

# Assessing the effects of exam review attendance on academic performance in first-year pharmacy students

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## Introduction

- Pharmacy programs are tasked with developing "Practice & Team-Ready" pharmacists with career success skills.
- Exam reviews strengthen metacognition and foster lifelong learning.
- Reviewing missed questions helps identify mistakes, improves exam-taking behaviors, and prevents future errors.

## Objective

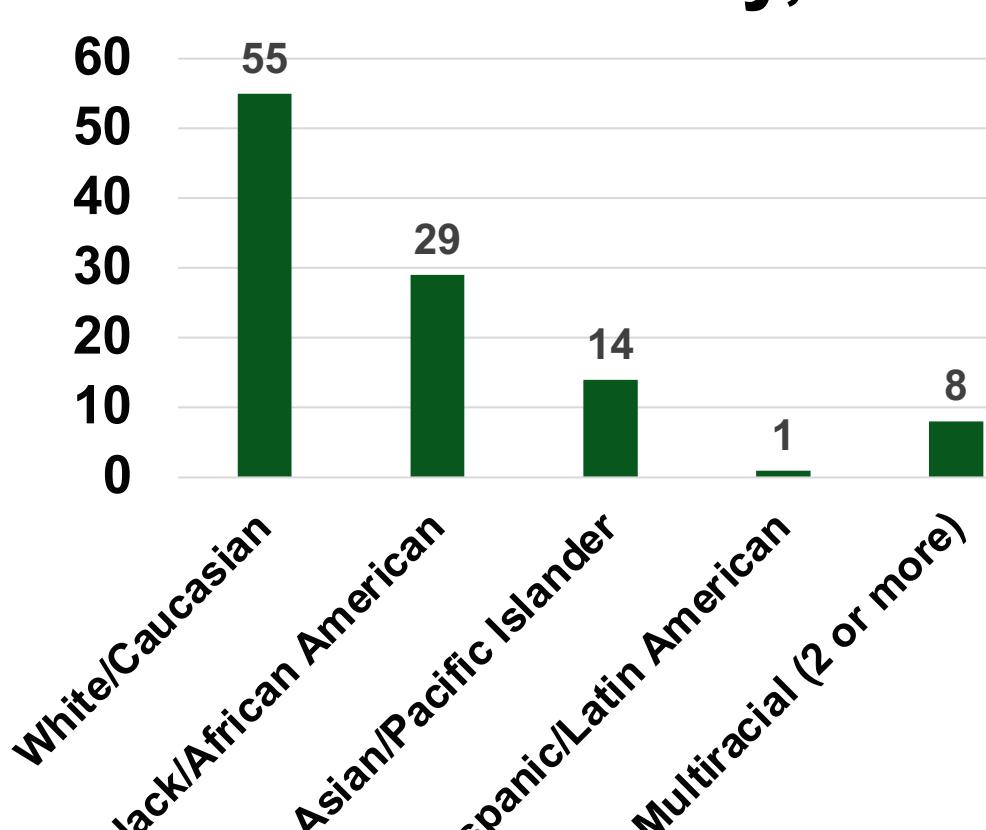
- To assess the effects of exam review session attendance on first-year students' academic performance.

## Methods

- Previously, the prior Exam Review process was an individual process where the student reviewed missed questions with no rationale, notes, or discussions with classmates.
- This exam review process was revised in Fall 2022.
  - Revisions to this process allowed students to review a personalized report of missed questions with rationales in a secure, proctored location.
  - Access to technology was prohibited. However, using class notes and peer discussion was permitted among peers.
- All first-year PharmD students (n=99) enrolled were included.
- Academic performance data (including term and cumulative GPA) and the number of exam review sessions attended were collected.
  - Student demographics, including age and race/ethnicity, were also collected.
- Term and cumulative GPAs were compared with the number of review sessions attended using independent samples t-tests.
  - A p-value of 0.05 was significant.

