Impact of Pre-Matriculation Course Withdrawals on First Year Pharmacy School Success

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BOTTOM LINE

➢ Success in the first year of pharmacy school (P1) and P1 GPA are independently predicted by pre-matriculation course withdrawals
➢ Students with less than two course withdrawals are more likely to have P1 success

PREVIOUS FINDINGS

➢ Pre-matriculation GPA and PCAT scores have been identified as significant predictors of pharmacy student success[1,2]
➢ Pre-matriculation GPA and the achievement of at least a bachelor's degree or higher are associated with higher P1 GPA as well as on-time graduation rates[1,3]
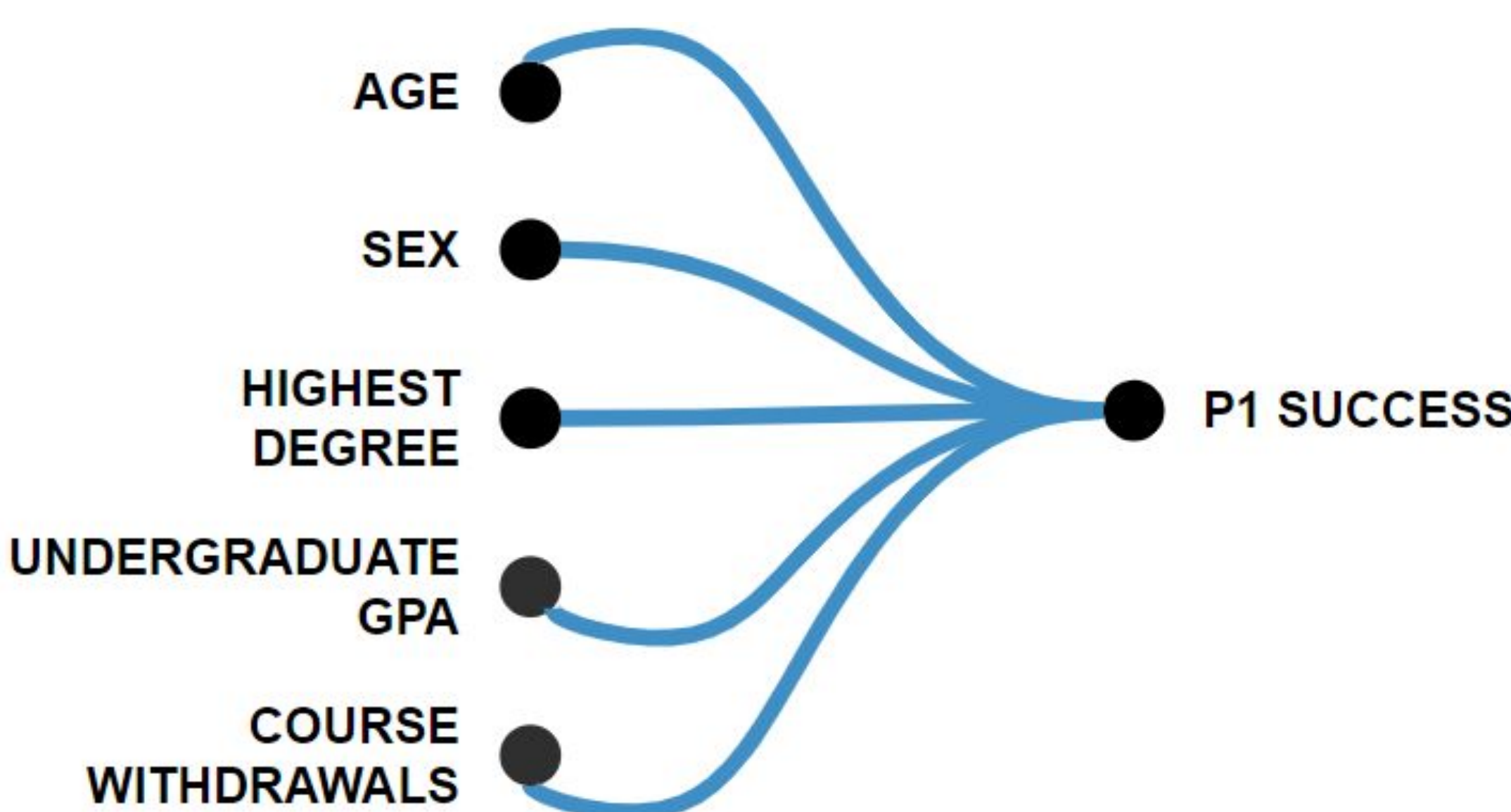
PRIMARY OBJECTIVE

