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Background

Students enrolled in Doctor of Pharmacy programs are required to pass the NAPLEX (North American Pharmacist Licensure Examination), an exam which assesses a candidate's competency to practice as a pharmacist. It is important to know what factors impact students' ability to successfully pass the NAPLEX allowing pharmacy programs to address these elements to enhance pharmacy education. Existing literature identifies factors which may affect NAPLEX pass rates. These factors include:

- Active learning (ex. study guides, quizzes, team activities)¹
- Public versus private institution²
- School structure (ex. year school was created, length of pharmacy program, academic health center)³
- Students pursuing PGY1 residency³

Currently, literature lack a direct relationship between the use of progress examinations and NAPLEX pass rates. The purpose of this study is to assess how progress examinations, and other factors, affect first time NAPLEX pass rates among schools and colleges of pharmacy.

Objectives

Primary Objective: To evaluate the impact of progress examinations in the Doctor of Pharmacy curriculum on the first attempt NAPLEX pass rates for pharmacist licensure.

Secondary Objectives: To assess contributing factors within the Doctor of Pharmacy curriculum impacting first attempt NAPLEX pass rates.

Methods

- Study Design:** Cross-sectional survey
- Population:** Members of the American Association of Colleges of Pharmacy Assessment Special Interest Group
- Time Frame:** December 2022 - February 2023
- Statistics:**
 - K-means clustering
 - $P < 0.05$ = statistically significant

Results

Table 1: Baseline Characteristics of Colleges of Pharmacy

	Cluster 1 (n = 33)	Cluster 2 (n = 7)	P
2020-2022 YEAR FIRST ATTEMPT PASSING RATE - % MEAN (SD)	85.4 (4.41)	69.1 (5.18)	<0.001
PRIVATE INSTITUTION - N (%)	19 (57.6)	5 (71.4)	0.681
HOW LONG HAS YOUR PROGRAM BEEN ESTABLISHED - YEARS (SD)	75.6 (55.75)	31.7 (45.30)	0.037
PERCENTAGE WITH BACHELOR'S DEGREES - % MEAN (SD)	43.7 (27.18)	21.8 (13.81)	0.077
PERCENTAGE WITH MASTER'S DEGREES - % MEAN (SD)	4.7 (6.41)	2.6 (2.41)	0.516
CREDIT HOURS FOR DOCTOR OF PHARMACY - HOURS (SD)	148.1 (15.37)	139.3 (11.31)	0.119
INTRODUCTORY PHARMACY PRACTICE EXPERIENCE - HOURS (SD)	349.9 (102.29)	303.6 (7.83)	0.034
ADVANCED PHARMACY PRACTICE EXPERIENCE - HOURS (SD)	1581.6 (141.62)	1531.4 (117.11)	0.421

*Cluster 1 represents higher performer and Cluster 2 represents lower performer

Table 2: Types of Grading Embedded in Pharmacy Curriculum

	Cluster 1 (n = 33)	Cluster 2 (n = 7)	P
GRADING SYSTEM FOR CORE DIDACTIC (GPA ONLY) - N (%)	29 (87.9)	7 (100)	1
GRADING SYSTEM FOR PHARMACY SKILLS (GPA ONLY) - N (%)	27 (81.8)	7 (100)	0.567
P/F GRADING SYSTEM FOR ELECTIVE COURSES - N (%)	7 (21.2)	0	0.317
P/F GRADING SYSTEM FOR IPPE COURSES - N (%)	21 (63.6)	3 (42.9)	0.407

*Cluster 1 represents higher performer and Cluster 2 represents lower performer

Table 3: Number of Years of Professional Pharmacy Program

	Cluster 1 (n = 33) N (%)	Cluster 2 (n = 7) N (%)	P
HOW MANY YEARS IS THE PROGRAM			0.566
6 YEARS	3 (9.1)	1 (14.3)	
PRE-REQ + 3 PROFESSIONAL	5 (15.2)	2 (28.6)	
PRE-REQ + 3,4 PROFESSIONAL	2 (6.1)	1 (14.3)	
PRE-REQ + 4 PROFESSIONAL	21 (63.6)	3 (42.9)	
PRE-REQ + 4 PROFESSIONAL, 6 YEARS	2 (6.1)	0	

*Cluster 1 represents higher performer and Cluster 2 represents lower performer

Table 4: Average Class Size of Colleges of Pharmacy

	Cluster 1 (n = 33) N (%)	Cluster 2 (n = 7) N (%)	P
AVERAGE CLASS SIZE - N (%)			0.032
<50	2 (6.1)	4 (57.1)	
50 - 74	12 (36.4)	2 (28.6)	
75 - 100	6 (18.2)	0	
101 - 125	4 (12.1)	0	
>125	9 (27.3)	1 (14.3)	

*Cluster 1 represents higher performer and Cluster 2 represents lower performer

Results

Table 5: Types of Progress or Stage Examinations Embedded in Pharmacy Curriculum

	Cluster 1 (n = 33) N (%)	Cluster 2 (n = 7) N (%)	P
OFFERS A CAPSTONE REVIEW IN THE FINAL YEAR	23 (69.7)	7 (100)	0.161
PROGRESS OR STAGE EXAMINATIONS OFFERED	18 (54.5)	5 (71.4)	0.677
TYPE OF PROGRESS OR STAGE EXAMINATION OFFERED			0.007
EXTERNALLY CREATED (PCOA)	0	3 (42.9)	
INTERNALLY CREATED	6 (18.2)	0	
BOTH EXTERNALLY AND INTERNALLY CREATED	11 (33.3)	2 (28.6)	

*Cluster 1 represents higher performer and Cluster 2 represents lower performer

Conclusion

This study shows schools and colleges of pharmacy looking to maintain or improve first attempt NAPLEX pass rates should utilize internally created progress examinations, strive for a class size greater than 50 students which can be associated with increased available resources for student success, and have more than the minimum 300 required IPPE hours in their Pharm.D. curriculum. Further research is needed to determine the structure and implementation of progress examinations on NAPLEX pass rates and student success.

References

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