

# Objective Structured Clinical Examination (OSCE) Performance Assessment of PharmD Student Pharmacists

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## BACKGROUND

- Objective Structured Clinical Skills Examinations (OSCEs) were developed in 1975 to assess clinical skill performance and competence in a variety of health professions.<sup>1</sup>
- Metacognition is “thinking about thinking” and it has been shown that having a self-awareness of one's performance capabilities allows for better critical thinking and monitoring of actions.<sup>2</sup>
- Past studies have shown statistically significant positive relations between GPA and OSCE scores as well as Multiple Mini Interview (MMI) scores and GPA.<sup>3,4</sup>
- In Fall of 2020, the UT Austin College of Pharmacy curriculum introduced the Pharmacy Practice Lab series, which is a combination of seven existing courses designed to reduce repetitiveness and to increase alignment and reinforcement.<sup>5</sup> In each semester, students' skills and knowledge are assessed through one midterm OSCE and one final OSCE.

## OBJECTIVES

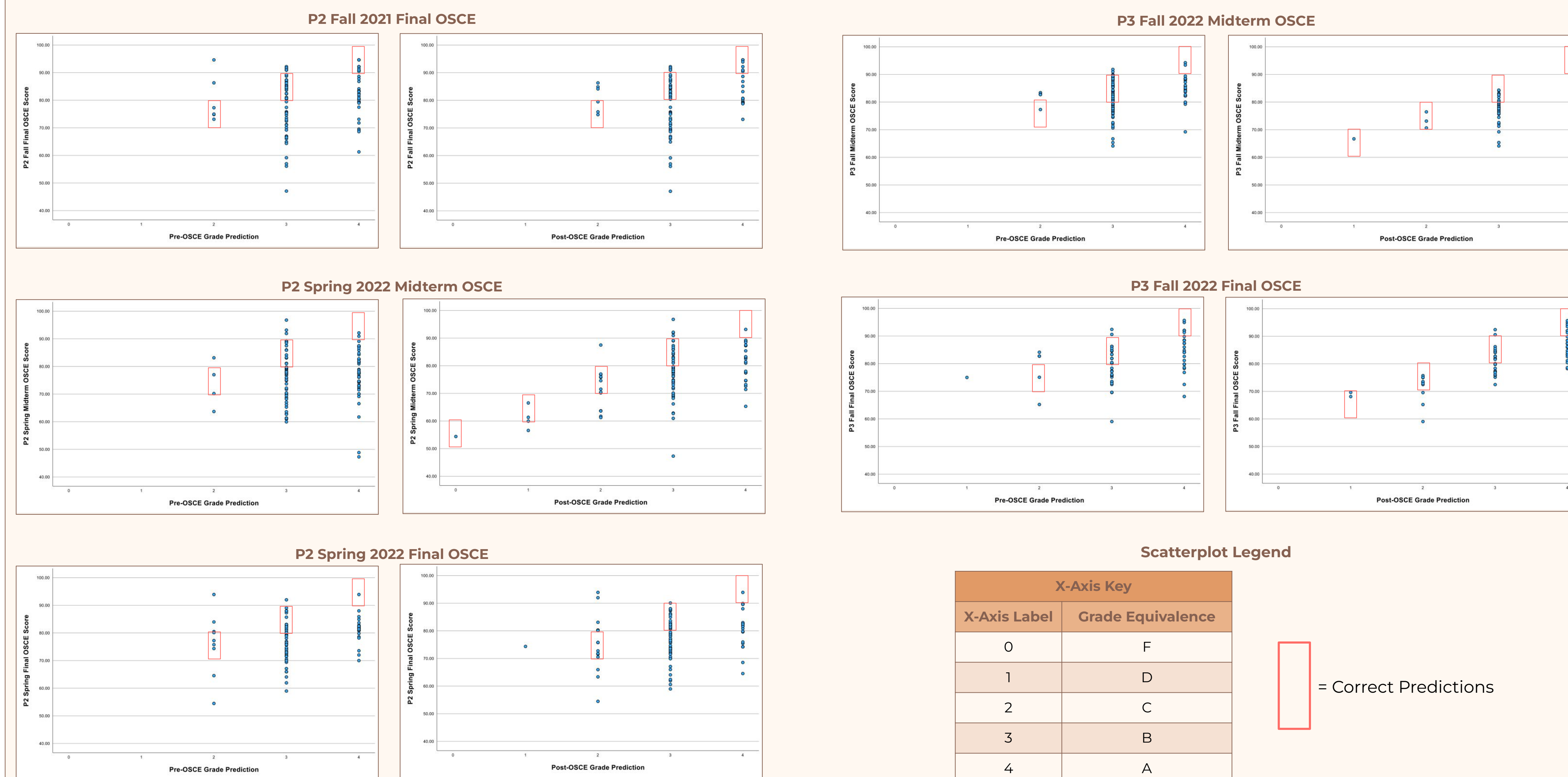
- Assess the students' ability to accurately predict their OSCE performance outcomes before and after the OSCE.
- Determine the correlations between OSCE scores and objective data including MMI scores, pre-pharmacy GPA, pharmacy GPA, and composite PCAT scores.
- Determine the correlations between OSCE scores and subjective data including preparation time, preparedness (prep) level, and stress level.