COURSE WITHDRAWALS → P1 SUCCESS
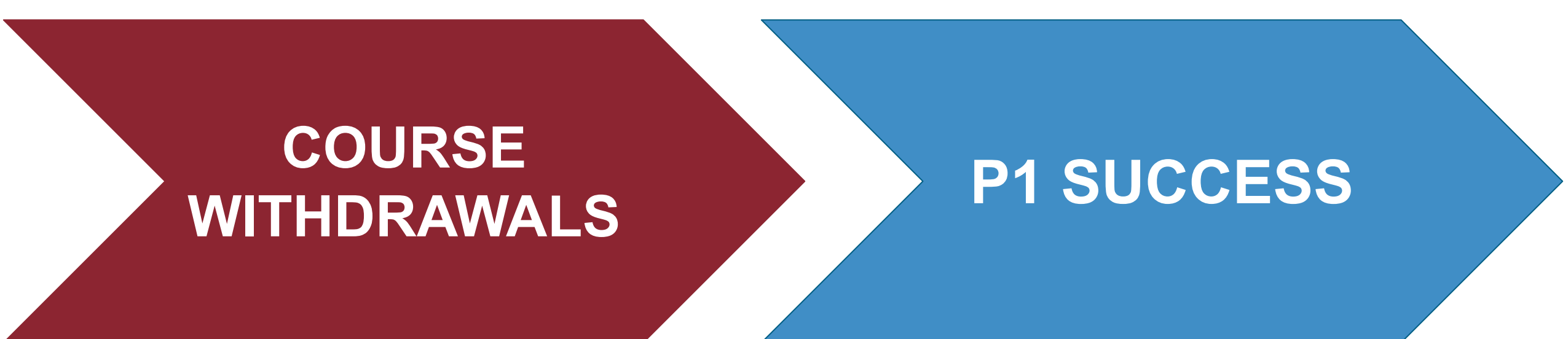
Note: P1 Success was defined as on-time progression to the P2 year without the need for remediation. Remediation is conducted over the summer for students who did not earn a passing grade in a course.

METHODS

➢ Retrospective review of students matriculating into our college of pharmacy between 2018 and 2021
➢ Pre-matriculation data was collected from PharmCAS applications and analyzed using bivariate analysis
➢ Multivariate analysis was used to determine predictors of P1 success and P1 GPA
➢ P-values<0.05 considered significant

