

NUMBER OF CLINICAL HOURS IN THE NURSING PROGRAMS AND
NATIONAL COUNCIL LICENSURE EXAMINATION FOR REGISTERED NURSES
(NCLEX-RN) PASSING RATE

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Abstract

The purpose of this study was to examine the relationship between National Council Licensure Examination for Registered Nurses (NCLEX) passing rates and the number of clinical hours completed by a student in a nursing program in Kansas or Missouri. In addition, the following relationships were examined: the relationship between NCLEX passing rates and (1) the type of program (BSN vs. ADN); (2) the presence or absence of an internship in a program; (3) the number of internship clock hours; (4) whether the internship was administered on a full or part time basis; (5) the number of classroom credit hours in a program; (6) how the clinical clock hours were distributed among different types of clinical practice (direct patient care; simulation; observation; or other); (7) offering an NCLEX preparatory course; and (8) faculty characteristics (the percentage of faculty with associate's, bachelor's, master's, and doctorate degrees; the percentage of full time and part time faculty; the percentage of adjuncts and visiting faculty; and length of faculty tenure). No statistically significant correlation was found between NCLEX passing rates and the number of clock clinical hours. Results indicated that additional research on the programmatic variables is necessary to understand how these variables affect the NCLEX passing rates.

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Chapter 1

Introduction

The expectation of a student entering a nursing program is that the program will provide sufficient knowledge and skills to be able to pass National Council Licensure Examination for Registered Nurses (NCLEX) and become a practicing nurse, so the time, financial and emotional investments of the student can translate into a rewarding career. Research studies have identified a variety of student and program factors that can contribute to NCLEX success rates. Student factors have been researched significantly more than program factors; specifically, few studies have looked into the number of clinical hours in a nursing program as a factor in NCLEX success rates.

Clinical courses are currently a significant part of nursing curriculum. However, on the one hand, their importance is not researched well. It is not clear, for example, if they make any impact on the ability of a graduate nurse to pass NCLEX, which is necessary to enter professional nursing practice. It is possible that the time spent in clinical classes is better utilized in some other way. On the other hand, the clinical component of nursing education the way it is administered now serves as a bottleneck for admissions of qualified applicants into nursing program for two main reasons: lack of faculty to teach clinical classes, and lack of the availability of clinical sites where these classes will be conducted. More research is needed to identify the impact of the clinical classes on the preparedness of nursing students.

The shortage of registered nurses in the United States is a well established issue, and it is projected to continue well into the 21st century. Despite the current easing of the nursing shortage due to the recession, the U.S. nursing shortage is projected to grow to

260,000 registered nurses by 2025. A shortage of this magnitude would be twice as large as any nursing shortage experienced in this country since the mid-1960s (AACN, 2011). A limited availability of clinical sites is further restricting the ability of nursing programs to expand to accommodate the needs of potential applicants (MacIntyre et al., 2008). The problem of nursing shortage can be alleviated to some degree if nursing schools had enough faculty and clinical sites to educate more students.

While literature supports the necessity of having clinical experiences to a degree, a legitimate question to ask is how long those clinical experiences should be and how they should be delivered. According to MacIntyre et al. (2008), traditional approaches to clinical education in nursing have not been altered substantially for decades. In the traditional model, nursing program instructors direct and evaluate learning for a small group of students (6-10) and function as clinical experts and supervisors for the students in the clinical area. The need for patient safety guides the limit placed on the number of nursing students a faculty member can supervise. Students often receive patient assignments in advance (e.g. the night before the shift) and then plan for the clinical experience by reviewing the patient's chart and medications. Because student assignments often include patients from more than one nurse's assignment, students' primary relationship is not with the specific patient's nurse, but with the faculty member. Staff nurses may work simultaneously with several students as well as different students each day. Adding to the challenge, students may attend different schools, each of which has different learning objectives for the clinical experience. Students may also be from junior and senior years, which adds the difference in what they are allowed to do on the unit, based on what interventions they were instructed on at their respective level. Thus,

the experience may be perceived as confusing, burdensome, and interfere with the staff nurses' ability to deliver care.

The number of clinical hours in a nursing program is a factor that is hard to increase, even if research supports the fact that more clinical hours translate into higher NCLEX passing rates. Two main issues put a limit on that number: the lack of qualified and available clinical instructors to teach the clinical courses, and the lack of available facilities willing to allow students to have clinical rotations on their premises. Another factor is simply the limited amount of time nursing students spend in the program. Since the nursing program is structured in such a way that the student takes specific classes taught at specific times in the course of study, the student cannot elect to take more or fewer clinical hours in the belief that they are or are not helpful in passing NCLEX. The course of education is designed so that it must be completed in two years of full time study (or the equivalent of two years of full time study, if part time study is allowed in the program).

The problem with finding placement for students at area clinical facilities is related to nursing shortage as well. A facility that is not able to get appropriate staffing is not likely to allow the students on a nursing unit that may not function in an optimal way. Having nursing students and instructors who are not hospital employees on the medical facility premises puts additional stress on the facility's employees, without providing any obvious and immediate benefits. It is reasonable to expect that present day nursing students will become tomorrow's practicing nurses and will to some degree alleviate the problem of hospital understaffing, and that knowledge should serve as an incentive to the clinical facilities to assist in their education. However, this goal is quite removed from the

immediate needs of the facility and thus low on the priority list of hospital administrators and educators.

The number of required clinical hours in all the area nursing programs and the number of clinical facilities in a given geographical area affects the number of nursing students that can be educated in any given community. The total number of clinical hours required in associate and baccalaureate programs varies widely (National Council of State Boards of Nursing, 2008). Most state boards of nursing do not specify a minimum number of clinical hours in nursing programs. Published evidence correlating the number of clinical hours with outcomes, including NCLEX-RN pass rates, is lacking (MacIntyre, 2008).

Diekelmann and Ironside (2002) raise a similar issue of innovation in nursing education that is not research-based but rather is a creative response to the immediate challenges facing the particular school. Tanner (2004, p.13) adds the following:

We have virtually no research on clinical education models, although our clinical education constitutes the lion's share of our educational costs. To defend these costs, administrators resort to regulatory requirements of strict student-faculty ratios and specified number of clinical hours, even in the absence of research evidence supporting these requirements. ...Our capacity may be limited, at least in part, by our adherence to clinical education models, student-faculty ratios, and ideologies that have little support in research evidence.

One way to show that the clinical component of a nursing program improves the quality of nursing education would be to show that there is a relationship between the number of clinical hours and NCLEX pass rates of a nursing program. A variety of

factors influencing NCLEX pass rates were examined by researchers. These factors can be divided into programmatic and student characteristics. Student characteristics can be further divided into demographic variables (age, sex, race, SES), and characteristics related to the academic proficiency (such as GPA, study habits, the use of preparatory courses etc.). The programmatic factors include such factors as the length of the program, the faculty-to-student ratio, the number of full time vs. part time and adjunct faculty, and the number of master's vs. doctorate prepared faculty. Overall, while numerous studies have been done to examine a variety of student and programmatic characteristics predicting NCLEX success rate, their findings are often contradictory. In addition, the number of research studies on student variables is significantly higher than that on programmatic variables. While the importance of several factors can be logically explained, their ability to predict NCLEX success rate is not always clear. No specific factor or group of factors has been universally identified as being good predictors of NCLEX success rates (Stevens, 1996).

The number of clinical hours spent in each rotation may vary significantly depending on each individual nursing school's curriculum. Arranging for appropriate clinical sites for all the students in a nursing program has become a major curricular challenge. Requiring more than the necessary amount of clinical hours in each specialty area creates enrollment barriers and perpetuates the shortage of nurses (MacIntyre, 2008). However, since little research has been conducted on the subject of clinical hours, it is unclear how many hours is the optimal number of hours for the nurses to be prepared to pass NCLEX. The goal of this research is to help shed some light on the number of clinical hours that are optimal for NCLEX success.

Chapter 2

Literature Review

Support for the clinical component of a nursing program in literature

The nursing profession started out as a practice-based occupation. Traditionally nursing education was similar to an apprenticeship, during which student nurses received salaries and in return provided services for a training hospital (Chan, 1999). Thus initially, the training of a nurse consisted mainly of a clinical component, which involves performing procedures and direct actions to provide care for a patient. Later on, it was decided that this type of education is not sufficient to prepare a nurse for the complex modern healthcare environment, and that a didactic component of the education was needed as well. The didactic component, or classroom hours, involves the instruction of students in the classroom regarding the pathophysiology of medical conditions, pharmacology, and the rationale behind nursing interventions, to name just a few subject areas. These classes are also known as nursing theory courses. While the theoretical component is critical, the necessity of the clinical component continues to be stressed in a nursing program.

Importance of the clinical component

Researchers describe the clinical component of a nursing program as the heart of professional education (McCabe, 1985), giving the student an opportunity for consolidating knowledge, socializing into the professional role, and acquiring professional values. Clinical experience allows students to combine cognitive, psychomotor, and affective skills to develop into competent professionals. While the expansion of realistic simulations may provide good instructional opportunities and at the

same time relieve the pressure on clinical sites, opportunities for students to care for real people in real clinical settings are also essential (MacIntyre et al., 2008). In contrast with the classroom environment, clinical education takes place in a complex social context that requires the application of a variety of skills simultaneously in an unpredictable environment. The student is able to sharpen critical thinking skills and learn how to prioritize tasks while interacting with the clients, their families, nurses, and other professionals in a clinical facility. A prominent nursing theorist Patricia Benner considers the self-reflection on how a student performs in the clinical environment and integrates a variety of skills necessary for the development of expertise in professional practice (Benner, 1984).

Some researchers claim that the clinical setting provides a laboratory for the application of knowledge learned in a classroom setting (Stevens, 1996). Princeton (1992) suggests that the learning that took place in the classroom can only be reinforced through applications to real patient care situations. Lynn and Twigg (2010) suggest that students in the clinical environment need to synthesize, analyze, and apply didactic content into clinical practice and has great significance in nursing practice.

Methods of administering the clinical component

The clinical component of a nursing program can be administered in a variety of ways. Clinical hours may be completed by means of participating in direct patient care under the supervision of a registered nurse; a simulation of care on a manikin under the supervision of another healthcare professional; or an observation (observing other registered nurses providing patient care).

In most states, including Kansas and Missouri, individual nursing programs decide how many clinical hours the student should complete; this number is not regulated by any external organization (NCSBN, 2010). Usually, core classes like medical-surgical nursing, care of children, or care of women have a clinical component that may or may not be part of the same class and consequently be graded separately or together.

Internship

A nursing program may or may not have a capstone or internship at the end of program. If the nursing program decides to have an internship, it normally takes the form of the student being assigned to a specific clinical unit and being preceptored by a registered nurse who is an employee of this unit. The number of hours the student spends doing the internship is determined by the nursing program; all the students in a given program spend the same number of hours at an internship, and usually receive a grade for it at the end.

Historically the internship hours are not included in the number of total clinical clock hours for the following reason: an internship is a separate class with its own number of credit hours that is not a part of any didactic course. It does not have a didactic component (or has a very small didactic component, mainly for debriefing only), and the student nurses are expected to engage in clinical practice rather than be in the classroom. On the other hand, clinical clock hours are usually a part of a didactic class. There are other differences between clinical clock hours that are a part of a didactic class and an internship, such as: an internship is administered in the last semester of nursing school, whereas clinical clock hours are administered throughout the nursing program. During

clinical hours, students are expected to be at different levels of ability, whereas during internship, they are expected to function in a way comparable to a registered nurse.

Precepted capstone or internship at the end of the last semester may be administered by the nursing program. A capstone is defined by the Kansas Nurse Practice Act (2010) as “an experiential nursing course for students to demonstrate integration of knowledge and professional nursing supervised by a preceptor during the final semester of the professional nursing program” (p.1). According to Myrick et al. (2011), during precepted clinicals students are thrust into everyday realities of nursing practice, at which time they can refine the art of nursing under careful guidance of their preceptors. During this educational experience, students begin to internalize the values of the nursing profession. Preceptors have significant influence on the socialization of students into professional nursing practice and serve as major role models. The protracted nature of an internship (several weeks to a whole semester long) allows the students to work side by side with professional nurses and perform duties similar to those of the members of the profession.

The Kansas Nurse Practice Act mandates the presence of a clinical component in the curriculum of all state board approved schools of nursing; however, the number of hours spent in the clinical component is not specified. The Missouri Nurse Practice Act (2010) implies that a nursing program is expected to have a clinical component, although no direct statement to that effect can be found. For example, the Practice Act states that “the curriculum shall be planned so that the number of hours/ credits/ units of instruction are distributed between theory and clinical hours/ credits/ units to permit achievement of graduate competencies and clinical outcomes” (p.29).

In summary, the inclusion of the clinical component in the nursing education is based on the tradition of nursing education and on the work of nursing theorists, who developed philosophies of how nursing knowledge is best acquired and what constitutes competence. Given the importance these theorists and researchers attached to clinical component of nursing education, it is surprising that there is little research available on how the clinical component affects the graduate nurse's ability to pass NCLEX and practice nursing in a safe and effective manner.

Faculty shortage

Faculty shortage is one of the main reasons nursing programs are not able to admit as many qualified applicants as they can, which exacerbates the overall nursing shortage. The shortage of clinical nursing faculty reduces the program's ability to provide as many clinical experience hours as they would like to. The difficulties with hiring clinical course instructors may have roots in the fact that teaching positions are reimbursed at lower rates than clinical nursing positions (Sims, 2009), and in the requirements education facilities often have for their instructors (master's degree in nursing, years of clinical and teaching experience, ACLS and/or other professional certifications). The situation is exacerbated by the general nursing shortage, which makes the number of nurses seeking employment low overall. Similar to the nursing force in general, college and university faculty are aging at a fast rate. The average age of the RN population in 2008 was 46 years of age, up from 45.2 in 2000. With the average age of RNs projected to 44.5 years by 2012, nurses in their 50s are expected to become the largest segment of the nursing workforce, accounting for almost one quarter of the RN population (AACN, 2011). Not enough PhDs have been trained in nursing, and the best

and the brightest are not willing to be trained for an underpaid position in education that has low public and legislative esteem. Sims (2009) states that one of the reasons for nurse shortage is the shortage of faculty to train the potential nursing school students.

The National League of Nursing recently reported that in 2006 there were 1,390 vacant full time nursing faculty positions in the United States, including 7.9% vacancy rate for faculty in baccalaureate programs and 5.6% vacancy rate for faculty in associate degree programs. The vacancy situation rose appreciably in one year. In 2007, there were more than 1900 unfilled full time faculty positions, affecting 36% of all schools of nursing. In response, 84% of nursing schools attempted to hire new faculty in 2007-2008. Of those, 79% found recruitment “difficult” and almost one in three schools found it “very difficult” (NLN, 2010). According to the NLN Data Review (2008), 23.4% of the nation’s nursing programs of all types reported receiving more qualified applicants than could be accepted in 2008. ~~39% of all qualified applicants were turned away from prelicensure programs in 2008.~~ Nursing programs turned away 39% of qualified applicants in that year. While shortages of faculty, clinical placements, and classroom space were all reported to impede the expansion of admissions, prelicensure programs reported that lack of clinical placement settings was the biggest impediment to admitting students.

Purpose and significance of NCLEX-RN examination

Definition of NCLEX

National Council Licensure Examination for Registered Nurses (NCLEX-RN) is administered to all nursing students after graduation and before they can obtain their license to practice nursing. The purpose of the examination is to determine if a candidate

possesses the minimum theoretical knowledge and abilities to provide entry-level nursing care that is safe and effective. The inclusion of various educational components into a nursing program serves the purpose of providing the graduate nurse with appropriate education to pass the licensure examination and enter professional practice. Society demands accountability for the degree of healthcare professionals' preparedness, as well as the quality of healthcare delivery. To ensure public protection, the United States requires each practicing registered nurse (RN) to pass the NCLEX-RN examination. (NCSBN report, 2009).

In the role of the educational leader and counselor, National Council of State Boards of Nursing (NCSBN) provides guidance in the composition and administration of NCLEX. The NCSBN is an organization that provides leadership to advance regulatory excellence to the state boards of nursing and to promote safe and effective nursing practice in the interest of protecting public health and welfare; it also serves as an educational and informational resource to policy makers and the general public (NCSBN report, 2009).

The use of nursing licensure examinations started in the beginning of the 20th century as a part of the effort to establish a standard for professional nursing practice (Dvorak, 1986). In 1982, the test assessing the competencies of new nurse graduates underwent a significant revision. It was changed from a norm-referenced to a criterion-referenced test, implemented a new test plan and used Rasch's one parameter logistic model to calibrate items and measure candidates' abilities. The applicant's performance was not compared to the performance of other applicants, but to a set criterion or standard, the minimum that a graduate nurse is expected to know to be able to practice

safely. At the same time, the test was renamed the National Council Licensure Examination for Registered Nurses (NCLEX-RN).

Structure and grading of NCLEX

In 1994, NCSBN began administering the NCLEX-RN examinations exclusively via computerized adaptive testing (CAT); in this method of test administration, each candidate's test is unique and is assembled interactively as the individual is tested. A minimum of 75 and a maximum of 265 test items may be administered to a candidate. As a candidate takes the examination, items are selected based on the candidate's response to previous items. The exam ends when it can be determined with 95% confidence that a candidate's performance is either above or below the passing standard. (National Council of the Boards of Nursing, 2012). The CAT NCLEX-RN can be taken up to four times a year, as long as there is a 3 month interval between testing. Thus a candidate who failed a test can potentially retake it indefinitely up to 4 times each year.

Importance of NCLEX for a nursing student

Without passing the NCLEX-RN examination, the graduate nurse is not able to obtain the license to legally practice nursing in the United States. Clearly, this is a major incentive for the nursing student to be well prepared for the examination. Failure to pass the examination delays or completely prohibits the student's entry into the ranks of healthcare practitioners, while the society is experiencing the shortage of these practitioners. The student is also not able to get a return on the investment of time, money, and opportunity cost (such as spending more time with the family or engaging in another income-producing occupation). In addition, the student is experiencing a decrease

in the feeling of emotional well-being due to the failure to pass the test (Lengacher and Keller, 1990).

Importance of NCLEX for government organizations and educational institutions

Government and accrediting agencies frequently examine pass rates on licensure examinations in their evaluation of programs and institutions to ensure educational quality. Not only does the NCLEX evaluate the individual competences of a new graduate nurse, but the NCLEX passing rate is also frequently used to determine the quality of a specific nursing program. Since over 3000 nursing programs are available in the United States, students can select a program that fits their needs best. It is understandable that students are more likely to select a program that has higher NCLEX passing rates in the hopes that the program will provide them with sufficient skills to pass the examination as well (Landry, 1997).

