

School or College Characteristics Associations with First-Time Multistate Pharmacy Jurisprudence Exam Pass Rates

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INTRODUCTION

- Along with the North American Pharmacist Licensing Examination (NAPLEX), the Multistate Pharmacy Jurisprudence Exam (MPJE) is among the most common licensing examinations a pharmacist is required to pass before being licensed to practice in a jurisdiction
- Currently, 48 of 53 jurisdictions require passing the MPJE to practice in that jurisdiction.¹
- A noticeable decrease in first-time MPJE pass rates² nationally has led investigators to consider modifiable curricular and non-modifiable school-wide characteristics that are associated with higher MPJE passing rates.
- To the investigators knowledge, no study has examined the correlation of MPJE pass rates over multiple colleges and schools of pharmacy and law-related curricular factors

OBJECTIVE

- This study aims to compare school-wide factors associated with higher 2022 and 2023 MPJE first-time pass rates

METHODS

- Study Design:** Retrospective review of accredited colleges and schools of pharmacy. Approved via exempt review by Shenandoah University Institutional Research Board
- Inclusion Criteria:** Accredited North American colleges or school of pharmacy located in jurisdictions that use the MPJE as a licensing exam in 2022 and 2023
- Exclusion Criteria:** International schools of pharmacy, Jurisdictions that don't use MPJE: AR, CA, ID, PR, VT
- Data Collection:** A list of pharmacy schools in MPJE-utilizing states, using 2022 and 2023 pass rates from the National Association of Boards of Pharmacy. Other data collection sources for school characteristics are presented in **Figure 1**.

PharmCAS

- Program structure
- School state of jurisdiction
- Private or public school

ACPE

- Year of college or school of pharmacy accreditation or pre-candidate status

AACP

- Number of applicants each year
- Number of students in graduating class the fall prior

ABA

- ABA-approved associated law school

Institution's Website

- Number and timing of law courses
- Number of credits in law courses
- Faculty member with doctorate of jurisprudence or esquire

Figure 1: Source of data collection for school-wide characteristics used in the study. PharmCAS= Pharmacy College Application Service, ACPE= Accreditation Council for Pharmacy Education, AACP= American Association of Colleges of Pharmacy, ABA=American Bar Association

- Statistical Analysis:** Schools were categorized based on first-time MPJE pass rates into first-quartile or lower three quartiles and analyzed using univariable and multivariable logistic regression. A predefined p-value of 0.1 used to include factors into the multivariable analysis

