken when students are labeled at-risk (DiBartolo & Seldomridge, 2005), given that benchmarks may be set according to national norms and not be truly representative of a specific nursing program's student sample. Students may become stigmatized or fearful when, in reality, they are likely to pass the NCLEX-RN®. This labeling may cause undue anxiety (Waterhouse & Beeman, 2003), and some students may even consider dropping out of the nursing program if they believe they will not be successful in becoming an RN.

Finally, it should be considered that while some authors indicated that standardized test use provided a form of quality improvement for the nursing programs, what may have actually occurred was more closely related to quality assurance (e.g., maintaining NCLEX-RN® benchmarks). When the literature is not clear as to the types of curricular changes made as a result of standardized test results, it can be difficult to determine how quality improvement actually occurred.

This study attempted to fill the gaps in the literature by reporting on how standardized tests are impacting nursing program curricula. While the reviewed research mainly focused on the reliability and validity of standardized tests, little research was available regarding how nursing programs select benchmarks, remediation, and progression polices. In addition, no research was found that assessed the potential of curricula narrowing due to the use of standardized tests within nursing programs.

CHAPTER 3

THEORETICAL FRAMEWORKS

This dissertation incorporated concepts from two theoretical frameworks. The first framework was quality improvement and, more specifically, the AQIP model. The second framework was QSEN.

Quality Improvement

Quality improvement is a not only a theory but a method commonly used in health care to guide improvements (Kyrkjebø & Hanestad, 2003). Quality improvement was selected for this study because nursing programs should continually evaluate themselves in order to improve their worth or value (Oermann & Gaberson, 2009). Nurse educators must keep in mind that within higher education there is a need to prove quality among graduates. There is dissatisfaction among employers that graduates cannot work in collaboration and have poor communication, computational, and writing skills (Middaugh, 2012). The nursing programs that will make a difference within the health care system are those that refuse to accept mediocrity and strive for excellence (Valiga, 2009).

AQIP. One specific quality improvement approach used within higher education is AQIP. Developed in 1999 by the Higher Learning Commission–North Central Association, AQIP strives to provide institutions of higher education with an alternative to traditional accreditation while infusing the principles of quality improvement into colleges and universities ("Academic Quality," 2013). AQIP has been successfully used within some nursing programs to ensure continuous quality improvement (Carroll, Thomas, & DeWolff, 2006).

Five AQIP principles were used within this dissertation as part of the theoretical framework. They include focus, involvement, leadership, learning, and information. These principles were considered essential to the goals of the study.

The first principle in AQIP is *focus*. It is appropriate for inclusion because it includes a nursing program's mission statement, philosophy, or vision. According to Oermann and Gaberson (2009), the curriculum must fit the philosophy of the nursing education program, and the courses offered must have a purpose within the curriculum (Iwasiw, Goldenberg, & Andrusyszyn, 2005). Additionally, the methods used to evaluate student learning—such as exams, papers, clinical performance, and presentations—must be congruent with the curriculum. Nursing programs that utilize standardized tests must ensure that they are aligned with the program's philosophy and mission statement.

The second principle is *involvement* and is appropriate for inclusion as it relates to nursing programs. Involvement reflects the need for nursing programs to have a broad base of employees skilled at knowing how to best meet the needs of stakeholders through the use of evidence-based practice while remaining committed to quality improvement ("AQIP Principles," 2013). Valiga (2009) adds that students must always be involved if excellence is to occur within nursing programs. Additionally, faculty members need to be involved in deciding the evaluation methods to be used within a course (e.g., the creation and use of tests).

The third principle is *leadership*, another aspect appropriate for inclusion, as leaders must be role models of quality improvement and ensure that faculty, staff, and stakeholders understand the concept of quality improvement and how it fits within the nursing education program ("AQIP Principles," 2013). "Leadership is a process whereby

an individual influences a group of individuals to achieve a common goal" (Northouse, 2010, p. 3). Individuals in leadership positions must involve faculty, students, and staff in planning and implementing the curriculum (Uys & Gwele, 2005). Department heads or program directors can be very useful in helping nursing education faculty understand how standardized tests should be instituted within the curricula and in a way that is congruent with the philosophy of the nursing education programs.

The fourth principle, *learning*, is appropriate for inclusion because learning should be the center of nursing programs not only for students but faculty and staff as well. It is an active process of seeking understanding, exploring, and applying meaning to newly acquired data (Candela, 2012). The courses that comprise the curriculum must be carefully designed and utilize evaluation methods that will enhance student learning ("AQIP Principles," 2013). If faculty members and nursing programs are including standardized tests within curricula and courses, they must be aware of how these tests are constructed and for what purpose they are intended. Nursing faculty cannot simply outsource their responsibilities to write reliable and valid tests to a standardized test company and relinquish knowledge regarding how to construct, plan, and write a test.

Most tests developed in colleges and universities are instruments for observing and describing student characteristics using a numerical (or categorical) scale (Nitko & Brookhart, 2011). They are frequently representative of a summative evaluation method—that is, faculty use them to judge a student's performance after a unit of instruction (e.g., lectures on cardiac diseases) or an entire course (Nitko & Brookhart, 2011). There are several reasons why faculty use tests within their courses. To begin

with, they are helpful—if not critical—in evaluating nursing students' knowledge (Masters et al., 2001).

Test blueprint. The test blueprint is a crucial aspect of test construction and is essential in test development. If numerous faculty members teach separate sections of the same course, the test blueprint will help ensure that all sections meet course outcomes. Faculty should be open to sharing the test blueprint with the students. Allowing students to view the test blueprint will help them better understand the level of content each objective will cover as well as the difficulty of each item (Oermann & Gaberson, 2009).

Standardized testing companies often use the NCLEX-RN® test blueprint when creating their tests. A common disadvantage is that course content is not organized into the NCLEX-RN® categories but is concept-based, such as teaching various heart diseases in a medical-surgical lecture (Twigg, 2012). Much control over the principles of test construction is left up to the test construction company and their assurances that the tests were well constructed and scored fairly.

Grading framework. Grading is another important concept under the AQIP *learning* principle. Many standardized tests are norm-referenced to some extent. One issue with norm-referenced grading is that students are not graded on content mastery but how they stand in relation to a group (Oermann & Gaberson, 2009). For example, a student could score quite well on a standardized test and have little content mastery.

Information is the fifth principle to be used within this dissertation. This is data that has accurate meaning and was assembled to answer questions (McLaughlin & Kaluzny, 1999). It is appropriate for inclusion due to its support of quality-focused and fact-based decisions ("AQIP Principles," 2013). Consistent with these statements, nursing

programs' curricula must take into account accreditation requirements and recommendations. Accreditation and quality are synonymous, and these accrediting bodies often have standards and guidelines that must be considered by nursing programs (Adams, 2009).

Benchmarks. Another source of information for nursing programs to consider is benchmarks. Faculty may set such criteria for students to achieve on standardized tests and then measure program or course outcomes based on those benchmarks (Bourke & Ihrke, 2012). Currently, the literature—as well as accrediting bodies such as the NLN—do not support the use of benchmarks associated with standardized tests for blocking progression to graduation. However, some nursing programs do have an exit exam that students must pass in order to graduate. Many nursing programs also assign points or count performance on a standardized test toward a course grade. The benchmarks that students must meet on standardized tests should be well-thought-out and not arbitrarily established.

It may be tempting for faculty to select a standardized testing package based on marketing materials, but faculty must ensure that these tests will help meet the needs of the faculty, staff, and students. Additionally, students should be able to provide feedback regarding standardized tests that faculty should consider. Finally, faculty members need to be aware that there is no quick fix (e.g., standardized tests) for determining who is at risk of failing the NCLEX-RN® . Rather, when schools incorporate evidenced-based teaching strategies, they will have better NCLEX-RN® success (Speakman, 2009).

QSEN

The second framework used was QSEN. "The overall goal for the Quality and Safety Education for Nurses (QSEN) project is to meet the challenge of preparing future nurses who will have the knowledge, skills, and attitudes (KSAs) necessary to continuously improve the quality and safety of the health care system within which they work" ("Pre-Licensure KSAs," n.d.). It is a continuous quality improvement initiative funded by the Robert Wood Johnson Foundation (Disch, 2012). This framework was selected because the six QSEN competencies are similar to the areas of nursing skills presented on the survey to be used within this dissertation to collect data.

The first competency is *patient-centered care*. "Patient-centered care: Recognize the patient or designee as the source of control and full partner in providing compassionate and coordinated care based on respect for patient's preferences, values, and needs" ("Pre-Licensure KSAs," n.d.; Smith, Cronenwett, & Sherwood, 2007, p. 113). Nursing care that reflects this principle includes performing thorough physical assessments, including the patient and family in teaching, and reevaluating plans of care as needed.

The second competency is *teamwork and collaboration*. "Teamwork and collaboration: Function effectively within nursing and inter-professional teams, fostering open communication, mutual respect, and shared decision-making to achieve quality patient care" ("Pre-Licensure KSAs," n.d.; Smith et al., 2007, p. 113). Nursing actions that reflect this principle include the ability to clearly communicate with colleagues regarding patient needs and working well with others to ensure that efficient care is provided.

The third competency is *evidence-based practice*. "Evidence-based practice: Integrate best current evidence with clinical expertise and patient/family preferences and values for delivery of optimal health care ("Pre-Licensure KSAs," n.d.; Smith et al., 2007, p. 113). Nursing actions that represent this principle include using critical thinking and ensuring that the care provided is based on up-to-date research.

The fourth competency is *quality improvement*. "Quality improvement: Use data to monitor the outcomes of care processes and use improvement methods to design and test changes to continuously improve the quality and safety of health care systems" ("Pre-Licensure KSAs," n.d.; Smith et al., 2007, p. 113). Nursing actions that reflect this principle include applying standards of care, ensuring that the patient has the resources needed after discharge to prevent readmission (e.g., case management), and understanding core measures.

The fifth competency is *safety*. "Safety: Minimizes risk of harm to patients and providers through both system effectiveness and individual performance" ("Pre-Licensure KSAs," n.d.; Smith et al., 2007, p. 113). Nursing actions that reflect this principle include following policies and guidelines regarding patient procedures, properly administering medications, and reporting hazards such as malfunctioning equipment.

The sixth competency is *informatics*. "Informatics: Use of information and technology to communicate. Manage knowledge, mitigate error, and support decision-making" ("Pre-Licensure KSAs," n.d.; Smith et al., 2007, p. 113). The nursing actions that reflect this competency include the ability to locate results or resources from databases and communicating patient needs by electronic means quickly while maintaining privacy laws.

Nurses must understand these six competencies upon graduation from nursing programs. Comprehension of these items will help ensure that the future patients assigned to them will receive safe treatment from qualified health care professionals who understand that nursing practice is more than just a sum of tasks. These competencies move the nursing profession forward and away from how nurses historically worked (e.g., task-focused) (Bargagliotti & Lancaster, 2007).

Chapter Summary

In summary, quality improvement must be present within every nursing program. Those managing nursing programs must recognize the importance of not only maintaining standards (e.g., NCLEX-RN® pass rates) but fostering an environment in which quality improvement exists and is ongoing. There is no end-point within the quality improvement process. Even when NCLEX-RN® pass rates consistently reach 100% every semester, quality improvement is still required.

AQIP is one specific quality improvement framework that can be utilized within nursing programs. AQIP encourages nursing programs to examine their key processes and procedures in order to ensure that they are investing time and energy in a way that will help them produce a competent, well-educated nurse ("Using the AQIP," 2013). In addition, nursing programs must recognize the importance of QSEN principles and how they are related to quality improvement. QSEN principles promote higher-level learning within nursing students. Nursing students must graduate not only with the ability to pass the NCLEX-RN® but with the understanding of complex patient needs and the ability to utilize information that extends beyond simply recalling facts.

CHAPTER 4

METHODOLOGY

This chapter presents the methods used within this study, including (a) design, (b) sample, (c) sampling procedure, (d) instrumentation, (e) operational definitions, (f) data collection procedures, (g) statistical methods, and (h) reliability/validity. The chapter will also provide ethical considerations and a summary.

Design

This study utilized a descriptive correlational design. Descriptive statistics were employed to describe how and why standardized tests were used within nursing programs. Associations were employed to assess for relationships among select variables (Burns & Grove, 2009). Data was collected through use of a self-report survey.

While this is a nonexperimental design, self-report surveys are able to evaluate the relationships among variables within a short period of time (Burns & Grove, 2009). A good descriptive study answers the questions *who, what, where, when, why,* and *so what* (Grimes & Shultz, 2002). When little is known about a topic—such as this study—the results can function as an effective springboard for future research (Grimes & Shultz, 2002; Polit & Beck, 2008). Additional benefits of this design include that it is an inexpensive as well as an efficient way to conduct research. There are also usually few ethical issues that occur (Grimes & Shultz, 2002). However, one must be careful not to conclude any cause-and-effect based on the self-reported data collected and any associations/potential predictions gleaned from the information (Grimes & Shultz, 2002).

Sample

Convenience-census sampling was used for this study. Convenience sampling uses the most readily available persons as the population (Polit & Beck, 2008). The SI

obtained a listing of nursing programs from the state boards of nursing located within the western one-third of the United States. The sample consisted of department heads, program directors, or equivalent faculty with working email addresses in Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Texas, Utah, Oregon, Washington, and Wyoming. The western region of the U.S. was chosen because it is geographically close to Nevada and represents a large area of nursing programs. Texas, Alaska, and Hawaii were included to ensure a sufficient sample size.