Some states which do not limit the number of nursing programs that can be established in the state provide an expectation for NCLEX passing rate for all the nursing programs in the state. In Missouri, for example, the state board of nursing expects all nursing programs to have a passing rate of 80%; in Kansas 75% pass rate is expected for nursing programs in order to stay board-approved. Programs may lose board approval if their NCLEX passing rates fall below state expectations. If a nursing program is not board approved, its graduates cannot sit for the examination at all, and therefore cannot become licensed. Programs with low passing rates may have penalties imposed on them, such as having to put in place an improvement program (Mitchell & Grippando, 1993). In addition, nursing programs may be directed by their university governing boards to

improve the passing rates of their graduates or face enrollment cutbacks, which in turn lead to cutbacks in program funding (Baradell, Durham, Angel, Kaufman, & Lowdermilk, 1990).

Government agencies and accrediting organizations exist to ensure and enhance the quality of education. Accreditation is voluntary, but the majority of programs are accredited by the National League of Nursing (NLN) or Commission of Collegiate Nursing Education (CCNE). These accrediting organizations often request NCLEX passing rates for programs applying for accreditation to make inferences about the overall quality of the programs (Landry, 1997). It is beneficial for a nursing program to be accredited for the purpose of prestige and attractiveness for potential students, but also to be eligible for federal funding and grants (Mitchell & Grippando, 1993).

Society at large is affected by NCLEX pass rates. Failure of nursing students to pass the examination translates into a delay in investment made by the society, and affects the supply of competent practitioners needed to meet the society's healthcare needs (Landry, 1997).

In summary, the NCLEX passing rates of a nursing program are of great importance for the decision making of potential nursing students, licensing bodies, and governmental institutions. Graduate nurses must pass the examination in order to gain entry into the profession. This explains the reason for nursing researchers to study extensively a variety of factors that may be related to the NCLEX passing rates. If and when the modifiable factors predictive of success on the examination are identified, program faculty and administrators can implement some specific interventions to increase the NCLEX passing rates.

Profiles of today's nursing programs

Three basic types of nursing programs prepare graduates for the role of a registered nurse (RN): diploma programs that are sponsored by hospitals, associate degree nursing (ADN) programs that are typically located in technical or community colleges, and baccalaureate degree nursing (BSN) programs that are located in four-year colleges or universities. While these programs differ in a variety of ways, including the length of programs and educational requirements, all prepare nursing graduates to sit for the licensure examination (Landry, 1997).

The AACN survey found that total enrollment in all nursing programs in 2009 leading to the baccalaureate degree was 214,533, an increase from 201,407 in 2008. Within this student population, 151,378 students were enrolled in entry-level baccalaureate programs, and 63,155 were enrolled in RN-to-baccalaureate programs. Representation of students from minority backgrounds climbed in all types of nursing programs last year, growing to 26.3% in entry-level baccalaureate programs. Specifically, 0.7% of enrollees in entry-level baccalaureate programs were American Indian/ Alaskan Native; 8% - Asian/ Hawaiian/ Pacific Islander; 11.1% Black; 6.5% Hispanic or Latino; and 73.7% white (AACN, 2010). Though men represent only 6.6% of the U.S. nursing workforce, the percentages of men in baccalaureate programs is 10.8%.

Only about one in three prelicensure RN students was over the age of 30 in 2009. However, students enrolled in baccalaureate programs in 2008-2009 were significantly younger than the general four-year college student population. Only 14% of BSN students were reported to be over the age of 30, compared with almost 22% of four-year

college students. By contrast, at 49%, the proportion of ADN (associate degree in nursing) students over 30 vastly exceeds the percentage of over-30 students in US two-year colleges, where only about one in four students is 30 and over (Kaufman, 2009). Specifically, in 2008-2009 school year 70% of BSN program students were 25 and under; 16% were 26 to 30; 10% were 31 to 40, and 4% were 41 and older. In the diploma programs, 35% of students were 25 and younger; 25% were 26 to 30; 26% were 31 to 40; and 14% were 41 and older. In ADN programs, 26% were 25 and younger; 25% were 26 to 30; 29% were 31 to 40; and 20% were 41 and older (NLN, 2010). According to NCSBN (2011), in 2010 the NCLEX pass rate was 87.41% for all US educated RN candidates who were taking the test for the first time.

Factors influencing NCLEX-RN examination success rates

Schools of nursing are charged with several tasks: that of alleviating the nursing shortage; providing the public with nurses who can practice safely; and ensuring a positive educational experience for a graduate. For the colleges, it is critical to prepare nurse graduates who are able to pass NCLEX. The goals of this effort are to alleviate nursing shortage, to make the student's investment of time and emotional resources pay off, and to ensure that the public has at its service nurses who can practice safely. For this reason, nursing programs are a major stakeholder in identifying the factors that predict NCLEX success.

Due to the importance of establishing and maintaining high NCLEX passing rates for nursing programs, and professional objectives tied in with passing the examination for graduate nurses, various factors impacting NCLEX passing rates have been examined. It is in the interest of nursing programs and individual students to determine what those

factors are and to attempt to impact the modifiable factors to aid in passing the examination. These factors can be divided into programmatic and student characteristics. Student characteristics can be further divided into demographic variables (age, sex, race, SES), and characteristics related to the academic proficiency (such as GPA, study habits, the use of preparatory courses etc.). The programmatic factors include such factors as the length of the program, the faculty-to-student ratio, the number of full time vs. part time and adjunct faculty, and the number of master's vs. doctorate prepared faculty.

Academic student factors

A variety of studies researched pre-admission student factors, such as overall GPA prior to admission, and GPA in science classes, such as anatomy and physiology, biology, and chemistry. Other preadmission factors include high school GPA, high school rank, and ACT/ SAT scores prior to college admission. The majority of the research concentrated on student characteristics, but some studies were also done to examine faculty and program characteristics on the NCLEX success rate. Stevens (1996) voices concern that while student variables have been researched at length, other factors related to faculty characteristics and attributes of the nursing program have not been studied to determine if they relate to student outcomes.

A few authors claim that specifically the performance in nursing school classes is the variable that predicts NCLEX passing rate best. Additionally, some authors found that nursing theory grades predict NCLEX success better than nursing clinical grades. Most studies do not identify which classes predict success; those that do, identify courses in medical-surgical nursing, nursing care of children, and maternal-newborn nursing as the

classes that have the most impact. This finding is likely due to the fact that a large portion of NCLEX focuses on these clinical areas (Stevens, 1996).

Grossbach and Kuncel (2011) conducted a meta-analysis of correlation between NCLEX scores and a variety of academic predictors. The meta-analysis indicated that admissions test scores (SAT) and grades earned in nursing programs are the two best predictors of NCLEX performance. Prenursing GPA is also predictive of NCLEX success, but to a lesser extent.

Seldomridge and Dibartolo (2004) identified a combination of test average in advanced medical/surgical nursing and a percentile score on the National League for Nursing Comprehensive Achievement Test for Baccalaureate Students, as well as a grade in the pathophysiology nursing course to be the best predictors of success. Barkley et al. (1998) identified nursing theory course grades, nursing clinical course grades, and NLN achievement test scores as good predictors of NCLEX success.

Alameida et al. (2010) explored the relationship between first-time NCLEX pass rates and nursing course GPA; cumulative GPA; program type (BSN, satellite BSN, or master's degree); scores on a predictive commercially available test (ATI RN comprehensive predictor); and course grades for each course of the curriculum. It was found that only the ATI test scores were highly predictive of NCLEX success.

Haas et al. (2003) investigated the relationship between nursing cumulative GPA, transfer undergraduate GPA, cumulative undergraduate GPA, verbal and quantitative SAT scores, and group membership according to campus location (main vs. satellite campus), and success on NCLEX test. They found that cumulative nursing GPA, verbal and quantitative SAT, and age (negatively correlated with passing rates) differs

significantly between those who pass and fail NCLEX. Lengacher and Keller (1990) found no predictive value in clinical course grades and the nursing theory courses. No predictive value was found for ACT math and English, or entrance GPA.

Parry (1991) also finds that there were no significant relationships between the number of program hours in the total program, the nursing theory program hours, and the clinical/ laboratory experience hours and the NCLEX passing rates. As a matter of fact, the more theory-related program hours there were in a program, the lower the NCLEX passing rate was. Fewer theory-related program hours were associated with higher passing rate. Parry's paper does not explain this relationship, suggesting only that faculty involved in course planning should consider the utilization of time in the theory-related program hours area. This counterintuitive finding may be explained by information overload and inability to remember all the information provided, or inability to retain large volumes of information, or possibly the faculty's undue attention to the details rather than the bigger picture while presenting the content.

A study by Younger and Grap (1992) found that the strongest predictor of NCLEX pass rate was a combination of scores on four theory courses, including Nursing of Children, Health Needs of Women, Medical-Surgical Nursing I and Medical-Surgical Nursing II. The second best predictor was the combined SAT verbal and quantitative scores. The researchers also attempted to determine the earliest point of the student's academic career when their NCLEX passing rate can be predicted. The results indicated that some of the variance in the passing rate can be explained by high school rank and SAT scores, college GPA, nursing program GPA, and finally performance on a National League of Nursing (NLN) comprehensive exam and in an NCLEX review course. Nearly

half of the variance in NCLEX scores was explained by circumstances that occurred prior to entry into the nursing school. From this finding, it can be concluded that previous academic background, as well as general study skills, determine to a large degree their success on the NCLEX.

Demographic student factors

Non-cognitive variables, such as age, gender, race, and self-esteem have been investigated. These findings are often contradictory and inconclusive (Stevens, 1996). Landry (1997) found that of the three demographic variables examined (age, sex, ethnicity), only sex was significantly correlated with NCLEX performance; male graduates were more likely to have failed NCLEX than females. She also found that switching to a computerized version of NCLEX did not significantly affect passing rates. Alameida et al. (2010) found no relationship between NCLEX passing rates and the students' age, gender, and race. Lengacher and Keller (1990) found no predictive value in the students' age. Haas et al. (2003), however, found that race and gender was a significant predictor of NCLEX success rate.

Programmatic factors: faculty characteristics

Appropriate preparation for nursing faculty is a subject of debate. In 2009, In terms of educational preparation, 43.0% of nursing school faculty are doctorally prepared with 29.1% holding nursing doctorates, and 13.9% holding doctorates in related disciplines (AACN, 2010). Ultimately, it is up to an individual nursing program whether they want to have their faculty be bachelor's, master's, or doctorate-prepared, but currently the master's degree in nursing is commonly recognized to be the minimal qualification for teaching in a baccalaureate nursing program. State boards of nursing

make a specification in their state nurse practice act what type of preparation nursing faculty are expected to have. For example, Missouri Nurse Practice Act (2010) states that “nursing faculty teaching in associate degree or diploma programs shall have a minimum of a baccalaureate degree in nursing with a clinical component. A graduate degree is recommended; and nursing faculty teaching in baccalaureate programs shall have a minimum of a graduate degree. It is required that 75% of faculty have a graduate degree with major in nursing. A doctoral degree is recommended. Faculty without a nursing major in their graduate degree shall have a bachelor’s degree in nursing with a clinical component.” Kansas Nurse Practice Act (2010) states that each nurse faculty member assigned the responsibility for a course shall hold a graduate degree, and each person hired after July 1, 2001 shall have a graduate degree in nursing, preferably in the clinical area being taught. Each nurse faculty member responsible for clinical instruction shall possess a graduate degree or provide to the board a faculty degree plan that projects completion of a graduate degree. A minimum of a bachelor’s degree is required to teach in a practical nursing program.

Faculty educational level is a programmatic variable that has been researched by several authors. While the findings vary between classroom and clinical faculty, it appears that there is a consensus that higher education levels of clinical faculty (e.g. a doctorate vs. a master’s degree) have a negative correlation with NCLEX passing rates (Davis, Dearman, Schwab, & Kitchens, 1992; Stevens, 1996; Landry, 1997). The explanation for this correlation may be that doctorate-prepared faculty become too removed from teaching clinical skills and everyday applications of clinical knowledge at very basic levels that is implemented by the nursing students. Turner (2005), on the other

hand, did not find a significant relationship between the educational degree held by faculty and NCLEX pass rates.

Regarding part-time faculty, Stevens (1996) indicates that a statistically significant negative correlation exists between the number of part-time faculty and NCLEX passing rate. The higher the number of full time faculty, the higher the NCLEX passing rates were. Turner (2005), however, found that there was no significant relationship between the number of part time faculty and NCLEX passing rates.

NLN's 2006 faculty census indicates that nearly 45% of the estimated mean number of faculty full time equivalents were part time faculty. The number of part-time baccalaureate faculty grew 72.5% from 2002 to 2006, and more than 58% of baccalaureate and higher degree programs and almost half of the associate degree programs (47.5%) reported hiring part time faculty as their primary strategy to compensate for unfulfilled, budgeted, full time positions. While the use of part time faculty allows for greater flexibility, these faculty are often not an integral part of the design, implementation, and evaluation of the overall program. And, because they typically hold other positions, they are not as available to the nursing students as full time faculty are (NLN, 2010).

Stevens (1996) notes that in order to cut costs and keep up with increasing enrollment, schools are hiring more part-time faculty. Some researchers indicate that the problem with having part-time faculty in introductory courses is that part-time faculty are employed without an adequate screening of their ability, and the integrity of curriculum may suffer. Part-time faculty generally do not receive benefits and are not considered for tenure, thus proving to be a good financial investment. Part-time faculty may not know

what instructional content the students received in the classroom and cannot align the instruction they may provide in the clinical setting with the didactic component. They may be hired at the last moment and receive little or no orientation to the structure, mission, or goals of the nursing program. Their clinical experience is often considered a substitute for educational experience or expertise.

Stevens (1996) also found that the higher the average number of years of teaching experience the clinical faculty have, the higher the NCLEX passing rates are. However, the number of years of clinical experience of the faculty was not a statistically significant predictor. Stevens (1996) also found that the more faculty per student the program employs, the higher the NCLEX passing rate.

Turner (2005), on the other hand, found that the number of years of teaching experience was not a significant predictor of NCLEX pass rates. There was no significant relationship between the two variables until 30 years of teaching experience have been attained. At that point, the relationship was significant, but negative. This suggests that there is a point when teaching effectiveness and student outcomes are hindered by longevity of the faculty, perhaps due to failure to stay current on new information, technologies, and teaching innovations. Effects of the aging process, such as fatigue and lack of stamina, can also inhibit teaching effectiveness. Turner also found, unlike Stevens, that there was a significant relationship between the number of faculty's years of clinical experience and NCLEX pass rates. Having less than 10 years of clinical nursing experience outside teaching was found to be negatively correlated with pass rates, while having between 10 and 19 years of experience positively correlated with pass rates.

There is little research on student/ faculty ratios specific to nursing education, but it may be an important factor in NCLEX passing rates (Stevens, 1996). The faculty per student ratio has long been recognized as a critical component for safe practice in the clinical setting. The information about faculty to student ratio in the clinical setting is requested by NLN during accreditation process. Some boards of nursing also require to have this information on file. It is not uncommon for state laws to mandate an acceptable faculty to student ratios (Stevens, 1996). One study (Campbell, 1988, quoted in Parry) found a significant relationship in Ohio associate degree schools between NCLEX passing rates and increased student selection of assignments, decreased student-faculty ratio, decreased utilization of one-on-one conferences, and decreased utilization of demonstration hours in the area of theory-related content. Stevens' (1996) finding support the positive correlation between faculty to student ratios and NCLEX passing rates.

Programmatic factors: program size

Few research studies are available on how the size of a nursing program affects NCLEX passing rates, and it produces contradictory results. For example, research by Stevens (1996) indicates that size is not a significant variable in the explanation of NCLEX passing rates. Turner (2005) confirmed the finding that program size is not a significant predictor of NCLEX passing rate. At the same time, Dell and Valine (1990) claim that it is a significant variable, and smaller nursing programs have higher NCLEX failure rates. One explanation of Dell and Valine's finding may be that small graduating classes have the disadvantage of their pass rate percentage being significantly affected by a very small number of failures. Another possibility may be that the relationship between the size of class and pass rate is moderated by variables like the average socioeconomic

status of the students, or the class size itself being a mediator in the relationship between the general economic development of the area and the scholastic ability of the students, or some additional factors mediating or moderating the relationship between class size and NCLEX pass rate. Parry (1991) also finds that there was no significant relationship between the student admission/ selection process prior to the start of the nursing program and the NCLEX pass rate. There was no significant relationship between the average faculty contact hours and the pass rate. The ratio of full time and part time faculty and students had a significant reverse relationship with pass rate, meaning that having more faculty did not translate into higher NCLEX pass rates.

Turner (2005) finds that there was a significant relationship between mandatory clinical attendance policies and NCLEX pass rates, suggesting that attending clinicals positively affected pass rates. She also found that there was no significant relationship between percentage of faculty turnover and NCLEX pass rates.

Overall, while numerous studies have been done to examine a variety of student and programmatic characteristics predicting NCLEX success rate, their findings are contradictory. While the importance of several factors can be logically explained, their ability to predict NCLEX success rate is not always clear. No specific factor or group of factors has been universally identified as being good predictors of NCLEX success rates (Stevens, 1996). Our research attempts to specifically investigate the importance of several programmatic factors that were not researched or researched insufficiently by previous investigators, including the impact of the clinical component and faculty variables.

Chapter 3

Methods

One way to show that the clinical component of a nursing program improves the quality of nursing education would be to show that there is a relationship between the number of clinical hours and NCLEX pass rates of a nursing program. A variety of factors influencing NCLEX pass rates have been examined by researchers. Student characteristics include demographic variables (age, sex, race, SES), and academic variables (such as GPA, study habits, the use of preparatory courses etc.). For example, Grossbach and Kuncel (2011) conducted a meta-analysis of correlation between NCLEX scores and a variety of academic predictors. Haas et al. (2003) investigated the relationship between gender, race, age, nursing cumulative GPA, transfer undergraduate GPA, cumulative undergraduate GPA, verbal and quantitative SAT scores, and group membership according to campus location (main vs. satellite campus), and success on NCLEX test. The programmatic factors include such factors as the length of the program, the faculty-to-student ratio, the number of full time vs. part time and adjunct faculty, and the number of master's vs. doctorate prepared faculty. Some examples of research conducted on the impact of these factors on the NCLEX success rate include studies by Davis, Dearman, Schwab, & Kitchens, 1992; Stevens, 1996; Landry, 1997, and a study by Turner (2005), indicating that higher education levels of clinical faculty (e.g. a doctorate vs. a master's degree) have a negative correlation with NCLEX passing rates,. However, little research has been conducted on the relationship between the number of clinical hours in a nursing program and NCLEX pass rate. This research will help shed

some light on the relationship between the number of clinical hours in a nursing program and NCLEX success rates.

Participants

Types of nursing programs in Kansas and Missouri

Several types of nursing programs are available to meet the needs of nursing students. Only two, however, were examined – the associate degree programs and bachelor’s degree programs – due to the fact that these two types of programs are similar in the way they organize their curriculum, and also because, unlike diploma programs, they graduate registered nurses (RNs), whose scope of practice differs from that of diploma program graduates (licensed practical nurses, or LPNs). Stand-alone associate degree nursing programs graduate RNs only. A student cannot elect to study for a PN examination after graduating from this type of program. And BSN programs graduate RNs with a bachelor’s degree in nursing.