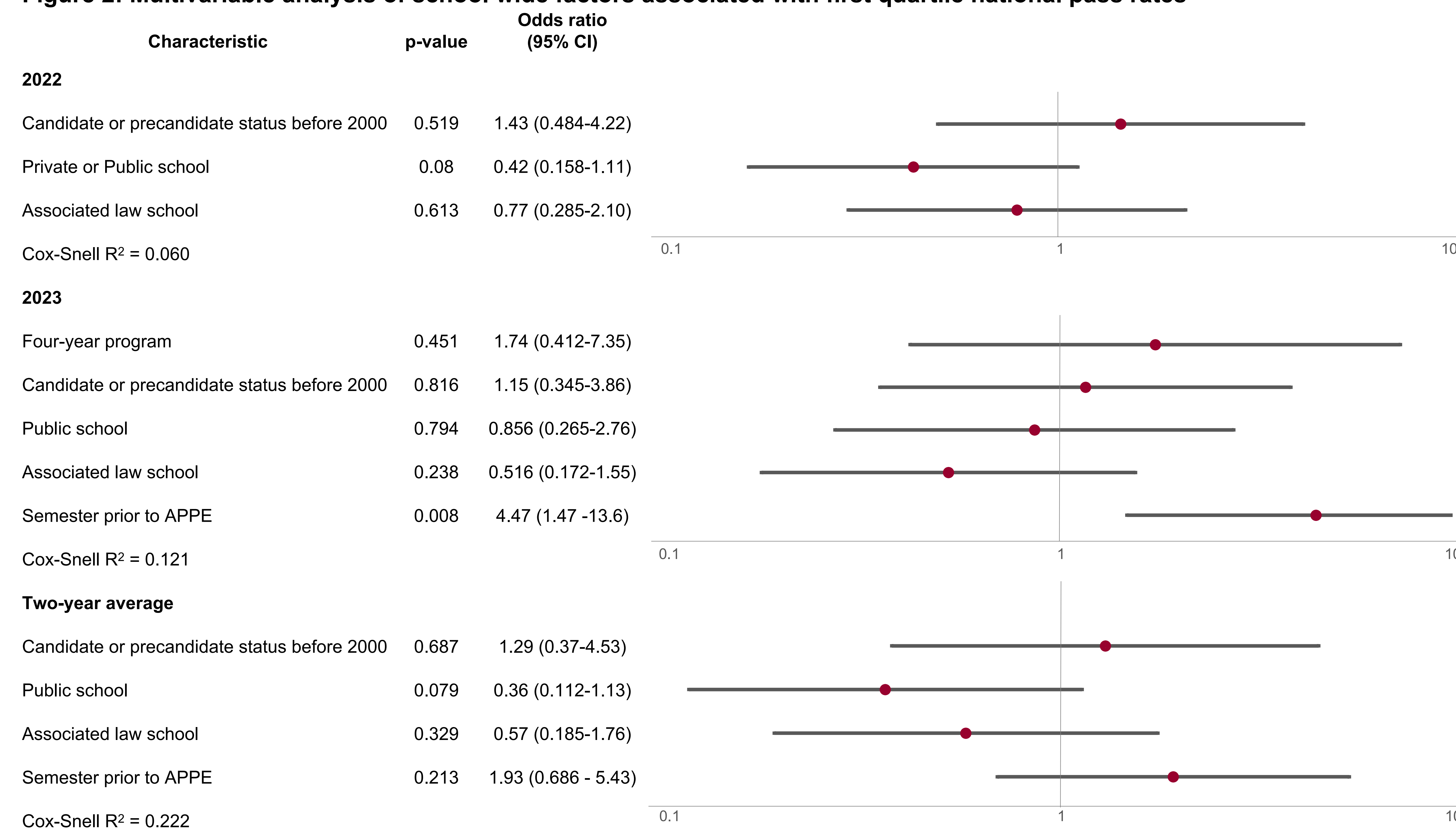
RESULTS

- Among 125 pharmacy schools, 27 and 31 were categorized as first-quartile in 2022 and 2023, respectively
- School-wide characteristics and univariable analyses are listed in **Table 1**; the multivariable analysis is listed in **Figure 2**.

Table 1: School-wide characteristics and univariable analysis for 2022, 2023, and combined two-year average

School characteristics	2022				2023				Two-Year Average	
	First quartile (n=27)	Other quartiles (n=98)	p-value	Odds ratio (95% CI)	First quartile (n=31)	Other quartiles (n=94)	p-value	Odds ratio (95% CI)	p-value	Odds ratio (95% CI)
Four-year program, n (%)	24 (88.9%)	74 (75.5%)	0.146	2.60 (0.717-9.38)	28 (90.3)	70 (74.4%)	0.074	3.20 (0.892-11.4)	0.105	2.89 (0.80-10.4)
Candidate or precandidate status before 2000, n (%)	23 (85.2%)	52 (53.1%)	0.005	5.09 (1.64-15.8)	23 (74.2%)	52 (55.3%)	0.067	2.32 (0.943-5.72)	0.019	3.24 (1.21-8.68)
Students in class the fall prior, mean (SE)	104 (9.29%)	103 (6.10%)	0.953	1.00 (0.993-1.01)	95.4 (6.74%)	92.7 (5.44%)	0.785	1.00 (0.993-1.01)	0.509	1.00 (0.999-1.00)
Applicants, mean (SE)	358 (40.3%)	416 (35.3%)	0.529	0.999 (0.998-1.00)	387 (91.3%)	370 (26.3%)	0.812	1.00 (0.99-1.00)	0.436	1.00 (0.995-1.00)
Associated law school, n (%)	19 (70.4%)	40 (40.8%)	0.008	3.44 (1.37-8.63)	19 (61.3%)	40 (42.6%)	0.073	0.468 (0.204-1.07)	0.027	0.38 (0.156-0.894)
Public school, n (%)	20 (74.1%)	44 (44.9%)	0.010	3.51 (1.36-9.05)	22 (71.0%)	42 (44.7%)	0.013	0.330 (0.138-0.79)	0.001	5.14 (1.92-13.7)
>1 courses, n (%)	5 (18.5%)	17 (17.3%)	0.741	1.21 (0.40-3.69)	5 (16.1%)	17 (18.1%)	0.922	0.946 (0.315-2.84)	0.646	0.758 (0.232-2.47)
≥3 credits, n (%)	24 (88.9%)	82 (83.7%)	0.592	0.696 (0.185-2.62)	14 (45.2%)	59 (62.8%)	0.162	0.542 (0.23-1.28)	0.666	0.823 (0.340-1.99)
Semester prior to APPEs, n (%)	19 (70.4%)	54 (55.1%)	0.255	1.73 (0.674- 4.42)	23 (74.2%)	44 (46.81%)	0.003	4.91 (1.72-14.1)	0.056	2.55 (0.977-6.63)
JD or Esq on faculty, n (%)	6 (22.2%)	21 (21.4%)	0.929	0.955 (0.342-2.67)	7 (22.6%)	20 (21.3%)	0.878	1.08 (0.41-2.86)	0.892	0.932 (0.336-2.59)

Figure 2: Multivariable analysis of school wide factors associated with first quartile national pass rates



DISCUSSION

- This is the first study to the investigators' knowledge examining the effects of school wide characteristics on first time pass rates.
- Unlike previous studies examining NAPLEX pass rates, school or college of pharmacy characteristics such as program structure, number of students, school time of establishment seemed to have less effect on MPJE first time pass rates.^{3,4}
- In terms of curricular characteristics, only having a law course the semester prior to APPEs had a positive effect on NAPLEX pass rates.
- Limitations
 - MPJE first time pass-rates only report for the school's state. Schools of pharmacy with many students who license in other states may underperform
 - Interstate variability in test
 - Changes in law curriculum could not be accounted for for all institutions
 - Adjunct JD or Esq. may not be listed on school or college of pharmacy's website
 - Schools or college of pharmacy that did not have stand alone law courses considered to not have a law course. Which may underrepresent the the amount of law instruction

CONCLUSIONS

- The study suggests that law-course characteristics weren't consistently associated with first-time MPJE pass rates.
- A law course the semester before APPEs was associated with first-quartile pass rates in 2023 in the univariable analysis and multivariable analysis.
- School-wide characteristics such as having an associated law school, public colleges or university, and schools that were candidate or precandidate status prior to 2000 were significant only in the univariable analysis
- Further research is needed to understand factors influencing pharmacy students' MPJE success.

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DISCLOSURES

The investigators have no disclosures to declare.