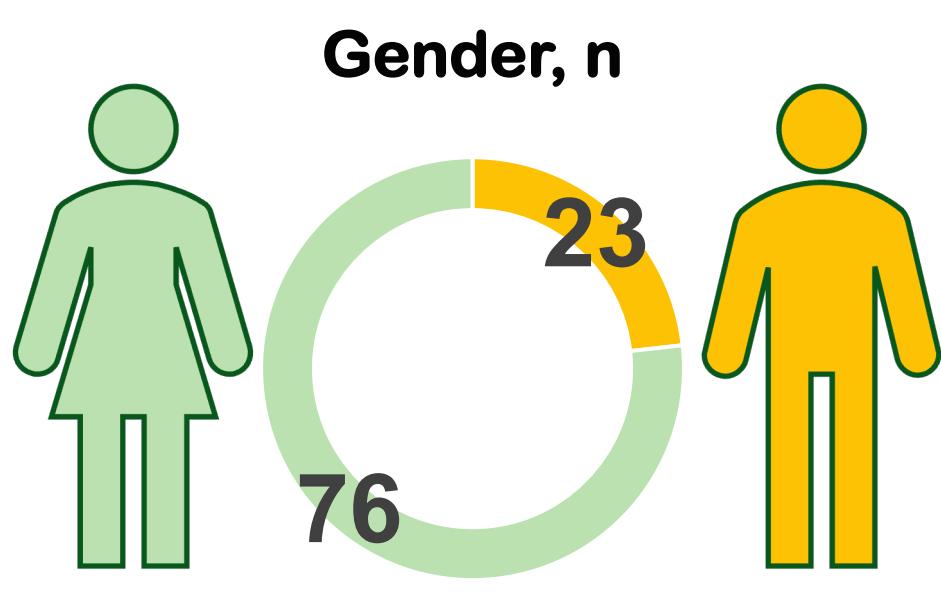
## Demographics

### Race/Ethnicity, n



23.7

Age  
mean, in years



## Results

	Fall 2022	Spring 2023	Year 2022/23
GPA, mean (SD)	3.36 (0.59)	3.03 (0.66)	3.24 (0.54)
Sessions attended, mean (SD)	3.87 (1.94)	3.33 (2.54)	7.20 (3.86)
Number of students, n	99	95	95

	< 50% Sessions Attended	> 50% Sessions Attended	p-value****
Fall Semester-GPA (Term)*	3.14 (0.73) n=38	3.50 (0.44) n=61	.002
Spring Semester-GPA (Term)**	3.00 (0.63) n=58	3.10 (0.70) n=37	.032
Academic Year - GPA (Overall)***	3.19 (0.55) n=48	3.30 (0.54) n=47	.336

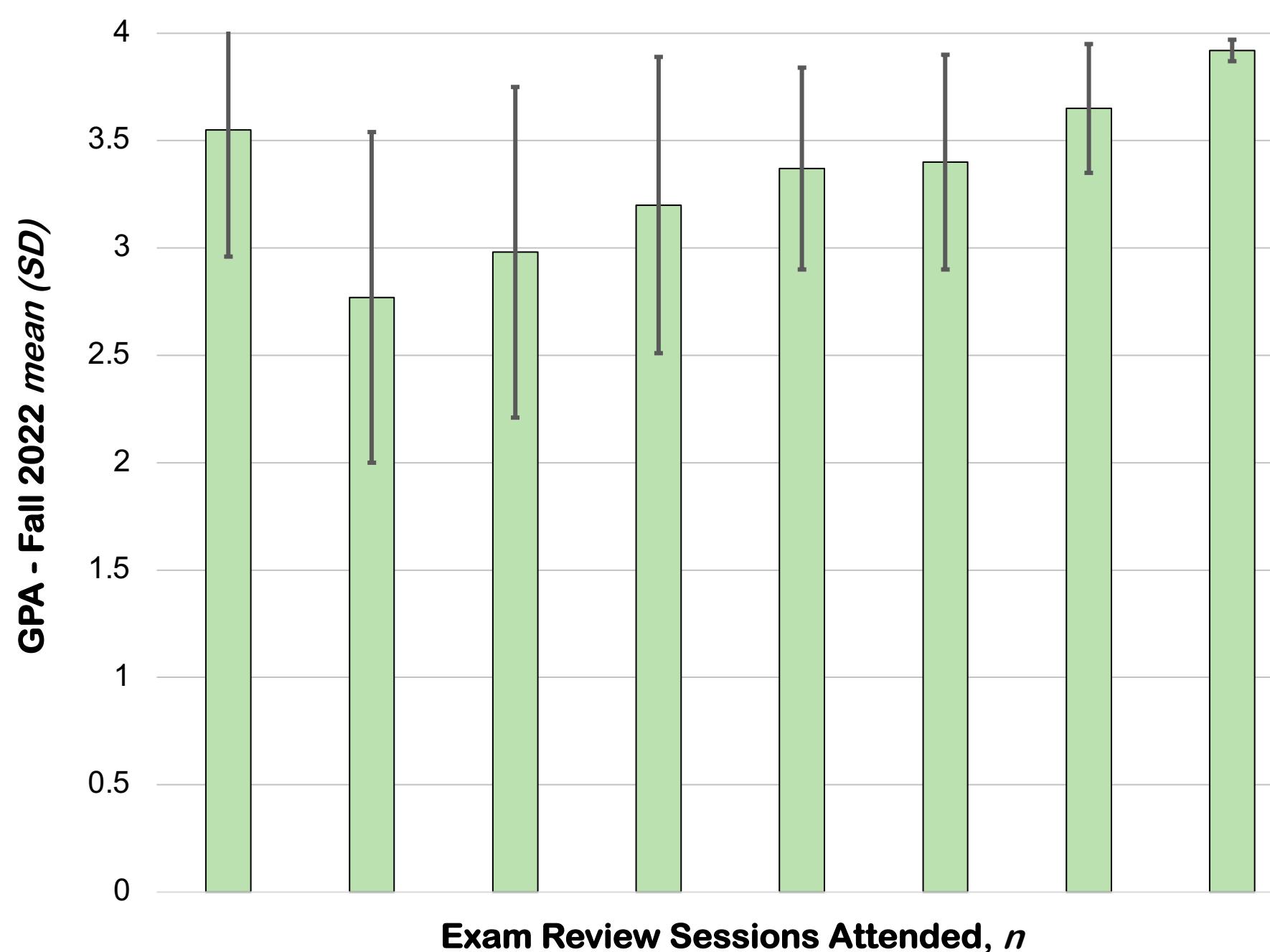
\*For the Fall semester, there were 7 sessions in total: 0-3 Sessions (< 50%); 4-7 Sessions (> 50%)