Kansas nursing program characteristics

In Kansas, there are currently 22 associate degree programs, 13 baccalaureate degree programs, and 19 practical nursing programs; there are a total of 54 programs. Only 34 of those programs were included in this study (all associate degree programs and baccalaureate degree programs) due to the similarity in their curriculum structure.

Ten BSN programs (66% of all Kansas BSN programs) are CCNE (Commission for Collegiate Nursing Education) accredited, and three (20%) are NLNAC (National League for Nursing Accrediting Commission) accredited. There are two newer programs (Benedictine College and National American University) that are not accredited.

Eighteen ADN programs (86% of all ADN programs in Kansas) are NLNAC accredited, and three (14%) are not accredited.

In 2009, a total of 954 students were admitted to Kansas BSN programs and a total of 1,390 students to associate degree nursing (ADN) programs. The total number of nursing students admitted for 2009 school year was 2,344. At the end of the school year (in 2010), 793 students graduated from BSN programs, and 1,128 students from ADN programs, for a total of 1,921 nursing graduates qualified to sit for NCLEX-RN. In the 2009-2010 school year, 80 ADN students and 95 BSN students were lost to attrition, for a total of 175 students.

In the 2009-2010 school year, Kansas nursing programs had 980 faculty. Out of these, 82 (8%) had a doctorate degree in nursing; 75 (7.7%) had a doctorate in other fields; 443 (45%) had a master's degree in nursing; 60 (6%) had a master's degree in another field; 280 (28.5%) had a baccalaureate in nursing; two (<1%) had a baccalaureate in another field; and 38 (3.8%) had a diploma in nursing (KSBN, 2010).

The average NCLEX-RN Kansas pass rate on the first try in 2010 was 83.8%. The pass rates have been somewhat declining since 2006. In 2006, for example, the passing rates in Kansas were 86.02%; in 2007, 85.5%; in 2008, 85.33%, in 2009, 84.71%, and in 2010, 83.8%. The average Kansas NCLEX-RN pass rate in 2010 is below the national average of 87.41%. The national average pass rate does not show a declining pattern evident in Kansas (KSBN, 2010).

Missouri nursing program characteristics

In Missouri, there is currently one diploma program, 35 associate degree programs, 23 baccalaureate degree programs, and 45 practical nursing programs; there are a total of 104 programs. Only 58 of those programs were included in this study (all associate degree programs and baccalaureate degree programs) due to the similarity in their curriculum structure. Missouri State Board of Nursing (MSBN) does not provide information regarding the specific types of ADN or practical nursing programs. Practical nursing programs were excluded from this study for reasons mentioned above.

Twenty of Missouri associate degree nursing programs (57% of all Missouri ADN programs) are not accredited by any accrediting body except for the Missouri Board of Nursing. The other 15 ADN programs (43%) are accredited by NLNAC. Twenty BSN programs (87% of all Missouri BSN programs) are accredited by CCNE, and three BSN programs (13% of all Missouri BSN programs) are only accredited by the Missouri Board of Nursing.

A total of 2,054 students were admitted to Missouri BSN programs, a total of 1,817 students into ADN programs, and 75 students were admitted into the diploma program. The total number of students admitted into RN programs was 5,770. The number of graduating students in 2009 was 1,508 from baccalaureate programs, 1,255 from ADN programs, and 52 from the diploma program for a total of 3,798 graduate nursing students eligible to sit for NCLEX-RN. The information about the total number and educational preparation of faculty in Missouri nursing programs is not publicly available. It was obtained from individual nursing programs' websites.

The average NCLEX pass rate in 2010 for Missouri was not available. The average NCLEX passing rate on the first try in Missouri in 2009 was 88.96%, which is above the national average level of 88.42% (MSBN report, 2010). In 2008, the Missouri average NCLEX-RN pass rate was 87.13%, whereas the national rate was 85.51% (MSBN report, 2009). In 2007, the Missouri average pass rate was 89.96%, and the national average was 89.9% (MSBN report, 2008). In 2006, the Missouri average pass rate was 87.71%, and the national average was 87.52% (MSBN report, 2007).

Procedure

The names of nursing programs in Kansas and Missouri were obtained from the lists available on the web sites of the states' boards of nursing (<http://www.ksbn.org/> for Kansas; <http://pr.mo.gov/nursing.asp> for Missouri). The persons whose names are provided on the web site as contacts for the programs (i.e., nursing school administrative assistants, education coordinators, or administrators) were contacted by email. In the email the designated contact persons were sent the consent form and the questionnaire (see Appendix A14). In the questionnaire, information regarding the demographic characteristics (age, gender, race) and average GPA of their students at the time of graduation was requested from each respective nursing program. This information was requested for all 2010 graduates.

Information about the following nursing program characteristics was obtained from the state board of nursing web sites: the program NCLEX passing rates, number of students at admission and graduation for each program; program degree type (associate's vs. bachelor's) and consequent program length (two vs. four years). The following information about the programs was requested from individual schools of nursing

because it was not available on the web site: number of full time and part time faculty; number of master's of nursing (MSN) vs. doctorate (PhD or doctorate in nursing science) prepared faculty; number of classroom instruction hours in the program; and number of clinical hours completed by the students by the time of graduation. This information was requested for the school year 2009-2010. The nursing programs' average NCLEX (National Council Licensure Examination) passing rate for 2010 was obtained from the boards of nursing web sites.

The data are stored on a password protected computer at the University of Kansas School of Education. The data will be kept for a period of two years, and after that all hard copies of the data and their electronic form will be destroyed. The primary investigator and the faculty supervisor will have access to the data.

Data Analysis

A correlation between the nursing program NCLEX passing rates, the type of program (BSN vs. ADN), the number of clinical hours completed by students of Kansas and Missouri nursing programs, and several variables related to faculty characteristics was performed. The NCLEX-RN examination pass rate was used as the primary variable under investigation. The number of clinical hours in a nursing program and the type of nursing program and faculty variables were also examined.

The data were cleaned, and descriptive statistics tables were created for the obtained data. Bivariate (zero order) correlations between NCLEX passing rates and the number of clinical hours, presence or absence of an internship, the type of nursing program, and several faculty characteristics were obtained.

Measures

Two measurement instruments were used in this study. One of them was the questionnaire (see appendix A14) in which the information regarding the faculty and clinical variables by the time of 2009-2010 class graduation was requested.

Program Characteristics Questionnaire

Specifically, the questionnaire solicited information about demographic student variables to allow comparison of nursing programs in Kansas and Missouri to the rest of the country. It also asked several questions related to the curriculum (how is the internship administered? How are clinical clock hours distributed? How many classroom credit hours are included?) There were also several questions related to the faculty variables (the educational preparation of faculty; percentage of full time vs. part time faculty; and faculty length of tenure).

NCLEX-RN

The second instrument used was data from the National Council Licensure Examination for Registered Nurses (NCLEX-RN). The purpose of the examination is to determine if a candidate possesses the minimum knowledge and abilities to provide entry-level nursing care that is safe and effective (NCSBN report, 2009). In 1994, NCSBN began administering the NCLEX-RN examinations exclusively via computerized adaptive testing (CAT); in this method of test administration, each candidate's test is unique and is assembled interactively as the individual is tested. A minimum of 75 and a maximum of 265 test items may be administered to a candidate. As a candidate takes the examination, items are selected based on the candidate's response to previous items. The exam ends when it can be determined with 95% confidence that a

candidate's performance is either above or below the passing standard (National Council of the Boards of Nursing, 2012). The CAT NCLEX-RN can be taken up to four times a year, as long as there is a 3 month interval between testing. Thus a candidate who failed a test can potentially retake it indefinitely up to 4 times each year.

The criterion-referenced standard of testing means that the passing or failing of the test depends only on the test-taker's level of performance in relation to the established reference point (or cutoff point) that represents entry-level competence. There is no preassigned percentage of candidates that pass or fail each examination. The candidates' performance on NCLEX is reported only as pass/fail; the actual scores are not reported. During testing the candidate is presented with a minimum number of items, the computer program then attempts to make the decision of pass/ fail. If the candidate's abilities fall clearly in the range of above the passing standard or clearly below the passing standard, the computer makes the decision to pass or fail the candidate. If it is not clear on which side of the cutoff point the candidate's ability falls, the computer continues to present items to the test taker until it is possible to make a pass/fail scoring decision.

The content of NCLEX-RN test is organized into four major client needs categories: (1) safe and effective care environment; (2) health promotion and maintenance, (3) psychosocial integrity, and (4) physiological integrity. Safe and effective care environment is further subdivided into management of care and safety and infection control. It may include content related to the patients' legal rights; working with other healthcare professionals and delegating care tasks; error prevention; and ethical practice of nursing. Health promotion and maintenance may include such content as labor and delivery and newborn care; high risk behaviors; and disease prevention. Psychosocial

integrity may include behavioral interventions; mental health concepts; and end of life care. Physiological integrity is subdivided into basic care and comfort, pharmacological and parenteral therapies, reduction of risk potential, and physiological adaptation. This area may include such topics as nutrition and hydration; administering medications, blood, and blood products; interpreting laboratory tests; pathophysiology and medical emergencies (NCSBN, 2010).

The distribution of the test items per test category is done approximately as follows:

Table 1

Distribution of NCLEX item content

Client needs	Percentage of items from each category/ subcategory
Safe and effective care environment	
<ul style="list-style-type: none"> • Management of care 	16-22%
<ul style="list-style-type: none"> • Safety and infection control 	8-14%
Health promotion and maintenance	6-12%
Psychosocial integrity	
<ul style="list-style-type: none"> • Basic care and comfort 	6-12%
<ul style="list-style-type: none"> • Pharmacological and parenteral therapies 	13-19%
<ul style="list-style-type: none"> • Reduction of risk potential 	10-16%
<ul style="list-style-type: none"> • Physiological adaptation 	11-17%

It is reasonable to believe that classroom instruction in theoretical concepts positively influences the NCLEX passing rate, since the test consists of multiple choice questions soliciting knowledge about the concepts mentioned above. The logic behind the importance of the clinical component for NCLEX success is similar to the overall importance of the clinical component: practice helps reinforce and solidify the didactic knowledge, and is thus helpful in passing NCLEX.

Chapter 4

Results

Introduction

The primary purpose of this project was to examine the relationship between National Council Licensure Examination for Registered Nurses (NCLEX) passing rates and the number of clinical hours completed by a student in a nursing program in Kansas or Missouri. In addition, the following relationships were examined: the correlation between NCLEX passing rates and (1) the type of program (BSN vs. ADN); (2) the presence or absence of an internship in a program; (3) the number of internship clock hours; (4) whether the internship was administered on a full or part time basis; (5) the number of classroom clock hours in a program; (6) how the clinical clock hours were distributed among different types of clinical practice (direct patient care; simulation; observation; or other); (7) offering an NCLEX preparatory course; and (8) faculty characteristics (the percentage of faculty with associate's, bachelor's, master's, and doctorate degrees; the percentage of full time and part time faculty; the percentage of adjuncts and visiting faculty; and length of faculty tenure).

Participating programs

Currently, there are 36 ADN and BSN programs in Kansas; of these, 15 programs (42%) are BSN programs, and 21 programs (58%) are ADN programs. There are four new programs, which means that they have no data to report for 2010. That left 32 programs eligible for the study. Ten questionnaires (31%) were received back from Kansas nursing programs.

There are currently 56 total ADN and BSN nursing programs in Missouri; of these, 22 programs (39%) are BSN programs and 34 (61%) are ADN programs. One out of 56 programs is new and had no data to report for the year 2010. This left 55 eligible nursing programs in Missouri. Fifteen questionnaires (27%) were received back from Missouri nursing programs.

Altogether, the questionnaires were sent to 87 programs in Kansas and Missouri and 25 responses were received. The response rate was 28.7%.

In this study group, 12 programs (48%) are BSN programs, and 13 (52%) are ADN programs. Four (33%) of the BSN programs are in Kansas, and the other eight (67%) BSN programs are in Missouri. Seven (54%) of the ADN programs are in Missouri, and six (66%) ADN programs are in Kansas. All of the programs had a classroom and clinical component in their nursing programs. The clinical component was administered in a variety of ways (clinical rotation hours, internships, simulation, observation). Out of ten Kansas programs, six (60%) had an internship and four (40%) did not. Out of 15 Missouri programs, 12 programs (80%) had an internship and three (20%) did not.

Table 2

Participating programs

State	Program type		Internship	
	BSN	ADN	Yes	no
KS	4	6	6	4
MO	8	7	12	3
Total	12	13	18	7

Demographically, the nursing programs in Kansas and Missouri were somewhat comparable to the nursing programs countrywide (the percentage of female students was 88.68%, compared to the countrywide average of 89.5%; the percentage of Caucasian students was 86.92%, as compared to the countrywide average of 73.7%). The countrywide information was obtained from the American Association of Colleges of Nursing (2010). Detailed information about the participating nursing programs can be found in the appendix (Table A1).

Non-participating programs

Some information was also obtained about the non-participating programs from Kansas and Missouri state boards of nursing and individual program web sites. Out of 87 programs in Kansas and Missouri, 25 (29%) responded to the questionnaire, and 62 (71%) did not. Out of those 62 non-responders, 59 were eligible for the study; the other three programs were not, due to being new or having not collected or reported NCLEX rates to the state boards. Out of these 59 programs, 21 (36%) were in Kansas and 38 (64%) were in Missouri. Seven (33%) of the non-responding programs in Kansas were BSN programs, and 14 (67%) were ADN programs. Eighteen (47%) of the non-responding programs in Missouri were BSN programs, and 20 (53%) were ADN programs. Judging from the program curriculum, all non-responding programs had a classroom and clinical components. However, it was not possible to determine how the clinical hours were distributed between clinical rotations, internships, simulations, and observations. The status of internship administration for three out of 21 Kansas non-responders could not be determined. Out of the remaining 18, seven had an internship, and the other 11 did not. For the Missouri programs, for seven out of 38 non-responders

the status of an internship was unclear. Out of the remaining 31 programs, ten offered an internship, whereas the other 22 did not. The following information was available for most non-responding programs: the type of program (BSN vs. ADN), the NCLEX passing rate, the number of students in the program, whether or not the program offers an internship, and the number of classroom hours. Perhaps the most important finding in this comparison is that the mean NCLEX passing rate in non-responding programs (88.02) was comparable to the mean NCLEX passing rate of the responding programs (86.56). Detailed information about non-participating programs can be found in the appendix (Tables A2 and A3).

Table 3

Non-participating programs

State	Program type		Internship	
	BSN	ADN	Yes	No
KS	7	14	7	11
MO	18	20	10	22
Total	25	34	17	33

Chi square test of independence was performed for responding and non-responding programs (1=responder, 0=non-responder) in relation to the presence or absence of an internship (1=internship present, 0=internship absent) and program type (1=BSN, 0=ADN). It was found that the presence or absence of an internship was a factor in whether the program responded to the questionnaire or not; a program with an internship was more likely to respond ($\chi^2(1)=14.68, p<.01$). The program type was not a

factor in whether a program responded to the questionnaire or not ($\chi^2 (1)=0.23, p>0.05$). Both the programs that had above 80% and below 80% NCLEX passing rates (the percentage below which Kansas programs are put on probation) responded to the questionnaire and were included in the study. Four programs' passing rates were below 80%. Out of those four, one program had a passing rate below 75% (the percentage below which Missouri nursing programs are put on probation). Therefore, it does not appear that only the highest quality programs participated in the study.

General findings

Given the small sample size, both statistical significance and effect size estimates were considered and presented in the tables. All other correlations can be found in the appendices. No statistically significant correlation was found between NCLEX passing rates and the number of clock clinical hours ($r(21)=.17, p=.43$).

After reviewing the data, one Kansas ADN program was viewed as an outlier due to a very low number of internship hours (48), compared to the mean number of internship hours at 125, as shown in table A1. The demographic information on the participating nursing programs after the outlier was excluded can be found in Table 4:

Table 4

Demographic information on participating programs

	N	Min	Max	Mean	SD
NCLEX pass rate	24	69.7	98	86.53	6.68
% Students 18-22 years old	11	0	80	36.91	29.62
% Students 23-27 years old	11	10	65	31.18	17.84
% Students 28-32 years old	10	0	50	18.20	18.62
% Students 33 and older	10	5	50	16.90	14.07
% Male students	21	1	20	11.10	6.33
% Female students	21	80	99	88.67	6.18
% African American students	19	0	16	4.26	4.64
% Asian students	20	0	11	1.90	2.73
% Caucasian students	20	50	100	86.40	13.35
% Hispanic students	20	0	21	3.15	5.00
% Native American students	20	0	14	1.05	3.15
% Other race	20	0	25	2.00	5.66

Detailed information about nursing programs after the exclusion of the outlier can be founds in the appendix (Table A4). After the information about this program was excluded, a significant positive correlation was found between NCLEX passing rate and the presence of an internship ($r(22)=0.59, p=0.00$), and NCLEX passing rate and the internship being offered on a part-time basis ($r(21)=0.55, p=0.01$). A negative correlation was found between NCLEX passing rate and the percentage of faculty with master's

degrees ($r(16)=-.47, p=0.05$). No statistically significant correlation was found between the NCLEX passing rate and the number of internship hours. The effect size estimate of the correlation between the number of internship clock hours, classroom clock hours, clinical hours spent in observation and administered in the “other” category, percentage of faculty with associate’s and doctorate degrees, and length of part time faculty tenure and NCLEX passing rate was moderate to large, although the relationships were not statistically significant. The complete correlation table can be found in the appendix (Table A5).

Table 5

Overall curricular variables

	Internship offered	Internship clock hours	Part-time internship	Classroom credit hours	Clinical hours - observation	Clinical hours - other
NCLEX pass rate	$r=.59$ $p=.002$ $n=24$	$r=.38$ $p=.07$ $n=23$	$r=.55$ $p=.01$ $n=23$	$r=.33$ $p=.13$ $n=23$	$r= -.39$ $p=.11$ $n=18$	$r= -.32$ $p=.19$ $n=18$

Note: dichotomous items were coded as follows: 1=internship offered; 0=internship not offered; 1=full time internship; 2=part time internship.

Table 6

Overall faculty variables

	% Faculty with associate’s degrees	% Faculty with master’s degrees	% Faculty with doctorate degrees	Length of part-time faculty tenure
NCLEX pass rate	$r= -.33$ $p=.19$ $n=18$	$r= -.47$ $p=.05$ $n=18$	$r=.35$ $p=.17$ $n=18$	$r=.60$ $p=.08$ $n=9$

In summary, NCLEX rates tend to be higher in programs that offer internships, although the length of internship made no impact on NCLEX passing rates. NCLEX rates

also tend to be higher if the internship is offered on a part-time basis, and in programs with a higher percentage of faculty with doctorate degrees. NCLEX passing rates tend to be lower in programs with a higher percentage of faculty with master's degrees.

Program type: ADN vs. BSN

Descriptive statistics

To examine the relationship between the type of nursing program and NCLEX passing rate, the data were grouped by program type. For ADN programs, NCLEX passing rate had a range of 28.3 (69.7 to 98), with a mean of 85.45 and SD of 7.78. BSN programs had NCLEX passing range of 16.67 (77.53 to 94.2), with a mean of 87.75 and SD of 4.93. No statistically significant difference in NCLEX passing rate was found in different program types.

