Impact of Peer-Led MOSCE and Open Practice Sessions on Student Performance and Peer Tutor Perceptions

Christy Xavier, MS, PharmD; Meredith Howard, PharmD

University of North Texas Health Science Center College of Pharmacy, Fort Worth, TX

INTRODUCTION

- Objective structured clinical examinations (OSCE) are highly associated with student stress compared with other types of assessments.
- Peer-assisted learning programs (PAL) such as a mock OSCE (MOSCE) may:
  - Increase cognitive and psychomotor development[1,4,5]
  - Improve confidence[1,2,4,5]
  - Increase valued feedback[2,4]
  - Increase OSCE scores[3,5]
- Few studies analyze impact of such programs including a mock OSCE in pharmacy education.
- Our previous study following students in the Fall of 2022 found:
  - No impact on performance
  - Improved self-perceived confidence and preparedness
- Controversy behind value of peer-led vs. faculty feedback

OBJECTIVE

To examine the impact of a novel peer-led MOSCE and/or faculty-led open sessions on student performance and peer grader and student perceptions

METHODS

Study Design
- Retrospective quantitative and qualitative cohort study conducted in Fall 2022 and 2023 semesters

Study Participants
- *P1 students*: enrolled in PHAR 7118 Physical Assessment Skills Lab course
- *Mock participants*: P1 students that attended the mock OSCE
- *Non-participants*: P1 students that did not attend the mock OSCE
- *Peer tutors*: P2-P4 students that acted as mock patients and graders during the MOSCE

Mock OSCE Event
- MOSCE was conducted after the low stakes OSCE and prior to the high stakes OSCE.
- Peer tutors were provided rubrics for evaluation and conducted the mock OSCE similarly to the high stakes OSCE.
- Evaluated on blood pressure (BP) and diabetic foot exam (DFE) techniques and communication/interview skills

Faculty-Led Open Sessions
- Voluntary and conducted once before the low-stakes and once before the high-stakes OSCE

Data Collection
- Voluntary, anonymous surveys through Qualtrics were administered pre- and post-MOSCE event to participants, after the MOSCE event to peer tutors, and after the low stakes/before the high stakes OSCE for non-participants.
- Surveys analyzed: baseline demographics, preparedness/confidence scores (for P1 students), perceptions about the event, reasons for not attending the MOSCE (for P1 non-participants)
- Low and high-stakes OSCE scores
- Open session attendance

Statistical Analysis
- Descriptive statistics and Chi square analysis for baseline demographics and Perceptions
- Paired sample T-test for preparedness and confidence scores pre- and post-MOSCE
- Independent samples T-test for comparison of participants and non-participants scores

RESULTS

	Class of 2026	Class of 2027
MOSCE Participants	23	35
	21 (91.3%)*	26 (74.3%)*
Peer Tutors	24	57
	8 (33.3%)*	26 (45.6%)*
Non-Participants	48	33
	26 (54.2%)*	23 (69.7%)*
Low-Stakes OSCE Fail Rate	39 (52%)	29 (42.6%)
High-Stakes OSCE Fail Rate	16 (22.5%)	15 (22.1%)

	Mock Participants	Non-Participants	p-value
Mean Age + SD	24.46 ± 2.64	26.05 ± 6.32	0.251
Gender			
Male	7	13	0.224
Female	19	10	
Gender-Fluid	0	0	
Race/Ethnicity			
Caucasian Non-Hispanic White	4	4	
Hispanic/Latino	5	8	0.742
African American/Black	5	3	
Asian	8	6	
Multiple/Other	4	2	
Prefer not to answer	0	0	
Highest Degree Earned			
High School or GED	0	1	
Undergraduate	25	22	0.365
Graduate	1	0	
Prior Clinical or Pharmacy Experience			
Yes	18	18	0.475
No	8	5	

*Survey respondents

Peer Tutor Demographics	Fall 2022	Fall 2023
	n = 8	n = 26
Mean Age	23.71	26
Gender		
Female	4 (50%)	19 (73.1%)
Male	4 (50%)	7 (26.9%)
Race/Ethnicity		
Caucasian Non-Hispanic White	2 (25%)	5 (19.2%)
Hispanic/Latino	1 (12.5%)	3 (11.5%)
African American/Black	3 (37.5%)	4 (15.4%)
Asian	2 (25%)	11 (42.3%)
Multiple/Other	0 (0%)	3 (11.5%)
Pharmacy Year		
P2	7 (87.5%)	17 (65.4%)
P3	1 (12.5%)	9 (34.6%)