AGE
SEX
HIGHEST DEGREE
UNDERGRADUATE GPA
COURSE WITHDRAWALS
→ P1 SUCCESS

RESULTS

Figure 1. Withdrawal Frequency by P1 Success

P1 Success ■ No ■ Yes

One student had 36 withdrawals and was not successful in the P1 year (not shown on graph)
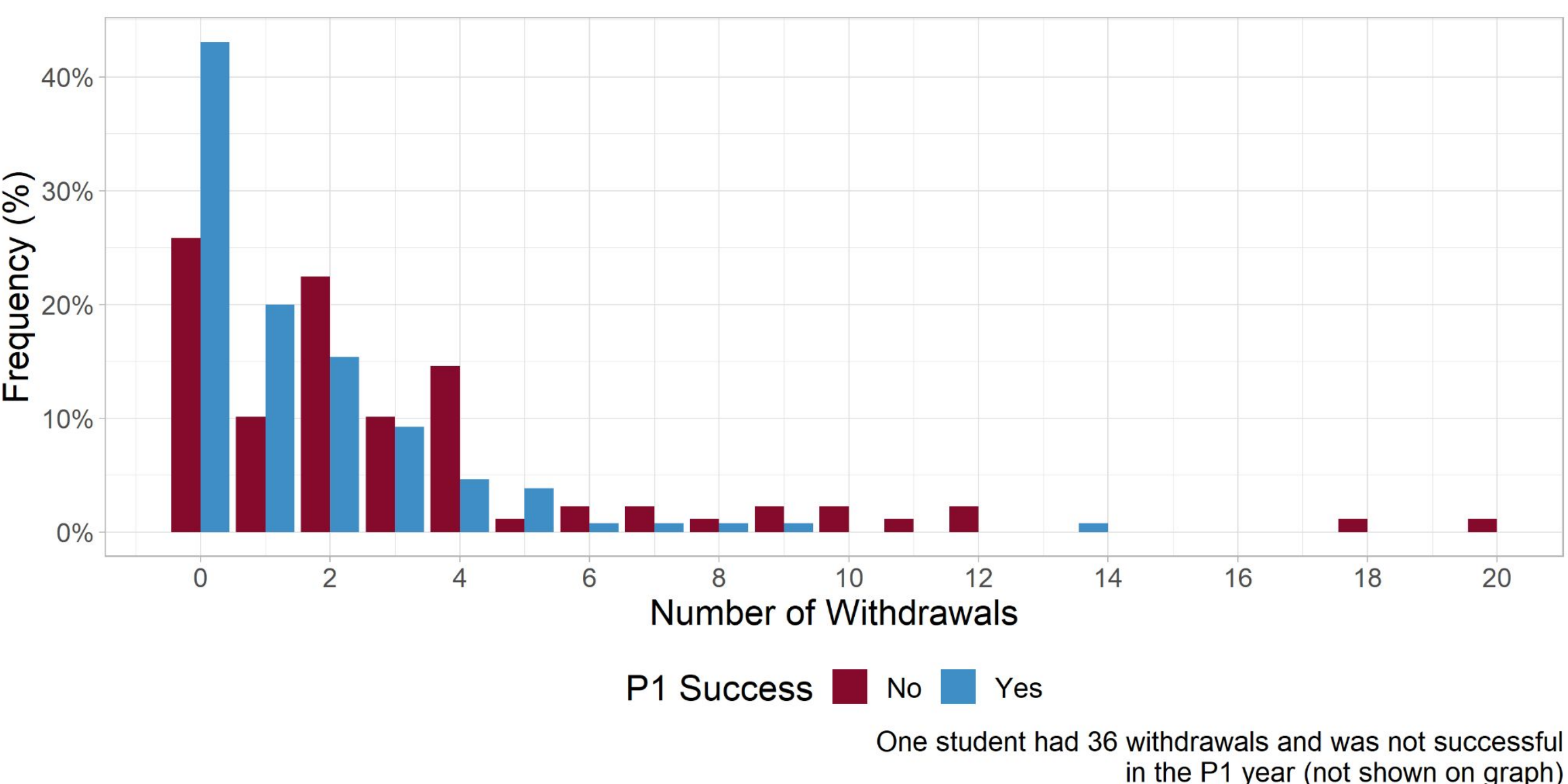
Table 1. Pre-Matriculation Characteristics (N=220)

Characteristic	P1 Success (n=130)	No P1 Success (n=90)	p-value
Female sex, n (%)	84 (65)	56 (62)	0.717
Age, median (IQR)	23.5 (22-25)	25 (23-28)	0.009
Bachelor's degree or higher, n (%)	87 (67)	52 (58)	0.167
Pre-matriculation GPAs			
Cumulative GPA, median (IQR)	2.88 (2.62-3.37)	2.71 (2.42-3.07)	0.001
Science GPA, median (IQR)	2.60 (2.28-3.26)	2.46 (2.17-2.87)	0.019
Course withdrawals			
Median (IQR)	1 (0-2)	2 (0.25-4)	**<0.001**
Two or more, n (%)	48 (37)	58 (64)	**<0.001**

Figure 2. P1 Success Status Breakdown

47 (21.4%)
43 (19.5%)
130 (59.1%)