The range of the number of internship clinical hours in ADN programs was 144 (0 to 144), with a mean of 47.83 and SD of 63.66. The range of number of internship clinical hours in BSN programs was 200 (120 to 320), with a mean of 204 and SD of 67. Thus on average there are more internship clinical hours in BSN programs. This difference was found to be statistically significant ($t(22)=-5.85, p<0.05$).

The range of number of classroom credit hours in ADN programs was 34 (38 to 72), with a mean of 49.83 and SD of 13.11. The range of the number of classroom credit hours in BSN programs was 85 (39 to 124), with a mean of 58.79 and SD of 21.84. However, this difference was not found to be statistically significant.

The range of clinical clock hours for ADN programs was 782 (210 to 992), with a mean of 589.96 and SD of 199.37. The range of clinical clock hours for BSN programs was 850 (300 to 1150), with a mean of 693.33 and SD of 238.76. Thus on average, BSN

programs had more clinical clock hours than ADN programs. However, this difference was not found to be statistically significant. It was found that BSN programs were significantly more likely to have an internship than an ADN program ($t(23)=-3.59$, $p<0.05$). Despite that, as mentioned before, no statistically significant difference in NCLEX passing rate was found in different program types. The complete descriptive statistics can be found in tables A6 and A7 of the appendix. The t test tables with all examined variables can be found in table A8 of the appendix.

Intercorrelations

When the data were grouped by program type, for ADN programs, there was a significant correlation between NCLEX passing rate and the presence of an internship ($r(10)=0.73$, $p=0.007$), between NCLEX passing rate and the number of internship clock hours ($r(9)=0.76$, $p=0.007$), and NCLEX passing rate and having the internship administered on a part-time basis ($r(9)=0.69$, $p=0.019$). In summary, NCLEX rates tended to be higher in the ADN programs that offered an internship and had longer internships; and in the ADN programs which administered the internship on a part-time basis.

For ADN programs, administering the internship on a part-time basis, clinical hours administered as simulation and as observation had a moderate effect on NCLEX passing rate, although the correlation was not statistically significant. The following faculty variables had a moderate to strong effect on the NCLEX pass rate: percentage of faculty with associate's and master's degrees, percentage of faculty with doctorate degrees, percentage of full time and part time faculty, and length of part time and full time faculty tenure.

Table 7

ADN curricular variables

	Internship offered	Internship clock hours	Part-time internship	Classroom credit hours	Clinical clock hours	Clinical hours - observation	Clinical hours - other
NCLEX pass rate	$r=.73$ $p=.01$ $n=12$	$r=.76$ $p=.01$ $n=11$	$r=.69$ $p=.02$ $n=11$	$r=.41$ $p=.21$ $n=11$	$r=-.32$ $p=.34$ $n=11$	$r=-.38$ $p=.24$ $n=11$	$r=-.31$ $p=.35$ $n=11$

Table 8

ADN faculty variables

	% Faculty with associates' degrees	% Faculty with master's degrees	% Faculty with doctorate degrees	% Full time faculty	% Part time faculty	% Adjunct faculty	Length of full time faculty tenure
NCLEX pass rate	$r=-.33$ $p=.35$ $n=10$	$r=-.54$ $p=.11$ $n=10$	$r=.30$ $p=.43$ $n=10$	$r=.32$ $p=.34$ $n=11$	$r=-.32$ $p=.34$ $n=11$	$r=-.49$ $p=.32$ $n=6$	$r=.63$ $p=.37$ $n=4$

For BSN programs, there was a significant positive correlation between NCLEX passing rate and NCLEX preparatory material use ($r(9)=0.65, p=0.02$). Thus, for BSN programs, NCLEX rates tended to be higher if NCLEX preparatory materials were used. NCLEX rates tended to be lower if the number of clinical observation hours was higher. The complete correlations table can be found in the appendix (Table A9).

Administering the internship on a part-time basis, and the number of clinical hours spent performing observations and simulations had a moderate effect on NCLEX passing rate, although the correlation was not statistically significant. The following faculty variables had a moderate to strong effect on NCLEX passing rate, although the correlation was not statistically significant: percentage of faculty with master's and

doctorate degrees, percentage of full and part time faculty, and the length of full and part time faculty tenure.

Table 9

BSN curricular variables

	Part-time internship	Clinical hours - simulation	Clinical hours - observation	Use of preparation materials
NCLEX pass rate	$r=.38$ $p=.23$ $n=12$	$r=.35$ $p=.45$ $n=7$	$r= -.34$ $p=.45$ $n=7$	$r=.65$ $p=.02$ $n=12$

Table 10

BSN faculty variables

	% Faculty with master's degrees	% Faculty with doctorate degrees	% Full time faculty	% Part time faculty	Length of full time faculty tenure	Length of part-time faculty tenure
NCLEX pass rate	$r= -.52$ $p=.19$ $n=8$	$r= .43$ $p=.29$ $n=8$	$r= -.41$ $p=.21$ $n=11$	$r=.41$ $p=.21$ $n=11$	$r= -.68$ $p=.32$ $n=4$	$r=.92$ $p=.08$ $n=4$

Internship vs. no internship

To further examine the relationship between NCLEX passing rate and the presence of an internship, the data were organized by presence or absence of an internship. When the file was split (internship present=1, internship absent=0), it was found that there were some differences between the group of programs that offered an internship and the one that did not. Seven programs (28%) in Kansas and Missouri did not offer internships; all of these programs were ADN programs. Eighteen programs (62%) in Kansas and Missouri did offer internships. Out of those 18, 11 (61%) were

BSN programs and seven (39%) were ADN programs. All BSN programs offered internships, whereas only seven ADN programs (54%) offered internships.

Descriptive statistics

For those programs that did not offer internships, the NCLEX passing rate range was 20.3 (69.7 to 90) with a mean of 80.5 and SD of 6.39. For those programs that did offer internships, NCLEX passing rate range was 20.47 (77.53 to 98.0), with a mean of 88.91 and SD of 5.0. Thus the mean NCLEX passing rate was significantly higher for programs that do offer internships than for those that do not ($t(23)=-3.48, p<0.05$).

For those programs that do not offer internships, the number of classroom clock hours had a range of 33 (39 to 72) with a mean of 46.71 and SD of 11.46. For those programs that offer internships, the number of classroom clock hours had a range of 86 (38 to 124), with a mean of 57.44 and SD of 19.78. While the range of classroom clock hours is approximately the same for both programs, the mean classroom clock hours number remains higher for programs that offer internships than for those that do not. However, this difference was not statistically significant.

For those programs that do not offer internships, the number of clinical clock hours had a range of 494 (210 to 704), with a mean of 561.5 and SD of 184.2. Those programs that offered an internship had a range of clinical clock hours of 850 (300 to 1150), with a mean of 668.36 and SD of 231.03. The mean number of clinical clock hours is higher for programs that offer an internship than for those that do not. However, this difference was not found to be statistically significant. The complete descriptive statistics can be found in tables A10 and A11 of the appendix. The t test table for all the variables examined can be found in the appendix (A12).

Intercorrelations

For the programs that did not offer an internship, there was a significant negative correlation between NCLEX passing rate and the length of part time faculty tenure ($r(2)=-0.98, p=0.02$). This result must be interpreted with caution given the small sample size: few nursing programs provided the information regarding the percentage of faculty by type and tenure.

The following curricular variables had a moderate to strong effect on the NCLEX passing rate, although the correlation was not statistically significant: the number of clinical clock hours, and the number of clinical clock hours spent providing direct care and participating in simulations. The following faculty variables had a moderate to strong effect on the NCLEX passing rate, although the correlation was not statistically significant: percentage of faculty with doctorate degrees, percentage of full time, part time, and adjunct faculty, and the length of faculty tenure.

Table 11

No internship: Curricular variables

	Clinical clock hours	Clinical hours – direct care	Clinical hours – simulation
NCLEX pass rate	$r= -.48$ $p=.34$ $n=6$	$r= -.46$ $p=.35$ $n=6$	$r=.72$ $p=.11$ $n=6$

Table 12

No internship: Faculty variables

	% Faculty with doctorate degrees	% Full time faculty	% Part time faculty	% Adjunct faculty	Length of full time faculty tenure	Length of part time faculty tenure	Average length of faculty tenure
NCLEX pass rate	$r=.31$ $p=.69$ $n=6$	$r=.36$ $p=.48$ $n=6$	$r= -.36$ $p=.48$ $n=6$	$r= -.75$ $p=.26$ $n=4$	$r= -.35$ $p=.78$ $n=3$	$r= -.98$ $p=.02$ $n=4$	$r= -.98$ $p=.14$ $n=3$

For those programs that offer internship, there was a significant positive correlation between NCLEX passing rate and the use of NCLEX preparation materials ($r(15)=0.57, p=0.02$), and a significant negative correlation between NCLEX passing rate and the percentage of faculty with master’s degrees ($r(11)= -0.74, p=0.00$).

NCLEX rates tend to be higher in those programs that offer an internship and use NCLEX preparation courses. NCLEX rates tend to be lower for those programs that do not offer an internship and have a higher part-time faculty length of tenure. For those programs that do offer an internship, NCLEX rates tend to be lower when the percentage of faculty with master’s degrees is higher. The complete correlations table can be found in the appendix (A13).

The following curricular variables had a moderate effect on the NCLEX passing rate, although the correlation was not statistically significant: the number of internship clock hours, the program type (BSN vs. ADN), clinical hours spent in observation and in the “other” category. The following faculty variables had a moderate to strong effect on the NCLEX passing rate, although the correlation was not statistically significant: percentage of faculty with bachelor’s and master’s degrees, and length of full time and part time faculty tenure.

Table 13

Internship: Curricular variables

	Internship clock hours	Program type	Clinical hours – observation	Clinical hours – other	Use of preparation materials
NCLEX pass rate	$r = -.37$ $p = .16$ $n = 16$	$r = -.39$ $p = .12$ $n = 17$	$r = -.42$ $p = .18$ $n = 12$	$r = -.38$ $p = .23$ $n = 12$	$r = .58$ $p = .02$ $n = 17$

Note: dichotomous variables were coded as follows: 1=ADN program; 2=BSN program;

1=use of preparation materials; 0=no use of preparation materials.

Table 14

Internship: Faculty variables

	% Faculty with bachelor's degrees	% Faculty with master's degrees	Length of full time faculty tenure	Length of part time faculty tenure
NCLEX pass rate	$r = .39$ $p = .19$ $n = 13$	$r = -.74$ $p = .00$ $n = 13$	$r = -.78$ $p = .12$ $n = 5$	$r = .77$ $p = .13$ $n = 5$

Chapter 5

Discussion

The primary purpose of this project was to examine the relationship between National Council Licensure Examination for Registered Nurses (NCLEX) passing rates and the number of clinical hours completed by a student in a nursing program in Kansas or Missouri. In addition, the following relationships were examined: the correlation between NCLEX passing rates and (1) the type of program (BSN vs ADN); (2) the presence or absence of an internship in a program; (3) the number of internship clock hours; (4) whether the internship was administered on a full or part time basis; (5) the number of classroom clock hours in a program; (6) how the clinical clock hours were distributed among different types of clinical practice (direct patient care; simulation; observation; or other); (7) offering an NCLEX preparatory course; and (8) faculty characteristics (highest degree achieved; the percentage of full time and part time faculty; the percentage of adjuncts and visiting faculty; and length of faculty tenure). Part time faculty was defined as all faculty working less than 40 hours a week. Since nursing program faculty frequently are not offered academic tenure, the length of tenure was defined as equivalent to length of employment.

While these questions were posed in the questionnaire, some of them, specifically, some student demographics, faculty characteristics, and the distribution of clinical clock hours among different types of clinical practice, were addressed by very few nursing programs. There can be several explanations to this phenomenon: for example, the person filling out the questionnaire was not likely to have quick access to this information; limited time was available to find this information; the person answering the

questionnaire may not have had authorized access to this information, to name just a few reasons.

No statistically significant correlation was found between NCLEX passing rates and the number of clock clinical hours. This finding is supported by Parry's study (1991) that determined that there was no statistically significant relationship between the number of clinical hours in the program and NCLEX passing rates.

Once effect sizes were considered, however, it was found that the number of internship clock hours had a moderate effect on NCLEX passing rate, even though it was not statistically significant. A moderate to strong effect of the method of clinical hours administration on the NCLEX pass rate was found, with observation having a consistently negative effect, and simulation having a positive effect on the pass rate. There is limited research on the effectiveness of the use of simulation, and the results of the studies are frequently controversial (Sanford, 2010). Currently there are no studies that compare simulation with other methods of clinical hours administration, such as observation or direct care.

A significant positive correlation was found between NCLEX passing rate and the presence of an internship ($r(21)=0.59, p=0.002$), which implies that students were more likely to pass NCLEX if their nursing program offered an internship. However, no statistically significant correlation was found between the NCLEX passing rate and the number of internship hours. Currently no research is available on the issue of how the presence of an internship or the number of internship hours affects NCLEX passing rates. The finding that there is a positive correlation between NCLEX passing rate and the availability of an internship could be explained by the fact that an internship allows the

student to tie in the classroom knowledge and practical experience together, the clinical knowledge reinforcing the classroom knowledge. Being able to practice what was learned in the classroom allows for better retention of the material and better familiarity with the information.

A significant positive relationship was found between NCLEX passing rate and the internship being offered on a part-time basis ($r(20)=0.55, p=0.01$), which implies that students whose program offered an internship on a part-time basis were more likely to pass NCLEX than those whose program offered the internship full time. Currently no research is available on this issue. The finding that when the internship was offered on a part-time basis, the students had a higher rate of NCLEX passing, while not specifically researched in literature, may be explained. When students complete the internship on a part-time basis, this may leave them more time to read about or discuss with the instructor the conditions they encounter during clinicals, research the medications they are administering and the procedures they are participating in. This finding can also be explained by the fact that distributive practice (items with repetitions separated by time or other events) was found more effective in skill acquisition than massed practice (items that are repeated in immediate succession) (Dempster, 1988).

A negative correlation was found between NCLEX passing rate and the percentage of faculty with master's degrees ($r(16)=-.47, p=0.05$), which implies that programs with a higher percentage of faculty with master's degrees tend to have a lower NCLEX passing rate. A positive, while not significant, relationship was found between the NCLEX passing rate and the percentage of faculty with doctorate degrees. Our findings are not supported by the studies that determined that higher education levels of

clinical faculty (e.g. a doctorate vs. a master's degree) have a negative correlation with NCLEX passing rates (Davis, Dearman, Schwab, & Kitchens, 1992; Stevens, 1996; Landry, 1997). The explanation for this correlation provided by the above mentioned authors is that doctorate-prepared faculty become too removed from teaching clinical skills and everyday applications of clinical knowledge at very basic levels that is implemented by the nursing students. Turner (2005), on the other hand, did not find a significant relationship between the educational degree held by faculty and NCLEX pass rates. These findings do not support the findings of the study either, since the relationship found in this study was significant. The findings on this issue should be interpreted with caution, one reason being that the information regarding nursing faculty was not consistently obtained and provided by nursing programs. Very few nursing programs were able to provide this information.

Once effect size estimates of faculty educational preparation were considered, it was found that the percentage of faculty with master's degrees had a consistent moderate to large negative effect on NCLEX passing rates, and the percentage of faculty with doctorate degrees had a consistent moderate to large positive effect of on the NCLEX passing rates.

We further examined the relationship between NCLEX passing rates and the presence of an internship, and the type of program (BSN vs. ADN). The findings are consistent with the data obtained prior to splitting the file. While some of the differences between the programs that do and do not offer internships are not statistically significant, one may notice a trend in that the programs that do not offer internships also have lower NCLEX passing rates and fewer classroom and clinical hours.

While it may appear that the difference in the mean number of hours is tangible, it is important to remember that the hours are distributed throughout two years of the nursing program; also, these are clock hours, not credit hours; thus in the long run it is understandable that the difference does not make a significant impact on the education of a nursing student.

For those programs that do offer an internship, NCLEX rates tend to be lower when the percentage of faculty with master's degrees is higher. This finding is not supported by the studies done by Davis, Dearman, Schwab, & Kitchens, 1992; Stevens, 1996; and Landry, 1997, whose findings were the opposite, while the study done by Turner (2005) found no relationship between the two variables. There is currently no consensus in literature regarding the relationship between these two variables.

NCLEX rates tended to be higher in the ADN programs that offered an internship and had longer internships; and in the ADN programs which administered the internship on a part-time basis. For BSN programs, NCLEX rates tended to be lower if the number of clinical observation hours was higher. Currently there is no research done on these issues. NCLEX rates tended to be higher if NCLEX preparatory materials were used. This finding is supported by a variety of authors (e.g. Bonis, Taft, and Wendler, 2007).

While the findings need to be interpreted with caution, and at times the findings may be contradictory, several common topics can be identified. For example, in the overall correlation and after the file was split by program type and by the presence of an internship, a consistently positive correlation was found between NCLEX passing rate and the percentage of faculty with doctorate degrees. Similarly, a consistently positive correlation was found between NCLEX passing rate and the internship being

administered on a part-time basis. A consistently negative correlation was found between NCLEX passing rate and the percentage of faculty with master's degrees, and between NCLEX passing rate and clinical hours administered as an observation.

Table 15

Common topics in correlations

	All programs	ADN	BSN	No internship	internship
Program type					0
Internship offered	X	X			
Number of hours in the internship	X	X			0
Internship administered part-time	X	X	X		
Number of classroom clock hours	X	X			
Number of clinical clock hours		0		0	
Clinical clock hours – direct care				0	
Clinical hours – simulation			X	X	
Clinical hours – observation	0	0	0		0
Clinical hours – other	0	0			0
Use of preparation materials			X		X
% faculty with	0				

associate's degrees					
% faculty with bachelor's degree					X
% faculty with master's degrees	0	0	0		0
% faculty with doctorate degrees	X	X	X	X	X
% full time faculty		X	0	X	
% part time faculty		0	X	0	
% adjunct faculty		X		0	
Length of part-time faculty tenure	X		X	0	X
Length of full time faculty tenure		X	0	0	0
Average length of faculty tenure				0	

(Note: X signifies a positive correlation, O signifies a negative correlation).

Limitations of the study

Limitations related to the questionnaire

It is possible that programs with an internship were more likely to respond to the questionnaire due to the following: in the questionnaire, the question “Does your program have an internship?” was the first on the list. Even after briefly scanning the

questionnaire, the responder may have come to believe that the whole questionnaire was related to the internship, and since the responder's program does not have it, the questions are not applicable to them.

Some difficulties were encountered with the questionnaire distribution: even though instructions were provided on how to move from question to question within the questionnaire and how to use the questionnaire in general, only four out of 87 programs were able to complete the questionnaire on the first try. The population that constituted the responders was potentially very diverse: it could have been any person employed by the program, from the dean of the school of nursing to the program secretary. Even though the questionnaire was distributed to the deans and clinical coordinators (if their names were available), that did not mean that these recipients were the actual people filling out the questionnaire. Due to the variability in experience using computer questionnaires and computers in general, the recipients' completion of the questionnaires was not consistent. In the end, it was decided to distribute the questionnaire by email, and response rate improved with that method of distribution.