## METHODS

- De-identified MMI scores, pre-pharmacy GPA, pharmacy GPA, and composite PCAT scores were obtained from the college administration.
- Qualtrics surveys containing the following questions were distributed to the Class of 2024 through the Pharmacy Practice Lab Sequence:
  - Pre-OSCE survey only:
    - How much time (hrs) did you spend outside of class preparing for the OSCE?
  - Both pre- and post- OSCE surveys:
    - On a scale of 1-10 (1=not prepared & 10=very prepared) how prepared are/were you for the OSCE?
    - On a scale of 1-10 (1=not stressed & 10=very stressed) how stressed are/were you for the OSCE?
    - What grade (A-F) do you anticipate earning on the OSCE?
- Compiled data was analyzed using Pearson's correlation and scatterplots.

## RESULTS

### Students' Perceptions of their OSCE Performance



### Pearson's Correlation Coefficients

OSCE Scores	Pre-Pharm GPA <i>r</i> ( <i>p</i> )	PCAT Score <i>r</i> ( <i>p</i> )	MMI Score <i>r</i> ( <i>p</i> )	Corresponding Semester GPA <i>r</i> ( <i>p</i> )
P2 Fall 2021 Final OSCE Score	0.103 (0.306)	<b>0.243</b> ( <b>0.014</b> )	<b>0.201</b> ( <b>0.044</b> )	<b>0.434</b> ( <b>&lt;0.001</b> )
P2 Spring 2022 Midterm OSCE Score	0.102 (0.310)	0.058 (0.566)	<b>0.249</b> ( <b>0.012</b> )	<b>0.487</b> ( <b>&lt;0.001</b> )
P2 Spring 2022 Final OSCE Score	0.147 (0.145)	0.032 (0.753)	<b>0.422</b> ( <b>&lt;0.001</b> )	<b>0.461</b> ( <b>&lt;0.001</b> )
P3 Fall 2022 Midterm OSCE Score	<b>0.304</b> ( <b>0.002</b> )	0.152 (0.129)	0.165 (0.098)	<b>0.373</b> ( <b>&lt;0.001</b> )
P3 Fall 2022 Final OSCE Score	0.172 (0.086)	<b>0.346</b> ( <b>&lt;0.001</b> )	<b>0.216</b> ( <b>0.030</b> )	<b>0.436</b> ( <b>&lt;0.001</b> )

Table 1: Pearson Correlation Coefficients for OSCE Scores, Pre-Pharm GPAs, PCAT Scores, MMI Scores, and Corresponding Semester GPAs

