



Impact of Type of Healthcare Experience Before Physician Assistant School Admission on PANCE

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INTRODUCTION

- The PA profession is based on a strong foundation of previous healthcare experience (HCE).
- There is no clear, unified definition across PA programs on what constitutes HCE.
- Nursing assistant, medical assistant, home health aide and medical scribe represented 75% of the reported types of HCE in 2017. Medics represented 20%.¹
- It is unclear if HCE requiring more autonomous decision-making, such as RN or paramedic, equates to a higher likelihood of success as a PA student.

Study Objective

The objective of this study was to determine if there was an association between type of pre-PA program HCE and student success as determined by Physician Assistant National Qualifying Exam (PANCE).

METHODS

- This retrospective, observational study included PA students (single institution) from four consecutive classes that took the PANCE (N=188).
- Self-reported HCE was used to classify each student into two broad groups based on locally derived criteria.

Group A 66% (N=124)	Group B 34% (N=64)	
Nursing Assistant/CNA	90	EMT/Medic 11
Medical Assistant	34	Registered Nurse 8
		ED/UC technician 15
		Dietitian 5
		AT/OT/PT 8
		Optician technician 3
		Radiology Technician 3
		Respiratory technician 2
		Misc. (<2 per description) 9

Figure 1. Local criteria was used to assign to HCE groups. CNA, certified nursing assistant; EMT, emergency medical technician; ED/UC, emergency department/urgent care; AT/OT/PT, athletic trainer, occupational therapist, physical therapist

METHODS CONT

Group A

- Less autonomy
- Lower medical decision making

Group B

- Higher autonomy
- Higher medical decision making

Other data obtained included:

- Overall undergraduate GPA
- Undergraduate science GPA
- Number HCE hours
- Year 1 academic year GPA of PA school
- Year 2 clinical year GPA of PA school
- Physician assistant national certifying exam (PANCE) score

Statistical Analysis

- For continuous data either the independent samples t-test or Wilcoxon's test were used based on data distribution.
- A hierarchical linear mixed model was fit to assess the association between the primary outcome, PANCE, and HCE grouping.
- The model also incorporated GPA 1, GPA 2, undergrad science GPA and undergrad overall GPA and log transformation of HCE hours.
- Year matriculated and undergraduate school attended were incorporated as random effects.
- Two sensitivity analyses performed:
 - EMT and paramedic groups re-assigned to Group B.
 - "Misc." and "technicians" placed into a third, intermediate group.
 - Did not change estimates of the conclusions.

RESULTS

Table 1: HCE Group Characteristics

	GROUP A 66% (N=124) median (25 th , 75 th)	GROUP B 34% (N=64) median (25 th , 75 th)	P-VALUE*
AGE	23 (22, 25)	26 (23, 32)	<.0001
GPA 1	3.8 (3.57, 3.97)	3.79 (3.5, 3.97)	0.47
GPA 2	3.88 (3.65, 3.96)	3.78 (3.6, 3.96)	0.22
SCI GPA	3.65 (3.44, 3.84)	3.57 (3.22, 3.75)	0.04
UNGR GPA	3.72 (3.52, 3.87)	3.57 (3.27, 3.78)	0.01
HOURS	1547 (1043, 2382)	2898 (1471, 7195)	<.0001
	mean (95% CI)	mean (95% CI)	p-value
PANCE	497 (485, 510)	499 (480, 518)	0.26

*Significant at <0.05. HCE, health care experience; Group A, lower autonomy HCE group; Group B, higher autonomy HCE group; GPA 1, GPA academic year 1; GPA 2, GPA clinical year 2; SCI GPA, undergraduate Science GPA; Hours, number of hours of HCE; PANCE, physician assistant national certifying exam

Group A (lower autonomy):

- was **younger** than Group B.
- reported **fewer** median hours of HCE.
- had a **higher** median undergraduate GPA.
- had a **higher** median undergrad science GPA.

Group A and Group B had **similar**:

- median PA school year 1 GPA.
- median PA school year 2 GPA.
- mean PANCE scores.

Table 2: Fixed effect variables for modeling PANCE

	Estimate	95% CI lower	95% CI Upper	P-value*
Intercept	-200.1	-496.6	96.3	0.12
Age	-2.12	-3.5	-0.7	0.002
Group A	-16.4	-34.1	1.2	0.07
Group B	REF**			
GPA 1	147.2	93.0	201.3	<.0001
GPA 2	33.5	-34.0	101.0	0.33
Sci GPA	23.2	-3.6	50.0	0.09
Hours Experience (log transformation)	1.4	-8.0	10.9	0.77

*Significant at <0.05. Group A, lower autonomy HCE group; Group B, higher autonomy HCE group; GPA 1, GPA academic year 1; GPA 2, GPA clinical year 2; SCI GPA, undergraduate Science GPA; Hours, number of hours of HCE

HCE groups were not statistically associated with PANCE (p=0.07)

- Group A scored 16.4 points lower on PANCE.
- PANCE was associated with:
 - Age
 - PA school year 1 GPA
- PANCE was **NOT** associated with:
 - Number of HCE hours
 - GPA PA school year 2
 - Undergraduate science GPA

CONCLUSIONS

- This pilot study found no significant association between type of pre-PA program health care experience and PANCE score.
- A larger, multi-centered study might be able to find smaller differences in outcomes.
- PANCE scores are a limited evaluation of success of a PA student.

References and Contact info

1. Physician Assistant Education Association, By the Numbers: Student Report 2: Data from the 2017 Matriculating Student and End of Program Surveys, Washington, DC: PAEA; 2018. doi: 10.17538/SR2018.0002

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