One item on the questionnaire – “What is the length of tenure for your full time and part time faculty, and average length of tenure?” – was confusing for participants. The responders interpreted this question in the sense of academic tenure, and advised that his or her program does not have tenure (which is common for nursing programs), rather than providing the number of years of employment in the program.

Limitations related to data gathering

Some general issues with gathering the information were experienced that were related to the inconsistency of information nursing schools gather on their students,

faculty, and curriculum. For example, the number of classroom hours may not be consistently reported by nursing programs. One of the reasons why some nursing programs may have a higher number of classroom hours is because they count into the nursing curriculum such supporting classes as chemistry and biology, whereas other programs may consider those classes prerequisites for entry into the nursing program. Also, some programs admit students into the nursing school as freshmen, whereas others require two years of general study, and then the student applies to the university nursing school. In addition, classes with similar names may be considered a part of the university's biology program and be listed under biology classes, whereas in other programs these classes will be listed under the nursing program and be taught as part of a nursing program (e.g. anatomy and physiology, microbiology, pathophysiology).

Also, nursing programs may calculate and report the number of clinical hours differently. Some may report credit hours rather than clock hours. Some programs may include classroom instruction hours related to the clinicals into the clock clinical hours, whereas other programs count them as classroom clock hours. Nursing programs keep track of faculty tenure differently, and some programs may not keep track of this variable at all.

Programs had varying ability to obtain the information and invest time in researching the information the questionnaire requested. This factor contributed to the fact that only some information was provided by all the programs, and such data as student demographics and faculty information was less likely to be available, and so was not consistently provided.

One of the things that could be done differently in the future is have a larger sample. A very limited number of responders was a definite limitation of the study. It may be more time consuming, and the differences in data collection between states in different areas of the country may be even greater than what we encountered; at the same time, the advantages of a bigger sample would be more reliable information.

Another limitation of the study is the lack of access to the nursing school data. Some information requested in the questionnaire was not readily available either to this author, or to nursing program representatives. Currently most of this information is not publicly available free of charge, and access to the NLN reports costs a significant amount of money. If possible, it would be beneficial to have access to organizations that collect the data on nursing programs centrally, such as the National League for Nursing (a membership organization for nurse faculty and leaders in nursing education).

Future directions

Several nursing researchers indicate that while the student variables that affect NCLEX passing rate are researched at length (even though there may not be a consensus on their impact), there is not enough research on the programmatic variables that influence NCLEX passing rate. This issue may be explained by a variety of factors. Paradoxically, it may be easier for a nursing program to affect student factors, especially at a time when applicants are being rejected due to limited number of admissions. Nursing programs have an opportunity to set high admission standards and admit highly qualified students from a large pool of applicants. At the same time, nursing programs are frequently limited in their choice of qualified faculty due to the shortage of nurses with master's and doctorate degrees who are willing to teach nursing students.

Also, historically nursing schools included clinical components despite the fact that little empirical research regarding its usefulness was conducted. Nursing programs that do not have a clinical component, or have fewer clinical hours than comparable programs in the area, may attract fewer applicants.

Despite that, research on programmatic variables is necessary to promote evidence-based practice in nursing education. To improve nursing education to respond to modern complex healthcare needs, research is needed to justify current educational practices, or to implement new and improved ones.

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Appendix

Table A1

Participating nursing programs (with the outlier): Descriptive statistics

	<i>n</i>	Minimum	Maximum	Mean	SD
State	25	1.00	2.00	1.60	.50
Program	25	1.00	2.00	1.48	.51
NCLEX pass rate	25	69.70	98.00	86.56	6.54
Internship	25	.00	1.00	.72	.46
Internship clock hours	24	.00	320.00	125.92	102.21
Internship full/ part time	24	.00	2.00	1.25	.90
Classroom credit hours	24	38.00	124.00	54.31	18.20
Clinical clock hours (CCH)	24	210.00	992.00	266.31	127.67
CCH direct care	19	20.00	881.00	474.34	210.90
CCH simulation	19	.00	220.00	43.00	61.38

	<i>n</i>	Minimum	Maximum	Mean	SD
CCH observation	19	.00	111.00	43.37	39.68
CCH other	19	.00	100.00	10.16	24.84
NCLEX prep materials	25	.00	1.00	.96	.20
% Students 18-22 years old	11	.00	80.00	36.91	29.62
% Students 23-27 years old	11	10.00	65.00	31.18	17.84
% Students 28-32 years old	10	.00	50.00	18.20	18.62
% Students 33 years old and older	10	5.00	50.00	16.90	14.07
% Male students	22	1.00	20.00	11.09	6.18
% Female students	22	80.00	99.00	88.68	6.03
% African American students	20	.00	16.00	4.19	4.53
% Asian students	21	.00	11.00	1.81	2.69

	<i>n</i>	Minimum	Maximum	Mean	SD
% Caucasian students	21	50.00	100.00	86.92	13.23
% Hispanic students	21	.00	21.00	3.00	4.92
% Native American students	21	.00	14.00	1.00	3.08
% Other race	21	.00	25.00	1.90	5.53
GPA	13	2.70	3.83	3.21	.29
% Faculty with associate degree	18	.00	10.00	.80	2.60
% Faculty with bachelor's degree	18	.00	70.00	20.72	20.53
% Faculty with master's degree	18	30.00	86.00	65.09	16.66
% Faculty with doctorate	18	.00	64.00	18.69	22.21
% Full time faculty	23	25.00	100.00	77.76	22.16
% Part time faculty	23	.00	75.00	22.24	22.16
% Adjuncts	15	.00	61.00	23.64	21.83

	<i>n</i>	Minimum	Maximum	Mean	SD
Average full time faculty length of tenure	9	4.40	14.30	9.33	3.52
Average part time faculty length of tenure	10	.00	8.00	3.08	2.26
Average length of tenure	8	2.20	13.00	7.83	3.62

Table A2

Non-participating programs: Descriptive statistics

	<i>n</i>	Minimum	Maximum	Mean	SD	Variance
State	59	1.00	2.00	1.64	.48	.23
Program	59	1.00	2.00	1.41	.50	.25
NCLEX	58	62.96	100.00	88.02	8.75	76.52
Internship	49	.00	1.00	.35	.48	.23
Classroom credit hrs	42	28	126	67.81	20.59	423.87

Table A3

Non-participating programs: Correlations table

	State	Program	NCLEX pass rate	Internship	Classroom hours
State	1	-	-	-	-
Program	$r=.11$ $p=.40$ $n=59$	1	-	-	-
NCLEX pass rate	$r=.26$ $p=.05$ $n=58$	$r=.19$ $p=.16$ $n=58$	1	-	-
Internship	$r= -.04$ $p=.81$ $n=49$	$r=.48$ $p=.001$ $n=49$	$r=.05$ $p=.74$ $n=49$	1	-
Classroom hours	$r=.09$ $p=.56$ $n=42$	$r=.32$ $p=.04$ $n=42$	$r=.20$ $p=.20$ $n=41$	$r= -.13$ $p=.45$ $n=36$	1

Table A4

Participating nursing programs (without the outlier): Descriptive statistics

	<i>n</i>	Minimum	Maximum	Mean	SD
State	24	1.00	2.00	1.63	.49
Program	24	1.00	2.00	1.50	.51
NCLEX pass rate	24	69.70	98.00	86.53	6.68
Internship	24	.00	1.00	.71	.46
Internship clock hours	23	.00	320.00	129.30	103.12
Internship full/ part time	23	.00	2.00	1.22	.90
Classroom credit hours	23	38.00	124.00	54.89	18.38
Clinical clock hours (CCH)	23	210.00	992.00	277.72	130.31
CCH direct care	18	20.00	881.00	477.03	216.67
CCH simulation	18	.00	220.00	42.61	63.13
CCH observation	18	.00	111.00	44.44	40.54
CCH other	18	.00	100.00	10.72	25.43

	<i>n</i>	Minimum	Maximum	Mean	SD
NCLEX prep materials	24	.00	1.00	.96	.20
% Students 18-22 years old	11	.00	80.00	36.91	29.61
% Students 23-27 years old	11	10.00	65.00	31.18	17.84
% Students 28-32 years old	10	.00	50.00	18.20	18.62
% Students 33 years old and older	10	5.00	50.00	16.90	14.07
% Male students	21	1.00	20.00	11.10	6.33
% Female students	21	80.00	99.00	88.67	6.18
% African American students	19	.00	16.00	4.26	4.64
% Asian students	20	.00	11.00	1.90	2.73
% Caucasian students	20	50.00	100.00	86.40	13.35
% Hispanic students	20	.00	21.00	3.15	5.00

	<i>n</i>	Minimum	Maximum	Mean	SD
% Native American students	20	.00	14.00	1.05	3.15
% Other race	20	.00	25.00	2.00	5.66
GPA	13	2.70	3.83	3.21	.29
% Faculty with associate degree	18	.00	10.00	.86	2.68
% Faculty with bachelor's degree	18	.00	70.00	19.94	20.94
% Faculty with master's degree	18	30.00	86.00	64.94	17.13
% Faculty with doctorate	18	.00	64.00	19.93	22.41
% Full time faculty	22	25.00	100.00	79.27	21.43
% Part time faculty	22	.00	75.00	20.73	21.43
% Adjuncts	14	.00	61.00	21.36	20.71
Average full time faculty length of tenure	8	4.40	14.30	9.71	3.55

	<i>n</i>	Minimum	Maximum	Mean	SD
Average part time faculty length of tenure	9	.00	8.00	3.14	2.38
Average length of tenure	8	2.20	13.00	7.83	3.62

Table A5

Overall correlations table

	Program	NCLEX pass rate	Internship	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
Program	-	-	-	-	-	-	-	-	-	-	-
NCLEX pass rate	$r=.19$ $p=.38$ $n=24$	-	-	-	-	-	-	-	-	-	-
Internship	$r=.64$ $p=.00$ $n=24$	$r=.59$ $p=.00$ $n=24$	-	-	-	-	-	-	-	-	-
Internship clock hrs	$r=.77$ $p=.00$ $n=23$	$r=.38$ $p=.07$ $n=23$	$r=.85$ $p=.00$ $n=23$	-	-	-	-	-	-	-	-
Internship full/part time	$r=.73$ $p=.00$ $n=23$	$r=.55$ $p=.01$ $n=23$	$r=.91$ $p=.00$ $n=23$	$r=.86$ $p=.00$ $n=23$	-	-	-	-	-	-	-
Clinical clock hrs (CCH)	$r=.21$ $p=.35$ $n=23$	$r=.17$ $p=.43$ $n=23$	$r=.13$ $p=.56$ $n=23$	$r=.41$ $p=.06$ $n=22$	$r=.18$ $p=.41$ $n=22$	-	-	-	-	-	-

	Program	NCLEX pass rate	Internship	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
CCH direct care	<i>r</i> = -.10 <i>p</i> =.68 <i>n</i> =18	<i>r</i> = -.03 <i>p</i> =.90 <i>n</i> =8	<i>r</i> =.18 <i>p</i> =.46 <i>n</i> =18	<i>r</i> = -.06 <i>p</i> =.81 <i>n</i> =17	<i>r</i> =.12 <i>p</i> =.65 <i>n</i> =17	<i>r</i> = -.53 <i>p</i> =.03 <i>n</i> =18	-	-	-	-	-
CCH simulation	<i>r</i> =.37 <i>p</i> =.13 <i>n</i> =18	<i>r</i> =.20 <i>p</i> =.42 <i>n</i> =18	<i>r</i> =.11 <i>p</i> =.66 <i>n</i> =18	<i>r</i> =.36 <i>p</i> =.15 <i>n</i> =17	<i>r</i> =.24 <i>p</i> =.36 <i>n</i> =17	<i>r</i> = -.09 <i>p</i> =.73 <i>n</i> =18	<i>r</i> =.24 <i>p</i> =.33 <i>n</i> =18	-	-	-	-
CCH observation	<i>r</i> = -.30 <i>p</i> =.23 <i>n</i> =18	<i>r</i> = -.39 <i>p</i> =.11 <i>n</i> =18	<i>r</i> = -.27 <i>p</i> =.27 <i>n</i> =18	<i>r</i> = -.28 <i>p</i> =.28 <i>n</i> =17	<i>r</i> = -.30 <i>p</i> =.24 <i>n</i> =17	<i>r</i> =.12 <i>p</i> =.63 <i>n</i> =18	<i>r</i> =.12 <i>p</i> =.62 <i>n</i> =18	<i>r</i> = -.22 <i>p</i> =.39 <i>n</i> =18	-	-	-
CCH other	<i>r</i> = -.03 <i>p</i> =.90 <i>n</i> =18	<i>r</i> = -.32 <i>p</i> =.19 <i>n</i> =18	<i>r</i> = -.29 <i>p</i> =.24 <i>n</i> =18	<i>r</i> = -.13 <i>p</i> =.61 <i>n</i> =17	<i>r</i> = -.21 <i>p</i> =.43 <i>n</i> =17	<i>r</i> = -.11 <i>p</i> =.68 <i>n</i> =18	<i>r</i> = -.10 <i>p</i> =.71 <i>n</i> =18	<i>r</i> =.25 <i>p</i> =.31 <i>n</i> =18	<i>r</i> =.24 <i>p</i> =.35 <i>n</i> =18	-	-
NCLEX prep	<i>r</i> = -.21 <i>p</i> =.33 <i>n</i> =24	<i>r</i> =.29 <i>p</i> =.17 <i>n</i> =24	<i>r</i> = -.13 <i>p</i> =.53 <i>n</i> =24	<i>r</i> = -.32 <i>p</i> =.14 <i>n</i> =23	<i>r</i> = -.19 <i>p</i> =.39 <i>n</i> =23	<i>r</i> =.05 <i>p</i> =.84 <i>n</i> =23	-	-	-	-	-
% Faculty with associate degree	<i>r</i> = -.29 <i>p</i> =.32 <i>n</i> =18	<i>r</i> = -.33 <i>p</i> =.19 <i>n</i> =18	<i>r</i> = -.47 <i>p</i> =.052 <i>n</i> =18	<i>r</i> = -.38 <i>p</i> =.13 <i>n</i> =17	<i>r</i> = -.41 <i>p</i> =.10 <i>n</i> =17	<i>r</i> = -.09 <i>p</i> =.73 <i>n</i> =17	<i>r</i> = -.17 <i>p</i> =.55 <i>n</i> =15	<i>r</i> =.02 <i>p</i> =.75 <i>n</i> =12	<i>r</i> =.40 <i>p</i> =.14 <i>n</i> =15	<i>r</i> = -.12 <i>p</i> =.66 <i>n</i> =15	-

	program	NCLEX pass rate	Internship	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
% Faculty with bachelor's degree	<i>r</i> = -.53 <i>p</i> =.04 <i>n</i> =18	<i>r</i> =.03 <i>p</i> =.91 <i>n</i> =18	<i>r</i> = -.24 <i>p</i> =.33 <i>n</i> =18	<i>r</i> = -.44 <i>p</i> =.08 <i>n</i> =17	<i>r</i> = -.42 <i>p</i> =.10 <i>n</i> =15	<i>r</i> = -.31 <i>p</i> =.22 <i>n</i> =17	<i>r</i> = -.25 <i>p</i> =.37 <i>n</i> =15	<i>r</i> = -.29 <i>p</i> =.30 <i>n</i> =15	<i>r</i> =.17 <i>p</i> =.56 <i>n</i> =15	<i>r</i> = -.37 <i>p</i> =.18 <i>n</i> =15	-
% Faculty with master's degree	<i>r</i> =.23 <i>p</i> =.37 <i>n</i> =18	<i>r</i> = -.47 <i>p</i> =.049 <i>n</i> =18	<i>r</i> = -.07 <i>p</i> =.79 <i>n</i> =18	<i>r</i> = -.12 <i>p</i> =.65 <i>n</i> =17	<i>r</i> = -.03 <i>p</i> =.92 <i>n</i> =17	<i>r</i> = -.29 <i>p</i> =.26 <i>n</i> =17	<i>r</i> =.24 <i>p</i> =.38 <i>n</i> =15	<i>r</i> = -.18 <i>p</i> =.51 <i>n</i> =15	<i>r</i> =.42 <i>p</i> =.12 <i>n</i> =15	<i>r</i> =.24 <i>p</i> =.38 <i>n</i> =15	-
% Faculty with doctorate	<i>r</i> =.31 <i>p</i> =.26 <i>n</i> =17	<i>r</i> =.35 <i>p</i> =.17 <i>n</i> =17	<i>r</i> =.30 <i>p</i> =.25 <i>n</i> =17	<i>r</i> =.54 <i>p</i> =.03 <i>n</i> =16	<i>r</i> =.44 <i>p</i> =.09 <i>n</i> =16	<i>r</i> =.16 <i>p</i> =.57 <i>n</i> =16	<i>r</i> =.14 <i>p</i> =.64 <i>n</i> =14	<i>r</i> =.42 <i>p</i> =.14 <i>n</i> =14	<i>r</i> = -.56 <i>p</i> =.04 <i>n</i> =14	<i>r</i> = .40 <i>p</i> =.15 <i>n</i> =14	-
% Full time faculty	<i>r</i> = -.16 <i>p</i> =.48 <i>n</i> =22	<i>r</i> = -.06 <i>p</i> =.79 <i>n</i> =22	<i>r</i> =.08 <i>p</i> =.74 <i>n</i> =22	<i>r</i> =.02 <i>p</i> =.93 <i>n</i> =21	<i>r</i> = -.08 <i>p</i> =.74 <i>n</i> =21	<i>r</i> = -.15 <i>p</i> =.51 <i>n</i> =22	<i>r</i> =.18 <i>p</i> =.47 <i>n</i> =18	<i>r</i> = -.07 <i>p</i> =.80 <i>n</i> =18	<i>r</i> = -.00 <i>p</i> =.99 <i>n</i> =18	<i>r</i> = -.53 <i>p</i> =.02 <i>n</i> =18	<i>r</i> =.20 <i>p</i> =.37 <i>n</i> =22
% Part time faculty	<i>r</i> =.16 <i>p</i> =.48 <i>n</i> =22	<i>r</i> =.06 <i>p</i> =.79 <i>n</i> =22	<i>r</i> = -.08 <i>p</i> =.74 <i>n</i> =22	<i>r</i> = -.02 <i>p</i> =.93 <i>n</i> =21	<i>r</i> =.08 <i>p</i> =.74 <i>n</i> =21	<i>r</i> =.15 <i>p</i> =.51 <i>n</i> =22	<i>r</i> = -.18 <i>p</i> =.47 <i>n</i> =18	<i>r</i> =.07 <i>p</i> =.80 <i>n</i> =18	<i>r</i> = .00 <i>p</i> =.99 <i>n</i> =18	<i>r</i> =.53 <i>p</i> =.02 <i>n</i> =18	<i>r</i> = -.20 <i>p</i> =.37 <i>n</i> =22
% Adjuncts	<i>r</i> =.20 <i>p</i> =.50 <i>n</i> =14	<i>r</i> = -.16 <i>p</i> =.60 <i>n</i> =14	<i>r</i> =.01 <i>p</i> =.97 <i>n</i> =14	<i>r</i> = -.18 <i>p</i> =.56 <i>n</i> =13	<i>r</i> = -.16 <i>p</i> =.61 <i>n</i> =13	<i>r</i> = -.09 <i>p</i> =.77 <i>n</i> =13	<i>r</i> = -.02 <i>p</i> =.95 <i>n</i> =11	<i>r</i> = -.10 <i>p</i> =.76 <i>n</i> =11	<i>r</i> = -.16 <i>p</i> =.65 <i>n</i> =11	<i>r</i> = -.43 <i>p</i> =.19 <i>n</i> =11	-