PEER TUTOR PERCEPTIONS

Most Liked Aspects
73.1%: mutual learning environment
65.4%: "mimics clinical scenario" and "peer-led"

Strengths
- Able to give feedback based on experience as P1
- Makes students feel more confident and comfortable
  - See process from perspective of grader
  - Can never be too prepared for an OSCE
- Needed to refresh my knowledge on BP assessment and DFE

Limitations
- Time organization
- More feedback time
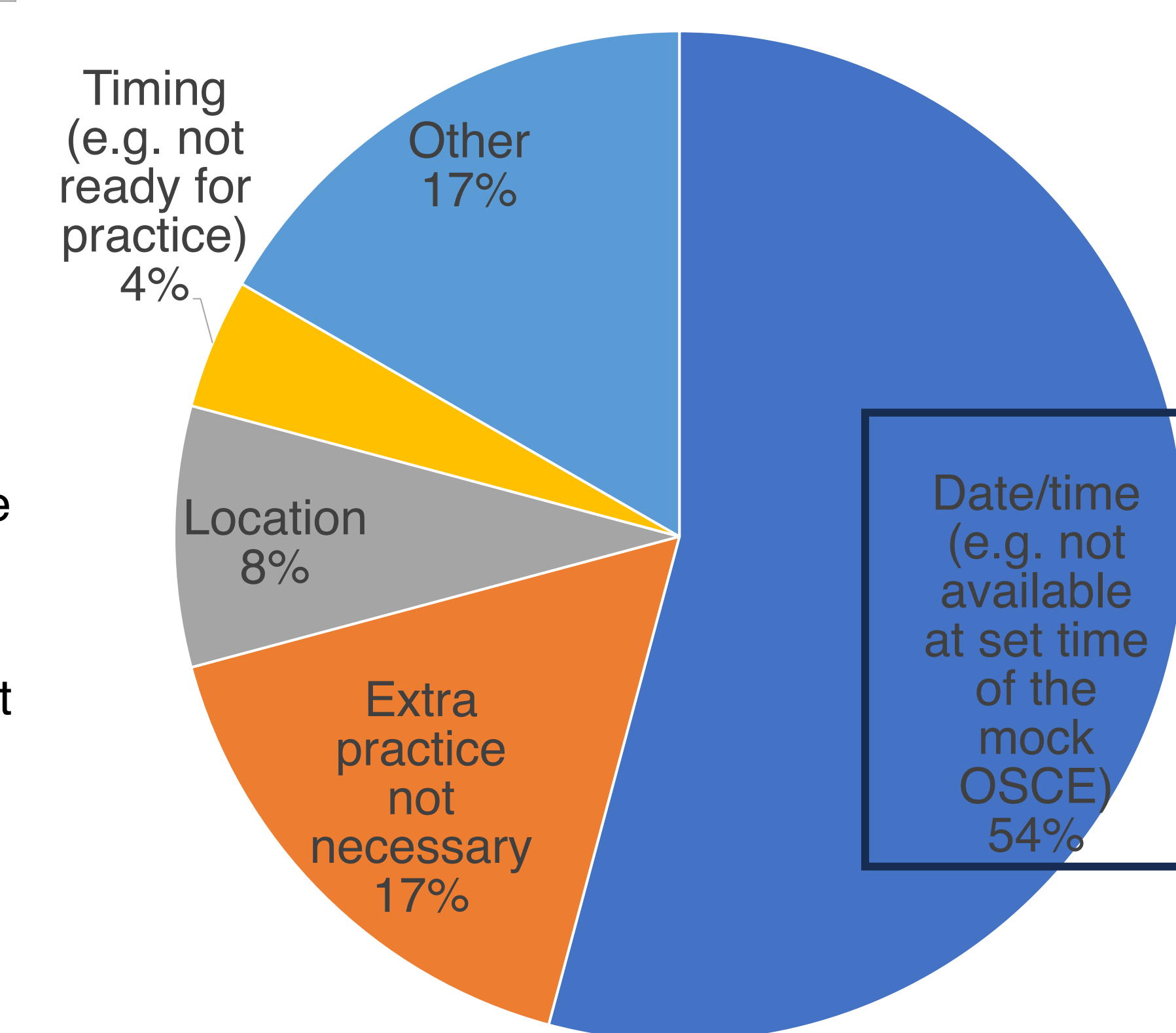 - Ran long
- Finished later than would like

100% of MOSCE participants *somewhat to strongly agreed*:
- MOSCE was beneficial
- Helped improve their communication skills
- Appreciated student presence in all aspects of the MOSCE
- Increased confidence in patient care activities

100% of MOSCE participants *strongly agreed*:
- Appreciated feedback from peer tutors

REASONS FOR NON-PARTICIPATION

Timing (e.g. not ready for practice) 4%
Other 17%
Location 8%
Extra practice not necessary 17%
Date/time (e.g. not available at set time of the mock OSCE) 54%

RESULTS (CTD.)

