



Comparison of NAPLEX First-Time Pass Rates Before and After COVID-19 Pandemic

Subrata Deb and Prashant Sakharkar

Larkin University College of Pharmacy, Miami, FL 33169

Objectives

- The North American Pharmacist Licensure Examination (NAPLEX) is a critical assessment for pharmacy graduates, serving as a benchmark for entry into professional practice.¹
- The COVID-19 pandemic significantly disrupted educational systems worldwide.
- It further necessitated a shift to remote learning and altering traditional methods of exam preparation and administration including NAPLEX.²
- NAPLEX pass rates are crucial indicators of pharmacy education quality and preparedness of graduates for professional responsibilities.³
- Thus, it is essential to understand any changes in these rates over time.
- The objectives of this study was to examine the NAPLEX first-time pass rates before and after the COVID-19 pandemic.

Methods

- This was a retrospective cohort study using NAPLEX first-time pass rates from 2016 to 2023.
- The NAPLEX data was obtained from reports published by the National Board of Pharmacy that are publicly available.
- The NAPLEX pass rates of four years before (2016-2019) and four years after (2020-2023) COVID-19 were considered as the pre-pandemic and post-pandemic cohorts, respectively.
- Data were analyzed for differences in pass rates among public versus private, traditional (four years) vs accelerated (three years), and the geographic locations of pharmacy programs using the t-test and ANOVA.
- Additionally, time trend and correlation analyses were performed.
- A p-value of <0.05 was considered statistically significant.

Results

- The average NAPLEX first-time pass rate of 112 pharmacy programs from 2016 to 2023 was 84.4% ± 7.
- The time trend analyses showed an overall decline in pass rates from 2016 onwards and it became more pronounced post-pandemic.
- The pre-pandemic NAPLEX first-time pass rates were significantly higher than the post-pandemic (87.6% ± 7 vs. 81.3% ± 8, p<0.001) (Table 1).

Results

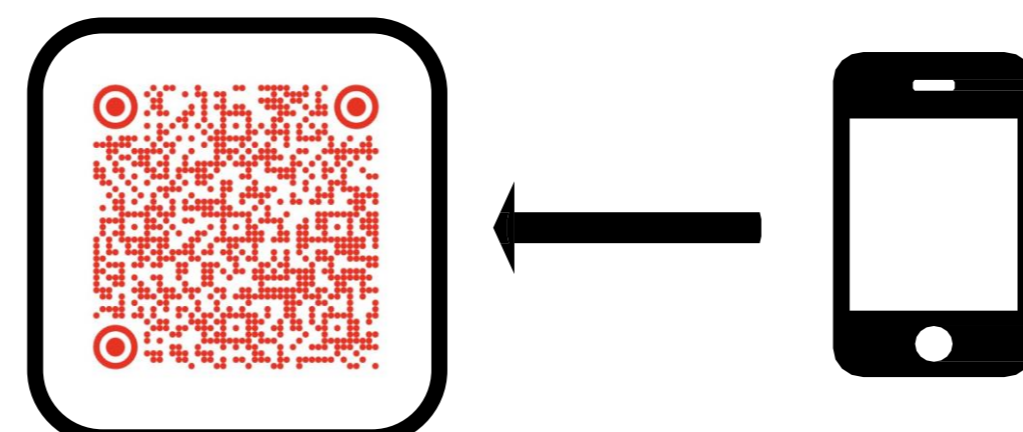
- Moreover, these post-pandemic rates significantly differed between public and private (85% ± 6 vs. 77.9% ± 8, p<0.001), and between traditional versus accelerated pharmacy programs (82.7% ± 7 vs. 73% ± 7, p<0.001) (Table 2).
- Pharmacy programs located in various regions of the country differentially performed in the post-pandemic first-time pass rates (F(3, 93,454) = 2583, p<0.001) with the Northeast having lower pass rates than the other regions.
- The post-pandemic NAPLEX pass rates negatively correlated with public vs private (rpb= -0.41, p<0.001) and traditional vs accelerated programs (rpb= 0.42, p<0.001).

Conclusions

- Pharmacy programs generally had lower NAPLEX first-time pass rates in the post-pandemic years.
- Pharmacy programs that are private, accelerated, or located in the Northeast region had lower NAPLEX first-time pass rates.

