Assessing the Correlation of Student Clinical Encounters and PANCE Performance

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BRIEF REPORT

Introduction: Little research exists regarding the correlation between the quantity of clinical encounters and performance on the Physician Assistant National Certifying Examination (PANCE) scores. Determining whether such a correlation exists would be of great benefit to physician assistant (PA) programs and PA students alike in choosing the most valuable educational experiences with the greatest opportunities to learn. **Methods:** As part of this retrospective study, the patient encounter logs of 184 students were compiled from the graduating classes of 2003 through 2006. The number of encounters performed for each skill or knowledge category was then compared to the score the student achieved on the corresponding section of the PANCE. The data collected from the student logs and PANCE results were analyzed using correlation coefficients. **Results:** The findings of the analysis revealed no significant correlation between numbers of clinical encounters and PANCE scores. **Discussion:** The lack of correlation found between the quantity of encounters and PANCE performance indicate that the quality of the clinical experience may be of more importance than the quantity of encounters.

Feature Editor's Note:
Many PA programs use student-logged clinical encounters as tools to document students' clinical activities and learning experiences. The implied rationale for this educational strategy is that the volume and breadth of these activities will increase students' preparedness for practice. Performance on the Physician Assistant National Certifying Examination (PANCE) continues to be an important measure of this preparedness, but little research exists regarding the correlation between the quantity of clinical encounters and performance on the PANCE. The authors present the findings of a study that assesses whether a correlation exists between the numbers of clinical encounters a student completes and performance on PANCE.

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INTRODUCTION

Teaching institutions strive to prepare physician assistant (PA) students for their careers through rigorous academics and a comprehensive range of clinical experiences. The first year establishes the foundation of medical knowledge, through didactic studies focused largely on anatomy and the pathology of diseases as well as patient care skills including history taking, physical examination, differential diagnoses, treatment, and prevention. The second year comprises clinical encounters commonly structured in 4- to 6-week clinical rotation experiences. The focus of the clinical year is to allow students to interact with patients and employ their newly developed clinical skills.

In our program, students are required to log each of their clinical encounters on a daily basis in order to document the various clinical scenarios they experienced and the procedures performed. Currently, no research has been performed to determine whether there is a statistically significant correlation between the numbers of clinical encounters and performance on the PANCE. Since clinical encounters comprise the entire second year (and third year at some programs), and are a fundamental aspect of the way PAs are trained, research is needed to determine the impact of clinical encounters related to PANCE scores.

PURPOSE

The purpose of this study was to investigate whether the number of clinical encounters a second-year PA student completes during his or her clinical year predicts PANCE examination scores.

METHODS

For this retrospective study the patient encounter logs of all students

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from Rosalind Franklin University of Medicine and Science (RFUMS) graduating classes of 2003, 2004, 2005, and 2006 were obtained. The students were eligible for inclusion only if their logs were filled out appropriately, they were present for all six core rotations, their rotation sites were within the United States, and they had successfully completed the PA program and passed the Physician Assistant National Certifying Examination (PANCE) following graduation. After applying the inclusion criteria, 184 students were found to be eligible. The six logs for each of the eligible student participants were then totaled to provide a summary of all patient encounters during the students' clinical year. The PANCE scores were then obtained for analysis of correlation with number of clinical encounters. The PANCE results were provided both as a comprehensive score and scores in individual organ systems and task areas. The PANCE scores obtained were then matched with the clinical encounters recorded by the student. The paired data were statistically analyzed using correlation coefficients and interpreted using *r* values.

Table 1. Correlations Between Number of Clinical Encounters and Performance on PANCE for PA Students by Organ System

Organ System	*r* Value
Neurology	-0.109
Gastrointestinal health	-0.102
EENT Health	-0.046
Cardiovascular health	-0.022
Musculoskeletal health	0.004
Reproductive health	0.044
Endocrine health	0.108
Psychological health	0.174
Dermatology	0.200
Hematology	0.230
Genitourinary health	0.388

r value interpretation:
.00 - .20 Slight correlation; almost negligible relationship
.20 - .40 Low correlation; definite but small relationship
.40 - .70 Moderate correlation; substantial relationship
.70 - .90 High correlation; marked relationship
.90 - 1.00 Very high correlation; very dependable relationship

