

The Relationship Between Pre-Nursing Science Course Performance and the Development of Clinical Judgment, Nursing School Performance, and NCLEX-RN® First Attempt



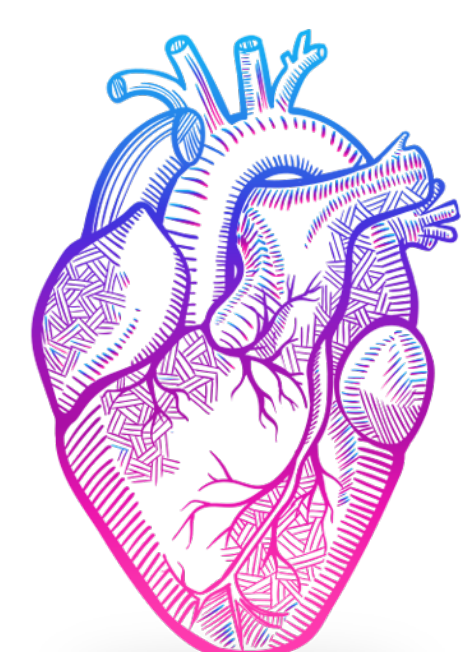
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Introduction

- In the quest for nursing schools to set appropriate admissions standards, which qualities are determinant of future success?
- Critical thinking and reasoning, math skills, professional language skills, and proficiency in the biosciences including chemistry, biology, and anatomy and physiology. (Zamanzadeh et al., 2020)
- Critical thinking is essential to the development of clinical judgment. (Cannon & Boswell, 2016)
- The development of clinical judgment in nursing is contingent upon a solid basis of understanding human physical structures and biological processes. (Kaddoura & Van Dyke, 2017)
- A foundation of subjects such as anatomy and physiology, pathophysiology, chemistry, and microbiology (Krippaehne, 2021), is necessary to the development of understanding in undergraduate nursing school (Brown et al., 2016) and to develop the clinical judgment skills needed for nursing practice.
- Prerequisite courses completed prior to entering study for a specific discipline provide the basis for understanding which will be built upon in future courses. (Baard and Watts, 2009)
- A search of 25 colleges of nursing showed that anatomy and physiology I & II, biology, chemistry, and pathophysiology were the sciences most often required as pre-nursing science prerequisites.
 - Required prerequisite science course grades ranged from 2.0 to 3.2 on a 4.0 scale.
 - Only 8 colleges mentioned course repetitions: either no repetitions allowed, or limited repetitions allowed.
- Schools of nursing continue to have varying attrition and first attempt pass rates but desire a greater measures of success for their students and to support the bottom line of the university. (Doggrell & Schaffer, 2016; Tennessee Department of Health, 2020a; Tennessee Department of Health, 2020b)
- An NCLEX-RN® pass rate of at least 80% is required by both ACEN and CCNE for schools of nursing to maintain accreditation (Spector et al., 2018).
- NLN CNEA requires an 80% NCLEX-RN® pass rate over a period of three years.
- What other factors may contribute to a student's ability to grasp the content in nursing school and graduate successfully?



Statement of the Problem



No set of success determining factors have been identified that adequately predict success in nursing school, including the first attempt at the NCLEX-RN®, pre-nursing science course repetitions, the development of clinical judgment skills, and successful completion of nursing school.

Hypotheses

- H₀₁ There is no statistically significant relationship between course repetition in pre-nursing science and success in nursing school in BSN students.
- H₀₂ There is no statistically significant relationship between course repetition in pre-nursing science and success in nursing school in BSNA students.
- H₀₃ There is no statistically significant relationship between course repetition in pre-nursing science and success on the first attempt at NCLEX-RN® in BSN students.
- H₀₄ There is no statistically significant relationship between course repetition in pre-nursing science and success on the first attempt at NCLEX-RN® in BSNA students.
- H₀₅ There is no statistically significant difference between course repetition in pre-nursing science and clinical judgment measured at the beginning of nursing school in BSN students.
- H₀₆ There is no statistically significant difference between course repetition in pre-nursing science and clinical judgment measured at the beginning of nursing school in BSNA students.
- H₀₇ There is no statistically significant difference between course repetition in pre-nursing science and clinical judgment measured at completion of nursing school in BSN students.
- H₀₈ There is no statistically significant difference between course repetition in pre-nursing science and clinical judgment measured at the completion of nursing school in BSNA students.



Methodology

- Quantitative, retrospective, comparative, and correlational
- Purposive sample including all eligible participants
- Population
 - BSN students – traditional undergraduate
 - BSNA students - students have a previous degree and attend nursing school for 15 months to complete RN requirements
 - Began nursing curriculum in the Fall semesters of 2016, 2017, 2018 and ended nursing school by graduation, failure, withdrawal or other before May 31, 2020.



Purpose



The purpose of this study was to examine the relationship between the repetition of pre-nursing science courses, clinical judgment, nursing school performance, and first attempt at NCLEX-RN® in BSN and BSNA students.

References

References available on request from lktaylor@uu.edu

Results



Statistically Significant Results

	Cohort	Dependent Variable	p value
H ₀₁	BSN	Success in Nursing School	p = .027
H ₀₂	BSNA	Success in Nursing School	p = .032
H ₀₃	BSN	NCLEX-RN® first attempt	p < .001
H ₀₇	BSN	Ending Clinical Judgment Score	p = .002

Not Statistically Significant Results

	Cohort	Dependent Variable	p value
H ₀₄	BSNA	NCLEX-RN® first attempt	p = .817
H ₀₅	BSN	Beginning Clinical Judgment Score	p = .121
H ₀₆	BSNA	Beginning Clinical Judgment Score	p = .965
H ₀₈	BSNA	Ending Clinical Judgment Score	Could Not Test

Conclusions

- This research adds further clarity to the body of research surrounding consideration for nursing school admissions criteria.
- Pre-nursing science course performance has a statistically significant relationship when correlated with nursing school performance for both BSN and BSNA students, NCLEX-RN® first attempt in BSN students only and ending clinical judgment scores in BSN students only.
- In hypotheses one through four, six and seven, some of the cell population sizes were minimal. In the eighth hypothesis, the cell sizes were too small to accomplish statistical analysis. So, the reliability of the results should be closely examined for reliability.
- In hypotheses five, BSN students, and six, BSNA students, the null failed to be rejected. So, neither relationship was thought to be statistically significant.
- Kolb's (2015) theory demonstrates that learning tends to occur layer by layer, and that students at the beginning of the nursing program may not have obtained enough knowledge and understanding to have begun the development of clinical judgment. It then follows that students at the end of the program should have digested enough information to have formed basic clinical judgment. Hypothesis seven demonstrates this assertion.
- This work demonstrates that pre-nursing science course performance has a statistically significant relationship to three of the most widely accepted predictors of success for the novice nurse: success in nursing school, development of clinical judgment, and success at the first attempt at NCLEX-RN®.
- Nursing educators are encouraged to re-evaluate their admissions standards related to pre-nursing science course requirements and adjust accordingly.