	Program	NCLEX pass rate	Internship	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
Average full time faculty length of tenure	<i>r</i> =.79 <i>p</i> =.02 <i>n</i> =8	<i>r</i> =.20 <i>p</i> =.63 <i>n</i> =8	<i>r</i> =.84 <i>p</i> =.01 <i>n</i> =8	<i>r</i> =.80 <i>p</i> =.02 <i>n</i> =8	<i>r</i> =.69 <i>p</i> =06 <i>n</i> =8	<i>r</i> =.36 <i>p</i> =.38 <i>n</i> =8	<i>r</i> =.42 <i>p</i> =.30 <i>n</i> =8	<i>r</i> =.10 <i>p</i> =.81 <i>n</i> =8	<i>r</i> = -.20 <i>p</i> =.64 <i>n</i> =8	<i>r</i> =.02 <i>p</i> =.97 <i>n</i> =8	-
Average part time faculty length of tenure	<i>r</i> =.22 <i>p</i> =.57 <i>n</i> =9	<i>r</i> =.60 <i>p</i> =.09 <i>n</i> =9	<i>r</i> =.31 <i>p</i> =.42 <i>n</i> =9	<i>r</i> =.32 <i>p</i> =.41 <i>n</i> =9	<i>r</i> =.39 <i>p</i> =.30 <i>n</i> =9	<i>r</i> =.85 <i>p</i> =.004 <i>n</i> =9	<i>r</i> =.90 <i>p</i> =.001 <i>n</i> =9	<i>r</i> =.66 <i>p</i> =.052 <i>n</i> =9	<i>r</i> = -.37 <i>p</i> =.32 <i>n</i> =9	<i>r</i> = -.31 <i>p</i> =.42 <i>n</i> =9	-
Average length of tenure	<i>r</i> =.42 <i>p</i> =.30 <i>n</i> =8	<i>r</i> =.04 <i>p</i> =.94 <i>n</i> =8	<i>r</i> =.45 <i>p</i> =.27 <i>n</i> =8	<i>r</i> =.61 <i>p</i> =.11 <i>n</i> =8	<i>r</i> =.50 <i>p</i> =.21 <i>n</i> =8	<i>r</i> =.33 <i>p</i> =.42 <i>n</i> =8	<i>r</i> =.31 <i>p</i> =.46 <i>n</i> =8	<i>r</i> =.09 <i>p</i> =.84 <i>n</i> =8	<i>r</i> =.12 <i>p</i> =.79 <i>n</i> =8	<i>r</i> =.58 <i>p</i> =.13 <i>n</i> =8	-

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate degree	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
% Faculty with bachelor's degree	$r=.47$ $p=.09$ $n=18$	-	-	-	-	-	-	-	-	-
% Faculty with master's degree	$r= -.28$ $p=.34$ $n=18$	$r= -.35$ $p=.19$ $n=18$	-	-	-	-	-	-	-	-
% Faculty with doctorate degree	$r= -.24$ $p=.43$ $n=18$	$r= -.73$ $p=.01$ $n=18$	$r= -.72$ $p=.00$ $n=18$	-	-	-	-	-	-	-
% Full time faculty	$r=.09$ $p=.76$ $n=13$	$r=.35$ $p=.20$ $n=15$	$r=.12$ $p=.65$ $n=17$	$r= -.39$ $p=.17$ $n=14$	-	-	-	-	-	-
% Part time faculty	$r= -.09$ $p=.76$ $n=13$	$r= -.35$ $p=.20$ $n=15$	$r= -.12$ $p=.65$ $n=17$	$r=.39$ $p=.17$ $n=14$	$r= -1.0$ $p=.00$ $n=22$	-	-	-	-	-
% Adjuncts	$r= -.09$ $p=.81$ $n=10$	$r= -.25$ $p=.46$ $n=11$	$r=.01$ $p=.98$ $n=12$	$r=.12$ $p=.73$ $n=10$	$r= -.48$ $p=.09$ $n=13$	$r=.48$ $p=.09$ $n=13$	-	-	-	-

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate degree	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
Average full time faculty length of tenure	$r = -.56$ $p = .20$ $n = 7$	$r = -.40$ $p = .38$ $n = 7$	$r = .22$ $p = .63$ $n = 7$	$r = -.08$ $p = .88$ $n = 6$	$r = .24$ $p = .57$ $n = 8$	$r = -.24$ $p = .57$ $n = 8$	$r = -.48$ $p = .10$ $n = 13$	-	-	-
Average part time faculty length of tenure	$r = -.21$ $p = .62$ $n = 8$	$r = -.15$ $p = .72$ $n = 8$	$r = -.49$ $p = .22$ $n = 8$	$r = .42$ $p = .34$ $n = 7$	$r = -.30$ $p = .43$ $n = 9$	$r = .30$ $p = .43$ $n = 9$	$r = .48$ $p = .09$ $n = 13$	$r = .17$ $p = .70$ $n = 8$	-	-
Average length of tenure	$r = -.43$ $p = .29$ $n = 8$	$r = -.03$ $p = .95$ $n = 8$	$r = .21$ $p = .62$ $n = 8$	$r = -.25$ $p = .59$ $n = 7$	$r = .15$ $p = .72$ $n = 8$	$r = -.15$ $p = .72$ $n = 8$	$r = -.36$ $p = .49$ $n = 6$	$r = .81$ $p = .03$ $n = 7$	$r = .17$ $p = .69$ $n = 8$	-

Table A6

Split file by program type: Descriptive statistics

Program type: ADN

	<i>n</i>	Minimum	Maximum	Mean	SD
Internship	12	.00	1.00	.42	.51
NCLEX pass rate	12	69.70	98.00	85.31	8.10
Internship clock hours	11	.00	144.00	47.82	66.77
Internship full/ part time	11	.00	2.00	.55	.82
Clinical clock hours (CCH)	11	210.00	992.00	598.14	206.98
CCH direct care	11	177.00	881.00	494.32	191.56
CCH simulation	11	.00	50.00	24.45	20.37
CCH observation	11	.00	111.00	53.82	47.45
CCH other	11	.00	100.00	11.36	30.34
NCLEX prep materials	12	1.00	1.00	1.00	.00

	<i>n</i>	Minimum	Maximum	Mean	SD
% Faculty with associate degree	10	.00	10.00	1.50	3.51
% Faculty with bachelor's degree	10	.00	70.00	28.20	21.75
% Faculty with master's degree	10	30.00	86.00	61.60	19.08
% Faculty with doctorate	10	.00	64.00	12.71	24.46
% Full time faculty	11	40.00	100.00	82.64	18.17
% Part time faculty	11	.00	60.00	17.36	18.17
% Adjuncts	6	.00	35.00	16.83	11.27
Average full time faculty length of tenure	4	4.40	10.00	7.10	2.81
Average part time faculty length of tenure	5	1.50	4.00	2.70	1.20
Average length of tenure	4	2.20	11.40	6.40	4.12

Table A7

Split file by program type: Descriptive statistics

Program type: BSN

	<i>n</i>	Minimum	Maximum	Mean	SD
Internship	12	1.00	1.00	1.00	.00
NCLEX pass rate	12	77.53	94.20	87.75	4.93
Internship clock hours	12	120.00	320.00	204.00	67.00
Internship full/ part time	12	1.00	2.00	1.83	.39
Clinical clock hours (CCH)	12	300.00	652.00	526.67	180.58
CCH direct care	7	20.00	180.00	144.86	26.43
CCH simulation	7	8.00	220.00	71.14	95.12
CCH observation	7	.00	64.00	29.71	22.13
CCH other	7	.00	42.00	9.71	17.22
NCLEX prep materials	12	.00	1.00	.92	.29

	<i>n</i>	Minimum	Maximum	Mean	SD
% Faculty with associate degree	8	.00	.00	.00	.00
% Faculty with bachelor's degree	8	.00	23.00	6.17	9.97
% Faculty with master's degree	8	45.00	86.00	69.12	14.44
% Faculty with doctorate	8	.00	55.00	26.25	19.84
% Full time faculty	11	25.00	100.00	75.91	24.68
% Part time faculty	11	.00	75.00	24.09	24.68
% Adjuncts	8	.00	61.00	24.75	25.98
Average full time faculty length of tenure	4	10.00	14.30	12.33	1.81
Average part time faculty length of tenure	4	.00	8.00	3.70	3.53
Average length of tenure	4	7.00	13.00	9.25	2.87

Table A8

t test: program type

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		<i>F</i>	Sig.	<i>t</i>	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower		Upper
NCLEX pass rate	Equal variances assumed	2.74	.11	-89	22	.38	-2.44	2.74	-8.12	3.23
	Equal variances not assumed			-89	18.16	.38	-2.44	2.74	-8.19	3.30
	Equal variances not assumed			-1.86	21.98	.08	-.58	.31	-1.23	.065
Internship clock hrs	Equal variances assumed	.14	.72	-5.59	21	.00	-156.18	27.92	-214.24	-98.12
	Equal variances not assumed			-5.60	20.84	.00	-156.18	27.92	-214.26	-98.10
Internship full/part time	Equal variances assumed	9.65	.01	-4.88	21	.00	-1.29	.26	-1.84	-.74
	Equal variances not assumed			-4.74	14.01	.00	-1.29	.27	-1.87	-.71
	Equal variances not assumed			-1.09	18.50	.29	-8.16	7.49	-23.87	7.56

Clinical clock hrs (CCH)	Equal variances assumed	4.41	.05	-.96	21	.35	520.53	544.30	165.46	610.40
	Equal variances not assumed			-1.00	11.00	.34	520.53	519.11	166.95	623.89
CCH direct care	Equal variances assumed	1.22	.29	.41	16	.68	44.46	107.41	-183.24	272.16
	Equal variances not assumed			.38	9.98	.71	44.46	115.76	-213.55	302.47
CCH simulation	Equal variances assumed	23.85	.00	-1.60	16	.13	-46.69	29.22	-108.63	15.25
	Equal variances not assumed			-1.28	6.35	.25	-46.69	36.47	-134.75	41.37
CCH observation	Equal variances assumed	16.88	.00	1.25	16	.23	24.10	19.28	-16.78	64.98
	Equal variances not assumed			1.45	15.07	.17	24.10	16.57	-11.21	59.41
CCH other	Equal variances assumed	.26	.62	.13	16	.90	1.65	12.67	-25.21	28.50
	Equal variances not assumed			.15	15.90	.89	1.65	11.23	-22.16	25.46
NCLEX prep materials	Equal variances assumed	4.84	.04	1.00	22	.33	.083	.083	-.089	.26
	Equal variances not assumed			1.00	11.00	.34	.083	.083	-.10	.27
% Faculty with associate's	Equal variances assumed	4.58	.05	1.04	12	.32	1.50	1.45	-1.65	4.65

degrees	Equal variances not assumed			1.21	7.00	.27	1.50	1.24	-1.43	4.43
% Faculty with bachelor's degrees	Equal variances assumed	2.12	.17	2.32	14	.04	22.03	9.52	1.62	42.44
	Equal variances not assumed			2.76	13.44	.02	22.03	7.99	4.83	39.24
% Faculty with master's degrees	Equal variances assumed	1.42	.25	-.92	16	.37	-7.53	8.16	-24.82	9.77
	Equal variances not assumed			-.95	15.97	.36	-7.53	7.90	-24.28	9.23
% Faculty with doctorate	Equal variances assumed	.24	.63	-1.18	13	.26	-13.54	11.43	-38.24	11.17
	Equal variances not assumed			-1.17	11.60	.27	-13.54	11.60	-38.92	11.85
% Full time faculty	Equal variances assumed	1.60	.22	.73	20	.48	6.73	9.24	-12.55	26.00
	Equal variances not assumed			.73	18.38	.48	6.73	9.24	-12.66	26.11
% Part time faculty	Equal variances assumed	1.60	.22	-.73	20	.48	-6.73	9.24	-26.00	12.55
	Equal variances not assumed			-.73	18.38	.48	-6.73	9.24	-26.11	12.66
% Adjuncts	Equal variances assumed	9.36	.01	-.69	12	.50	-7.92	11.41	-32.79	16.95
	Equal variances not assumed			-.77	10.07	.46	-7.92	10.27	-30.79	14.95

Average full time faculty	Equal variances assumed	3.93	.10	-3.12	6	.02	-5.23	1.67	-9.32	-1.13
length of tenure	Equal variances not assumed			-3.12	5.13	.03	-5.23	1.67	-9.49	-.96
Average part time faculty	Equal variances assumed	7.40	.03	-.60	7	.57	-1.00	1.67	-4.94	2.94
length of tenure	Equal variances not assumed			-.54	3.56	.62	-1.00	1.85	-6.39	4.39
Average length of tenure	Equal variances assumed	1.11	.33	-1.14	6	.30	-2.85	2.51	-9.00	3.30
	Equal variances not assumed			-1.14	5.36	.31	-2.85	2.51	-9.18	3.48
internship	Equal variances assumed	385.00	.00	-3.92	22	.00	-.58	.15	-.89	-.28
	Equal variances not assumed			-3.92	11.00	.00	-.58	.15	-.91	-.26

Table A9

Split file by program type: Correlations

	ADN									
	NCLEX pass rate	Internship	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
NCLEX pass rate	1	$r=.73$ $p=.007$ $n=12$	$r=.76$ $p=.007$ $n=11$	$r=.69$ $p=.02$ $n=11$	$r=-.32$ $p=.34$ $n=11$	$r=-.10$ $p=.77$ $n=11$	$r=.10$ $p=.76$ $n=11$	$r=-.38$ $p=.24$ $n=11$	$r=-.31$ $p=.35$ $n=11$	-
Internship	-	1	$r=.99$ $p=.00$ $n=11$	$r=.92$ $p=.00$ $n=11$	$r=.20$ $p=.55$ $n=11$	$r=.43$ $p=.18$ $n=11$	$r=-.47$ $p=.14$ $n=11$	$r=-.14$ $p=.68$ $n=11$	$r=-.36$ $p=.28$ $n=11$	-
Internship clock hrs	$r=-.16$ $p=.63$ $n=12$	-	1	$r=.95$ $p=.00$ $n=11$	$r=.03$ $p=.93$ $n=10$	$r=.35$ $p=.32$ $n=10$	$r=-.43$ $p=.22$ $n=10$	$r=-.32$ $p=.37$ $n=10$	$r=-.34$ $p=.34$ $n=10$	-
Internship full/part time	$r=.38$ $p=.23$ $n=12$	-	$r=.32$ $p=.30$ $n=12$	1	$r=.13$ $p=.73$ $n=10$	$r=.40$ $p=.25$ $n=10$	$r=-.41$ $p=.24$ $n=10$	$r=-.19$ $p=.60$ $n=10$	$r=-.31$ $p=.38$ $n=10$	-
Clinical clock hrs (CCH)	$r=.26$ $p=.42$ $n=12$	-	$r=.55$ $p=.07$ $n=12$	$r=.13$ $p=.68$ $n=12$	1	$r=.93$ $p=.00$ $n=11$	$r=-.56$ $p=.07$ $n=11$	$r=.61$ $p=.05$ $n=11$	$r=.12$ $p=.72$ $n=11$	-

	NCLEX pass rate	Internship	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
CCH direct care	$r=.13$ $p=.78$ $n=7$	-	$r=-.46$ $p=.30$ $n=7$	$r=-.13$ $p=.78$ $n=7$	$r=-.71$ $p=.07$ $n=7$	1	$r=-.74$ $p=.01$ $n=11$	$r=.46$ $p=.16$ $n=11$	$r=-.16$ $p=.63$ $n=11$	-
CCH simulation	$r=.35$ $p=.45$ $n=7$	-	$r=.38$ $p=.40$ $n=7$	$r=.26$ $p=.57$ $n=7$	$r=-.24$ $p=.61$ $n=7$	$r=.62$ $p=.14$ $n=7$	1	$r=-.00$ $p=.99$ $n=11$	$r=.38$ $p=.25$ $n=11$	-
CCH observation	$r=-.34$ $p=.45$ $n=7$	-	$r=.36$ $p=.43$ $n=7$	$r=-.21$ $p=.66$ $n=7$	$r=.68$ $p=.09$ $n=7$	$r=-.78$ $p=.98$ $n=7$	$r=-.37$ $p=.42$ $n=7$	1	$r=.24$ $p=.48$ $n=11$	-
CCH other	$r=-.34$ $p=.44$ $n=7$	-	$r=.35$ $p=.44$ $n=7$	$r=.25$ $p=.59$ $n=7$	$r=-.25$ $p=.59$ $n=7$	$r=.01$ $p=.98$ $n=7$	$r=.50$ $p=.25$ $n=7$	$r=.20$ $p=.66$ $n=7$	1	-
NCLEX prep materials	$r=.65$ $p=.02$ $n=12$	-	$r=-.36$ $p=.25$ $n=12$	$r=-.14$ $p=.68$ $n=12$	$r=.09$ $p=.78$ $n=12$	-	-	-	-	1
% Faculty with associate degrees	-	-	-	-	-	-	-	-	-	-