● P1 Success ● Remediation ● No Progression
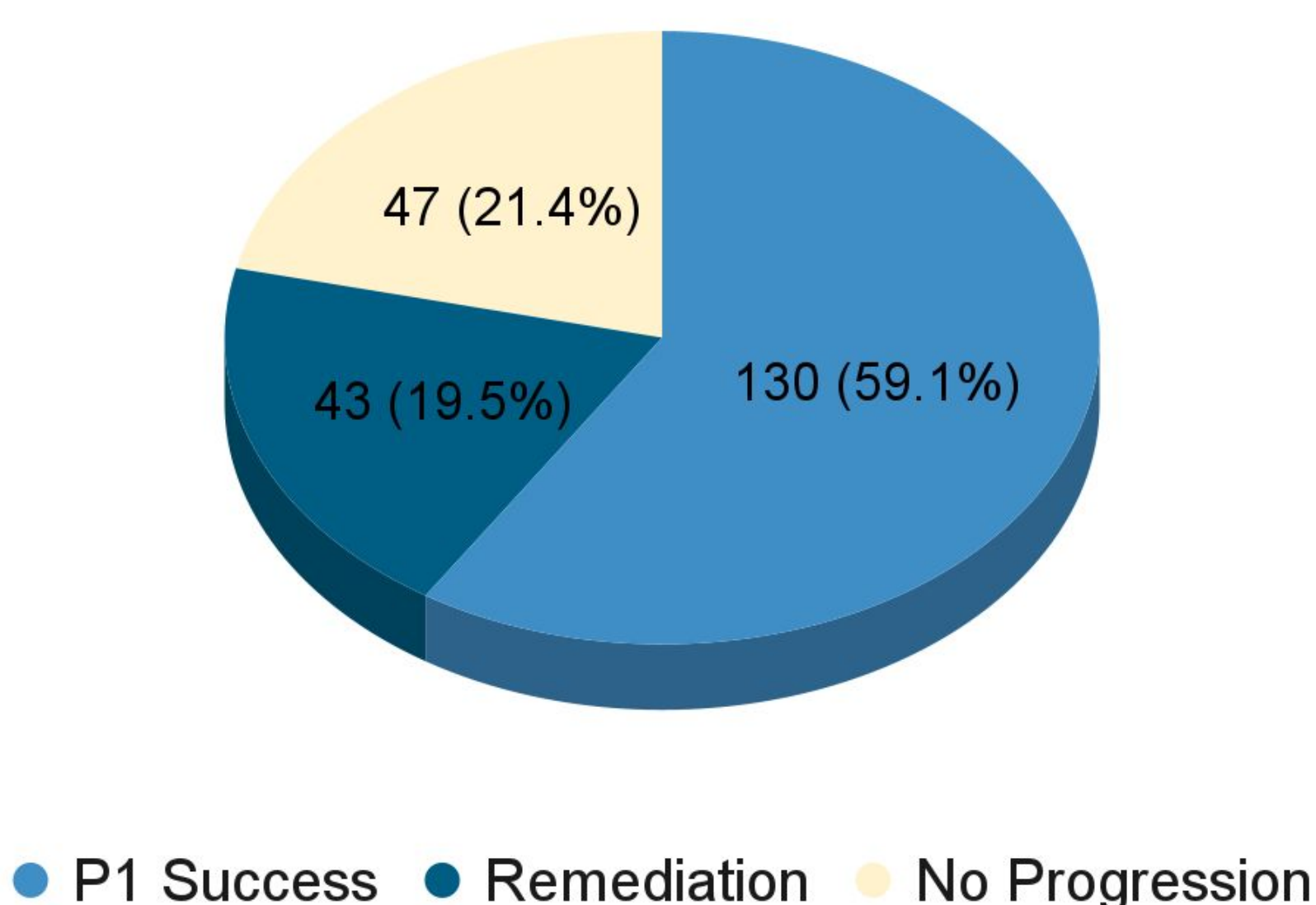
Table 2. Logistic Regression Model for P1 Success

Characteristic	OR	95% CI	p-value
< 2 course withdrawals	2.46	1.36 to 4.49	**0.003**
Cumulative GPA	1.97	1.07 to 3.71	**0.032**

