

# Impact of a P-Zero Pharmacy Preparation Program on First Year Pharmacy Student Performance

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## Objective:

To address declining student academic performance, the P-zero (P0) pharmacy preparation program was created to orient and prepare students to the Pharm.D. program. The objective of this study was to examine the impact of the P0 Program on student preparedness and performance in their first semester of pharmacy school.

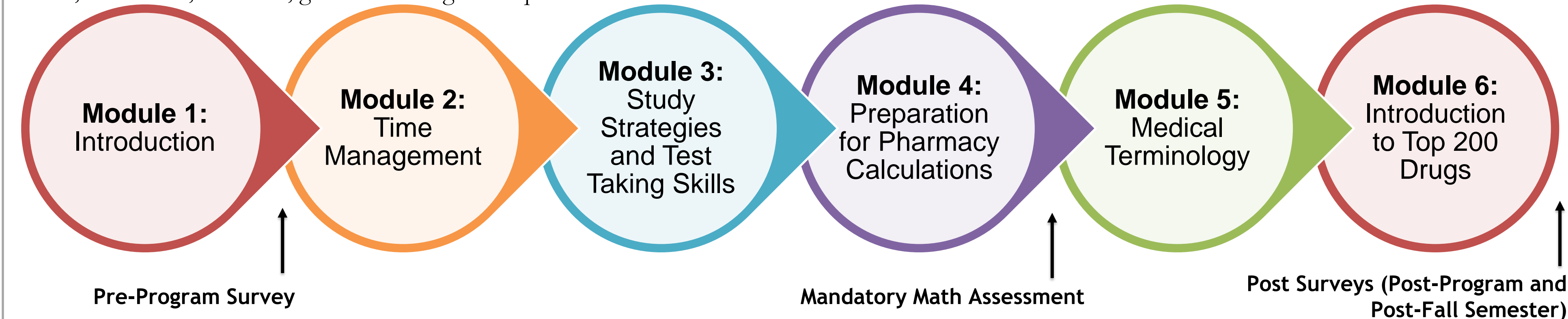
## Methods

The P0 program is an optional, self-paced, online experience available to students for 6 weeks prior to the start of the fall P1 semester. The learning modules included time management, test-taking skills and study strategies, pharmacy calculations, medical terminology, and introduction to the top 200 drugs. Quantitative and qualitative data collected included participation in the P0 program, performance in the four fall P1 courses, pre- and post-program surveys and a post-fall semester survey. Performance data were compared with the Fall 2021 cohort absent of a P0 experience. Descriptive statistics for all numerical data and means were compared using a t-test or paired t-test, as appropriate. This study was approved by the St. John Fisher University Institutional Review Board.

**Table 1: Student Participation in P0 Program**

	Students Given Access: N (%)	Students Who Completed Some of the Program: N (%)	Students who completed the entire program: N (%)
<b>Total</b>	79 (100%)	74 (93.7%)	64 (81.0%)
<b>Campus</b>	31 (39.2%)	31 (100%)	29 (93.5%)
<b>Online</b>	48 (60.8%)	43 (89.6%)	35 (72.9%)

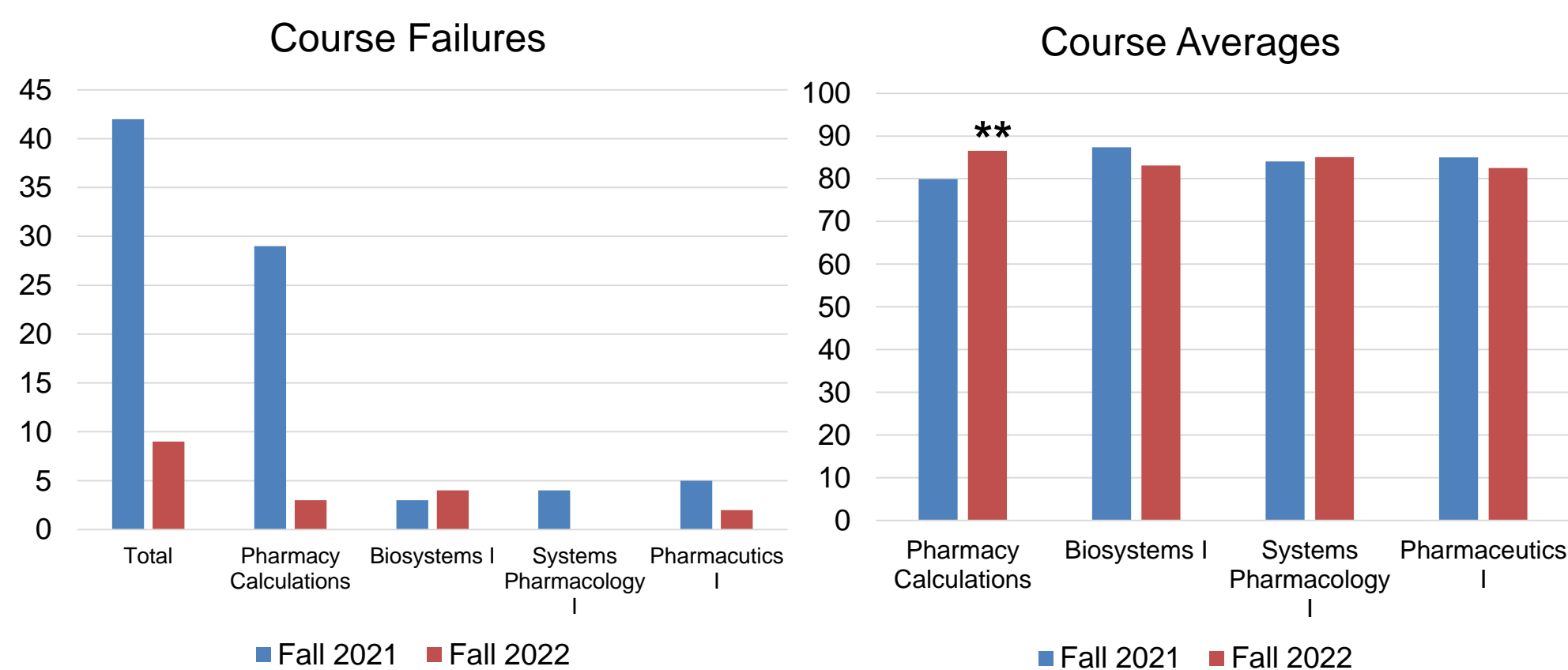
**Figure 1: Overview of the P0 Pharmacy Preparation Program.** Each module contained a mixture of learning approaches, including readings, lectures, videos, interviews, activities, graded and ungraded quizzes and discussion boards.