Table 2. Correlations Between Number of Clinical Encounters and Performance on PANCE for PA Students by Task Area

Task Areas	*r* Value
Complete history and physicals	-0.090
Health maintenance	-0.014
Development of treatment plan	-0.005
Lab interpretation	0.108

r value interpretation:
.00 - .20 Slight correlation; almost negligible relationship
.20 - .40 Low correlation; definite but small relationship
.40 - .70 Moderate correlation; substantial relationship
.70 - .90 High correlation; marked relationship
.90 - 1.00 Very high correlation; very dependable relationship

RESULTS

The data collected from the student logs and PANCE results were compared using Pearson's correlation coefficient *r* values. Table 1 presents the *r* values broken down by the specified organ systems, while Table 2 presents the *r* values broken down by specific task areas. For the purpose of this study the following standard values were used to interpret the data: .00-.20, slight correlation; .20-.40, low correlation; .40-.70, moderate correlation; .70-.90, high correlation; .90-1.0, very high correlation. According to the correlation coefficient obtained and the standard values, it was determined that the following clinical experiences did not influence a student's performance on the correlation PANCE categories: reproductive health (0.041), lab interpretation (0.108), endocrine health (0.108), musculoskeletal health (0.004), and psychological health (0.174).

There was a low correlation between clinical experience and a student's performance on the following PANCE categories: genitourinary health (0.388), dermatology (0.201), and hematology (0.230).

The following clinical experiences appeared to have a negative correlation with PANCE performance: complete history and physicals (-0.090), cardiovascular health (-0.022), EENT health (-0.046), gastrointestinal health (-0.102), neurology (-0.109), development of a treatment plan (-0.005), and health maintenance (-0.014).

CONCLUSIONS

It is widely accepted that clinical experience is an integral part of preparing PAs for their careers. The belief is that the time spent in each clinical rotation affords students an opportunity to perfect their skills with mentoring from their preceptors. However, while clinical experience is essential to train a PA to be competent in clinic, this study suggests that the number of clinical encounters has little measurable effect on PANCE scores.

There were no previous studies found by the researchers suggesting a correlation between higher numbers of clinical encounters and PANCE scores for PAs. However, similar research has been performed with medical students by the Department of Pediatrics at the University of Nebraska Medical Center (UNMC) in conjunction with the Department of Pediatrics at Texas Tech University Health Sciences Center, which showed third-year medical students' performance on multiple-choice examinations to be independent of the number of patients seen.[1] Our study and the UNMC study do not support the hypothesis that higher numbers of clinical encounters will result in higher medical examination scores.

The results of this study appear to support the theory that the quality of the rotation experience is of greater educational value than the quantity of encounters. Other factors that may have an impact on the relationship between the number of clinical encounters and PANCE scores include students finding more time to study for their board examinations when they have a lighter patient load and preceptors who have increased teaching time due to lighter patient load. The negative correlations might be explained by the small population size in some cases.

Limitations

While every effort was made during this study to collect and analyze only the most accurate information, there were limitations. First, this study was based on the assumption of accurate and honest logging by the students. Accurate documentation by PA students is imperative for obtaining appropriate correlations. The population size of this study was also small and limited to students who graduated from a single program; hence, generalization of this data must be approached cautiously.

Recommendations for future research include incorporating a greater number of schools to allow for an increased number of subjects and a greater regional span of clinical rotation sites. Further research is also needed to define the most efficient and accurate data collection method to standardize the logging of clinical encounter data among all PA programs, allowing for less variation and more accurate data for future research studies.

Though the present study demonstrated a minimal correlation between clinical encounter numbers and PANCE scores, clinical experience remains an integral part of a PA's training in preparation for his or her career. Clinical patient encounter data should still be considered an important aspect of selecting quality clinical rotation sites to ensure the best experience possible for the student. However, the question remains: What type of clinical educational experiences have the greatest impact on our students' acquisition of knowledge and skills, as measured on the PANCE.

REFERENCES

1. Beck GL, Matache MT, Riha C, Kerber K, McCurdy FA. Clinical experience and examination performance: is there a correlation? www.unomaha.edu/dormat/Papers/ms_ExamsIdentifying.htm.