- MOSCE attendance significantly improved confidence and preparedness scores
- Post-MOSCE scores were similar to non-participant scores (p > 0.05)
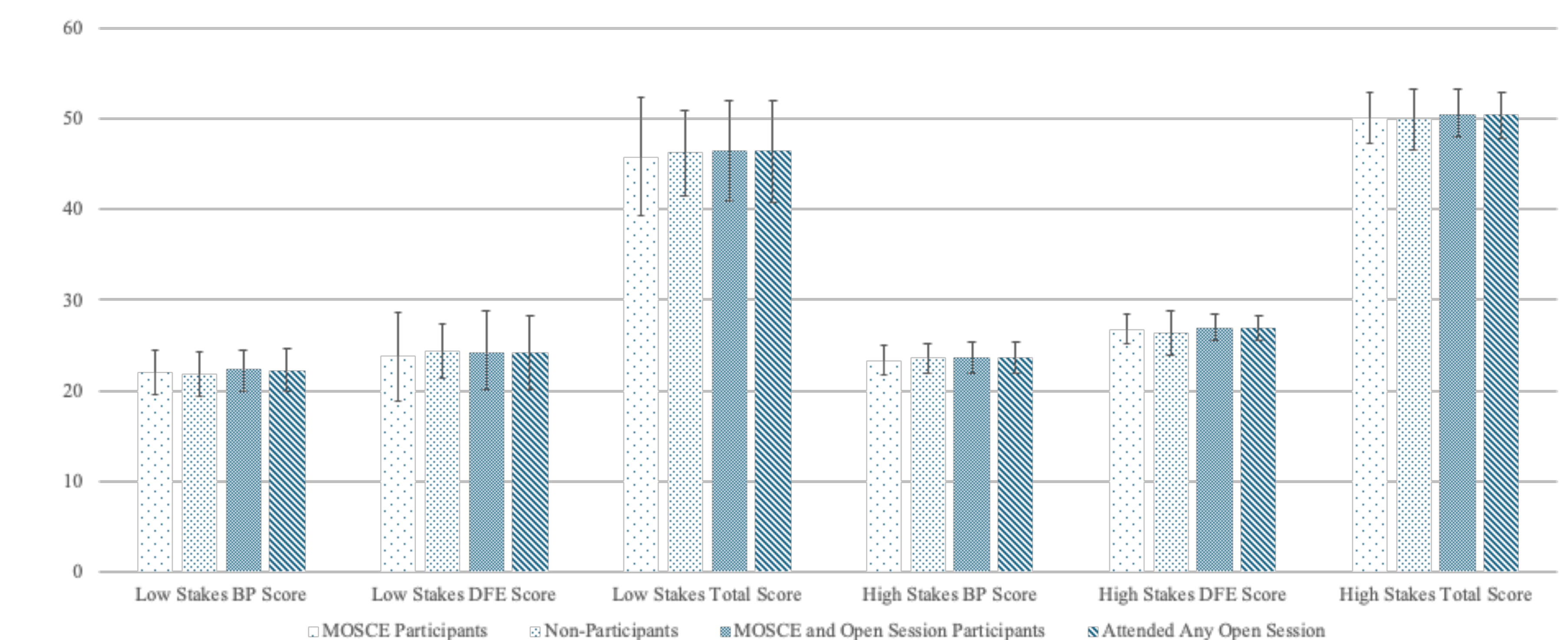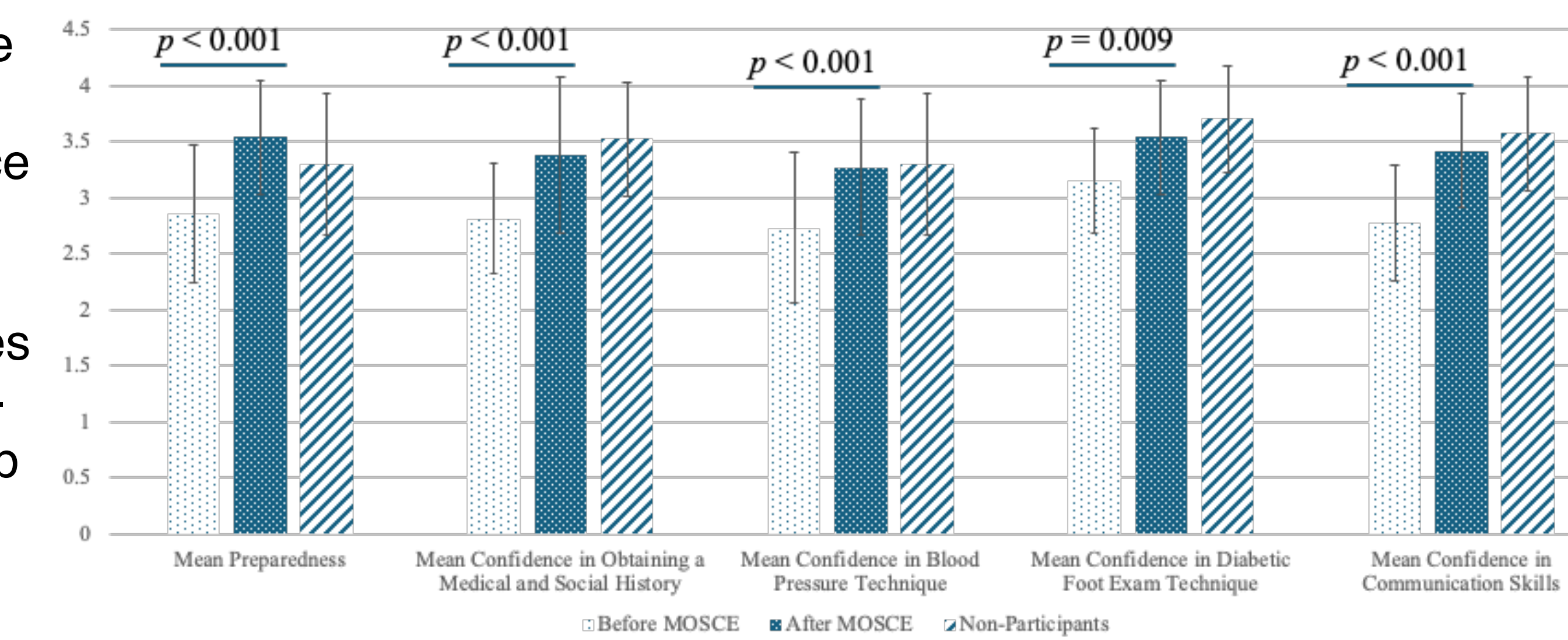
- 52.9% of P1s attended any open practice session, 11.8% attended both practice sessions, and 32.4% attended both the MOSCE and any open practice session.
- Attendance at any practice session (p = 0.97), both practice sessions (p = 0.831), and any open practice session and MOSCE (p = 0.594) was not associated with higher passing rates or scores on the high-stakes OSCE.