References

- National Association of Boards of Pharmacy. The North American Pharmacist Licensure Examination. <https://nabp.pharmacy/programs/examinations/naplex/> Accessed Feb 12, 2024.
- Chilbert MR, Albanese N, Cieri-Hutcherson N, O'Brocta R, Woodruff AE, Maerten-Rivera J. NAPLEX Preparatory Perceptions from Recent Graduates at One College of Pharmacy. Am J Pharm Educ. 2024;88(2):100642. doi: 10.1016/j.ajpe.2024.100642.
- Accreditation Council for Pharmacy Education. Guidance for the accreditation standards and key elements for the professional program in pharmacy leading to the doctor of pharmacy degree ("Guidance for Standards 2016"). <https://www.acpe-accredit.org/pdf/GuidanceforStandards2016FINAL.pdf> Accessed Feb 19, 2024.



Take a picture to download the abstract

Table 1. Characteristics of US Pharmacy Programs and Pre-pandemic and Post-pandemic NAPLEX First-time Pass Rates (N=112)

	Pre-pandemic (Mean NAPLEX Pass Rates, SD)				Post-pandemic (Mean NAPLEX Pass Rates, SD)			
Year	2016	2017	2018	2019	2020	2021	2022	2023
National	85.9 (8)	88.1(8)	89.6 (7)	87.1 (8)	86.6 (9)	82.1 (9)	77.9 (10)	78.6 (10)
Program Type								
Public	88.6 (8)	91.4 (6)	91.5 (6)	90.3 (5)	89.9 (7)	85.4 (8)	82.3 (8)	82.4 (8)
Private	83.4 (8)	84.9 (8)	87.7 (7)	83.9 (9)	83.6 (9)	79.1 (9)	75.1 (9)	75.1 (10)
Program Structure								
Traditional	86.7 (8)	88.8 (8)	90.2 (6)	88.1(8)	87.7 (8)	83.5 (9)	79.7 (9)	80.0 (9)
Accelerated	81.4 (8)	83.5(7)	85.1 (8)	80.5 (10)	80.0 (9)	74.1 (8)	67.2 (8)	70.3 (9)
Region								
Northeast	82.8 (8)	83.9 (9)	87.7 (7)	83.9 (10)	82.6 (9)	79.3 (10)	74.2 (10)	74.9 (10)
Midwest	88.6 (6)	91.2 (6)	90.7 (8)	89.6 (6)	89.4 (8)	83.3 (9)	80.8 (9)	82.5 (9)
South	85.6 (9)	88.2 (7)	89.3 (6)	86.7 (8)	86.8 (8)	83.1 (8)	78.8 (9)	79.2 (9)
West	87.7 (6)	89.7 (7)	91.4 (6)	88.9 (7)	88.7 (7)	82.9 (8)	77.7 (10)	77.6 (9)
Schools below national NAPLEX average pass rate (n, %)	52 (46.4)	50 (44.6)	49 (43.8)	41 (36.6)	42 (37.5)	43 (38.4)	45 (40.2)	46 (41.1)
Schools with first time pass rates ≥80% (n, %)	88 (78.6)	92 (82.1)	104 (92.9)	85 (75.9)	90 (80.4)	72 (64.3)	52 (46.4)	53 (47.3)