Because the nursing programs managers have knowledge of the overall program, it was believed they could best give a comprehensive and accurate portrayal of their undergraduate nursing program. Thus, it was decided to send the survey to only those who manage nursing programs instead of all faculty members in order to avoid numerous responses from single programs and bias the data. However, if the managers of the nursing programs did not believe that they were the individual best qualified to answer the survey, they were asked to forward the survey to the appropriate faculty member who possessed sufficient knowledge regarding the undergraduate nursing program.

Inclusion criteria for the subjects in programs that were surveyed included the following requirements: (a) individual must be in a role to manage a two-year or four-year pre-licensure RN nursing program that has received full approval by the state board of nursing (or equivalent) and (b) the name of the nursing program is listed on the respective state board of nursing (or equivalent) website. Exclusion criteria included (a) the name of nursing program was not listed by the board of nursing, (b) the program received limited approval by the state board of nursing, (c) approval was granted for clinical learning experiences only, (d) the nursing program is a licensed practical nursing

program, (e) the program was only an RN-to-BSN program, (f) the program is a diploma program of nursing, or (g) the program was only a LPN/LVN-to-RN program.

Sample size. Based on these inclusion criteria and geography, the survey was sent to 412 nursing programs. Based on an anticipated response rate of approximately 20%, a sampling frame of 400 was determined to be adequate to yield the sample size needed. The response rate was estimated using 20–25% as the customary response rate to electronic surveys (Hart, Brennan, Sym, & Larson, 2009). According to Polit and Beck (2008), an effect size of 0.50, power of 0.80, and an alpha of 0.05 are appropriate for nursing research studies. Effect size is of great importance within research studies, as it is the degree (magnitude) to which the independent variable(s) influences the dependent variable (Pallant, 2010). Statistically significant findings are desirable; however, effect size tells us about the strength of the relationship between the independent and dependent variable (Field, 2013). To ensure a power of 0.80 (alpha of $p < 0.05$, $d = 0.50$) (Cohen, 1988), a sample size of 80–100 usable surveys was necessary.

Sampling procedure. Each state board of nursing provided a list of nursing programs operating within that state. For this study, the websites of the state boards of nursing that were located in the geographical area of interest were accessed and the list(s) of nursing programs published on these websites were then obtained and those programs which were fully approved by the state board of nursing were identified. If the state board did not indicate which nursing programs were fully approved, a call was placed or an email sent to the board of nursing asking for this information. The programs on the list were then reviewed for those that were two-year or four-year pre-licensure nursing programs.

In addition, some state boards of nursing provided the name and email address of the nursing program director. When that was the case, that name and email was collected. If the state board of nursing did not provide the name and/or email address of the nursing program director, the website (i.e., directory) for that nursing program and/or school was searched in an attempt to obtain that information. If only a name was located but an email address was not given, the SI contacted the nursing program.

In the event that no one was identified as overseeing the nursing program, a search of the college/university website occurred to identify the dean or other administrator responsible for health sciences programs at that school. Once identified, that person's name and/or email address were collected. In the event that no one was identified through the college/university website as being a nursing program manager and/or administrator, the SI contacted the college/university to locate a nursing manager or administrator's name and/or email address. Also, when a discrepancy was noted between the name provided by the state board of nursing and the person listed by the college/university as being the nursing program manager, the name and/or email address deemed most valid by the SI (i.e., most up-to-date) was collected.

When reviewing the listings, particular attention was paid to nursing programs that offered both two-year and four-year nursing degrees to ensure that the SI included both program directors (if applicable) within the sample. Once the program directors were identified, email addresses were secured in order to send out the survey. In the event that no program director or department head existed, the survey was sent to whoever oversaw the nursing program (e.g., dean). The SI asked that he or she then forward the email to whoever directed the nursing program. If the nursing program manager believed

that another faculty member was better qualified to answer the survey, he or she was instructed to forward the survey to that person (e.g., assistant program manager). No emails were returned as undeliverable. More information is provided under the data collection section.

Survey/Instrumentation

The entire survey consisted of 101 items and contained multiple parts (e.g., Parts One through Three). (Please refer to Appendix C). A previously validated nursing competencies survey (Filer, 2001; Hyndman, 1999) was selected for use in this study. In addition, the SI wrote survey items to address specific research questions. There were 25 SI-created survey questions and 38 items hailing from the *Nursing Competencies Survey*. The 38 items from the *Nursing Competencies Survey* were answered twice for a total of 76 items. Information collected from the entire survey remained confidential, and only aggregate information was presented in the results of the study. The entire survey for this study was a self-report design: the data was obtained from the written responses of those completing the forms (Burns & Groves, 2009).

The SI-created survey for use in this study consisted of three parts. Questions within Part One related to how, why, and with what frequency nursing programs used standardized tests. Part Two contained the *Nursing Competencies Survey*. Part Three consisted of questions that pertained to demographics. The SI was interested in reporting standardized test use within nursing programs in addition to assessing the impact of standardized tests on nursing program curricula (e.g., curricular narrowing). The entire survey (Parts One through Three) was sent to five faculty members within the UNLV School of Nursing. They were asked to review the survey for face and content validity.

Changes were made to the survey based on feedback provided by the five faculty members.

Part One

Part One contained questions written by the SI. These questions included but were not limited to requesting responses regarding the frequency and purpose of standardized test use, remediation practices, grading, and benchmarks. Questions included closed-ended questions (e.g., yes/no, select one response, or select all that apply). Open-ended questions were also provided to allow program directors to enter information not included as one of the provided responses. Eighteen questions appeared in Part One.

Part Two

Part Two consisted of items from the *Nursing Competencies Survey* (Filer, 2001; Hyndman, 1999) that measured the six competency categories. The survey possessed two constructs. The first construct examined how often nursing program directors perceived competencies to be used in practice by beginning nurses. The second construct concerned how often nursing program directors perceived that the competencies were presented within their nursing program. Thirty-eight competencies were listed, and each required two responses. The first response indicated how often the program director perceived that competency is used in practice by beginning RNs. The second time the question appeared was intended to indicate how often the program director perceived that competency was taught within their nursing program. Each item was answered using a 1 to 4 Likert scale. There were 38 items located in Part Two. However, each item was answered twice (e.g., two constructs) for a total of 76 items.

The SI added the new competency category of safety to the survey, and it contained three skills. It was noted that the original *Nursing Competencies Survey* did not contain any information regarding the QSEN category of safety, so the SI wrote the three new items based on the QSEN definition of safety.

The original *Nursing Competencies Survey* was tested for reliability and validity. Reliability alphas were obtained at greater than 0.80 for three of the five competencies' constructs (Filer, 2001). (Please refer to Table 1.)

Table 1

Reliabilities for Competency Areas

Competency Area	Number of Items	Practice Competency Alpha	Program Competency Alpha	Combined Practice & Program Alpha
Intellectual	6	0.7042	0.7117	0.7445
Interpersonal	10	0.8548	0.8769	0.8668
Technical	2	--------	--------	0.4577
Care-Management	12	0.8767	0.8512	0.8710
Community-Based	5	0.8818	0.8893	0.8798

The intellectual competency construct had alpha coefficients above 0.70. The technical competency construct contained only two items and no alpha coefficients were obtained except when combined, in which case it was 0.4577. According to Burns and Grove (2009), alpha coefficients above 0.70 for a new instrument and above 0.80 for an existing instrument are acceptable. Additionally, the number of items in a subscale can

affect the reliability ("Reliability and Item Analysis," n.d.), and there are instances in which coefficients lower than desired can be used (Polit & Beck, 2008).

During development of the original *Nursing Competencies Survey*, face and content validity were established. It was sent to two groups of people consisting of registered nurses, nurse educators, and lay people. Each was asked to complete the survey and provide feedback regarding reliability of the survey, directions for completion, clarity of the key, and whether the skills listed were appropriate (Hyndman, 1999). A pretest was also conducted.

Part Three

Part Three contained background and demographic questions written by the SI. For example, those completing the survey were asked to indicate their highest level of education, their gender, and their race. Part Three also featured questions such as nursing program accreditation and location of the nursing program.

Study Variables

The dependent variable within this study was the construct of "*presented in nursing program*." The construct was comprised of six categories using a four-point Likert scale. The independent variables (i.e., factors) included the following:

1. Requirement to pass a standardized exit exam
2. Faculty members' belief of competencies used in beginning practice
3. Requirement of a benchmark for progression into the next course or semester
4. Average number of courses that use standardized tests as a portion of the final course grade

5. Average percentage that a standardized test score contributes when calculating final course grades
6. Type of school

Because this survey also included descriptive data, additional information was collected in an attempt to describe how and why nursing programs were using standardized tests. Other data included:

1. Demographics
2. Use of test blueprints
3. Remediation activities
4. Brand of standardized tests used
5. Reasons for standardized test use
6. Departmental policy regarding standardized tests

Operational Definitions

The following sections represent the operational definitions used within this dissertation. Chapter One contains the conceptual definitions and/or definitions of key terms.

Presented in nursing program. Scores from the *Nursing Competencies Survey* measured the construct of presented in nursing program. One of the two constructs presented on the *Nursing Competencies Survey*. This construct is comprised of six competency categories. They include (a) safety, (b) community-based skills, (c) technical, (d) interpersonal, (e) intellectual, and (f) care-management. A score (continuous) was obtained from the six categories, which reflect the concept of presented in nursing program.

Used in beginning practice. Scores from the *Nursing Competencies Survey* measured the construct of used in beginning practice. One of the two constructs presented on the *Nursing Competencies Survey*. This construct is comprised of six competency categories, including (a) safety, (b) community-based skills, (c) technical, (d) interpersonal, (e) intellectual, and (f) care-management. A score (continuous) was obtained from the six categories, which reflect the concept of used in beginning practice.

Competencies. Knowledge, skills, abilities, and attitudes measured on the 38 *Nursing Competencies Survey* items. Competency categories include (a) safety, (b) community-based skills, (c) technical, (d) interpersonal, (e) intellectual, and (f) care-management.

Care-management. One of the six competency categories. Twelve items from the *Nursing Competencies Survey* were used to measure the operational definition of care management.

Community-based skills. One of the six competency categories. Five items on the *Nursing Competencies Survey* were used to measure the operational definition of community-based skills.

Intellectual. One of the six competency categories. Six items on the *Nursing Competencies Survey* were used to measure the operational definition of intellectual.

Interpersonal. One of the six competency categories. Ten items on the *Nursing Competencies Survey* were used to measure the operational definition of interpersonal.

Safety. One of the six competency categories. Three items on the *Nursing Competencies Survey* were used to measure the operational definition of safety.

Technical. One of the six competency categories. Two items on the *Nursing Competencies Survey* were used to measure the operational definition of technical.

Consistently. A measurement on the Likert scale (i.e., 3). Competency presented within the nursing program or used in practice.

Occasionally/Rarely. The Likert scale terms "occasionally" and "rarely" were combined into one operational definition. It is a measurement on the Likert scale (i.e., 2).

Never. A measurement on the Likert scale (i.e., 1). Competency presented within the nursing program or used in practice.

Data Collection

As described previously, the state boards of nursing in the specific geographical area identified for this study were contacted in order to obtain a list of all approved nursing programs. The listings were reviewed for programs that offered two-year or four-year nursing programs in which, upon completion, the student was eligible to write the NCLEX-RN®. If the program director or department head was listed, the SI contacted him or her directly via email. If no name was listed, the SI located the college or university online and found the program director or department head through the school's website. Once the email addresses for those overseeing the nursing programs were located, an email message with a link to the survey was sent to each individual, asking them to participate in the study. Those wishing to complete the survey clicked on the link provided within the email.

An electronic survey was used to gather the data. The introductory email, informed consent, and survey were uploaded into Qualtrics. Once the email list was finalized and approval was received from the UNLV IRB, the survey was distributed.

The initial distribution occurred in September 2013, and emails were sent to addresses appearing on the list. Explanation regarding the survey was included in the email and a link to the survey was embedded in the email message. This helped ensure the confidentiality of the response.

The survey was accessible for eight weeks. A reminder email was sent every 10 to 14 days to remind those who had not completed the survey to please do so. In addition, follow-up emails were sent at both 24 to 28 days and 38 to 44 days from when the survey became accessible online. Follow-up reminders typically yield 30–50% of the initial response rate (Sierles, 2003). The reminders were sent automatically through the Qualtrics survey portal and only to those who had not originally responded to the survey. In addition, an incentive of $5 was offered to the program directors. In order to receive the $5 Starbucks gift card, participants must have completed the entire survey as it pertained to their nursing program.

Data Analysis

The data was analyzed using SPSS 22.0 (IBM Corporation New York, NY). The two statistical methods utilized were descriptive statistics and linear regression. Statistical analyses were used to answer the research questions outlined below

Research Questions

The following research questions guided this study:

1. Do a majority of nursing programs require students to pass a standardized exit exam to graduate? **Descriptive statistics were used to report results of this question.**

2. What is the average number of courses within the nursing programs surveyed that use standardized tests as a portion of the final grade? **Descriptive statistics were used to report results of this question.**
3. Who within the nursing programs surveyed determines the percentage that standardized test scores will contribute to final course grades? **Descriptive statistics were used to report results of this question.**
4. Do a majority of nursing programs require passing a standardized test as a benchmark to progress into the next course or semester? **Descriptive statistics were used to report results of this question.**
5. What are the most common ways in which nursing programs utilize standardized tests results? **Descriptive statistics were used to report results of this question.**
6. Who within the nursing programs surveyed determines the standardized test benchmarks used for progression? **Descriptive statistics were used to report results of this question.**
7. Do a majority of nursing programs use standardized test blueprints within their programs? **Descriptive statistics were used to report results of this question.**
8. Which of the following factors contribute to competencies presented within nursing programs surveyed?
    a. Requirement to pass a standardized exit exam
    b. Faculty members' belief of competencies used in beginning practice

c. Requirement of a benchmark for progression into the next course or semester
d. Average number of courses that use standardized tests as a portion of the final course grade
e. Average percentage that a standardized test score contributes when calculating final course grades
f. Type of school

Descriptive statistics were used to report results of this question. Linear regression equations were used to determine the predictors that contributed significantly to "*presented in nursing program*" and their strength of associations. Beta weights were provided.