CONCLUSIONS

- MOSCE participation was associated with an increase in preparedness and confidence in performing OSCE skills but was not associated with a lower failure rate on the high stakes OSCE or better OSCE performance.
- Faculty-led open sessions had no additional value, as attendance to either or both open sessions and/or mock OSCE was not correlated with better performance or failure rates.
- Most non-participants cited unavailability as a reason for not attending MOSCE.
- Peer tutors cited mutual learning environment and "paying it forward" as reasons for volunteering.

Future studies:
- Analyze impact of MOSCE prior to low stakes on performance and confidence
- Increase availability and accessibility of MOSCE sessions
- Collect data from multiple cohorts

REFERENCES
1. Braier-Lorimer DA, Warren-Miell H. A peer-led mock OSCE improves student confidence for summative OSCE assessments in Undergraduate Medical Education. Med Teach. 2022;44(5):535-540. doi:10.1080/0142159x.2021.2004306
2. Koo JH, Ong KY, Yap YT, Tham KY. The role of training in student examiner rating performance in a student-led mock objective structured clinical examination. Korean J Med Educ. 2021;33(4):383-393. doi:10.3946/kjme.2021.213-8
3. Madrazo L, Lee CB, McConnell M, Khamisa K, Pugh D. No observed effect of a student-led mock objective structured clinical examination on subsequent performance scores in medical students in Canada. Journal of Educational Evaluation for Health Professions. 2019;16:14. doi:10.3352/jeehp.2019.16.14
4. Taylor D, Quick S. Students' perceptions of a near-peer objective structured clinical examination (OSCE) in Medical Imaging. Radiography. 2020;26(1):42-48. doi:10.1016/j.radi.2019.06.009
5. Young I, Montgomery K, Kearns P, Hayward S, Mellanby E. The benefits of a peer-assisted mock OSCE. Clin Teach. 2014 Jun;11(3):214-8. doi: 10.1111/tct.12112. PMID: 24802924.