	NCLEX pass rate	Internship	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
% Faculty with bachelor's degrees	$r = -.05$ $p = .92$ $n = 8$	-	$r = -.36$ $p = .48$ $n = 6$	$r = .48$ $p = .34$ $n = 6$	$r = -.30$ $p = .56$ $n = 6$	$r = .06$ $p = .93$ $n = 5$	$r = -.40$ $p = .51$ $n = 5$	$r = -.16$ $p = .80$ $n = 5$	$r = .35$ $p = .57$ $n = 5$	-
% Faculty with master's degrees	$r = -.52$ $p = .19$ $n = 8$	-	$r = -.67$ $p = .07$ $n = 8$	$r = -.25$ $p = .55$ $n = 8$	$r = -.68$ $p = .07$ $n = 8$	$r = .04$ $p = .95$ $n = 6$	$r = -.37$ $p = .48$ $n = 6$	$r = .02$ $p = .96$ $n = 6$	$r = .37$ $p = .47$ $n = 6$	-
% Faculty with doctorate	$r = .43$ $p = .29$ $n = 8$	-	$r = .61$ $p = .11$ $n = 8$	$r = .04$ $p = .93$ $n = 8$	$r = .59$ $p = .13$ $n = 8$	$r = -.02$ $p = .98$ $n = 6$	$r = .46$ $p = .36$ $n = 6$	$r = .05$ $p = .93$ $n = 6$	$r = -.23$ $p = .66$ $n = 6$	-
% Full time faculty	$r = -.412$ $p = .21$ $n = 11$	-	$r = .12$ $p = .73$ $n = 11$	$r = -.33$ $p = .32$ $n = 11$	$r = -.15$ $p = .67$ $n = 11$	$r = .06$ $p = .90$ $n = 7$	$r = -.11$ $p = .82$ $n = 7$	$r = -.06$ $p = .91$ $n = 7$	$r = .51$ $p = .25$ $n = 7$	$r = .21$ $p = .53$ $n = 11$
% Part time faculty	$r = .41$ $p = .21$ $n = 11$	-	$r = -.12$ $p = .73$ $n = 11$	$r = .33$ $p = .32$ $n = 11$	$r = .15$ $p = .67$ $n = 11$	$r = -.06$ $p = .90$ $n = 7$	$r = .11$ $p = .82$ $n = 7$	$r = .06$ $p = .91$ $n = 7$	$r = -.51$ $p = .25$ $n = 7$	$r = -.21$ $p = .53$ $n = 11$
% Adjuncts	$r = -.23$ $p = .59$ $n = 8$	-	$r = -.71$ $p = .05$ $n = 8$	$r = -.64$ $p = .09$ $n = 8$	$r = -.17$ $p = .69$ $n = 8$	$r = .25$ $p = .63$ $n = 6$	$r = -.19$ $p = .73$ $n = 6$	$r = .12$ $p = .82$ $n = 6$	$r = -.52$ $p = .29$ $n = 6$	-

	NCLEX pass rate	Internship	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
Average full time faculty length of tenure	$r = -.68$ $p = .32$ $n = 4$	-	$r = .12$ $p = .88$ $n = 4$	$r = -.73$ $p = .27$ $n = 4$	$r = -.30$ $p = .70$ $n = 4$	$r = -.35$ $p = .65$ $n = 4$	$r = -.11$ $p = .89$ $n = 4$	$r = .56$ $p = .44$ $n = 4$	$r = .25$ $p = .75$ $n = 4$	-
Average part time faculty length of tenure	$r = .92$ $p = .08$ $n = 4$	-	$r = .12$ $p = .88$ $n = 4$	$r = .36$ $p = .64$ $n = 4$	$r = .96$ $p = .04$ $n = 4$	$r = .94$ $p = .06$ $n = 4$	$r = .80$ $p = .20$ $n = 4$	$r = -.99$ $p = .01$ $n = 4$	$r = -.70$ $p = .30$ $n = 4$	-
Average length of tenure	$r = .04$ $p = .96$ $n = 4$	-	$r = .89$ $p = .11$ $n = 4$	$r = .52$ $p = .48$ $n = 4$	$r = -.36$ $p = .64$ $n = 4$	$r = -.55$ $p = .45$ $n = 4$	$r = .20$ $p = .80$ $n = 4$	$r = .17$ $p = .83$ $n = 4$	$r = .81$ $p = .13$ $n = 4$	-

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
NCLEX pass rate	$r = -.33$ $p = .35$ $n = 10$	$r = .21$ $p = .57$ $n = 10$	$r = -.54$ $p = .11$ $n = 10$	$r = .30$ $p = .43$ $n = 9$	$r = .32$ $p = .34$ $n = 11$	$r = -.32$ $p = .34$ $n = 11$	$r = -.49$ $p = .32$ $n = 6$	$r = .63$ $p = .37$ $n = 4$	$r = .24$ $p = .69$ $n = 5$	$r = -.13$ $p = .87$ $n = 4$
Internship	$r = -.40$ $p = .25$ $n = 10$	$r = .13$ $p = .73$ $n = 10$	$r = -.29$ $p = .42$ $n = 10$	$r = .16$ $p = .69$ $n = 9$	$r = .38$ $p = .25$ $n = 11$	$r = -.39$ $p = .25$ $n = 11$	$r = -.57$ $p = .24$ $n = 6$	$r = .69$ $p = .31$ $n = 4$	$r = .60$ $p = .28$ $n = 5$	$r = .26$ $p = .74$ $n = 4$
Internship clock hrs	$r = -.38$ $p = .32$ $n = 9$	$r = .13$ $p = .74$ $n = 9$	$r = -.48$ $p = .19$ $n = 9$	$r = .29$ $p = .48$ $n = 8$	$r = .34$ $p = .34$ $n = 10$	$r = -.34$ $p = .34$ $n = 10$	$r = -.21$ $p = .74$ $n = 5$	$r = .69$ $p = .31$ $n = 4$	$r = .60$ $p = .28$ $n = 5$	$r = .26$ $p = .74$ $n = 4$
Internship full/part time	$r = -.35$ $p = .36$ $n = 9$	$r = -.12$ $p = .76$ $n = 9$	$r = -.33$ $p = .39$ $n = 9$	$r = .43$ $p = .29$ $n = 8$	$r = .28$ $p = .44$ $n = 10$	$r = -.28$ $p = .44$ $n = 10$	$r = -.21$ $p = .74$ $n = 5$	$r = .69$ $p = .31$ $n = 4$	$r = .60$ $p = .28$ $n = 5$	$r = .26$ $p = .74$ $n = 4$
Clinical clock hrs (CCH)	$r = -.05$ $p = .89$ $n = 9$	$r = -.19$ $p = .63$ $n = 9$	$r = .49$ $p = .19$ $n = 9$	$r = -.26$ $p = .54$ $n = 8$	$r = .08$ $p = .83$ $n = 11$	$r = -.08$ $p = .83$ $n = 11$	$r = -.92$ $p = .03$ $n = 5$	$r = .72$ $p = .28$ $n = 4$	$r = .62$ $p = .27$ $n = 5$	$r = .86$ $p = .14$ $n = 4$
CCH direct care	$r = -.19$ $p = .63$ $n = 9$	$r = -.22$ $p = .57$ $n = 9$	$r = .43$ $p = .25$ $n = 9$	$r = -.17$ $p = .69$ $n = 8$	$r = .31$ $p = .35$ $n = 11$	$r = -.31$ $p = .35$ $n = 11$	$r = -.94$ $p = .02$ $n = 5$	$r = .80$ $p = .20$ $n = 4$	$r = .91$ $p = .03$ $n = 5$	$r = .93$ $p = .07$ $n = 4$

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
CCH simulation	$r=.50$ $p=.17$ $n=9$	$r=.28$ $p=.48$ $n=9$	$r= -.44$ $p=.24$ $n=9$	$r=.13$ $p=.76$ $n=8$	$r= -.34$ $p=.30$ $n=11$	$r=.34$ $p=.30$ $n=11$	$r=.65$ $p=.24$ $n=5$	$r= -.33$ $p=.67$ $n=4$	$r= -.82$ $p=.09$ $n=5$	$r= -.87$ $p=.13$ $n=4$
CCH observation	$r=.36$ $p=.34$ $n=9$	$r= -.04$ $p=.93$ $n=9$	$r=.60$ $p=.09$ $n=9$	$r= -.56$ $p=.15$ $n=8$	$r=.07$ $p=.83$ $n=11$	$r= -.07$ $p=.83$ $n=11$	$r= -.72$ $p=.17$ $n=5$	$r= -.04$ $p=.96$ $n=4$	$r= -.09$ $p=.89$ $n=5$	$r=.31$ $p=.69$ $n=4$
CCH other	-	-	-	-	$r= -.85$ $p=.00$ $n=11$	$r=.85$ $p=.00$ $n=11$	--	$r=.45$ $p=.55$ $n=4$	$r= -.33$ $p=.59$ $n=5$	-
NCLEX prep materials	-	-	-	-	-	-	-	-	-	-
% Faculty with associate degree	1	$r=.44$ $p=.28$ $n=8$	$r= -.33$ $p=.42$ $n=9$	$r= -.23$ $p=.62$ $n=8$	$r=.06$ $p=.91$ $n=7$	$r= -.06$ $p=.91$ $n=7$	$r=.08$ $p=.89$ $n=5$	$r= -.41$ $p=.73$ $n=3$	$r= -.44$ $p=.56$ $n=4$	$r= -.39$ $p=.61$ $n=4$
% Faculty with bachelor's degree	-	1	$r= -.50$ $p=.14$ $n=9$	$r= -.68$ $p=.09$ $n=8$	$r=.35$ $p=.36$ $n=9$	$r= -.35$ $p=.36$ $n=9$	$r=.13$ $p=.81$ $n=6$	$r= -.41$ $p=.73$ $n=3$	$r= -.09$ $p=.91$ $n=4$	$r=.12$ $p=.88$ $n=4$

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
% Faculty with master's degree	-	$r=.53$ $p=.29$ $n=9$	1	$r= -.69$ $p=.09$ $n=8$	$r=.40$ $p=.28$ $n=9$	$r= -.40$ $p=.28$ $n=9$	$r= -.24$ $p=.65$ $n=6$	$r= -.83$ $p=.37$ $n=3$	$r= -.29$ $p=.71$ $n=4$	$r= -.01$ $p=.99$ $n=4$
% Faculty with doctorate	-	$r= -.80$ $p=.06$ $n=9$	$r= -.91$ $p=.00$ $n=9$	1	$r= -.84$ $p=.04$ $n=6$	$r=.84$ $p=.04$ $n=6$	$r=.13$ $p=.87$ $n=4$	-	$r=.13$ $p=.92$ $n=3$	$r= -.25$ $p=.84$ $n=3$
% Full time faculty	-	$r=.21$ $p=.69$ $n=6$	$r=.15$ $p=.72$ $n=8$	$r= -.21$ $p=.62$ $n=8$	1	$r= -1.00$ $p=.00$ $n=11$	$r=.85$ $p=.07$ $n=5$	$r= -.64$ $p=.36$ $n=4$	$r=.19$ $p=.76$ $n=5$	$r= -.11$ $p=.89$ $n=4$
% Full time faculty	-	$r= -.21$ $p=.69$ $n=6$	$r= -.15$ $p=.72$ $n=8$	$r=.21$ $p=.62$ $n=8$	$r= -1.00$ $p=.00$ $n=11$	1	$r=.85$ $p=.07$ $n=5$	$r=.64$ $p=.36$ $n=4$	$r= -.19$ $p=.76$ $n=5$	$r=.11$ $p=.89$ $n=4$
% Adjuncts	-	$r= -.66$ $p=.23$ $n=5$	$r=.14$ $p=.79$ $n=6$	$r=.02$ $p=.97$ $n=6$	$r= -.47$ $p=.25$ $n=8$	$r=.47$ $p=.25$ $n=8$	1	$r= -1.00$ $p=.00$ $n=4$	$r= -.76$ $p=.45$ $n=3$	$r= -.76$ $p=.45$ $n=3$
Average full time faculty length of tenure	-	$r= -.72$ $p=.28$ $n=4$	$r=.19$ $p=.81$ $n=4$	$r=.22$ $p=.78$ $n=4$	$r=.69$ $p=.31$ $n=4$	$r= -.69$ $p=.31$ $n=4$	$r=.67$ $p=.53$ $n=3$	1	$r=.77$ $p=.24$ $n=4$	$r=.98$ $p=.13$ $n=3$

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
Average part time faculty length of tenure	-	$r = -.18$ $p = .82$ $n = 4$	$r = -.92$ $p = .08$ $n = 4$	$r = .69$ $p = .32$ $n = 4$	$r = -.97$ $p = .03$ $n = 4$	$r = .97$ $p = .03$ $n = 4$	$r = .08$ $p = .95$ $n = 3$	$r = -.56$ $p = .45$ $n = 4$	1	$r = .94$ $p = .06$ $n = 4$
Average length of tenure	-	$r = .01$ $p = .99$ $n = 4$	$r = .17$ $p = .83$ $n = 4$	$r = -.12$ $p = .89$ $n = 4$	$r = .17$ $p = .83$ $n = 4$	$r = -.17$ $p = .83$ $n = 4$	$r = -.99$ $p = .09$ $n = 3$	$r = .20$ $p = .80$ $n = 4$	$r = -.31$ $p = .70$ $n = 4$	1

Table A10

Split file by presence of internship: descriptive statistics

Programs with no internship

	<i>n</i>	Minimum	Maximum	Mean	SD
Program	7	1.00	1.00	1.00	.00
NCLEX pass rate	7	69.70	90.00	80.51	6.39
Internship clock hours	7	.00	.00	.00	.00
Internship full/ part time	7	.00	.00	.00	.00
Clinical clock hours (CCH)	6	210.00	704.00	561.50	184.20
CCH direct care	6	177.00	614.00	422.17	143.79
CCH simulation	6	.00	50.00	32.83	20.88
CCH observation	6	.00	100.00	59.67	45.61
CCH other	6	.00	100.00	20.83	40.05
NCLEX prep materials	7	1.00	1.00	1.00	.000

	<i>n</i>	Minimum	Maximum	Mean	SD
% Faculty with associate degree	4	.00	10.00	3.00	4.76
% Faculty with bachelor's degree	5	.00	40.00	25.60	15.31
% Faculty with master's degree	5	50.00	75.00	66.80	10.23
% Faculty with doctorate	3	.00	25.00	8.33	14.43
% Full time faculty	6	40.00	100.00	76.67	21.37
% Part time faculty	6	.00	60.00	23.33	21.37
% Adjuncts	4	14.00	35.00	21.00	9.70
Average full time faculty length of tenure	3	4.40	9.00	6.13	2.50
Average part time faculty length of tenure	4	1.50	4.00	2.38	1.11
Average length of tenure	3	2.20	11.40	5.87	4.88

Table A11

Split file by presence of internship: Descriptive statistics

Programs with an internship

	<i>n</i>	Minimum	Maximum	Mean	SD
Program	17	1.00	2.00	1.71	.47
NCLEX pass rate	17	77.53	98.00	89.01	5.13
Internship clock hours	16	112.00	320.00	185.88	66.18
Internship full/ part time	16	1.00	2.00	1.75	.45
Clinical clock hours (CCH)	17	300.00	952.00	573.03	151.20
CCH direct care	12	20.00	881.00	504.46	246.36
CCH simulation	12	.00	220.00	47.50	76.70
CCH observation	12	.00	111.00	36.83	37.48
CCH other	12	.00	42.00	5.67	13.67
NCLEX prep materials	17	.00	1.00	.94	.24

	<i>n</i>	Minimum	Maximum	Mean	SD
% Faculty with associate degree	10	.00	.00	.00	.00
% Faculty with bachelor's degree	11	.00	70.00	17.36	23.25
% Faculty with master's degree	13	30.00	86.00	64.23	19.46
% Faculty with doctorate	12	.00	64.00	22.83	23.56
% Full time faculty	16	25.00	100.00	80.25	22.06
% Part time faculty	16	.00	75.00	19.75	22.06
% Adjuncts	10	.00	61.00	21.50	24.25
Average full time faculty length of tenure	5	10.00	14.30	11.86	1.88
Average part time faculty length of tenure	5	.00	8.00	3.76	3.06
Average length of tenure	5	7.00	13.00	9.00	2.55

Table A12

t test: presence of an internship

		Levene's Test for Equality of Variances		<i>t</i> -test for Equality of Means						
		<i>F</i>	Sig.	<i>t</i>	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower		Upper
program	Equal variances assumed	31.43	.00	-3.92	22	.00	-.71	.18	-1.08	-.33
	Equal variances not assumed			-6.20	16.00	.00	-.71	.11	-.95	-.46
NCLEX pass rate	Equal variances assumed	.30	.59	-3.44	22	.00	-8.50	2.47	-13.63	-3.38
	Equal variances not assumed			-3.13	9.36	.01	-8.50	2.72	-14.61	-2.39
Internship clock hours	Equal variances assumed	21.36	.00	-7.33	21	.00	-185.88	25.35	-238.59	-133.16
	Equal variances not assumed			-11.23	15.00	.00	-185.88	16.55	-221.14	-150.61
Internship full/part time	Equal variances assumed	19.17	.00	-10.22	21	.00	-1.75	.17	-2.11	-1.39
	Equal variances not assumed			-15.62	15.00	.00	-1.75	.11	-1.99	-1.51

Clinical clock hours (CCH)	Equal variances assumed	1.55	.23	-.59	21	.56	-368.53	627.70	-167.80	93.74
	Equal variances not assumed			-1.00	16.00	.33	-368.53	366.49	-114.57	40.51
CCH direct care	Equal variances assumed	2.05	.17	-.75	16	.46	-82.29	109.76	-314.97	150.39
	Equal variances not assumed			-.89	15.38	.39	-82.29	92.22	-278.42	113.84
CCH simulation	Equal variances assumed	3.01	.10	-.45	16	.66	-14.67	32.33	-83.21	53.87
	Equal variances not assumed			-.62	13.84	.55	-14.67	23.73	-65.61	36.28
CCH observation	Equal variances assumed	.55	.47	1.14	16	.27	22.83	20.10	-19.77	65.44
	Equal variances not assumed			1.06	8.50	.32	22.83	21.54	-26.32	71.99
CCH other	Equal variances assumed	4.92	.04	1.20	16	.24	15.17	12.55	-11.43	41.77
	Equal variances not assumed			.90	5.59	.40	15.17	16.82	-26.73	57.07
NCLEX prep materials	Equal variances assumed	1.83	.19	.63	22	.53	.06	.09	-.13	.25
	Equal variances not assumed			1.00	16.00	.33	.06	.06	-.07	.18
% Faculty with associate's	Equal variances assumed	22.11	.001	2.13	12	.06	3.00	1.41	-.07	6.07

degrees	Equal variances not assumed			1.26	3.00	.30	3.00	2.38	-4.58	10.58
% Faculty with bachelor's degrees	Equal variances assumed	.79	.39	.72	14	.49	8.24	11.48	-16.38	32.86
	Equal variances not assumed			.84	11.66	.42	8.24	9.80	-13.18	29.65
% Faculty with master's degrees	Equal variances assumed	5.78	.03	.28	16	.79	2.57	9.27	-17.08	22.22
	Equal variances not assumed			.36	13.90	.72	2.57	7.08	-12.62	17.76
% Faculty with doctorate	Equal variances assumed	1.16	.30	-1.00	13	.33	-14.50	14.46	-45.74	16.74
	Equal variances not assumed			-1.35	5.14	.23	-14.50	10.76	-41.93	12.93
% Full time faculty	Equal variances assumed	.04	.84	-.34	20	.74	-3.58	10.48	-25.44	18.28
	Equal variances not assumed			-.35	9.30	.74	-3.58	10.32	-26.82	19.65
% Part time faculty	Equal variances assumed	.04	.84	.34	20	.74	3.58	10.48	-18.28	25.44
	Equal variances not assumed			.35	9.30	.74	3.58	10.32	-19.65	26.82
% Adjuncts	Equal variances assumed	4.02	.07	-0.04	12	.97	-.50	12.75	-28.28	27.28
	Equal variances not assumed			-.06	11.92	1.00	-.50	9.07	-20.28	19.28