Descriptive statistics were used to report frequencies. In addition, descriptive statistics were employed to report the demographic profile of the sample (N = 199). Data from the *Nursing Competencies Survey* was transformed from the original four-category Likert scale into a three-category Likert scale. This procedure was performed because "occasionally" and "rarely" are subjective terms and considered similar to one another. The reassigned categories are as follows: 3 = consistently, 2 = occasionally/rarely, and 1 = never.

The scores that comprised competencies "*presented in nursing program*" were continuous. Thus, linear regression was the most appropriate analysis for predicting the outcome of this dependent variable. Each predictor corresponded to a question, response, or construct on the survey. The predictors of *requirement to pass a standardized exit exam* and *requirement of a benchmark for progression into the next course or semester*

were combined into a single predictor (i.e., progression) prior to running the linear regression. This was enacted because both predictors were response items from the same survey question. Prior to performing the linear regression equation(s) data was screened and surveys deemed incomplete were deleted. Otherwise, data was transformed using the "System missing" option. The command, "Compute new variable" was performed when combining data into a single predictor/variable (e.g., *progression*, *beginning practice*, or *presented in program*). The assumption of multicollinearity is further discussed in Chapter 5.

All select independent factors comprised an initial exploratory analysis and the enter method was used. If there were no significant variables in the analysis, no further analyses would have been conducted. However, one variable was significant, so a second linear regression analysis was conducted including only that variable (N = 177).

Validity/Reliability

Validity and reliability are important strategies which help to strengthen quantitative research findings (Polit & Beck, 2008). To minimize the threats from poor validity, the SI utilized a homogeneous sample. The program directors were those who were identified as managers of nursing programs, their designee, or in the position to oversee a nursing program (e.g., dean). A homogenous sample can control for extraneous variables but will limit the findings to that population (Polit & Beck, 2008). The survey was only accessible to those who had received an individualized link from Qualtrics, and once the link was opened it could only be accessed from that one email address. This was done in an attempt to control for extraneous participants completing the survey (i.e., multiple faculty members who passed around a link).

Internal validity can be affected by multiple factors (Polit & Beck, 2008). Historical events can influence internal validity; however no major events (i.e., news stories) were noted during the study which may have impacted the opinions of program managers and standardized test use. Maturation and mortality was not considered a threat since the survey was not expected to take longer than 20 minutes to complete. This study did not utilize a pretest design, and data was gathered only once from each participant; therefore, the threats to validity from testing and instrumentation were considered minimal. The SI attempted to control for selection error by asking the program directors to read the informed consent and to participate in the study only if they met the inclusion criteria and did not meet the exclusion criteria. It is not possible to know whether those who participated in the study did correctly follow those directions. Statistical conclusion validity was ensured through use of adequate power. In this study, the power was set at 0.80. Sufficient power was needed to ensure that relationships could be detected among variable within this study (Polit & Beck, 2008).

Reliability ensures the accuracy and consistency of data collected from a study (Polit & Beck, 2008). Data was collected utilizing an online commercial platform (e.g., Qualtrics) which helped ensure reliability of the results. Also, data collection was clearly explained in this current chapter should another researcher wish to repeat this study. Furthermore, Cronbach's alphas were calculated for the competencies used within this study (e.g., internal consistency). These are presented in detail in Chapter 5. The *Nursing Competencies Survey* has been used previously, but that alone does not support its reliability. However, this instrument was used to collect data from a population similar to the one it had previously been used on and developed for (i.e. reliability estimate).

Ethics and Chapter Summary

When conducting any type of research, ethical considerations are an important factor. As mentioned earlier, UNLV IRB approval was obtained before any surveys were emailed to program directors. A cover letter explained the purpose, risks, and benefits, as well as made clear to potential subjects that their participation was voluntary. If, after reading the informed consent, the program directors still desired to participate in the study, they clicked the "start" button at the bottom of the webpage. Since this survey was conducted online, physical risks to the sample were considered minimal. Program directors could skip any questions they did not want to answer. Records were kept in a confidential manner. Should program directors have wished to contact the SI, a phone number and email were provided upon request. Program directors were treated fairly, and the population was selected regardless of race, ethnicity, gender, or religion. Records and results are maintained in a password-protected computer. Once the dissertation was successfully defended, data was deleted from the platform. Storage of the data will continue for three years after the completion of this study. After the three years have passed, the data will be permanently destroyed.

In summary, this research investigation was a descriptive correlational study of how and why nursing programs utilized standardized tests, and how standardized tests affected nursing program curricula. The SI hoped to determine whether standardized tests were affecting nursing program curricula and contributing to circular narrowing. By performing a large-scale study, it is hoped that results will function as a foundation for further research.

Data was collected through a self-report survey. SI-created survey questions measured how and why nursing programs were using standardized tests. The *Nursing*

Competencies Survey was used to collect data regarding skills and competencies taught within nursing programs. Descriptive statistics were obtained to report how nursing programs were using standardized tests, determining remediation activities and benchmarks, and how course grades may be affected. In order to predict whether variables associated with standardized test use affect nursing program curricula, linear regression equations were used and data subsequently analyzed for any statically significant relationships.

CHAPTER 5

DATA ANALYSIS

The present research study examined the relationships among standardized test use and competencies presented within nursing programs. This chapter presents the reliabilities for the *Nursing Competencies Survey*, descriptive statistics of the research study's sample demographic characteristics, other findings, and results for each of the eight research questions.

Sample Size and Response Rate

The survey invitation was sent to 412 people who were in the position to manage a two-year or four-year pre-licensure nursing program. All surveys were successfully delivered to the addresses on file. A total of 199 surveys were returned and used for this study, resulting in a response rate of 48.3%.

Instrument Reliability

The 76-item *Nursing Competencies Survey* was shown to be valid and reliable in two previous research studies (Filer, 2001; Hyndman, 1999). Regardless, reliability coefficients were computed to verify the survey with the current sample. An overall Cronbach's alpha coefficient was 0.951. Reliability coefficients for each of the identified constructs are listed in Table 2.

Study Demographic Characteristics

Demographic characteristics were divided into individual characteristics and nursing program characteristics. SPSS 22.0 (IBM Corporation New York, NY) was used to calculate descriptive statistics.

Table 2

Cronbach's Alphas

Scale	Number of Items	Practice Competency Alpha	Program Competency Alpha
Intellectual	6	0.74	0.66
Interpersonal	10	0.87	0.82
Technical	2	0.69	0.37
Case-Management	12	0.92	0.84
Community-Based	5	0.90	0.87
Safety	3	0.83	0.76
Used in Beginning Practice	38	0.96	-------
Presented in Nursing Program	38	-------	0.92

Note. Overall Cronbach's Alpha (r = 0.951)

Individual Characteristics

Individual characteristics were those demographics unique to a person. Individual characteristics collected from the survey included age, gender, race, and highest level of education.

The sample reported their age to range from 36 to 75 years (mean = 56.5 years). The sample reported their gender as female 84.4% (n = 168) and 5% (n = 10) as male. The majority of the sample identified themselves as white, not of Hispanic origin (75.9%; n = 151). The highest level of education for the majority of the sample was an MSN (50.3%; n = 100). Other highest levels of education written by the program directors included Ed.D., DNP, DNS, PhD, MEd, MS, FNP, DPA, MHA, post-masters, and doctoral candidates (Table 3 and Table 4).

Table 3

Demographic Statistics of Sample Individual Characteristics

Characteristic	*N*	% of Sample
Gender		
Male	10	5%
Female	168	84.4%
Not Reported	21	10.6%
Age		
31–40	6	3%
41–50	22	11.1%
51–60	94	47.2%
61–70	50	25.1%
>70	2	1%
Not Reported	25	12.6%

N = 199

Table 4

Demographic Statistics of Sample Individual Characteristics II

Characteristic	*N*	% of Sample
Race		
White, not of Hispanic Origin	151	75.9%
Prefer not to answer	7	3.5%
Asian or Pacific Islander	6	3%
American Indian or Alaskan Native	6	3%
Black, not of Hispanic Origin	5	2.5%
Hispanic	4	2%
Not Reported	20	10.1%
Highest Education		
BSN	0	0%
MSN	100	50.3%
PhD	56	28.1%
Other	27	13.6%
Not Reported	16	8%

N = 199

Nursing Program Characteristics

Nursing program characteristics were those demographics unique to a nursing program. Nursing program characteristics collected from the survey included type of nursing degree offered, classification of school, and location.

Almost 60% (58.8%; n = 117) of nursing programs offered an associate's degree in nursing. When asked which best described the college or university where the nursing

program was located, 71.4% (n = 142) identified the program as being part of a public institution. The largest numbers of nursing programs were located in California (23.1%; n = 46). However, for that question, program directors were asked to select all the response items that applied since some nursing programs may have been located in multiple states (Table 5 and Table 6).

Table 5

Demographic Statistics of Nursing Programs

Characteristic	*N*	% of Sample
Degree Offered		
Associate's Degree in Nursing	117	58.8%
Bachelor's Degree in Nursing	54	27.1%
Both	11	5.5%
Not Reported	17	8.5%
Program Type		
Public	142	71.4%
Private	27	13.6%
For-Profit	12	6%
Not Reported	18	9%

N = 199

Table 6

Demographic Statistics of Nursing Programs II

Characteristic	*N*	% of Sample
Location		
Alaska	0	0%
Arizona	14	7%
California	46	23.1%
Colorado	14	7%
Hawaii	5	2.5%
Idaho	2	1%
Montana	5	2.5%
Nevada	10	5%
New Mexico	9	4.5%
Oregon	11	5.5%
Texas	45	22.6%
Utah	5	2.5%
Washington	16	8%
Wyoming	3	1.5%
Multiple States	1	0.5%
Not Reported	17	8.5%

N = 199; *Percentages will be greater than 100%

Other Survey Results

Data which was related to but did not directly answer this study's research questions were also collected. Those results will be presented here.

Of the nursing programs surveyed, 92% (n = 183) used commercially-constructed standardized tests. When asked how the standardized tests were used within nursing programs, 84.9% (n = 169) of the program directors indicated that they were incorporated into one or more nursing courses, and 82.4% (n = 164) indicated that they were used to assess NCLEX-RN® readiness prior to graduation. For this question, program directors were allowed to select all the item responses that applied as well as write in a response if desired. Thirty-two of the program directors (16.1%) wrote that standardized tests were used for other purposes such as remediation, curriculum evaluation, benchmarking, content mastery, identification of students' weaknesses, preparation for the NCLEX-RN®, practice with computerized testing, substituted for course exams, and as selection criteria. The majority of the sample (n = 154; 77.4%) indicated they used standardized tests that were based on content determined by the testing company. The program directors were also asked to disclose the brand of standardized testing product used within their nursing programs. Almost 50% (n = 98; 49.2%) of nursing programs used an ATI product (Table 7).

Table 7

Types of Standardized Tests Used

Company	*N*	% of Sample
ATI	98	49.2%
HESI	63	31.7%
Kaplan	39	19.6%
Other	7	3.5%
NLN	2	1%
Don't Know	0	0%
Not Reported	17	8.5%

N = 199; *Percentages will be greater than 100%

The program directors were asked to write the number of courses within their nursing programs that used a standardized test. Of the nursing programs surveyed, 89.9% (n = 179) wrote in a number. The number of courses within the nursing programs that used a standardized test ranged from zero to 18. The mean number of courses that used a standardized test within a nursing program was six. The program directors were also asked whether their nursing program had a policy that stipulated how much a standardized test score could count toward a final course grade. The majority of nursing programs (n = 111; 55.8%) had a policy while 35.2% (n = 70) of the nursing programs did not have that policy.

Research Question Results

Research Question 1

Do a majority of nursing programs require students to pass a standardized exit exam to graduate? The program directors were initially asked whether their nursing

program required students to meet a minimum benchmark for progression. Approximately 40% (n = 77; 38.7%) of the program directors indicated yes. (Please refer to Table 8). The program directors who responded in the affirmative were then given a follow-up question (i.e., skip logic) asking whether students were required to meet a benchmark for progression into the next course, to become eligible to graduate, or other. The program directors were asked to select all items that may apply. Results did not support this research question.

Of the minority that responded, only 61% (n = 47) required their students to pass a standardized exit exam to graduate (Table 9). Results to this specific research question are also presented based on the entire sample. (Please refer to Table 10). Other responses recorded regarding why students needed to pass a standardized test included such answers as to receive a grade in the course, continue in the nursing program, pass the course, opt out of the final exam, obtain at least a C grade in the course, not receive an incomplete grade, and not be required to remediate.