**Table 2: Student Demographics at Start of Program (Total responses = 72)**

		N	%
Program	Campus	29	40.3
	Online	43	59.7
Gender	Female	55	76.4
	Male	17	23.6
	Other Gender Not Listed	0	0
Age (average = 25.7; range = 19-41)	18-25	46	63.9
	26-33	13	18.1
	34-37	8	11.1
	38-45	5	6.9
	> 45	0	0
Highest Education Level Completed	Pre-Pharm Requirements Only	26	36.1
	Associate Degree	9	12.5
	Bachelor's Degree	34	47.2
	Master's Degree	3	4.2
	Doctoral Degree	0	0
Prior Healthcare Experience	Pharmacy Experience	41	50.6
	Other Healthcare Experience	18	22.2
	No Prior Experience	22	27.2
Time Since Last Being a Full Time Student	Less than 6 months	44	61.1
	6 – less than 12 months	6	8.3
	Between 1-2 years	14	19.4
	More than 2 years	8	11.1
	Never been a full-time student	0	0

**Figure 2: Course Performance.** Number of course failures and overall course average for fall P1 Courses were compared before (Fall 2021) and after (Fall 2022) implementation of the P0 Program. \*\*p<0.001



**Table 3: P0 Program Survey Results**

\* p<0.05 compared to pre-program results

	Pre-Program (n=69)		Post-Program (n=64)	
	Mean ± SD	% 4 or 5	Mean ± SD	% 4 or 5
On a scale of 1-5 (1=no confident; 5= extremely confident), how confident are you in your ability to succeed in pharmacy school?	4.2 ± 0.7	82.6	4.4 ± 0.7*	92.2
On a scale of 1-5 (1=not helpful at all; 5= extremely helpful), how helpful do you think the P0 program will be to your success in pharmacy school?	4.6 ± 0.7	91.3	4.6 ± 0.7	93.8

**Table 4: Helpfulness of Each P0 Topic Based on Post-Program Surveys; n=64**

Topic	Mean ± SD (1=not helpful at all; 5= extremely helpful)	Student Ranked Order
Preparation for Pharmacy Calculations	4.5 ± 0.8	Most helpful ↓ Least Helpful
Medical Terminology	4.6 ± 0.7	
Study Skills and Test Taking Strategies	4.0 ± 1.0	
Introduction to Top 200 Drugs	4.5 ± 0.9	
Time Management	4.1 ± 1.1	

**Table 5: Post-Fall Semester Survey; n =25**

How often did you refer back to materials from the P0 Program during the fall P1 semester?	28% Often or Occasionally
What was your actual fall P1 GPA compared to the goal GPA you set at the beginning of the semester?	19.2% Higher; 46.2% The Same

## Additional Findings

- Fall P1 attrition rate prior to implementation of the program was 15.2%, and 9.2% after implementation.
- Significant improvements were observed in final course averages in the fall Pharmacy Calculations course (6.63% increase; p<0.001).
- At the conclusion of the fall semester, 92% found the program extremely helpful or helpful.
- 89% of students said that the top motivator for completing the program was wanting to be better prepared for pharmacy school.

## Implications

The P0 program was well-received and helped improve confidence going into the Pharm.D. program. The P0 experience appears to have contributed to improved performance in fall courses and enhanced student retention rates.