\*\*For the Spring semester, there were 8 sessions in total: 0-4 Sessions (< 50%); 5-8 Sessions (> 50%)

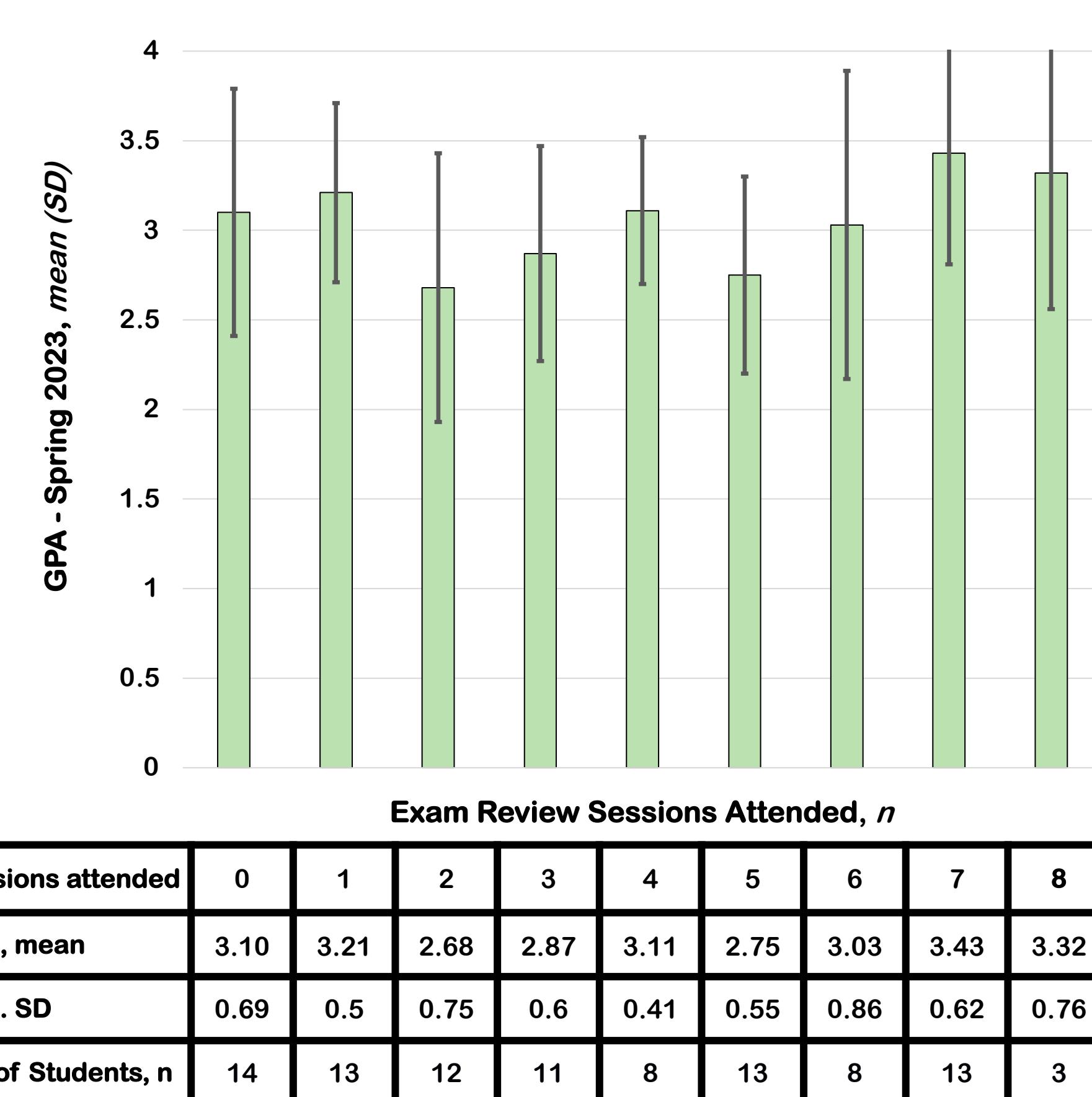
\*\*\*For the Academic Year, there were 15 sessions in total: 0-7 Sessions (< 50%); 7-15 Sessions (> 50%)