Table 8

Require a Benchmark for Progression

Item	*N*	% of Sample
Yes	77	38.7%
No	105	52.8%
Not Reported	17	8.5%

N = 199

Table 9

Requirement to Pass a Standardized Test

Item	*N*	% of Sample
Progress into Next Course or Semester	33	42.9%
Become Eligible for Graduation	47	61%
Other	21	27.3%
Not Reported	122	61.3%

N = 77; *Percentages will be greater than 100%

Table 10

Progression Based on Entire Sample

Item	*N*	% of Sample
Progress into Next Course or Semester	33	16.6%
Become Eligible for Graduation	47	23.6%
Other	21	10.6%
Not Reported	122	61.3%

N = 199; *Percentages will be greater than 100%

Research Question 2

What is the average number of courses within the nursing programs surveyed that use standardized tests as a portion of the final grade? The program directors were first asked if any courses within their program used scores from standardized tests toward a portion of a final course grade. Of those who responded, the average number of courses that used standardized tests as a portion of the final grade fell

almost equally between one to four (n = 57; 43.2%) and five to nine (n = 59; 44.7%) (Table 11).

Table 11

Number of Courses that Use Standardized Test Scores

Number of Courses	*N*	% of Sample
1–4	57	43.2%
5–9	59	44.7%
10–14	7	5.3%
15 or More	1	0.76%
Don't Know	8	6%
Not Reported	67	33.7%

N = 132; *Percentages will be greater than 100%

Research Question 3

Who within the nursing programs surveyed determines the percentage that standardized test scores will contribute to final course grades? The program directors were initially asked if any courses within their program used standardized test scores toward a final course grade. If the program directors indicated yes (n = 130; 65.3%), they were then given the follow-up research question (i.e., skip logic). For this research question, the program directors were allowed to select three items that most applied, as well as had the ability to write in a response. The top three responses were faculty meeting discussions (n = 97; 72.9%), faculty teaching the course (n = 79; 59.4%), and program policy (n = 38; 28.6%) (Table 12). Other responses written in included

curriculum committee, data collection, adult learning principles, and nursing program statistics.

Table 12

Who Determined the Percentages

Answer	*N*	% of Sample
Faculty Meeting Discussions	97	72.9%
Faculty Teaching the Course(s)	79	59.4%
Program Policy	38	28.6%
Nursing Program Committee	35	26.3%
Administrative Recommendations	21	15.8%
Standardized Test Company	18	13.5%
Nursing Education Literature	14	10.6%
Other Nursing Programs	10	7.5%
Other	4	3%
Student Recommendations	3	2.3%
Don't Know	1	0.75%
Not Reported	66	33.2%

N = 133; *Percentages will be greater than 100%

Research Question 4

Do a majority of nursing programs require passing a standardized test as a benchmark to progress into the next course or semester? The program directors were initially asked if their nursing program required students to meet a minimum benchmark for progression. Approximately 40% (n = 77; 38.7%) of the program directors indicated

that this was the case (Table 8). The program directors who responded in the affirmative were then given a follow-up question (e.g., skip logic) asking whether students were required to meet a benchmark for progression into the next course, to become eligible to graduate, or other. The program directors were asked to select all that may apply. Results did not support this research question in that less than half (n = 33; 42.9%) indicated that students must pass a standardized test in order to progress into the next course or semester (Table 9).

Research Question 5

What are the most common ways in which nursing programs utilize standardized tests results? Research question five was answered by reviewing the data from three survey questions. One question asked the program directors which best described why their nursing programs employed standardized tests. The program directors were asked to select three response items that most applied and could write in a response if so desired. A majority of the program directors (n = 138; 69.3%) indicated that standardized test results were used to assess students' abilities to pass the NCLEX-RN® on their initial attempt (Table 13). Other responses written in included predicting NCLEX-LVN pass rates, admission into program, benchmark against instructor written exams, and evaluate the curriculum.

Table 13

Common Ways Standardized Test Results Are Used

Items	*N*	% of Sample
Assess the Ability of a Student to Pass on Their Initial Attempt	138	69.3%
Provide Feedback Regarding Areas of Students' Strengths and Weaknesses	135	67.8%
Measure Student's Mastery of Course Content	111	55.8%
Increase NCLEX-RN® Pass Rates Among Graduates	93	46.7%
Provide a source of information for accreditation visits or program evaluation	43	21.6%
Provide Information Regarding How Well Faculty Taught the Content	20	10.1%
Other	4	2%
Don't Know	0	0%
Not Reported	15	7.5%

N = 199; *Percentages will be greater than 100%

In addition, a majority of program directors (n = 132; 66.3%) indicated that students were required to remediate when they did not meet a minimum benchmark on a standardized test. When the program directors answered yes, they were then asked (i.e., skip logic) what types of remediation activities students were required to complete. The program directors could select three response items that most applied and could write in a response if desired (Table 14). Other responses written in as the types of remediation activities used included meeting with a counselor, completing additional study materials, reviewing content on test company's website, retaking tests, completing a commercial

review course, completing a focused review, developing a learning guide, providing answers to missed questions, working with remediation faculty, attending student-led review sessions, and completing a summary outlining information missed.

Table 14

Remediation Activities Used

Item	*N*	% of Sample
Meet One-on-One With a Faculty Member to Review Content Missed	83	63.4%
Activities Determined by Standardized Test Company	64	48.9%
Complete Specified Number of NCLEX-RN® Prep Questions	40	30.5%
Attend Group Review Sessions Facilitated by a Faculty Member	38	29%
NCLEX-RN® Preparation Course	29	22.1%
Other	23	17.6%
Complete a Test-Taking Strategy and Skills Course	14	10.7%
Repeat Entire Nursing Course	6	4.6%
Learn Guided Imagery and Relaxation Techniques	2	1.5%
Don't Know	0	0%
Not Reported	68	34.2%

N = 131; *Percentages will be greater than 100%

Research Question 6

Who within the nursing programs surveyed determines the standardized test benchmarks used for progression? The program directors were first asked if students

were required to meet a minimum benchmark for benchmark for progression. If they answered yes (n = 77; 38.7%), they were then asked the follow-up (i.e., skip logic) research question. Faculty consensus was the item most selected; 74% (n = 57) program directors selected this item. However, the majority of the program directors within the research study did not answer this question. The program directors could select three response items that were most applicable and write in a response if desired. Other comments added by the program directors included probability is established by the faculty, faculty vote, utilization of statistical analysis of historical data, and benchmark determination by the Chancellor's office (Table 15).

Table 15

Who Determined the Benchmarks

Answer	*N*	% of Sample
Faculty Consensus	57	74%
Standardized Test Company	38	49.4%
Faculty Teaching the Course(s)	21	27.2%
Administration	18	23.3%
Committee Recommendations	14	18.2%
Other	5	6.5%
Student Recommendations	1	1.3%
Don't know	0	0%
Not Reported	122	61.3%

N = 77; *Percentages will be greater than 100%

Research Question 7

Do a majority of nursing programs use standardized test blueprints within their programs? Results did not support this research question in that less than half (n = 49; 24.6%) of the program directors indicated that their nursing program required faculty to obtain the test blueprint (Table 16).

Table 16

Required to Obtain Test Blueprints

Item	*N*	% of Sample
Yes	49	24.6%
No	114	57.3%
Don't Know	10	5%
Other	9	4.5%
Not Reported	17	8.5%

N = 199

Furthermore, only 13.6% (n = 27) of the program directors indicated that the test blueprint was shared with students (Table 17).

Table 17

Are Test Blueprints Shared With Students?

Item	*N*	% of Sample
Yes	27	13.6%
No	125	62.8%
Don't Know	13	6.5%
Other	16	8%
Not Reported	18	9%

N = 199

Research Question 8

Which of the following factors contribute to competencies presented within nursing programs surveyed: (a) requirement to pass a standardized exit exam, (b) faculty members' belief of competencies used in beginning practice, (c) requirement of a benchmark for progression into the next course or semester, (d) average number of courses that use standardized tests as a portion of the final course grade, (e) average percentage that a standardized test score contributes when calculating final course grades, and (f) type of school.

Results of the linear regression model indicated that only *used in beginning practice* had a significant relationship with competencies *presented in nursing programs* ($p < 0.05$) (Table 18). The model accounted for 34% of the variance in competencies presented within nursing programs ($R^2 = 0.340$). There was no issue with multicollinearity found in the regression model because the VIF values were well below 10 and tolerance values well above 0.2 (Field, 2013).

Table 18

Predictors of Competencies Presented Within Nursing Programs

	Competencies presented within nursing programs				
Variable	*B*	Std. Error	*β*	*t*-value	*p*-value
Constant	49.540	6.404		7.736	0.000
Beginning Practice	0.511	0.055	0.579	9.249	0.000*
Progression	1.680	0.971	0.108	1.730	0.086
Type of School	-0.447	1.398	-0.020	-0.320	0.750
Number of Courses	-0.033	0.183	-0.011	-0.181	0.857
Average Percentage	0.019	0.050	0.024	0.378	0.706

Note. (N = 176) R^2 = .340; $R^{2Adjusted}$ = .321; $F(5, 170) = 17.53$, p = 0.000
Beginning Practice = faculty members' belief of competencies used in beginning practice; Progression = requirement to pass an exit exam, and requirement of a benchmark for progression into the next course or semester; Number of Courses = average number of courses that use standardized tests as a portion of the final course grade; Average Percentage = average percentage a standardized test score contributes when calculating final course grades
*$p < 0.05$

Since there was one significant predictor, a second linear regression was performed using only the *beginning practice* predictor. The results of the linear regression model again indicated that *beginning practice* had a significant positive relationship with competencies *presented in nursing programs* ($p < 0.05$) (Table 19). The model accounted for 33% of the variance in competencies presented within nursing programs ($R^2 = 0.331$).

Table 19

Single Predictor of Competencies Presented Within Nursing Programs

	Competencies presented within nursing programs				
Variable	*B*	Std. Error	*β*	*t*-value	*p*-value
Constant	49.741	5.377		9.250	.000
Beginning Practice	.507	.055	.575	9.302	.000*

Note. (N = 177) R^2 = .331; $R^{2Adjusted}$ = .327; $F(1, 175) = 86.52$, p=.000
Beginning practice = faculty members' belief of competencies used in beginning practice
$p<.05$

Chapter Summary

This chapter presented information about the study's sample size, response rate, reliabilities, descriptive statistics and results from linear regression. The sample of nursing program managers was analyzed using appropriate statistical analyses. Data was analyzed using SPSS 22.0 IBM (Corporation New York, NY). The eight research questions guided much of the statistical analyses used.

CHAPTER 6

DISCUSSION

This research study examined how standardized tests were integrated into nursing program curricula and how these tests influenced what competencies were highlighted within nursing programs. The study sample was comprised of individuals in the position to manage, oversee, or direct a pre-licensure nursing program located in the western one-third of the United States. The purpose of this chapter is to discuss the influence of standardized tests on nursing programs' curricula.

Summary of Findings

The purpose of this study was two-fold. First, it assessed the reasons standardized tests were being used within nursing programs. Second, it assessed how standardized tests may affect competencies taught within nursing programs (e.g., curricula narrowing). Data was collected from a researcher-developed survey. Also used were questions written by the SI and questions from a previously established instrument (e.g., *Nursing Competencies Survey*) which measured nursing competencies presented within nursing programs (Filer, 2001; Hyndman, 1999).

Demographic variables from the research study indicated that the majority of the sample was female; 56.5 years old; white, not of Hispanic origin; and possessed an MSN. The lack of ethnic, gender, and racial diversity within this study is consistent with published research (Rosseter, 2014), as males and minorities are often underrepresented among nursing program faculty (Burruss & Popkess, 2012). The majority of the program directors reported that their nursing programs offered an associate's degree of nursing and were part of a public college or university. In this study, California (23.1%) was the state where the most nursing programs were located and Texas was the state with second

most nursing programs (22.6%). Frequency statistics showed that the majority of nursing programs (92%) did use standardized tests and the most common brand of standardized exam was ATI.

The majority of the sample reported that standardized tests were integrated into one or more nursing courses and were used to assess NCLEX-RN® readiness among students. The majority of nursing programs within this study reported applying scores from standardized tests toward final course grades (65.3%). However, less than half of the nursing programs within this study used results from standardized tests to block progression into the next semester, course, or onto graduation. In addition, when it came to who determined benchmarks and percentages, inconsistencies were noted among the various nursing programs.

Discussion of Results

This study had eight research questions which guided the statistical analyses used. The following presents a discussion of the findings within the context of current literature in the areas of progression, courses, benchmarks and remediation, how standardized tests results were used, and test blueprints. Implications for practice, how theoretical frameworks supported this study, and recommendations for future research will also be discussed.

Progression

Results from this study indicated that only a minority of nursing programs (38.7%) required students to meet a minimum benchmark on a standardized test for progression. However, this statistic is higher than what was found in a previous nationwide study conducted by the NLN, in which 33% of nursing programs required a

minimum score on a standardized test in order to progress (NLN Board of Governors, 2012). Also, when based on the entire sample, results from this study showed that 23.6% of nursing programs used standardized test results to block students' progression onto graduation and 16.6% of programs used results to block progression into the next course or semester (Table 10). These results are also similar to the findings of the 2011 NLN Annual Survey, which indicated that 12–20% of nursing programs required students meet to a minimum score at least once in a program and/or on a standardized test in order to graduate (NLN Board of Governors, 2012).

It is troubling that high-stakes test use is continuing to occur within nursing programs located in the western one-third of the United States. What is of even more concern is that little difference was found between the results from the 2011 NLN Annual Survey and this study's results, which were obtained in the fall of 2013. Meaning, despite recommendations from organizations like the NLN, no decrease in the rate of high-stakes testing was found to have occurred. In some states, such as Nevada, the state board of nursing has been proactive and disallowed the use of high-stakes within nursing programs. However, there are clearly other state boards of nursing (or equivalent) throughout the western one-third of the country which have not mandated such polices and continue to utilize high-stakes testing within nursing programs.