Trends of NAPLEX First-time Pass Rates

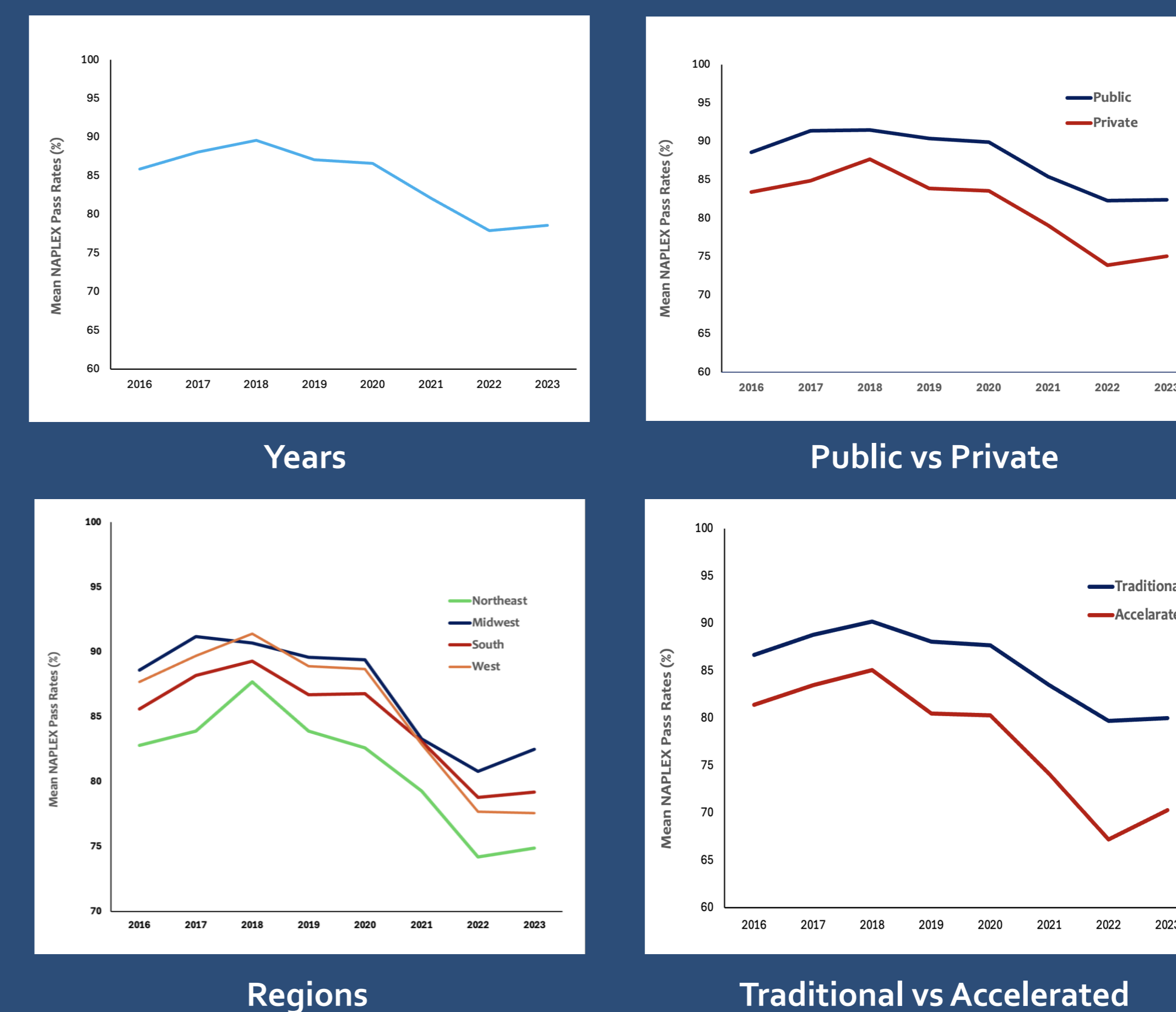


Table 2. Differences and Correlation between Characteristics of US Pharmacy Programs and NAPLEX First-time Pass Rates

	Pre-pandemic Mean (SD)	Post-pandemic Mean (SD)
National	87.6 (7)	81.3 (8)
Program		
Public	90.4 (5)	85.0 (6)
Private	84.9 (7)	77.9 (8)
t-statistic	139.4	149.2
p-value	<0.001	<0.001
Nature		
Traditional	88.4 (6)	82.7 (7)
Accelerated	82.4 (7)	73.0 (7)
t-statistic	102.9	142.8
p-value	<0.001	<0.001
Region		
Northeast	84.4 (8)	77.7 (9)
Midwest	90.0 (5)	84.2 (8)
South	87.5 (6)	81.9 (7)
West	89.3 (6)	81.7 (7)
F-statistics	3366.1	2583.9
df	(3, 93,454)	(3, 93,454)
p-value	<0.001	<0.001
Correlation	Post-pandemic NAPLEX Pass Rates	
Public vs Private	-0.41	<0.001
Traditional vs Accelerated	-0.42	<0.001