OSCE Scores	Corresponding Prep Time <i>r</i> ( <i>p</i> )	Corresponding Prep Level Pre-OSCE <i>r</i> ( <i>p</i> )	Corresponding Prep Level Post-OSCE <i>r</i> ( <i>p</i> )	Corresponding Stress Level Pre-OSCE <i>r</i> ( <i>p</i> )	Corresponding Stress Level Post-OSCE <i>r</i> ( <i>p</i> )
P2 Fall 2021 Final OSCE Score	0.144 (0.180)	0.009 (0.936)	<b>0.239</b> ( <b>0.031</b> )	<b>0.250</b> ( <b>0.018</b> )	0.042 (0.711)
P2 Spring 2022 Midterm OSCE Score	0.076 (0.459)	-0.090 (0.377)	<b>0.264</b> ( <b>0.009</b> )	0.126 (0.216)	-0.042 (0.683)
P2 Spring 2022 Final OSCE Score	0.058 (0.613)	0.205 (0.074)	<b>0.278</b> ( <b>0.008</b> )	0.088 (0.442)	-0.035 (0.738)
P3 Fall 2022 Midterm OSCE Score	-0.025 (0.810)	0.080 (0.441)	<b>0.544</b> ( <b>&lt;0.001</b> )	-0.007 (0.946)	-0.210 (0.051)
P3 Fall 2022 Final OSCE Score	0.023 (0.866)	0.025 (0.851)	<b>0.449</b> ( <b>&lt;0.001</b> )	-0.079 (0.552)	<b>-0.285</b> ( <b>0.024</b> )

Table 2: Pearson Correlation Coefficients for OSCE Scores, Corresponding Prep Time, Corresponding Prep Level Pre-OSCE, Corresponding Prep Level Post-OSCE, Corresponding Stress Level Pre-OSCE, and Corresponding Stress Level Post-OSCE

\*\*Statistically significant correlation coefficients are bolded\*\*

### Percentage of Correct Predictions

Qualtrics Survey	Percentage (%) of Students Who Correctly Predicted Their OSCE Performance Score
P2 Fall 2021 Pre-Final OSCE Survey	38.20
P2 Fall 2021 Post-Final OSCE Survey	42.68
P2 Spring 2022 Pre-Midterm OSCE Survey	16.33
P2 Spring 2022 Post-Midterm OSCE Survey	28.87
P2 Spring 2022 Pre-Final OSCE Survey	24.36
P2 Spring 2022 Post-Final OSCE Survey	30.77
P3 Fall 2022 Pre-Midterm OSCE Survey	46.88
P3 Fall 2022 Post-Midterm OSCE Survey	20.69
P3 Fall 2022 Pre-Final OSCE Survey	32.20
P3 Fall 2022 Post-Final OSCE Survey	47.62

Table 3: Percentage of Students Who Correctly Predict Their OSCE Performance Score on pre- and post- Qualtrics surveys

## RESULTS SUMMARY

- Generally, there are weak to moderate positive correlations between the following:
  - OSCE scores and MMI scores
  - OSCE scores and pharmacy GPA
  - OSCE scores and perceived preparedness post-OSCE
- The average percentage of students who correctly predicted their performance score is 32.86%.

## CONCLUSIONS

- Students who perform better on their MMI and have a higher pharmacy GPA are likely to score higher on OSCEs.
- Students have a better perception of their preparedness after completing the OSCE.
- The majority of students are unable to correctly predict their OSCE score, possibly indicating low self-awareness and overconfidence as most scored lower than they predicted.
- Future studies may investigate what students take into account when predicting their score.

## LIMITATIONS

- The data was collected from only one cohort; therefore, generalizability beyond that group is limited.
- Not every OSCE survey had the same number of respondents. Therefore, missing data was omitted that could have been meaningful.

## ACKNOWLEDGEMENTS

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