Nursing programs and the faculty teaching within those programs must consider the ethics associated with preventing a student from progressing onto graduation or into the next course based solely on a one-time test score. This is especially true if that student has successfully completed all other nursing program requirements (NLN Board of Governors, 2012). In addition, it has already been suggested that a variety of factors can

impact the performance of a student on any given day. Using a multitude of evaluation methods (e.g., case studies, exams, projects, and papers) will provide a better reflection of student learning (Oermann, 2009).

Unfortunately, one of the most common methods used to determine the quality of a nursing program is to look immediately at NCLEX-RN® pass rates (Oermann & Gaberson, 2009). However, high pass rates are not a guarantee that students are competent and able to care for patients who present complex medical issues. When higher priority is placed on retaining accreditation through maintaining appropriate NCLEX-RN® pass rates, students are often required to improve test-taking skills with the use of multiple-choice questions on standardized tests. However, this does not necessarily indicate that students have mastered content, as they may have only improved their abilities to answer test questions. Nursing faculty must keep in mind that although there is a lot of published literature discussing ways to improve NLCEX-RN® pass rates, no one method has ever been identified as the best way (e.g., standardized test score) (Speakman, 2009). Nursing programs that use high-stakes testing should consider whether there are other methods of improving NCLEX-RN® pass rates while still maintaining a caring learning environment.

Based on the study's results, the SI was interested in learning whether the nursing degree offered (i.e., ADN or BSN) affected the frequency of high-stakes testing within this study. Since it was not a specific research question, the results are included here. Cross-tabulation was performed between the type of nursing degree offered and progression. It was found that ADN programs were more likely than BSN programs to use standardized tests to block progression onto graduation or into the next

course/semester. (Please refer to Table 20). However, ADN programs did comprise a larger portion of nursing programs within this study. A Chi-square test for independence indicated there was no significant relationship between type of program and progression ($p = 0.83$).

Table 20

Cross Tabulation by Progression and Degree

	Degree Programs				
Block Progression	ADN Programs	BSN Programs	Offer Both	Not Valid	Total Reported
To Next semester	20	9	2	2	33 (16.6%)
To Graduation	29	12	3	3	47 (23.6%)

Note. ADN = Associate's Degree in Nursing; BSN = Bachelor's Degree in Nursing; Both = Associate and Bachelor Degrees; $p = 0.826$

Courses

The majority of the sample did indicate that standardized tests were used within nursing programs (92%). The majority of sample also indicated that there were courses within their respective nursing programs that used standardized test scores as a portion of a final course grade (65.3%). These results indicated that 25–27% of the nursing programs within this study did not believe it necessary to apply results from standardized tests toward course grades. For example, the tests may have been used for providing feedback to students or faculty and with regard to areas of students' strengths and weaknesses.

Though the SI did not query the reason that standardized test scores were used toward a final course grade, it is conjectured that a grade was used as an incentive for students to take the testing seriously. While using standardized test scores toward a final course grade is commonly occurring within nursing programs in this study, little has been published that supports this practice. Many times, students must set priorities within nursing programs; they often juggle multiple courses and course requirements. For some, studying for tests that will affect course grades will become their priority. This may inadvertently cause students not to study important content that is related to providing safe patient care such as ungraded assignments (e.g., clinical prep work).

Faculty must realize that applying a score from a standardized test toward a final course grade can have unintended consequences. For example, a low score obtained on a standardized test (and in combination with other course assignments) could cause a student not to pass a course. Although this is true for any assignment or test used in the context of a nursing course, faculty may want to reconsider the ethics of including on a score from a commercially-made standardized test into a course grade. Faculty members have the responsibility to ensure that scores which affect course grades are accurate, free from errors, and appropriate for use. Faculty must also realize that nursing students do have the right to appeal a course grade. Fair testing laws ensure that students possess the legal right to review tests and test questions (Oermann & Gaberson, 2009). Errors occurring on standardized tests are not uncommon, and there have been several issues with the mis-scoring or improper reporting of standardized test results within multiple states that has affected thousands of students (Johnson, 2007). Because of this possibility, nursing faculty must fully consider the ramifications of using scores from standardized

tests toward course grades. Consider a student who fails a course by only one or two points. If a two-point scoring error was later found to have been made on a standardized test where results were applied toward a course grade, that student has the right to file a lawsuit under tort law, especially if that student was required to pay for the test (Johnson, 2007).

A well-thought-out curriculum is essential to a successful nursing program. This includes planning the courses that will support the essentials established by accrediting bodies as well as the evaluation methods that will be used to establish the learning objectives. Also, faculty must assess the evaluation methods that are employed and determine whether those methods are congruent with the overall program's outcomes (Oermann & Gaberson, 2009). Furthermore, the evaluation methods selected should be driven by what outcomes are to be measured (Oermann & Gaberson, 2009) and not solely based on the recommendations of a testing company. The value or weight assigned to each test must be seriously considered by those teaching the course.

While there may be concern that students do not take standardized tests seriously unless a grade is assigned, faculty may want to work with students to help them understand the value in this type of evaluation method. For example, not all nursing programs may assign grades based on standardized test results, but students will be provided valuable feedback and remediation activities which will help them strengthen their understanding of theoretical concepts. Program directors and faculty need to consider remediation activities that will actively engage students in learning. Not only will a better understanding of nursing content help students pass the NCLEX-RN® on

their initial attempt, but, more importantly, they will also have gained increased knowledge for better patient care.

Determination of Percentages and Benchmarks

In order to determine the percentage to award students based on standardized tests, 72.9% of the program directors surveyed indicated that discussions occurred within *faculty meetings*. Other methods which involved direct faculty input included *faculty teaching the course* (59.4%) and *nursing program committee recommendations* (26.3%). It is concerning that only two of the methods were selected by a consensus (>50%) of the program directors. Also, more than 25% of nursing programs within this study did not use faculty meetings as a method when making decisions regarding the percentages to award. *Program policies* that should be created by faculty members (i.e., indirect faculty input) and can provide guidelines with regards to decisions made (i.e., grading) were selected by only 28.6% of the sample. Furthermore, *administrative recommendations* accounted for 15.8% of the responses. This too can be concerning in that administrative recommendations should be used to support faculty decisions, but administration should not be overly involved in decisions regarding how best to evaluate student learning. Other responses to this question were selected by less than 15% of the program directors.

Even though a minority of the sample indicated students were required to meet a minimum benchmark on a standardized test for progression, 74% of the program directors indicated that benchmarks were determined by a *faculty consensus*. The second most frequently selected item was *standardized test company* (49.4%) followed by *faculty teaching the course* (27.2%). Other options were selected by 25% or less of the sample. Again, faculty input was the most commonly selected item, but there were variations among the methods reportedly used by the program directors.

The percentages that a standardized test can count toward a course grade and the benchmarks used for progression must be thoroughly thought out. There are clearly inconsistencies regarding standardized test use among the various nursing programs. In addition, only a minority of the sample (10.6%) indicated that *nursing education literature* was what determined the percentage a standardized test could count toward a course grade. A review of nursing literature can be beneficial to nurse educators, especially when attempting to show the effectiveness of teaching and learning strategies (Ferguson & Day, 2005; Halstead, 2009; Iwasiw et al., 2005; Oermann, 2009). As mentioned previously, standardized tests were not developed with the purpose of being used to determine course grades. Reviewing pertinent nursing education literature may help faculty make better-informed decisions (i.e., evidenced-based practice) and avoid issues such as unfair testing practices and possible grade inflation or deflation.

Open discussions at faculty meetings, among those teaching the course, and within nursing program committees (e.g., curriculum committee) will provide an opportunity for faculty to provide input for decisions made regarding the percentages to award or determination of benchmarks (Oermann & Gabeson, 2009). However, caution is needed to ensure that decisions are made based on sound teaching principles (i.e., evidenced-based practice) and not because one or two faculty members were the most vocal in their *opinions* of how percentages or benchmarks should be determined (Oermann, 2009). Also, open discussions should help to ensure that consistency in awarding percentages is being maintained, as well as the selection of benchmarks. This is particularly important when determining passing or failing grades among *various sections* of a nursing course (Oermann & Gaberson, 2009). Faculty members play an integral role

in the development and evaluation of program curricula (Boland, 2012). While it may be tempting to follow the recommendations of a testing company or administrator, current research indicates that faculty input is crucial when making decisions that impact a nursing program's curriculum (Boland & Finke, 2012). Nursing programs must work to increase the involvement of faculty members when it comes to deciding how to use the results obtained from standardized tests. All faculty members should be able to provide input regarding how benchmarks and percentages will be determined within a nursing program. Even those who are not teaching didactic sections may still have ideas that are valuable to share.

Literature supports the use of policies when making decisions regarding testing (e.g., evidenced-based practice) (Schroeder, 2013). In addition, each course within a program must respect testing policies (Iwasiw et al., 2005) and ensure that evaluation methods used do not violate current program policies or best practices. Within this study, 28.6% of the participants reported that program policies were what determined the percentages a standardized test score could count toward a final course grade. Program directors and faculty must be involved in the creating and writing of policies that will affect how they evaluate students. These policies must be followed *every time* decisions are made, regarding standardized test use. In addition, program directors and faculty need to take into consideration state regulations (i.e., state boards of nursing) and accrediting bodies' recommendations when formulating testing policies. There have been a number of legal challenges from nursing students who believed that their rights have been violated by testing programs (Oermann & Gaberson, 2009).

Administrators may become involved during appeals made by students and must understand how scores were determined. Within this study, 15.8% of the program directors indicated decisions regarding what percentages to award from standardized test performance were decided by *administrative recommendations*, and 23.3% of program directors indicated that *administration* were who determined the benchmarks for progression. This can be problematic in that administrative input should be one of the least frequently selected methods for curricula-affecting decisions. Administrators should help *guide* faculty in decision-making and ensure that polices are clearly written and support a learning-centered environment (Rusin 2009). However, they should not be dictating cutoffs (e.g., benchmarks) on standardized tests. This is especially true if those administrators making decisions are not nurse educators or are not familiar with nursing education theory.

The majority of the program directors did not select the option of a *standardized test company* when asked who decided the percentages standardized tests were worth. However, it was the second most selected method by the program directors when asked who determined benchmarks. The literature has shown that in some nursing programs (Bondmass et al., 2008; Spurlock & Hunt, 2008), benchmarks set by the testing companies have not been accurate reflections of students' abilities. Furthermore, not all standardized testing companies recommend that their tests be used in a way that will affect a student's grade. For example, NLN achievement tests were developed to measure students' understanding of course content, but they were never intended to be used toward a final course grade or for progression (Test Policy Info, 2013) Nurse educators should thoroughly review the recommendations from standardized testing companies

before instituting them and ensure that they are congruent with fair testing polices (Oermann & Gaberson, 2009).

Also important is the feedback and input received from students. Current literature (Richards & Stone, 2008) supports making changes to standardized testing programs based on students' feedback. Within this study, feedback from students was rarely considered (2.5% or less). Faculty need to be aware that students are stakeholders within nursing education programs and their input should be valued (Rusin, 2009). Students can provide feedback regarding content seen on standardized tests, especially if there are questions covering content not presented within the nursing course. Students can also provide input as to whether they believed they were adequately prepared to take the standardized test, including information such as whether they had received adequate instructions and preparation materials. If they did not receive these tools, faculty should make improvements in testing procedures to ensure that students' results are indeed accurate reflections of learning and content covered in the course. This is especially important if course grades are based on standardized test results.

There was a lack of consistency within this study regarding the methods used by the various nursing programs to determine benchmarks and percentages. These inconsistencies should be somewhat alarming to program directors and those teaching within nursing programs. For example, nursing programs which have simply opted to follow standardized test companies' recommended benchmarks may be providing incorrect results to students regarding their abilities to pass the NCLEX-RN®. If benchmarks are too high, students may become frustrated and discouraged at the prospect of not being able to pass the NCLEX-RN®. This may lead students to drop out of nursing

programs even though they may have been ultimately been able to pass the NCLEX-RN®. Currently, there are no nationally-approved guidelines regarding standardized test use within nursing programs. For the most part, it is entirely up to the individual nursing programs to decide who will determine the benchmarks and percentages to award based on standardized test results. Those programs in which faculty discussions occur to determine the benchmarks and percentages to award should help to create a more caring and student-centered learning environment.

Common Ways Standardized Test Results Are Used

Within this study, the majority of program directors indicated that the results from standardized tests were used to *assess students' abilities to pass the NLCEX-RN® on their first attempt* (69.3%). However, the program directors also indicated that results were used to *provide feedback to students* (67.8%) and *measure students' mastery of content* (55.8%). These findings are consistent with current research, which has indicated that standardized tests can be effective at identifying students' curricular weaknesses and allow interventions (i.e., remediation activities) to occur prior to students attempting to complete the NLCEX-RN® (Lauer & Yoho, 2013). While there has been much literature published (Herrman & Johnson, 2009; Heroff 2009; Higgins 2005; Jacob & Koehn 2006; Jones & Bremmer 2008; Norton et al., 2006; Sewell et al., 2008) regarding the incorporation of standardized tests and subsequent improvement in NCLEX-RN® passage, only approximately 50% of the sample indicated that this was why standardized tests were used within their programs. In addition, less than 25% of the sample indicated that results were used to provide feedback regarding how well they taught course content or were a source of data for accreditation bodies. This is consistent with findings from

general education literature stating that caution must be used when evaluating teaching based on students' performance on a standardized test (Popham, 1999; Schaeffer, 2012).

