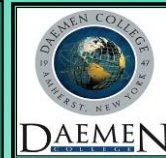# Variables that Predict First Time Success on the National Physical Therapy Examination

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Purpose

To determine the variables that predict a physical therapy student's first time success on the National Physical Therapy Exam (NPTE), and to determine variables that correlate to students who are not successful on the first attempt of the NPTE.

Background

The Commission on Accreditation of Physical Therapy Education (CAPTE) provides the accreditation to Physical Therapy programs. Physical Therapy programs prepare students for entry-level clinical practice and success on the NPTE. The NPTE assesses entry-level clinical competence of individuals seeking to gain professional licensure via a minimum score of 600/800. Previous research has identified predictor variables for first-time success on the examination including, but not limited to, grade point average (GPA), Graduate Record Examination (GRE), and Scholastic Aptitude Test (SAT). Physical therapy programs have prioritized identifying these predictors of first-time success on the NPTE in order to best align required admission and persistent academic standards. Future research should validate or refute previous findings and investigate additional predictor variables for first time success on the NPTE to allow students and faculty to better prepare for this assessment.

Analysis

Kume et al[1] found that significant predictors of first time pass rate on the NPTE included $_{verbal}$GRE ($_v$GRE) and $_{quantitative}$GRE ($_q$GRE) scores, as well as a first year graduate GPA of 3.25 or higher. Similarly, Wolden et al[2] reported that first year PT GPA, were significant predictors of first time success; the researchers also reported that overall PT GPA was a predictor of first time success on the NPTE. Meiners and Rush[3] enhanced the findings of Wolden et al such that first year PT GPA was the only significant predictor of first time success on the NPTE. Both studies determined that PT Clinical Performance Instrument (CPI) scores were not significant in predicting first time success on the NPTE. Riddle et al[4] determined that academic difficulty, students who failed a program course or who were put on academic probation, was a predictor of students who were unsuccessful in passing the NPTE. Academic status of a student in an accredited Physical Therapy program may also correlate to NPTE success.

Literature Review

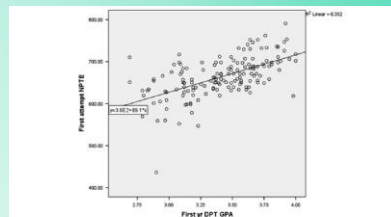| STUDY	SUBJECTS	METHODS	RESULTS
Kume et al; 2019[1] **Purpose:** To validate previous findings of predictors of NPTE first time pass rate after updates were made to the examination in 2013 and also analyze the significance of pre and post admission variables not yet studied.	-190 students from the Bay Shore and New York City campuses of Touro College School of Health Sciences from the graduating classes of 2014-2016 were included in this study.	-Analyzed past academic records from the registrar's office -Reviewed the following variables for first time NPTE success rate: undergraduate GPA, combined science-math GPA, vGRE, qGRE, first year GPA for DPT program, and combined GPA for second and third year	-Significant predictors of first time pass rate on the NPTE include vGRE and qGRE scores, as well as a first year graduate GPA of 3.25 or higher. (see Graph)
Wolden et al; 2019[2] **Purpose:** To determine the relationships between first attempt NPTE performance and physical therapy student variables.	-Meta-analysis design -Systematic search with the PubMed and EBSCO databases (1966-2018) -Evaluated 21 research studies that observed physical therapy student variables on subsequent NPTE performance	-Two independent reviewers completed data extraction and quality appraisal from the selected studies using the McMaster Appraisal Tool -Student variables in research studies evaluated include the following: undergraduate GPA, comprehensive exam scores, first year PT-GPA, overall PT-GPA, vGRE, qGRE, first and final clinical performance scores, and critical thinking skills through various tests specific to each study	-Four student variables were shown to be statistically significant on subsequent NPTE performance including the following: first-year PT-GPA, overall PT-GPA, undergraduate GPA, and comprehensive exam scores -Clinical performance had a weak and nonsignificant relationship with first attempt NPTE performance.
Meiners and Rush; 2017[3] **Purpose:** To explore whether certain variables were predictive of students' first-time score on the NPTE.	-134 DPT students from a Midwest University's Physical Therapy program: classes 2012-2014	-Hierarchical linear multiple regression used to determine relationship of independent variables and the dependent variable (NPTE scores) -Correlational analysis performed on the PT CPI 2006, overall PT CPI 2006 score, and NPTE passage coded as yes or no -Follow up correlational analysis to determine relation between 18 categories of PT CPI, overall PT CPI 2006, and NPTE raw score	-First year PT GPA (1PTGPA) was the only found predictor of NPTE success -18 category scores of PT CPI were significantly correlated to the overall PT CPI scores, but none were correlated with first time success on the NPTE
Riddle et al; 2009[4] **Purpose:** This retrospective population-based cohort study was conducted to determine a students odds of not passing the NPTE based on their program difficulty and institutional status by Carnegie classification.	-A total of 3,066 students from 20 professional physical therapy education programs located across the United States	-Information on student-level and program- level variables were provided by each program -Data on academic difficulty were characterized as having failed a course or being placed on academic suspension/probation. -Information on NPTE failure was provided by the Federation of state Boards of Physical Therapy (FSBPT)	-Academic difficulty was a significant predictor of not passing the NPTE. Students that demonstrated academic difficulty were 5.89 times more likely to not pass the NPTE in comparison to the students that didn't demonstrate academic difficulty (95% CI=4.06-8.93) -Institution status by Carnegie classification also associated to NPTE results

Graph: Correlation between First year DPT GPA and scores of the First attempt of the NPTE

Conclusion

First year professional phase GPA was consistently the most significant predictor of first time success on the NPTE. Other predictors of first time success on the NPTE included vGRE, qGRE, and overall professional PT GPA. Future research should aim to validate these findings to notify students of the importance of predictors that lead to first time success. Future research should also assess the potential factors influencing those students who were not successful on the first attempt of the NPTE in order for PT programs to do the following: determine criteria for entry and progression throughout the program, and consider allocation of resources to assist students early in the program to promote success on the NPTE.

Future Research

Future research is projected to add to the cohort of graduates to validate or refute the previous variables that predict success on the NPTE: pre-professional science course grades (BIO 110, BIO 330) and professional phase GPA (1st year Fall, 2nd year Spring). Future research will assess the number of mastery quiz retake needs, the number of mastery practical retake needs in the first year, and the length of academic probation of students' to determine correlation to the NPTE.

References

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