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Predictors of Family Nurse Practitioner Student Success on National Certification Exams

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Purpose:

The purpose of this study is to add to the body of knowledge regarding graduate nursing student variables that may predict success on the Family Nurse Practitioner Board Certification Exam.

Methods:

A quantitative correlational study was conducted using a convenience sample collected from 40 students who graduated from one face-to-face family nurse practitioner program in Texas between 2016-2018. Prior to starting the program, all participants completed a survey including current age, years of nursing experience, and were administered the Health Sciences Reasoning Test (HSRT) that examines high stakes reasoning and decision-making skills. During the graduate program, grades in 3 core nurse practitioner specific courses (Pathophysiology, Pharmacology, Advanced Health Assessment) were tracked and final cumulative grade point average (GPA) at time of graduation was recorded. First-time passing rates on the national board certification exams upon graduation were tracked as measures of success.

Binary logistic regression was performed using the Statistical Package for Social Sciences (SPSS) software to determine the importance of each predictor variable in relation to the desired outcome of students achieving a passing score on the national board examinations with their first attempt. The significance level was set at $p < .05$.

The original model contained five independent variables including age of student, years of experience as a registered nurse, cumulative score on the HSRT, cumulative grade in the three core advanced practice nursing courses (Pathophysiology, Pharmacology, and Physical Assessment) and cumulative GPA at time of graduation. The final model was reduced to four independent variables due to multicollinearity noted between cumulative grade in the core advanced practice courses and cumulative GPA at time of graduation, thus the variable of cumulative grade in the core advanced practice nursing courses was removed. The Omnibus Tests of Model Coefficients and Hosmer-Lemeshow Goodness of fit test was initially performed with results indicating support for the logistic regression model.

Results:

As a whole, the model explained between 33.1% and 52.3% of the variance in exam passing rates and was able to correctly classify 80% of cases. Using the four independent variables, the model had a positive predictive value of 85.29% and a negative predictive value of 50%. As shown in Table 1, only one of the four independent variables made a statistically significant contribution to the model and the strongest predictor of passing the national board certification exam was cumulative GPA at time of graduation.

Table 1

Binary Logistic Regression Predicting First-time Pass Rates on the National Board Exam

95% C.I. for Exp (B)

Variable	B	S.E.	Wald	df	Sig.	Exp (B)	Lower	Upper
Age	.067	.096	.484	1	.487	1.069	.886	1.291
RN EXP	-.373	.259	2.080	1	.149	.689	.415	1.143
HSRT Score	.088	.221	.159	1	.690	1.092	.708	1.685
Grad GPA	9.326	3.789	6.058	1	.014	11226.396	6.684	18854716.92
Constant	-34.327	15.095	5.171	1	.023	.000		

Conclusion:

Student age, years of nursing experience, and critical thinking skills at the time of entry into the family nurse practitioner program had no significant impact on predicting their overall ability to pass the national board certification exam on the first attempt. The most significant predictor of success on the national board certification exam was student academic performance during their enrollment in the family nurse practitioner program. Existing critical thinking skills at the start of the program had no significant overall impact on student performance and may not be helpful to use as a tool for selecting students for entry into the program or as a measure for potential student success after completion of the family nurse practitioner program.

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Keywords:

Nurse Practitioner Students, Pass rates and Predictor

References:

American Academy of Nurse Practitioners (2018, October 9). Examination development.

Retrieved from <http://www.aanpcert.org/certs/program>

American Nurses Credentialing Center (2018, October 9). Family nurse practitioner certification.

Retrieved from <https://www.nursingworld.org/our-certifications/family-nurse-practitioner/>

August, D. (Ed.). (2014). *Health sciences reasoning test: The world's leading critical thinking*

skills test for health sciences students and professionals. San Jose, CA: California Academic Press.

Bolender, J. S. (2001). *Predictors of certification scores in family nurse practitioners:*

Personality, academic, and demographic factors (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3029832)

Crosby, F. E., Dunn, J. D., Fallacaro, M. D., Jozwiak-Shields, C., MacIssac, A. M. (2003).

Preadmission characteristics of advanced practice nursing students. *Journal of the American Academy of Nurse Practitioners*, 15(9), 424-431.

Facione, N. C. & Facione P. A. (2008). *Critical thinking and clinical reasoning in the health sciences: An international multidisciplinary teaching anthology*. Millbrae, CA: The California Academic Press LLC.

Gorton, K. L. (2014). Challenges of assessing critical thinking and clinical judgement in nurse practitioner students. *Journal of Nursing Education*, March, S26-29.

Richard-Eaglin, A. (2017). Predicting student success in nurse practitioner programs.

Journal of the American Association of Nurse Practitioners, 29(10), 600-605.

Wang, M. & Lin, W. (2007). The nurturing and development of nurse practitioners.

Journal of Nursing, 54(6), 11-15.

Abstract Summary:

What variables can be used to predict a successful student outcome on a national family nurse practitioner certification exam? Does student critical thinking ability, prior to starting the nurse practitioner program, impact success? The results of a research study focusing on these questions will be presented and discussed.

Content Outline:

I. Introduction

A. Student variables that have been studied

B. Defining student success through testing

C. Critical thinking as one variable for success

II. Literature Review

A. What do we currently know

III. Research Study

A. Purpose of the study - Predicting student success

B. Methodology - Quantitative correlational study

C. Data Analysis - Binary logistical regression

D. Results - Which variables predicted success

IV. Conclusion

A. Implications for educators and students

B. Future research in this area

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