Within this study, the need for student remediation was determined based on standardized test results as well. The majority of the sample (66.3%) indicated that students were required to remediate if they did not meet a minimum benchmark on a standardized test. Similarly, Lauer and Yoho (2013) found within their study that 71.21% of nursing programs required remediation if a benchmark on a standardized test was not met. Current literature has indicated that students will take remediation more seriously when it is mandatory (Heroff, 2009), and scores on standardized test scores have been shown to be higher in nursing programs that require remediation (Lauer & Yoho, 2013). The most commonly selected remediation activities within this study involved students meeting with faculty one-on-one (63.4%), activities determined by the testing company (48.9%), or completing NCLEX-RN® questions (30.5%). Other less commonly selected items (< 30%) included activities such as completing a course (e.g., test taking or NCLEX-RN® preparation), attending review sessions, and learning relaxation techniques. It is interesting to note, however, that within this study only a few nursing programs required students repeat an entire course (4.6%) if they did not meet a benchmark. This is similar to findings of Lauer & Yoho (2013), who discovered that, within their study, 3% of nursing programs required repeating an entire nursing course.

Once again, there was a lack of consistency regarding remediation activities employed among the various nursing programs. The second most commonly used remediation activity involved having students complete activities determined by the testing company. Testing companies can provide tailored remediation activities, but

faculty should not rely solely on those activities. It is responsibility of the faculty—not the testing company—to ensure that remediation activities are appropriate and beneficial for student learning. Remediation should include activities that promote active adult learning and occur throughout a program and are not simply added to a student's course load prior to graduation (Heroff, 2009). In addition, faculty teaching within nursing programs should seriously consider making remediation mandatory. Instead of assigning a grade based on standardized test results, the prospect of remediation would be motivation (e.g., consequence) for a student's performance on the test. Also, if a benchmark is used on a standardized test a basis for remediation, it should be a *faculty-designated* benchmark. It is well documented that students do not take standardized testing seriously unless a consequence such as remediation is assigned (Heroff, 2009; Lauer & Yoho, 2013). When students do not take standardized testing or remediation seriously, the results obtained from the standardized tests may not be an accurate reflection of students' actual knowledge (Lauer & Yoho, 2013).

Assigning a score based on student performance is a quick method of providing motivation to students, but mandatory remediation activities should also encourage students to take testing seriously. Students should consider the amount of time that may be spent on activities such as meeting one-on-one with a faculty member, completing learning activities, or even repeating an entire course. As mentioned previously, standardized tests were initially developed to assess student learning in a norm-referenced manner, and there is little literature that supports assigning grades based on standardized test results. When faculty use standardized test results in an effective manner, nursing students can become better prepared to sit for the NCLEX-RN®. Faculty

should explain to students what the results obtained from standardized tests indicate and how those results can be beneficial in improving students' future performances (Burruss & Popkess, 2012).

Nursing programs will benefit when results are reviewed and used to guide appropriate changes to curricula if alterations are needed. Standardized test results and other evaluation methods can be useful sources of information during periods of accreditation (Dulski, Kelly, & Carroll, 2006; Tanner, 2009). However, faculty should be cautioned against making changes to curricula that are not reflective of current evidenced-based practices but are made solely on the need to present material known to be on standardized tests.

Test Blueprints

The majority of the sample (57.3%) indicated that there was no requirement to obtain standardized test blueprints. Furthermore, 62.8% of the sample indicated that standardized test blueprints were *not* shared with students. These findings are consistent with those of Bridge, Musial, Frank, Roe, and Sawilowsky (2003), who also found in their study of medical schools that 90% of the administrators did not require the use of test blueprints and 82% of the administrators had no plans to start requiring their use.

Test blueprints serve an important function within the test development process. A test blueprint helps ensure that a test provides an appropriate range of questions based on identified content and learning outcomes (Twigg, 2012). Test blueprints do not comprise test security and should be shared with students (Oermann & Gaberson, 2009).

The current study verified that standardized test blueprints are not required or widely shared with students within nursing programs. This may have occurred for a few

reasons. For example, some program directors indicated that there was no test blueprint available to faculty or that the company would not allow the test blueprint to be shared with students. Also, some program directors indicated that the students were referred to the testing company's website to review resources and practice tests in lieu of providing the students with test blueprints.

Faculty need to be responsible for the tests used within their courses, and this obligation includes understanding the questions selected and how the tests were created. According to some of the program directors who participated in this study, there was no blueprint available. In addition, it was the testing company that dictated if and when a test blueprint could be shared with students. This is concerning given the large amount of literature which supports, if not requires, that a test blueprint be developed when creating a test. Faculty must seriously consider whether they want to purchase tests from a company that will not provide a blueprint or allow it to be shared with students. When a test blueprint is available, faculty should review the content of the test and become familiar with the blueprint to ensure that learning outcomes will be accurately tested. Faculty should also review the test blueprint to ensure that test items are appropriate for the course level. Students should be informed of items such as the content areas to be tested, the number of questions, and the types of items to expect (Oermann & Gaberson, 2009). This can help the students become better prepared for tests, especially if test performance will affect their final course grade. When determining which standardized testing company to use, faculty must ask if test blueprints are available to both faculty and students.

Influence of Predictors on Competencies

Linear regression results showed that only *competencies used in beginning practice* had a significant positive relationship on *competencies presented in nursing programs*. No significant relationship was found between *type of school*, *progression*, *average percentage that a standardized test score counts toward a final course grade*, and *number of courses that apply a standardized test score toward a final course grade*. Meaning, these predictors did not affect (i.e., predict) the competencies presented in nursing programs. Since these predictors were nonsignificant, it does not appear that standardized test use is affecting nursing program curricula and the competencies (i.e., skills) taught within those programs. Furthermore, no evidence of curricular narrowing was found.

A second linear regression was conducted using only the one significant predictor of *competencies used in beginning practice*. The results showed that this predictor accounted for 33% of the variance in *competencies presented within nursing programs*. This means that competencies presented in nursing programs are influenced by the competencies that program directors—and perhaps faculty as well—perceive are important for beginning practice as a nurse.

Findings from this linear regression are important since the results showed that the competencies which are thought to be important for beginning practice influence the competencies presented within nursing programs, meaning that perceptions of what is important to know is what will be taught. Those working and teaching within nursing programs have the responsibility to stay up-to-date with the changes occurring in nursing practice and ensure that these changes are reflected in nursing curricula (Halstead, 2009).

Those responsible for overseeing or teaching in didactic sections must make sure that course content is based on up-to-date research and recommendations. Program directors or faculty cannot ignore a new recommendation simply because it is a skill they are not familiar with and therefore decide not to teach. For example, Thompson and Skiba (2008) found that despite recommendations from the IOM to include informatics within nursing programs, many nursing programs had not chosen to include the new information. Faculty must ensure they are integrating findings from research (i.e., evidenced-based practice) into nursing program curricula both quickly and appropriately. The fields of health care and nursing are ever-changing, and nursing students must graduate from nursing programs able to care for patients with complex medical issues.

Little research has been published regarding how standardized tests have impacted nursing programs' curricula. The majority of what has been published has focused on the academic and non-academic factors which can affect students' performances on the NLCEX-RN® (Oermann & Gaberson, 2009). This study researched variables such as type of school, number of courses that count standardized test scores toward course grades, and progression policies utilized to determine whether they had significantly impacted nursing program curricula. These variables were not commonly found within published literature but are relevant to nursing programs that institute standardized tests. When a nursing program incorporates standardized tests, faculty will need to consider many of the variables that were used in this study's the regression equation, such as the use of progression policies, the test score weight that will count toward a final course grades, the number of courses that will use standardized tests, and how the tests will affect the current curriculum. When changes are enacted in a

curriculum, they should be made to ensure that curricula are better preparing students to provide safe care and are not solely in response to a standardized test's questions. While no evidence of curricular narrowing was found within this study, it is possible that it is occurring elsewhere in the country.

Implications for Practice

The current study verified that standardized test use is common within many nursing programs, and the majority of the program directors indicated that standardized test results were applied toward students' final course grades. High-stakes testing was found to have occurred in only a small portion of the nursing programs studied. Although high-stakes testing occurred more often in ADN programs than in BSN programs, these findings were not significant. In addition, there was no evidence that standardized tests are negatively impacting nursing program curricula (i.e., curricular narrowing). In addition, some of the findings obtained through this study were quite similar to findings acquired in other studies such the 2011 NLN Annual Survey and Lauer and Yoho (2013).

Of concern is the lack of consistency found when it came to who determined the benchmarks used and the number of points to award based on standardized test results among the various nursing programs. This lack of consensus is problematic given that faculty own the curriculum. Faculty need to become more involved in the decisions that are affecting the students they teach and the way that evaluation methods are used within their courses. The methods that involved direct faculty input (i.e., committees, faculty meetings, and faculty teaching the courses) should be the most common methods used among all nursing programs.

Furthermore, faculty who teach within nursing programs should seriously consider making remediation mandatory while eliminating the points-from-standardized-

testing practice. Students should know that accuracy of feedback based on standardized test results is what is important for both them and those teaching in nursing programs. Many educators are aware of the demands placed on students while in nursing programs, but awarding points based on performance may be occurring because it is the most convenient method available to motivate students. However, it may not be the most effective method in ensuring student learning has occurred. For example, all students could be required to remediate based on their standardized test results. Those who scored well may only need to remediate over a small amount of content while those who possessed average results would need to remediate over a larger amount of content.

Several implications can be drawn from this study to assist nursing programs in moving toward a fair testing and learner-centered environment. Nursing programs that use standardized tests must have testing policies that are clearly defined and available to students in written form. These policies should include not only how much weight the test will carry toward a course grade (if used) but also how a student could challenge a question if they believe that an error occurred (Oermann & Gaberson, 2009). Students must be informed as to what the standardized test will cover, particularly in light of the nursing education literature that supports sharing test blueprints with students. Individuals working with nursing programs must be prepared to handle issues that can arise from mis-scoring of standardized tests and how this will affect students, especially those who may have failed a course by only one or two points.

Nursing programs and faculty teaching within them must understand that standardized tests were developed to assess students' understanding of nursing content and provide an opportunity to remediate in areas where students may be weak.

Remediation activities should focus on increasing students' understanding of how they learn as well as strive to provide meaningful learning experiences. Faculty must be involved in the remediation activities and not simply outsource student learning to a standardized testing company.

While awarding points based on standardized test performance is a common occurrence, it is not well supported by nursing education literature. Few publications exist which specifically validate awarding points based on standardized test results. This method is often utilized because there are concerns that students may not take the test seriously due to time constraints or other factors. In addition, the benchmarks associated with standardized tests may not be the most appropriate to use within every nursing program. Faculty and nursing program directors need to seriously consider how to determine which benchmarks are most representative of their student population.

Implications for Theory

The theoretical underpinnings (e.g., QSEN and AQIP) of this study provided an adequate model to measure the use of standardized tests within nursing programs. It did not appear that standardized tests affected competencies presented within nursing programs. When making decisions regarding standardized test uses and remediation, faculty consensus was the most common method selected. The process of involvement allows faculty to draw upon the expertise of other stakeholders and is supported by the AQIP model. However, few nursing programs considered the input of other stakeholders such as students or other sources of information (i.e., nursing education literature) when making decisions that could shape a caring learning environment.

The survey that measured competencies presented within nursing programs contained items that were similar to the skills identified by QSEN as being essential to include within nursing programs. When QSEN competencies (i.e., skills) are included within nursing programs, students will graduate with the ability to provide safe and competent care (Cronewett et al., 2007). In addition, results showed that the majority of nursing programs did not use standardized tests in a punitive manner (i.e., as a tool to block progression) and required students remediate when a benchmark was not met. This is consistent with quality improvement models which, when tests are properly integrated into nursing programs, can help identify students at risk of failure, allowing interventions (e.g., remediation) to be implemented (Brown & Marshall, 2008).

Recommendations for Future Research

The use of standardized tests within nursing programs is an area in which further research is warranted, specifically with regard to how various nursing programs have implemented standardized tests and developed testing polices. This study researched variables not already found within the literature, such as curricula narrowing, type of school, and percentage standardized tests count toward final course grades.

Future research may focus on qualitative studies in which faculty are observed teaching and are interviewed regarding how course curricula have changed due to the employment of standardized tests. Qualitative studies may reveal barriers and issues students and faculty face when using standardized tests (e.g., ease of use). In addition, more research is needed regarding how course grades are affected by standardized test results e.g., how much standardized test scores count toward grades and why), as there may be a vast differences between various nursing programs. Future studies may also ask

subjects to rank the methods used to determine the benchmarks and percentages within nursing programs. This will allow results to include which methods carry the most importance among the various programs. There may be value in repeating this study, but with altered parameters, such as including the faculty who are actually teaching in nursing courses and including participants from across the United States. While surveying faculty members may present some challenges such as an unequal sample size (e.g., multiple faculty responding from one course in a nursing program), it would be worthwhile to measure their perspective on standardized test use.

Conclusion

The current study utilized a descriptive correlational design, and quantitative data was gathered from an online self-report survey administered using Qualtrics. The population was comprised of directors (or their respective designee) of pre-licensure nursing programs located in the western one-third of United States. Descriptive statistics indicated that the majority of nursing programs (92%) utilized standardized tests within the curriculum, and an average of six courses employed this testing method. However, the majority of nursing program do not use test scores to either to determine progression within a nursing program (38.7%) or to determine a student's eligibility for graduation (23.6%). Remediation activities and test benchmarks were determined by a variety of methods within the nursing programs in this study. A linear regression analysis revealed that faculty members' beliefs regarding competencies that should be used in beginning practice had a positive significant relationship on competencies presented within nursing programs. The model accounted for 33% of the variance on competencies presented

within nursing programs. This study found no evidence that standardized tests are contributing to curricular narrowing within nursing programs.

