Impact of Number of Full-time Faculty Members on NAPLEX First-Attempt Pass Rates

Omar F. Attarabeen, PhD,[1] Eman F. Attarabeen, BSc.,[2] Fadi Alkhateeb, PhD,[3] Nile Khanfar, PhD,[4] Shaimaa A. Gad, PhD,[5] Rowida Mohamed, PhD,[6] Ahmad Hanif, PhD[7]

[1] University of Maryland Eastern Shore, School of Pharmacy & Health Professions
[2] Ms. Pharma Group United Pharmaceuticals Research & Development
[3] South College School of Pharmacy
[4] Nova Southeastern University College of Pharmacy
[5] Loyola University Chicago Cardinal Bernardin Cancer Center
[6] The University of Chicago
[7] West Virginia University School of Pharmacy

BACKGROUND

- Pharmacy schools and colleges in the US use NAPLEX pass rates to gauge the effectiveness of program outcomes and student learning methods.
- Despite previous research on other school characteristics, the literature is scant on whether faculty size impacts NAPLEX pass rates.
- Theoretically, having a high number of faculty members in a pharmacy school may enrich student experience and promote individualized learning. However, previous research did not address the impact of this factor on NAPLEX pass rates.
- Previous research demonstrated that NAPLEX pass rates are impacted by school age (graduates of older schools have higher pass rates) and student size (larger classes tended to have higher NAPLRX pass rates).

OBJECTIVE

- This study aimed to investigate the association between faculty size and NAPLEX first-attempt pass rates using the published 2023 data.
- We hypothesized that a higher number of faculty is linked to higher NAPLEX pass rates.

METHODS

- Data was downloaded from 3 sources that are available publicly:
  - The National Association of Boards of Pharmacy website[1]
  - The American Association of Colleges of Pharmacy website[2]
  - Individual pharmacy schools' websites.
- Analysis was limited to US-based pharmacy schools.
- Following IRB approval, a bivariate analysis was conducted to investigate the association between 2023 NAPLEX first-attempt pass rates and the number of full-time faculty members reported for the academic year 2022-2023.
- A linear logistic regression model was conducted to answer the research question.
- The following variables were added to the regression model to be controlled for:
  - program age
  - program structure (accelerated vs. traditional)
  - program type (public vs. private)
  - class size (number of degrees conferred).
- Analysis was conducted using SPSS version 28.

RESULTS

- A total of 137 pharmacy programs with complete data on all variables were included in the analysis.
- Faculty size was positively correlated with NAPLEX first attempt pass rate in the bivariate analysis (r = .301, n = 143, p < .001). However, this association lost statistical significance in the linear regression model *(p = .323)* after controlling for the covariates.

Linear Logistic Regression Model Showing The Predictors of Pass Rates, 2023

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B (95% CI)	Std. Error	Beta		
(Constant)	.762 (.715 - .808)	.024		32.135	<.001
Number of Faculty	.000 (.000 - .001)	.000	.111	.992	.323
Age of School/College	.000 (.000 - .001)	.000	.195	2.021	.045
Type (Public/Private)	-.038 (-.076- -.001)	.019	-.186	-2.050	.042
Program Structure (Traditional/Accelerated)	-.065 (-.117 - -.013)	.026	-.208	-2.487	.014
Number of Students	-6.187E-5 (.000 - .000)	.000	-.030	-.295	.768

CONCLUSION

- Although having a large number of faculty members may aid with curriculum delivery and fair distribution of workload, this factor is not necessarily associated with NAPLEX first-attempt pass rates.
- Program administrators may consider factors directly tied to learning for the purpose of supporting student education, such as student engagement, curriculum content, and program robustness.

REFERENCES

1. The National Association of Boards of Pharmacy website. https://nabp.pharmacy/wp-content/uploads/NAPLEX-Pass-Rates-2023.pdf Accessed 4-15-2024.
2. The American Association of Colleges of Pharmacy. https://public.tableau.com/app/profile/aacpdata/viz/full-time-pharmacy-faculty-trends_16934279570170/fulltimepharmacyfaculty Accessed 4-15-2024.