

# Effect of COVID-19 Pandemic on PA Student Preparedness for Objective Structured Clinical Examinations (OSCEs)

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## BACKGROUND

During the early phase of the COVID-19 pandemic, physician assistant (PA) education programs were forced to quickly transition to a virtual format. Limited experience in online PA education existed prior to the pandemic<sup>1-3</sup>. The negative impact of delivering curricula in the online format is most likely demonstrable in student's ability to perform hands-on skills, including history-taking and physical examination.

The hypothesis of this study is that objective structured clinical examination (OSCE) performance of PA students given OSCE preparation in a virtual format due to COVID-19 restrictions would be inferior compared to PA students given preparation in a traditional in-person format.

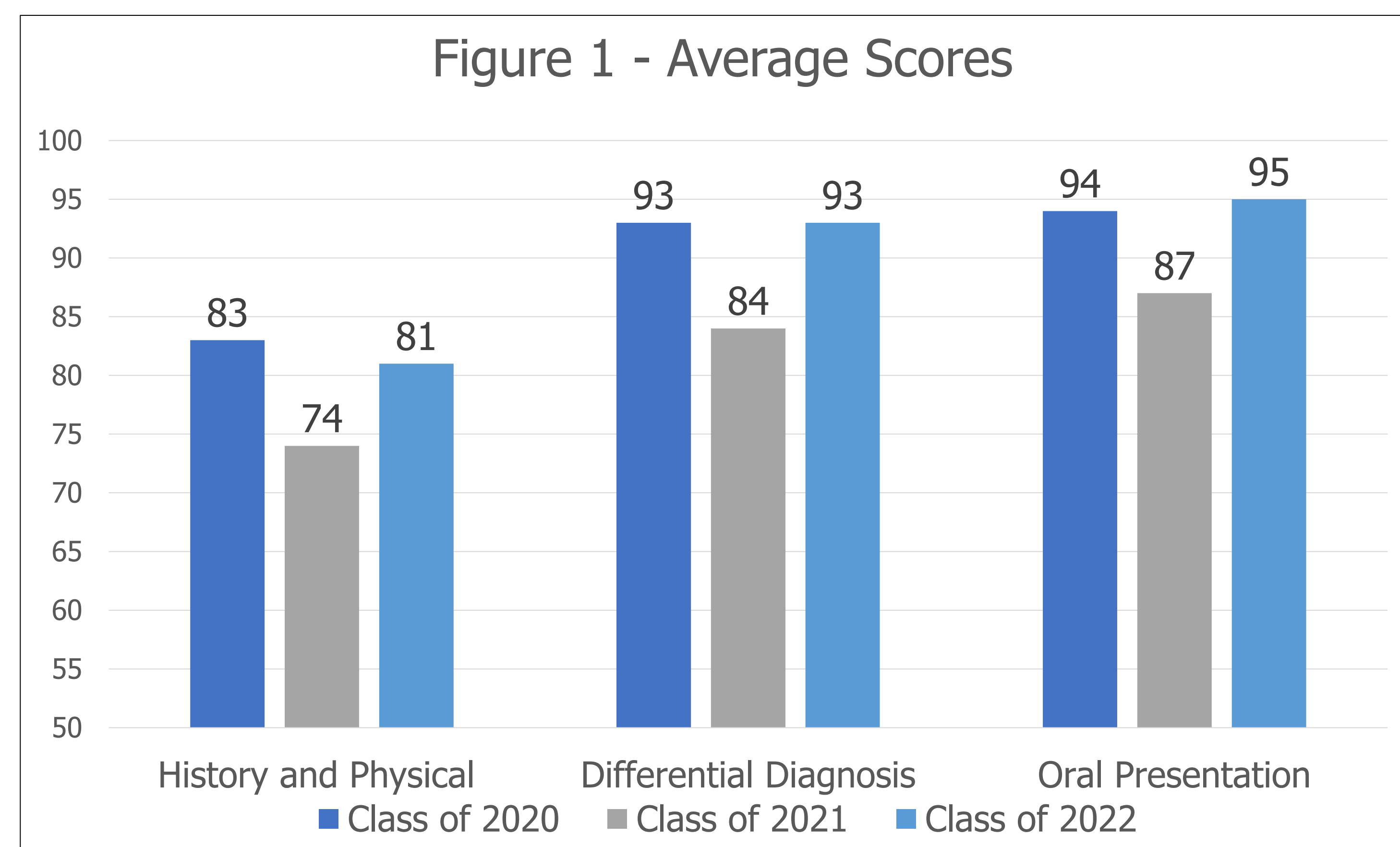
## METHODS

Three cohorts of PA students (n=86) from the graduating classes of 2020 - 2022 were included in the study.

Preparatory curricula consisted of a 14-week summative course in trimester III, consisting of problem-based learning modules with emphasis on history-taking and physical examination skills and differential diagnoses development. Due to COVID restrictions, the 2021 cohort participated in this summative course in the virtual format.

Performance across cohorts was compared using grades on an OSCE administered during the clinical year, early in trimester IV, approximately 1 month after completion of the preparatory course. Students were tasked with performing a history and physical examination on a standardized patient, giving an oral presentation, and developing a differential diagnosis. Students were assessed utilizing a standardized rubric. Assessment tools used for all three cohorts remained the same allowing for consistency of grading between cohorts. Results were analyzed using a one-way analysis of variance (ANOVA) with a post-hoc Tukey test.

	Class of 2020, Mean Score ± SD	Class of 2021, Mean Score ± SD	Class of 2022, Mean Score ± SD	p
History & Physical	83 ± 4.4	74 ± 10.5	81 ± 7.7	0.0001*
Differential Diagnosis	93 ± 6.1	84 ± 13.2	93 ± 6.7	0.000168*
Oral Presentation	94 ± 5.8	87 ± 9.1	95 ± 3.7	0.000036*
Cumulative GPA (through trimester IV)	3.80 ± 0.2	3.79 ± 0.2	3.71 ± 0.2	0.2599



## RESULTS

There was a statistically significant increase in the performance of students prepared using in-person compared to virtual coursework across all three skill domains assessed – history-taking and physical examination skills, oral presentation, and differential diagnosis development. When compared to the 2021 cohort, the 2020 and 2022 cohorts scored 11.46% and 9.03% higher, respectively, on the history and physical examination skills (p=<0.001). The 2020 and 2022 cohorts scored 10.16% higher on differential diagnosis development (p=<0.001) compared to 2021 cohort. The 2020 and 2022 cohorts scored 7.73% and 8.79% higher, respectively, on oral presentation (p = <0.001). Cumulative GPA from the end of the fourth trimester of program showed no statistical difference between the cohorts with a mean GPA of the three cohorts at 3.77 with a SD of +/- 0.21 (p=0.2599).

## CONCLUSIONS

The study found inferior OSCE performance with virtual format preparation compared to traditional in-person curricular delivery. All cohorts demonstrated equivalent overall academic performance when considering cumulative GPA through fourth trimester of program. The significant difference on OSCE performance highlights the limitations of virtual coursework to prepare students for hands-on skills. In the event of necessary transitions to remote learning, further work should be done to develop curricula for skills-based competencies to allow effective learning. For programs pursuing accreditation as online-only or hybrid programs, special focus should be given to the skills-based learning curricula.

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