Nurse educators face many challenges in their line of work, including helping students prepare to successfully pass the NCLEX-RN® on their initial attempt. This challenge can be intensified because NCLEX-RN® pass rates are viewed as the main quality indicator of a nursing program. Some nursing programs may see the use of standardized tests as an efficient way to determine who is most likely to pass or fail the NCLEX-RN®. In some cases, students may no longer be allowed to progress within the nursing program if there is concern that student will not successfully pass the NCLEX-RN® on their initial attempt. However, the focus of nursing education is not solely to prepare students to pass the NCLEX-RN®, but to prepare students to care for patients who have complex health care needs.

APPENDIX A: PERMISSION FOR USE

On Thu, Mar 7, 2013 at 2:00 PM, Hyndman, Susan <shyndman@css.edu> wrote:

Dear Ms. Coons: I would be very happy for you to use the tool I developed for my EdD dissertation. I am glad that additional faculty are benefiting from it--it is a topic that is near and dear to my heart!

I was just in Las Vegas last weekend for a mini-vacation. Looking forward to hearing how things go for you.

On Thu, Mar 7, 2013 at 3:15 PM, Irene Coons <colsoni@unlv.nevada.edu> wrote:
Dear Dr. Hyndman,

My name is Irene Coons and I am writing to ask if I may have permission to use the tool you developed titled the *Nursing Skills Survey* and published in your dissertation in 1999? I am a PhD student (Nursing Education) at the University of Nevada, Las Vegas. I have been a full-time nursing faculty member at the College of Southern Nevada since Fall 2002.

I did first read about it in Debra Ann Filer's dissertation titled *Faculty Perceptions of Competencies in the Nursing Profession* (2001). I noticed she obtained reliabilities for the survey "With a coefficient alpha at .80, the survey instrument demonstrated internal consistency for three of the five competency constructs used in practice, three of the five competency constructs as presented in nursing programs, and three of the five competency constructs when practice and program were combined" (Filer, 2001) and that was after she made some minor changes to it. I noticed in your dissertation *Registered Nurses' Perceptions of Nursing Skills Used in Practice and Presented in Their Nursing Program* (1999) that you obtained face and content validity as well.

My dissertation is focusing on the use of standardized tests within undergraduate nursing education programs and how they may be affecting curricula. I am interested in how often they are used, why they are being used, progression and remediation policies related to them, and so on. However, I am also interested in how IOM/QSEN competencies are being affected by the use of standardized tests. For example, are faculty aware of how IOM/QSEN are being measured on standardized tests? Do faculty even recognize IOM/QSEN competencies? I may make some small alterations to your survey to ensure I have included all QSEN areas but my chair and I believe your survey will be a good fit for my dissertation.

Prior to actually using it, I will send a more formal letter to you but I wanted to send this e-mail first. If you have any questions, please do not hesitate to call me at (702) 480-5887 or respond to this e-mail

Thank you,

Irene Coons MSN, RN, CNE

Susan Hyndman, EdD, RN

Chair, Non-Traditional Nursing Dept.

218-723-6783 | shyndman@css.edu

APPENDIX B: IRB EXEMPTION

UNLV
UNIVERSITY OF NEVADA LAS VEGAS

Biomedical IRB – Exempt Review
Deemed Exempt

DATE: August 16, 2013

TO: **Dr. Michele Clark,** School of Nursing

FROM: Office of Research Integrity – Human Subjects

RE: Notification of IRB Action
Protocol Title: Use of Standardized Tests within Nursing Education Programs
Protocol # 1307-4516

This memorandum is notification that the project referenced above has been reviewed as indicated in
Federal regulatory statutes 45CFR46 and deemed exempt under 45 CFR 46.101(b)2.

PLEASE NOTE:
Upon Approval, the research team is responsible for conducting the research as stated in the exempt
application reviewed by the ORI – HS and/or the IRB which shall include using the most recently submitted Informed Consent/Assent Forms (Information Sheet) and recruitment materials. The official versions of these forms are indicated by footer which contains the date exempted.

Any changes to the application may cause this project to require a different level of IRB review.
Should any changes need to be made, please submit a **Modification Form**. When the above-referenced project has been completed, please submit a **Continuing Review/Progress Completion report** to notify ORI – HS of its closure.

If you have questions or require any assistance, please contact the Office of Research Integrity - Human Subjects at IRB@unlv.edu or call 895-2794.

Office of Research Integrity –
Human Subjects
4505 Maryland Parkway • Box 451047 • Las Vegas, Nevada 89154-1047 (702) 895-2794 • FAX: (702) 895-0805

APPENDIX C: STUDY SURVEY

Q1 My name is Irene Coons and I am a doctoral candidate at the University of Nevada, Las Vegas. I need your assistance as a participant in my dissertation research regarding the use of standardized tests within nursing programs. You are being invited to participate in a research study. If you wish to participate after reading the informed consent, you simply click ">>" bottom of the page.

INFORMED CONSENT

School of Nursing

TITLE OF STUDY: Use of Standardized Tests within Nursing Education Programs

INVESTIGATOR(S): Michele Clark and Irene Coons For questions or concerns about the study, you may contact Michele Clark at 702-895-5978.

Purpose of the Study

The purpose of this study is two-fold. First, it is to evaluate how standardized tests may be affecting nursing program curricula within a sample of nursing programs located in the western one-third of the United States. Second, it is to evaluate how and why standardized tests are being used within those nursing programs.

Participants

You are being asked to participate in the study if you meet with inclusion criteria below:

(a) in a role to manage a two-year or four-year, pre-licensure RN nursing program that has received full approval by the state board of nursing (or equivalent) and (b) nursing program listed by the state board of nursing (or equivalent).

You are asked <u>not</u> to participate if your nursing program meets any of the exclusion criteria as listed below: (a) name of nursing program is not listed by the board of nursing, (b) received limited approval by the state board of nursing, (c) approval granted for clinical learning experiences only, (d) is only a licensed practical nursing program, (e) is only a RN to BSN program, (f) is a diploma program of nursing, or (g) is only a LPN/LVN to RN program.

Procedures

If you volunteer to participate in this study, you will be asked to complete the online nursing competencies survey, questions regarding standardized test use, and a few demographic questions.

Benefits of Participation

There may be no direct benefits to you as a participant in this study. However, we are examining the use of standardized tests within nursing programs and the findings will be submitted to publication to increase the knowledge base of the nursing discipline.

Deemed exempt by the ORI-HS and/or the UNLV IRB. Protocol #1307-4516 Exempt Date: 09-06-13

Risks of Participation

There are risks involved in all research studies. This study may include only minimal risks in that you may feel uncomfortable answering some of the questions. If you feel uncomfortable, you may skip that item and/or discontinue the survey at any time.

Cost/Compensation

There is no financial cost to you to participate in this study. The study will take 10-20 minutes of your time. For taking the time to complete and submit the survey you will be compensated for your time in the form of a $5.00 Starbucks electronic gift card.

Confidentiality

All information gathered in this study will be kept as confidential as possible. The Internet Protocol address used to contact you will be collected. All records will be stored in a locked facility at UNLV for 3 years after completion of the study. After the storage time, the information gathered will be destroyed.

Contact Information

If you have any questions or concerns about the study, you may contact Dr. Michele Clark (PI and Faculty Dissertation Chair) at michele.clark@unlv.edu or at 702-895-5978. For questions regarding the rights of the research subjects, any comments, or complaints regarding the manner in which the study is being conducted, you may contact the UNLV Office of Research Integrity – Human Subjects at 702-895-2794 or toll-free at 877-895-2794 or via email at IRB@unlv.edu.

Voluntary Participation

Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without effect to your relations with UNLV. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent

I have read the above information and agree to participate in this study. I have been able to ask questions about the research study. I am at least 18 years of age. If you have read the above information and you meet the inclusion criteria and you wish to participate in this study, please proceed by clicking the ">>" icon at the bottom of the screen.

Deemed exempt by the ORI-HS and/or the UNLV IRB. Protocol #1307-4516 Exempt Date: 09-06-13

Q2 Please read each question and select the option that best describes you and/or the nursing program that you manage. If none of the options are appropriate please indicate your answer on the space provided for "other."

Q3 Does your nursing program use any commercially constructed, standardized tests (e.g., HESI, ATI, NLN, or Kaplan) within the undergraduate, registered nurse (RN) program curriculum? Note, this does NOT include standardized tests used to screen or select candidates for acceptance into the undergraduate RN program such as the TEAS or TOEFL.

- ❍ a. Yes (1)
- ❍ b. No (2)

If b. No Is Selected, Then Skip To Nursing Competencies Survey The foll...

Q4 If yes to the previous question, how are they used? Select all that apply.

- ❑ a. Incorporated into one or more nursing courses throughout the nursing program (1)
- ❑ b. Used to assess NCLEX-RN readiness prior to graduation (2)
- ❑ c. Other, please explain: (3) _____

Q5 What is the name of the standardized test product your program uses? Select all that apply.

- ❑ a. Assessment Technologies Inc. (ATI) (1)
- ❑ b. National League for Nursing (NLN) (2)
- ❑ c. Kaplan (3)
- ❑ d. Health Education Systems Inc. (HESI) (4)
- ❑ e. Don't know (5)
- ❑ f. Other, please list (6) _____

Q6 How many nursing courses use a standardized test within your nursing program?

- ❍ a. Write the number of courses below: (1) _____
- ❍ b. Don't know (2)

Q7 What types of standardized tests are used within the course(s)? Select all that apply.

- ❑ a. Custom made tests based on course information sent to the testing company (1)
- ❑ b. Standardized tests based on content determined by the testing company (2)
- ❑ c. Varies based on the course (3)
- ❑ d. Don't know (4)
- ❑ e. Other, please explain: (5) _____

Q8 Which best describes why your nursing program uses standardized tests. Select three that most apply.

- ❑ a. To increase NCLEX-RN pass rates among the graduates (1)
- ❑ b. To assess the ability of a student to pass the NCLEX-RN on their initial attempt (2)
- ❑ c. To measure students' mastery of course content (3)
- ❑ d. To provide feedback regarding students' areas of strengths and weaknesses (4)
- ❑ e. To provide information regarding how well faculty taught the content (5)
- ❑ f. To provide a source of information for accreditation visits or program evaluation (6)
- ❑ g. Don't know (7)
- ❑ h. Other, please explain: (8) _____

Q9 Does your program require students to meet a minimum benchmark on a standardized test for progression?

- ❍ a. Yes (1)
- ❍ b. No (2)

If b. No Is Selected, Then Skip To Are students required to remediate if...

Q10 If yes to the previous question, which of the following statements are true? Students need to pass a standardized test in order to: Select all that apply.

- ❑ a. Progress into the next nursing course or semester (1)
- ❑ b. Become eligible for graduation (2)
- ❑ c. Other, please explain (3) _____

Q11 Within your program, who determined the standardized test benchmarks used for progression? Select three that most apply.

- ❑ a. The faculty teaching the course(s) (1)
- ❑ b. Administration (2)
- ❑ c. Faculty consensus (3)
- ❑ d. Committee recommendations (4)
- ❑ e. Students' recommendations (5)
- ❑ f. Followed the recommendations of the company who provided the standardized tests (6)
- ❑ g. Don't know (7)
- ❑ h. Other, please explain: (8) _____

Q12 Are students required to remediate if they do not meet a benchmark on a standardized test?

- ❍ a. Yes (1)
- ❍ b. No (2)

If b. No Is Selected, Then Skip To Does your nursing program have a poli...

Q13 If yes to the previous question, what types of remediation activities are they required to complete? Select three that most apply.

- ❑ a. Meet one-on-one with a faculty member to review content missed (1)
- ❑ b. Attend group review sessions that are facilitated by a faculty member (2)
- ❑ c. Complete a specified number of NCLEX-RN prep test questions (3)
- ❑ d. Activities that were determined by the standardized testing company (4)
- ❑ e. Complete a test taking strategy and skills course (5)
- ❑ f. NCLEX-RN preparation course (6)
- ❑ g. Learn guided imagery and visualization techniques (7)
- ❑ h. Repeat an entire nursing course (8)
- ❑ i. Don't know (9)
- ❑ j. Other, please explain: (10) _____

Q14 Does your nursing program have a policy that stipulates how much standardized test scores can count toward a final course grade?

- ❍ a. Yes (1)
- ❍ b. No (2)
- ❍ c. Don't know (3)

Q15 Within your nursing program, do any courses use a standardized test score as part of a final course grade?

- ❍ a. Yes (1)
- ❍ b. No (2)
- ❍ c. Don't know (3)

If b. No Is Selected, Then Skip To Does your nursing program require fac...

Q16 If yes to the previous question, how many nursing courses use a standardized test score as a portion of a final course grade?

- ❍ a. Write the number of courses below: (1) _____
- ❍ b. Don’t know (2)

Q17 What is the average percentage a standardized test contributes when calculating final course grades within your program.

- ❍ a. Write the average percent below: (1) _____
- ❍ b. Don't know (2)

Q18 Who determined the percentage that a standardized test score can contribute to a final course grade? Select three that most apply.

