First-Year Medical Students' In-Person and Virtual Gross Anatomy Lab Experience at Wayne State University School of Medicine amid the COVID-19 Pandemic

Youstina Abdallah[1,2], David Bai[1,2], Alison Rousseau[1,2], Ahmed Elattma[1,2], Harry Ramos[1,2], Matthew Bautista[1,2], Priyanka Kale[1,2], Paul Walker[1], Diane Levine[1,2]

[1]*Wayne State University School of Medicine, Detroit, MI*

[2]*Institute of Healthcare Improvement WSUSOM Chapter, Detroit, MI*

WAYNE STATE
School of Medicine

INTRODUCTION

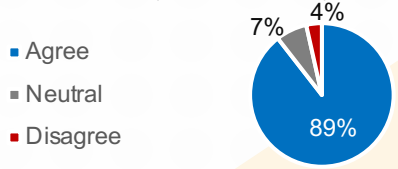
- Due to the ongoing COVID-19 pandemic, medical schools across the country have rapidly transitioned from in-person to virtual instruction.
- Ensuring rich and impactful learning remains an ongoing objective in virtual medical instruction at WSUSOM.
- One particular challenge in the past year has been finding an effective way to teach the Gross Anatomy (GA) curriculum virtually as students cannot experience traditional cadaveric dissection online.
- Here, a first-year cohort at Wayne State University School of Medicine (WSUSOM) that uniquely experienced both in-person and virtual GA lab instruction was surveyed to compare the effectiveness of these two forms of instruction.

METHODS

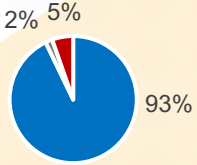
- For in-person learning, students were instructed to review anatomy resources such as dissection videos, anatomy videos, and lecture materials prior to each session. Groups of six students were divided into two, with three students performing the dissection and the other three students coming in afterward for review of the learning objectives and lab chart. Teams switched off dissecting with every session.
- For virtual learning, students were instructed to review the same resources as mentioned above. The six students then met all at once over Zoom to discuss the learning objectives and fill out the lab chart. Similar to in-person, anatomy instructors and 4th year medical students rotated between breakout rooms to facilitate discussion.
- A 17-question Likert question survey was administered electronically to the first-year student cohort (N≈290) at WSUSOM after completion of the GA curriculum. Questions compared student perception of the curriculum in general, faculty instruction, supplemental materials, professional identity development, and effectiveness of learning between in-person and virtual GA instruction. The "strongly agree" response was coded as 1 and "strongly disagree" as 5, and data were analyzed with descriptive statistics.
- The IHI team used Microsoft Excel for data entry and organization. Excel was also used to make relevant figures visualizing student responses to the survey.

RESULTS

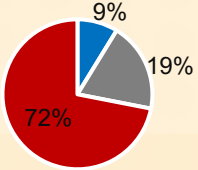
- Respondents strongly preferred in-person compared to virtual instruction ($\bar{x}$ = 1.40, s = 0.77).



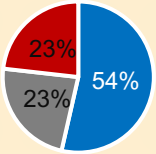
92.9% ($\bar{x}$ = 1.46, s = 0.78) felt that in-person GA instruction was an important part of professional identity development,



but only 8.8% ($\bar{x}$ = 3.98, s = 1.05) agreed that virtual gross anatomy sessions accomplished this equally well.

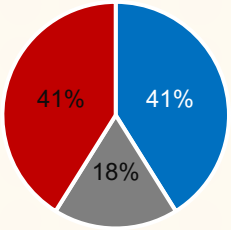


- Students moderately agreed that virtual sessions were effective overall ($\bar{x}$ = 2.63, s = 1.08).

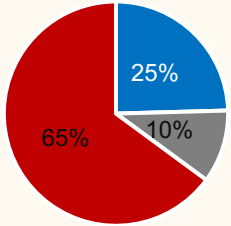


They disagreed that they were as effective as in-person sessions both in terms of overall learning and time needed to learn concepts ($\bar{x}$ = 3.74, s = 1.29 and $\bar{x}$ = 3.47, s = 1.26, respectively).

Effectiveness- Time Spent



Effectiveness- Overall learning



- Response rate was 20.3% (59/290).

CONCLUSION

Despite some perception of effectiveness in virtual GA instruction, students felt that in-person instruction was both more effective and worthwhile. Some limitations are that the pandemic was not anticipated, thus instructors did not have as much time to plan a virtual curriculum as they would have liked. Additionally, students were not expecting a virtual curriculum, thus this could have resulted in an increased level of hesitancy. Lastly, the transition to a virtual setting for GA may have decreased student engagement with the material and hindered effectiveness of learning.