\*\*\*\*Independent t-test was performed to determine significant; a p-value < .05 was deemed significant

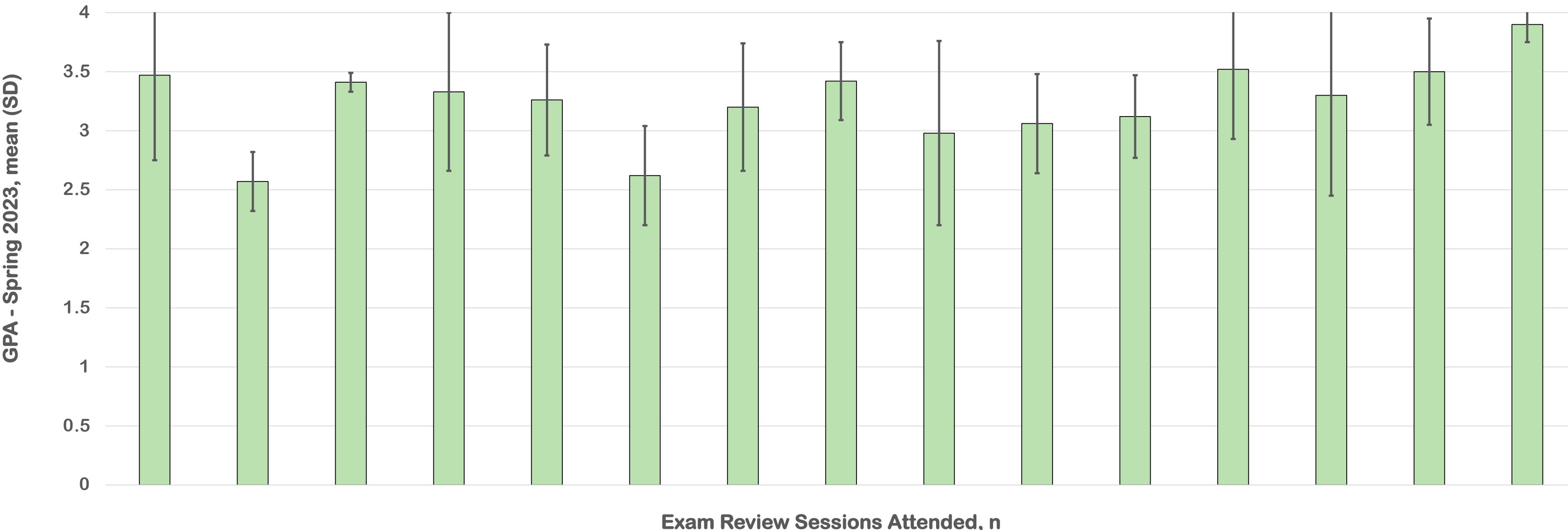
### Fall 2022



### Spring 2023



### Academic Year 2022/23



## Key Findings

- 95% of students attended one or more sessions during the 2022-23 Academic Year
  - 60% of students attended 50% of sessions held over the entire academic year
- Attendees with over 50% session attendance in both the Fall and Spring had significantly higher respective semester GPAs
  - There was no difference noted, however, in cumulative GPA analysis.
- Despite positive trends, no significant correlations are observed between the number of sessions attended and the resultant GPA on a term or academic year basis.

## Conclusions

- The majority of first-year students demonstrated a strong interest/attendance with exam review sessions
- Those who attended > 50% of sessions in the:
  - Fall/Spring Term: significantly higher Fall/Spring GPAs
  - Academic Year: no significant difference in cumulative GPAs
- The revised exam process was a positive procedural change that benefits students transitioning into a professional PharmD program.
- In the future, attendance at these sessions will be added to the early intervention process for students struggling within the curriculum.
- Additional research is needed to evaluate the longitudinal effects of exam review attendance over student performance in the entire curriculum

## Limitations

- Scheduling and timing of exam review sessions may have affected attendance for some students
- Data was only collected for one academic year and extended data collection may provide deeper insights
- The studied population introduces confounding variables (e.g., increasing comfort with pharmacy knowledge, acclimation to the instructor's teaching style, and assessment practices).
- Single-center study design and UTHSC COP's composite exam procedure limit generalizability to other institutions or professional programs.

## References

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