- ❑ a. The faculty teaching the course(s) (1)
- ❑ b. Administrative recommendations (2)
- ❑ c. Program policy (3)
- ❑ d. Faculty meeting discussions (4)
- ❑ e. Nursing program committee recommendations (5)
- ❑ f. Students’ recommendations (6)
- ❑ g. Standardized test company’s recommendations (7)
- ❑ h. Nursing education literature (8)
- ❑ i. Obtained opinions of faculty from other nursing programs (9)
- ❑ j. Don’t know (10)
- ❑ k. Other, please explain: (11) _____

Q19 Does your nursing program require faculty to obtain the test blueprint for the standardized test(s) used?

- ❍ a. Yes (1)
- ❍ b. No (2)
- ❍ c. Don't know (3)
- ❍ d. Other, please explain below: (4) _____

Q20 Are test blueprints shared with students prior to the administration of the standardized test(s)?

- ❍ a. Yes (1)
- ❍ b. No (2)
- ❍ c. Don't know (3)
- ❍ d. Other, please explain below (4) _____

Q21 Nursing Competencies Survey

The following competencies have been identified from the nursing literature as being important for nursing practice in a changing health care environment. Please review each competency listed and score each item twice. In the first column indicate how frequently the competency is used in beginning practice by registered nurses. In the far right column indicate how frequently your nursing program presents the competency.

Used in Beginning Practice	Presented in Nursing Program
4 = Consistently	4 = Consistently
3 = Occasionally	3 = Occasionally
2 = Rarely	2 = Rarely
1 = Never	1 = Never

Q22 Competency: ONE

	Used in Beginning Practice				Presented in Nursing Program			
	4 (1)	3 (2)	2 (3)	1 (4)	4 (1)	3 (2)	2 (3)	1 (4)
a. Critical thinking (1)	❍	❍	❍	❍	❍	❍	❍	❍
b. Knowledge-based practice (2)	❍	❍	❍	❍	❍	❍	❍	❍
c. Problem-solving/decision making (3)	❍	❍	❍	❍	❍	❍	❍	❍
d. Quantitative skills (4)	❍	❍	❍	❍	❍	❍	❍	❍
e. Ability to deal with change (5)	❍	❍	❍	❍	❍	❍	❍	❍
f. Creativity (6)	❍	❍	❍	❍	❍	❍	❍	❍

Q23 Competency: TWO

	Used in Beginning Practice				Presented in Nursing Program			
	4 (1)	3 (2)	2 (3)	1 (4)	4 (1)	3 (2)	2 (3)	1 (4)
a. Effective communication (1)	❍	❍	❍	❍	❍	❍	❍	❍
b. Values multicultural diversity (2)	❍	❍	❍	❍	❍	❍	❍	❍
c. Conflict resolution/negotiation (3)	❍	❍	❍	❍	❍	❍	❍	❍
d. Management skills (4)	❍	❍	❍	❍	❍	❍	❍	❍
e. Team work (5)	❍	❍	❍	❍	❍	❍	❍	❍
f. Caring (6)	❍	❍	❍	❍	❍	❍	❍	❍
g. Leadership skills (7)	❍	❍	❍	❍	❍	❍	❍	❍
h. Interdisciplinary collaboration (8)	❍	❍	❍	❍	❍	❍	❍	❍
i. Counseling (9)	❍	❍	❍	❍	❍	❍	❍	❍
j. Patient advocacy (10)	❍	❍	❍	❍	❍	❍	❍	❍

Q24 Competency: THREE

	Used in Beginning Practice				Presented in Nursing Program			
	4 (1)	3 (2)	2 (3)	1 (4)	4 (1)	3 (2)	2 (3)	1 (4)
a. Technical/psychomotor skills (1)	❍	❍	❍	❍	❍	❍	❍	❍
b. Computer use (2)	❍	❍	❍	❍	❍	❍	❍	❍

Q25 Competency: FOUR

	Used in Beginning Practice				Presented in Nursing Program			
	4 (1)	3 (2)	2 (3)	1 (4)	4 (1)	3 (2)	2 (3)	1 (4)
a. Comprehensive assessment of basic needs (1)	❍	❍	❍	❍	❍	❍	❍	❍
b. Provision of age appropriate care (2)	❍	❍	❍	❍	❍	❍	❍	❍
c. Provision of care to individuals (3)	❍	❍	❍	❍	❍	❍	❍	❍
d. Provision of care to families (4)	❍	❍	❍	❍	❍	❍	❍	❍
e. Management of care (5)	❍	❍	❍	❍	❍	❍	❍	❍
f. Delegating skills (6)	❍	❍	❍	❍	❍	❍	❍	❍
g. Patient/family teaching (7)	❍	❍	❍	❍	❍	❍	❍	❍
h. Holistic care (8)	❍	❍	❍	❍	❍	❍	❍	❍
i. Documentation (9)	❍	❍	❍	❍	❍	❍	❍	❍
j. Evaluation of care (10)	❍	❍	❍	❍	❍	❍	❍	❍
k. Accountability (11)	❍	❍	❍	❍	❍	❍	❍	❍
l. Ethical practice (12)	❍	❍	❍	❍	❍	❍	❍	❍

Q26 Competency: FIVE

	Used in Beginning Practice				Presented in Nursing Program			
	4 (1)	3 (2)	2 (3)	1 (4)	4 (1)	3 (2)	2 (3)	1 (4)
a. Health promotion/disease prevention emphasis in practice (1)	❍	❍	❍	❍	❍	❍	❍	❍
b. Application of knowledge to economic aspects of nursing & health care in practice (2)	❍	❍	❍	❍	❍	❍	❍	❍
c. Case finding/case management (3)	❍	❍	❍	❍	❍	❍	❍	❍
d. Home assessment (4)	❍	❍	❍	❍	❍	❍	❍	❍
e. Community assessment (5)	❍	❍	❍	❍	❍	❍	❍	❍

Q27 Competency: SIX

	Used in Beginning Practice				Presented in Nursing Program			
	4 (1)	3 (2)	2 (3)	1 (4)	4 (1)	3 (2)	2 (3)	1 (4)
a. Use of standards and protocols that support safety and quality (1)	❍	❍	❍	❍	❍	❍	❍	❍
b. Use of strategies to reduce the potential for errors or harm to patient and self (2)	❍	❍	❍	❍	❍	❍	❍	❍
c. Use of error reporting systems to communicate actual or potential hazards within the facility (3)	❍	❍	❍	❍	❍	❍	❍	❍

Q28 Please indicate your age in years below:

Q29 Please indicate your gender:

❍ a. Male (1)
❍ b. Female (2)

Q30 Please indicate the race/ethnicity you identify with. Note, the category which most closely reflects your community should be used when you identify yourself as being of mixed racial and/or ethnic origins.

- ❍ a. American Indian or Alaskan Native (1)
- ❍ b. Black, not of Hispanic origin (2)
- ❍ c. Hispanic (3)
- ❍ d. Asian or Pacific Islander (4)
- ❍ e. White, not of Hispanic origin (5)
- ❍ f. Prefer not to answer (6)

Q31 What is your highest level of education:

- ❍ a. BSN (1)
- ❍ b. MSN (2)
- ❍ c. PhD (3)
- ❍ d. Other, please explain below: (4) _____

Q32 What type of nursing degree does your college or university offer

- ❍ a. Associate's degree in nursing (1)
- ❍ b. Bachelor's degree in nursing (2)
- ❍ c. Both (3)

Q33 Which best describes the college or university your nursing program is associated with?

- ❍ a. For profit (1)
- ❍ b. Public (2)
- ❍ c. Private (3)

Q34 In what state is your nursing program located? Select all that apply.

- ❑ a. AK (1)
- ❑ b. AZ (2)
- ❑ c. CA (3)
- ❑ d. CO (4)
- ❑ e. HI (5)
- ❑ f. ID (6)
- ❑ g. MT (7)
- ❑ h. NV (8)
- ❑ i. NM (9)
- ❑ j. OR (10)
- ❑ k. TX (11)
- ❑ l. UT (12)
- ❑ m. WA (13)
- ❑ n. WY (14)
- ❑ o. Multiple States (15)

APPENDIX D: MEANS AND STANDARD DEVIATION SCORES

Used in Beginning Practice

Competency	*Mean*	*SD*
Intellectual		
a. Critical thinking	2.81	0.41
b. Knowledge-based practice	2.76	0.50
c. Problem-solving/decision making	2.83	0.38
d. Quantitative skills	2.42	0.53
e. Ability to deal with change	2.51	0.51
f. Creativity	2.19	0.47
Interpersonal		
a. Effective communication	2.86	0.39
b. Values multicultural diversity	2.64	0.51
c. Conflict resolution/negotiation	2.43	0.53
d. Management skills	2.27	0.52
e. Team work	2.76	0.47
f. Caring	2.84	0.41
g. Leadership skills	2.32	0.56
h. Interdisciplinary collaboration	2.56	0.54
i. Counseling	2.10	0.54
j. Patient advocacy	2.72	0.51
Technical		
a. Technical/psychomotor skills	2.73	0.61
b. Computer use	2.76	0.60
Care-Management		
a. Comprehensive assessment of basic needs	2.81	0.48
b. Provision of age appropriate care	2.71	0.54
c. Provision of care to individuals	2.89	0.38
d. Provision of care to families	2.57	0.54
e. Management of care	2.59	0.56
f. Delegating skills	2.47	0.57
g. Patient/family teaching	2.71	0.50
h. Holistic care	2.57	0.58
i. Documentation	2.85	0.46
j. Evaluation of care	2.73	0.49
k. Accountability	2.81	0.44
l. Ethical practice	2.82	0.44

Used in Beginning Practice (Cont.)

Competency	*Mean*	*SD*
Community-Based Skills		
a. Health-promotion/disease prevention emphasis in practice	2.45	0.55
b. Application of knowledge to economic aspects of nursing & health care in practice	2.14	0.51
c. Case finding/case management	2.12	0.50
d. Home assessment	1.90	0.55
e. Community assessment	1.93	0.52
Safety		
a. Use of standards and protocols which support safety and quality	2.83	0.42
b. Use of strategies to reduce the potential for errors or harm to patient and self	2.83	0.46
c. Use of error reporting systems to communicate actual or potential hazards within the facility	2.71	0.50

Range = 1–3
N = 177

APPENDIX E: MEANS AND STANDARD DEVIATION SCORES

Presented within Nursing Program

Competency	*Mean*	*SD*
Intellectual		
a. Critical thinking	2.93	0.26
b. Knowledge-based practice	2.82	0.44
c. Problem-solving/decision making	2.84	0.37
d. Quantitative skills	2.49	0.51
e. Ability to deal with change	2.48	0.51
f. Creativity	2.23	0.48
Interpersonal		
a. Effective communication	2.86	0.39
b. Values multicultural diversity	2.70	0.49
c. Conflict resolution/negotiation	2.38	0.52
d. Management skills	2.37	0.52
e. Team work	2.77	0.46
f. Caring	2.86	0.39
g. Leadership skills	2.42	0.53
h. Interdisciplinary collaboration	2.45	0.60
i. Counseling	2.12	0.44
j. Patient advocacy	2.77	0.50
Technical		
a. Technical/psychomotor skills	2.77	0.59
b. Computer use	2.75	0.60
Care-Management		
a. Comprehensive assessment of basic needs	2.85	0.52
b. Provision of age appropriate care	2.80	0.44
c. Provision of care to individuals	2.94	0.30
d. Provision of care to families	2.59	0.59
e. Management of care	2.68	0.54
f. Delegating skills	2.46	0.57
g. Patient/family teaching	2.76	0.50
h. Holistic care	2.69	0.53
i. Documentation	2.82	0.46
j. Evaluation of care	2.82	0.43
k. Accountability	2.86	0.44
l. Ethical practice	2.86	0.44

Presented in Nursing Program (Cont.)

Competency	*Mean*	*SD*
Community-Based Skills		
a. Health-promotion/disease prevention emphasis in practice	2.57	0.54
b. Application of knowledge to economic aspects of nursing & health care in practice	2.19	0.56
c. Case finding/case management	2.19	0.49
d. Home assessment	2.01	0.51
e. Community assessment	2.02	0.56
Safety		
a. Use of standards and protocols which support safety and quality	2.82	0.42
b. Use of strategies to reduce the potential for errors or harm to patient and self	2.86	0.39
c. Use of error reporting systems to communicate actual or potential hazards within the facility	2.60	0.54

Range = 1–3
N = 177

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VITA

Graduate College
University of Nevada, Las Vegas

IRENE COONS MSN, RN, CNE

DEGREES

University of California, Riverside
Graduate Certificate in Forensic Nursing **2010**

University of Nevada Las Vegas, NV
Post-Master's Certificate in Nursing Education **2006**

University of Phoenix, Michigan Campus
Master of Science in Nursing **2001**

Lake Superior State University, Sault Sainte Marie, MI
Bachelor of Science in Nursing **1993**

AWARDS

Dean's Research Award **September 2013**
Nevada State Board of Nursing, Certificate of Appreciation **April 2013**
Lahr Scholarship, *University of Nevada, Las Vegas* **Fall 2011 - Current**

PUBLICATIONS AND PAPERS

Grade Inflation within Higher Education **2011**
CEU speaker to the Department of Nursing-College of Southern Nevada

Grade Inflation within Higher Education **2011**
Speaker at convocation, College of Southern Nevada

Grade Inflation within Nursing Education **2010**
Poster presenter Western Institute for Nursing (WIN)

DISSERTATION TITLE

Use of Standardized Tests Within Nursing Education Programs

DISSERTATION COMMITTEE

Chairperson, Michele Clark, PhD
Committee Member, Lori Candela, PhD
Committee Member, Marcia Ditmyer, PhD
Committee Member, Nancy Menzel, PhD