Average full time faculty length of tenure	Equal variances assumed	.43	.54	-3.72	6	.01	-5.73	1.54	-9.50	-1.96
	Equal variances not assumed			-3.43	3.40	.03	-5.73	1.67	-10.71	-.74
Average part time faculty length of tenure	Equal variances assumed	2.73	.14	-.85	7	.42	-1.39	1.63	-5.24	2.47
	Equal variances not assumed			-.94	5.23	.39	-1.39	1.48	-5.14	2.37
Average length of tenure	Equal variances assumed	2.52	.16	-1.23	6	.27	-3.13	2.56	-9.39	3.12
	Equal variances not assumed			-1.03	2.67	.39	-3.13	3.04	-13.50	7.23

Table A13

Split file by presence of internship: Correlations

+Internship

	Program	NCLEX pass rate	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
Program	1	$r = -.39$ $p = .12$ $n = 17$	$r = .49$ $p = .05$ $n = 16$	$r = .33$ $p = .21$ $n = 16$	$r = .16$ $p = .54$ $n = 17$	$r = -.27$ $p = .39$ $n = 12$	$r = .38$ $p = .22$ $n = 12$	$r = -.24$ $p = .46$ $n = 12$	$r = .37$ $p = .24$ $n = 12$	$r = -.16$ $p = .54$ $n = 17$
NCLEX pass rate	-	1	$r = -.37$ $p = .16$ $n = 16$	$r = -.001$ $p = 1.00$ $n = 16$	$r = .14$ $p = .59$ $n = 17$	$r = -.12$ $p = .71$ $n = 12$	$r = .12$ $p = .71$ $n = 12$	$r = -.42$ $p = .18$ $n = 12$	$r = -.38$ $p = .23$ $n = 12$	$r = .58$ $p = .02$ $n = 17$
Internship clock hrs	-	-	1	$r = .41$ $p = .12$ $n = 16$	$r = .54$ $p = .03$ $n = 16$	$r = -.36$ $p = .28$ $n = 11$	$r = .48$ $p = .14$ $n = 11$	$r = .14$ $p = .67$ $n = 11$	$r = .47$ $p = .14$ $n = 11$	$r = -.38$ $p = .15$ $n = 16$
Internship full/part time	-	-	-	1	$r = .15$ $p = .58$ $n = 16$	$r = .02$ $p = .95$ $n = 11$	$r = .26$ $p = .44$ $n = 11$	$r = .19$ $p = .58$ $n = 11$	$r = .28$ $p = .41$ $n = 11$	$r = -.15$ $p = .58$ $n = 16$
Clinical clock hrs (CCH)	-	$r = -.48$ $p = .34$ $n = 6$	-	-	1	$r = -.62$ $p = .03$ $n = 12$	$r = -.11$ $p = .73$ $n = 12$	$r = .23$ $p = .48$ $n = 12$	$r = -.13$ $p = .69$ $n = 12$	$r = .06$ $p = .81$ $n = 17$

	Program	NCLEX pass rate	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
CCH direct care	-	$r = -.46$ $p = .35$ $n = 6$	-	-	$r = .91$ $p = .01$ $n = 6$	1	$r = .29$ $p = .37$ $n = 12$	$r = .11$ $p = .74$ $n = 12$	$r = -.09$ $p = .78$ $n = 12$	-
CCH simulation	-	$r = .72$ $p = .11$ $n = 6$	-	-	$r = -.30$ $p = .57$ $n = 6$	$r = -.52$ $p = .29$ $n = 6$	1	$r = -.30$ $p = .35$ $n = 12$	$r = .57$ $p = .06$ $n = 12$	-
CCH observatio n	-	$r = -.07$ $p = .90$ $n = 6$	-	-	$r = .51$ $p = .30$ $n = 6$	$r = .46$ $p = .35$ $n = 6$	$r = .26$ $p = .61$ $n = 6$	1	$r = -.00$ $p = .99$ $n = 12$	-
CCH other	-	$r = -.10$ $p = .86$ $n = 6$	-	-	$r = .33$ $p = .52$ $n = 6$	$r = -.02$ $p = .97$ $n = 6$	$r = .31$ $p = .55$ $n = 6$	$r = .30$ $p = .56$ $n = 6$	1	-
NCLEX prep materials	-	-	-	-	-	-	-	-	-	1
% Faculty with associate degree	-	$r = .18$ $p = .82$ $n = 13$	-	-	$r = .21$ $p = .86$ $n = 13$	$r = .01$ $p = .99$ $n = 13$	$r = .76$ $p = .45$ $n = 13$	$r = .58$ $p = .62$ $n = 13$	-	-

Program	NCLEX pass rate	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
% Faculty with bachelor's degree	- $r=.29$ $p=.19$ $n=13$	-	-	$r=.78$ $p=.23$ $n=13$	$r=.64$ $p=.36$ $n=12$	$r=.31$ $p=.69$ $n=12$	$r=.89$ $p=.11$ $n=12$	-	-
% Faculty with doctorate	- $r=.31$ $p=.69$ $n=13$	-	-	-	-	-	-	-	-
% Full time faculty	- $r=.36$ $p=.48$ $n=6$	-	-	$r=-.25$ $p=.63$ $n=6$	$r=.08$ $p=.88$ $n=6$	$r=-.06$ $p=.92$ $n=6$	$r=-.06$ $p=.92$ $n=6$	$r=-.93$ $p=.01$ $n=6$	-
% Part time faculty	- $r=-.36$ $p=.48$ $n=6$	-	-	$r=.25$ $p=.63$ $n=6$	$r=-.08$ $p=.88$ $n=6$	$r=.06$ $p=.92$ $n=6$	$r=.06$ $p=.92$ $n=6$	$r=.93$ $p=.01$ $n=6$	-
% Adjuncts	- $r=-.75$ $p=.26$ $n=4$	-	-	$r=-.998$ $p=.10$ $n=3$	$r=-.94$ $p=.23$ $n=3$	$r=.33$ $p=.78$ $n=3$	$r=-.97$ $p=.16$ $n=3$	-	-
Average full time faculty length of tenure	- $r=-.35$ $p=.78$ $n=3$	-	-	$r=.76$ $p=.45$ $n=3$	$r=.60$ $p=.59$ $n=3$	$r=.60$ $p=.59$ $n=3$	$r=.60$ $p=.59$ $n=3$	$r=.99$ $p=.08$ $n=3$	-

	Program	NCLEX pass rate	Internship clock hrs	Internship full/part time	Clinical clock hrs (CCH)	CCH direct care	CCH simulation	CCH observation	CCH other	NCLEX prep materials
Average part time faculty length of tenure	-	$r = -.98$ $p = .02$ $n = 4$	-	-	$r = .69$ $p = .31$ $n = 4$	$r = .92$ $p = .09$ $n = 4$	$r = -.85$ $p = .15$ $n = 4$	$r = .44$ $p = .56$ $n = 4$	$r = -.23$ $p = .78$ $n = 4$	-
Average length of tenure	-	$r = -.98$ $p = .13$ $n = 3$	-	-	$r = .85$ $p = .35$ $n = 3$	$r = .94$ $p = .22$ $n = 3$	$r = -.87$ $p = .34$ $n = 3$	$r = .58$ $p = .61$ $n = 3$	-	-

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
Program	-	$r = -.55$ $p = .08$ $n = 13$	$r = .33$ $p = .27$ $n = 13$	$r = .21$ $p = .50$ $n = 13$	$r = -.30$ $p = .26$ $n = 16$	$r = .30$ $p = .26$ $n = 16$	$r = .28$ $p = .43$ $n = 10$	$r = .55$ $p = .34$ $n = 5$	$r = -.04$ $p = .94$ $n = 5$	$r = .22$ $p = .73$ $n = 5$
NCLEX pass rate	-	$r = .45$ $p = .17$ $n = 13$	$r = -.74$ $p = .00$ $n = 13$	$r = .46$ $p = .13$ $n = 13$	$r = -.25$ $p = .34$ $n = 16$	$r = .25$ $p = .34$ $n = 16$	$r = -.16$ $p = .67$ $n = 10$	$r = -.78$ $p = .12$ $n = 5$	$r = .77$ $p = .13$ $n = 5$	$r = -.10$ $p = .88$ $n = 5$
Internship clock hrs	-	$r = -.52$ $p = .12$ $n = 10$	$r = -.03$ $p = .92$ $n = 12$	$r = .45$ $p = .17$ $n = 11$	$r = -.06$ $p = .83$ $n = 15$	$r = .06$ $p = .83$ $n = 15$	$r = -.53$ $p = .15$ $n = 9$	$r = .28$ $p = .65$ $n = 5$	$r = .10$ $p = .87$ $n = 5$	$r = .89$ $p = .04$ $n = 5$
Internship full/part time	-	$r = -.43$ $p = .21$ $n = 10$	$r = .19$ $p = .56$ $n = 12$	$r = .23$ $p = .51$ $n = 11$	$r = -.35$ $p = .20$ $n = 15$	$r = .35$ $p = .20$ $n = 15$	$r = -.49$ $p = .18$ $n = 9$	$r = -.72$ $p = .17$ $n = 5$	$r = .36$ $p = .56$ $n = 5$	$r = .44$ $p = .46$ $n = 5$
Clinical clock hrs (CCH)	-	$r = -.25$ $p = .46$ $n = 11$	$r = -.30$ $p = .33$ $n = 13$	$r = .43$ $p = .16$ $n = 12$	$r = -.19$ $p = .50$ $n = 16$	$r = .19$ $p = .49$ $n = 16$	$r = -.11$ $p = .77$ $n = 10$	$r = -.20$ $p = .76$ $n = 5$	$r = .95$ $p = .01$ $n = 5$	$r = -.33$ $p = .59$ $n = 5$

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
CCH direct care	-	$r = -.13$ $p = .72$ $n = 10$	$r = .31$ $p = .35$ $n = 11$	$r = -.22$ $p = .55$ $n = 10$	$r = .17$ $p = .60$ $n = 2$	$r = -.17$ $p = .60$ $n = 12$	$r = .02$ $p = .96$ $n = 8$	$r = -.32$ $p = .61$ $n = 5$	$r = .94$ $p = .02$ $n = 5$	$r = -.54$ $p = .34$ $n = 5$
CCH simulation	-	$r = -.22$ $p = .55$ $n = 10$	$r = -.15$ $p = .67$ $n = 11$	$r = .41$ $p = .24$ $n = 10$	$r = -.15$ $p = .64$ $n = 12$	$r = .15$ $p = .64$ $n = 12$	$r = -.09$ $p = .83$ $n = 8$	$r = .04$ $p = .95$ $n = 5$	$r = .77$ $p = .13$ $n = 5$	$r = .24$ $p = .70$ $n = 5$
CCH observation	-	$r = -.19$ $p = .61$ $n = 10$	$r = .63$ $p = .04$ $n = 11$	$r = -.43$ $p = .21$ $n = 10$	$r = .24$ $p = .46$ $n = 12$	$r = -.24$ $p = .46$ $n = 12$	$r = -.18$ $p = .68$ $p = 8$	$r = .70$ $p = .19$ $n = 5$	$r = -.85$ $p = .07$ $n = 5$	$r = .26$ $p = .67$ $n = 5$
CCH other	-	$r = -.08$ $p = .84$ $n = 10$	$r = .30$ $p = .38$ $n = 11$	$r = -.05$ $p = .90$ $n = 10$	$r = .38$ $p = .30$ $n = 12$	$r = -.38$ $p = .23$ $n = 12$	$r = -.42$ $p = .30$ $n = 8$	$r = .34$ $p = .58$ $n = 5$	$r = -.69$ $p = .20$ $n = 5$	$r = .88$ $p = .05$ $n = 5$
NCLEX prep materials	-	-	-	-	$r = .25$ $p = .36$ $n = 16$	$r = -.25$ $p = .36$ $n = 16$	-	-	-	-

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
% Faculty with associate degree	1	-	-	-	-	-	-	-	-	-
% Faculty with bachelor's degree	$r=.72$ $p=.28$ $n=4$	1	$r= -.34$ $p=.31$ $n=11$	$r= -.70$ $p=.02$ $n=10$	$r=.29$ $p=.40$ $n=11$	$r= -.29$ $p=.40$ $n=11$	$r= -.29$ $p=.53$ $n=7$	$r= -.34$ $p=.58$ $n=5$	$r= -.19$ $p=.77$ $n=5$	$r=.09$ $p=.88$ $n=5$
% Faculty with master's degree	$r= -1.00$ $p=.00$ $n=4$	$r= -.73$ $p=.16$ $n=5$	1	$r= -.76$ $p=.00$ $n=12$	$r=.15$ $p=.63$ $n=13$	$r= -.15$ $p=.63$ $n=13$	$r= -.01$ $p=.98$ $n=8$	$r=.52$ $p=.36$ $n=5$	$r= -.62$ $p=.27$ $n=5$	$r=.28$ $p=.65$ $n=5$
% Faculty with doctorate	$r= -.50$ $p=.67$ $n=3$	$r= -1.00$ $p=.10$ $n=3$	$r=.50$ $p=.67$ $n=3$	1	$r= -.40$ $p=.20$ $n=12$	$r=.40$ $p=.20$ $n=12$	$r=.22$ $p=.63$ $n=7$	$r= -.26$ $p=.68$ $n=5$	$r=.52$ $p=.37$ $n=5$	$r= -.23$ $p=.71$ $n=5$
% Full time faculty	$r=.87$ $p=.33$ $n=3$	$r=.73$ $p=.27$ $n=4$	$r= -.44$ $p=.56$ $n=4$	-	1	$r= -1$ $p=0.0$ $n=16$	$r= -.48$ $p=.16$ $n=10$	$r=.76$ $p=.14$ $n=5$	$r= -.89$ $p=.04$ $n=5$	$r=.25$ $p=.69$ $n=5$

	% Faculty with associate degree	% Faculty with bachelor's degree	% Faculty with master's degree	% Faculty with doctorate	% Full time faculty	% Part time faculty	% Adjuncts	Average full time faculty length of tenure	Average part time faculty length of tenure	Average length of tenure
% Part time faculty	$r = -.87$ $p = .33$ $n = 3$	$r = -.73$ $p = .27$ $n = 4$	$r = .44$ $p = .56$ $n = 4$	-	-	1	$r = .48$ $p = .16$ $n = 10$	$r = -.76$ $p = .14$ $n = 5$	$r = .89$ $p = .04$ $n = 5$	$r = -.25$ $p = .69$ $n = 5$
% Adjuncts	$r = -.23$ $p = .77$ $n = 4$	$r = .01$ $p = .99$ $n = 4$	$r = .15$ $p = .85$ $n = 4$	$r = -.24$ $p = .85$ $n = 3$	$r = -.78$ $p = .43$ $n = 3$	$r = .78$ $p = .43$ $n = 3$	1	$r = .67$ $p = .53$ $n = 3$	$r = .08$ $p = .95$ $n = 3$	$r = -.99$ $p = .09$ $n = 3$
Average full time faculty length of tenure	-	-	-	-	$r = -.95$ $p = .20$ $n = 3$	$r = .95$ $p = .20$ $n = 3$	-	1	$r = -.49$ $p = .41$ $n = 5$	$r = .28$ $p = .65$ $n = 5$
Average part time faculty length of tenure	$r = -.33$ $p = .79$ $n = 3$	$r = .33$ $p = .79$ $n = 3$	$r = .33$ $p = .79$ $n = 3$	-	$r = .26$ $p = .75$ $n = 4$	$r = -.26$ $p = .75$ $n = 4$	$r = -.76$ $p = .45$ $n = 3$	$r = .60$ $p = .59$ $n = 3$	1	$r = -.31$ $p = .62$ $n = 5$
Average length of tenure	$r = -.33$ $p = .79$ $n = 3$	$r = .32$ $p = .79$ $n = 3$	$r = .33$ $p = .79$ $n = 3$	-	$r = .19$ $p = .88$ $n = 3$	$r = -.19$ $p = .88$ $n = 3$	$r = -.76$ $p = .45$ $n = 3$	-	$r = 1.0$ $p = .00$ $n = 3$	1

Appendix A14

Questionnaire

Dear nurse educator,

At the University of Kansas, we are conducting research on some characteristics of nursing programs in Kansas and Missouri. On 8/25/11 we sent you a survey to obtain some information about your nursing program, but we have not heard back from you. We appreciate your input very much! I included the survey questions in this email. Please take a few minutes to provide the information you have available about your bachelor's or associate degree nursing program. If you prefer for us to send you a hard copy of the survey or to conduct a phone interview, please let us know. Please complete the survey within 10 days. If you have any questions, you can reach me at tlongabach@ku.edu, or by phone at 785-979-8436. Again, thank you very much for providing this information!

Tanya Longabach, RN, MSN
University of Kansas
School of Education
621 JRP Hall
Lawrence, KS 66045

1. Does your nursing program have an internship or a capstone in the last semester of nursing school?

_____ yes

_____ no

2. If you answered "yes" to question 2, how many clock hours does your internship or capstone consist of?

3. Is the internship a full time or part time experience?

4. What is the number of classroom nursing credit hours (not prerequisites to enter the nursing program) that the students must complete prior to graduation?

5. What is the number of clock clinical hours, excluding the capstone, that students must complete prior to graduation?

6. Of the total number of clinical hours the students had to complete prior to graduation from question 5, how many hours was completed by performing:

(Note: The sum should add to the total in question 5).

_____ direct patient care

_____ simulation

_____ observation

_____ other

_____ I do not have this information available

7. Does your nursing program use an NCLEX diagnostic and/or preparatory course?

8. If so, which one?

9. What was the percentage of 2010 graduates for each of the following age categories?

_____ % 18-22 years old

_____ % 23-27 years old

_____ % 28-32 years old

_____ % 33 years old and older

_____ I do not have this information available

10. What was the percentage of males and females in the 2010 graduating class?

_____ % males

_____ % females

_____ I do not have this information available

11. What was the percentage of 2010 graduates for each of the following categories of race/ ethnicity?

_____ % African American

_____ % Asian

_____ % Caucasian

_____ % Hispanic

_____ % Native American

_____ % Other

_____ I do not have this information available

12. What was the average nursing school GPA (classes taken as part of the nursing program only) of 2010 graduates on a scale from 0.0 to 4.0?

13. What percentage of the faculty employed by your program in 2010 held associate, bachelor's, master's, and doctoral degrees?

_____ % Associate degree

_____ % Bachelor's degree

_____ % Master's degree

_____ % Doctoral degree

_____ I do not have this information available

14. What percentage of your faculty is employed full time (40 hours per week) and part time (less than 40 hours per week)?

_____ % full time

_____ % part time

_____ I don't have this information available

15. If you define full time employment as different from 40 hrs/ week, please explain here.

16. What percentage of your faculty are adjuncts, lecturers, or courtesy professors?

_____ I do not have this information available

17. What is the average length of tenure in years for full time and part time faculty in your program?

_____ full time faculty length of tenure

_____ part time faculty length of tenure

_____ overall average length of tenure

_____ I do not have this information available