Age, sex, Bachelor's degree, cumulative science GPA, number and semesters with course withdrawals were removed from the final model
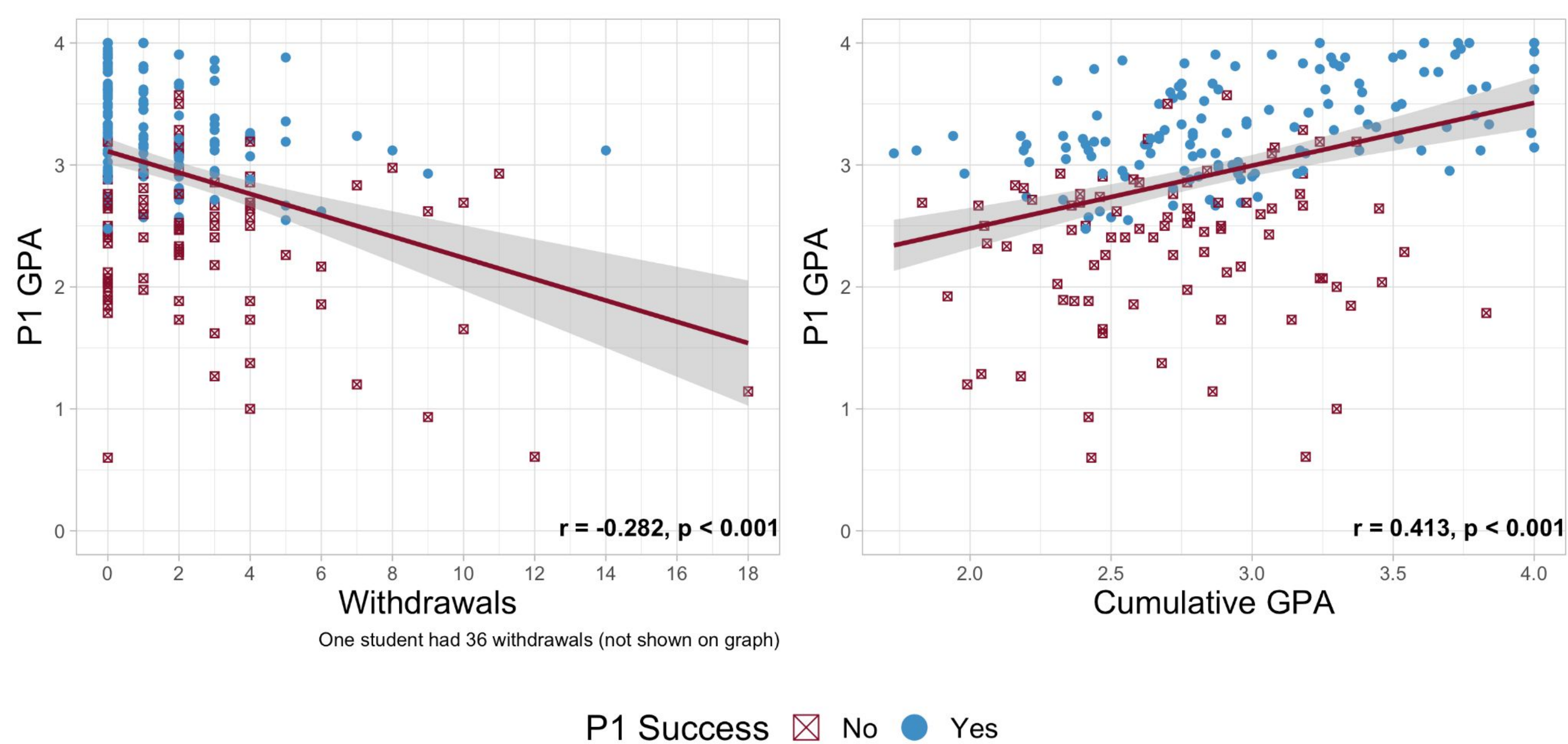
Table 3. Linear Regression Model for P1 GPA

Characteristic	OR	95% CI	p-value
Bachelor's degree or higher	0.22	0.05 to 0.39	**0.010**
Cumulative GPA	0.41	0.24 to 0.57	**<0.001**
# course withdrawals	-0.05	-0.08 to -0.03	**<0.001**

Final model R^2=23%, p<0.001
Age, sex, cumulative science GPA, and semesters with course withdrawals were removed from the final model through stepwise linear regression

Figure 3. Withdrawal, Pre-Matriculation Cumulative GPA, and P1 GPA

r = -0.282, p < 0.001

r = 0.413, p < 0.001

One student had 36 withdrawals (not shown on graph)

P1 Success ⊠ No ● Yes

LIMITATIONS

➢ Transcript data did not include course grades that were "in progress" at time of application
➢ COVID-19 may have confounded performance and success in both undergraduate school and in the first year of pharmacy school in a portion of our sample

CALL TO ACTION

Admission committees may use pre-matriculation course withdrawal metrics to make admissions decisions and/or identify students requiring greater academic support during the first year of pharmacy school

REFERENCES

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