A Novel Tele-Tutoring Service for Second-Year Osteopathic Medical Students: A Pilot Study
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INTRODUCTION
Lincoln Memorial University of Debsuk College of Osteopathic Medicine (LMU-DCOM) is located in rural Harrogate, Tennessee. Similar to many other Osteopathic Medical Schools, because of LMU-DCOM’s rural location it has multiple affiliated hospitals throughout the state of Tennessee and surrounding areas where OMS-III students complete their clinical rotations. This poses a unique problem for LMU-DCOM and other Osteopathic Medical Schools with similar circumstances because OMS II students who may be struggling in classes no longer have access to in-person “near-peer” tutors, namely OMS-III or OMS-IV tutors who have already completed the courses. For this reason, a novel tele-tutoring program was designed and piloted during the rigorous first-semester second-year courses in order to connect OMS-II students with OMS-III/OMS-IV students who had previously performed well in these courses but were no longer geographically accessible.

METHODS

Tutoring Program
Based on a review of the needs assessment and literature search results, a formal proposal for a pilot tele-tutoring program was developed. The tele-tutoring program was designed utilizing Zoom Technology to connect OMSII/OMSIV tutors with struggling OMS II students. The proposal and application materials were submitted in spring of 2017 and approved by the dean for implementation in the fall of 2017. Study approval was secured through the Lincoln Memorial University Institutional Review Board (IRB#644V1). Students who requested a tutor due to struggling academic performance were randomly assigned by the LMU-DCOM Director of Academic Support to either an in-person tutor or a tele-tutor. Tele-tutors were provided access to a Zoom administrative account, which allowed them to schedule online sessions. Attendance was recorded at the beginning of all tutoring sessions.

A survey was administered at the end of the semester to assess student satisfaction with both the modality by which the tutoring was administered and the tutors themselves.

Statistics
A total of seventy three students were assigned to tutoring and thirty four (n=34) student responses were received. Twenty-three (n=23) student responses came from online tele-tutored students, and eleven (n=11) student responses were received from in-person tutored students. Survey responses were analyzed quantitatively using a 1-5 scale.

   1 – Strongly Disagree
   2 – Disagree
   3 – Neither Agree/ Nor Disagree
   4 – Agree
   5 – Strongly Agree

Using SPSS 22 software, frequency distributions of the survey responses were generated to compare cohorts in regard to overall tutoring experience and the individual tutor. A two sample Kolmogorov-Smirnov test was used to compare the frequency distributions of the cohorts’ survey responses. Individual question responses between cohorts were also compared for significant differences using two tailed t-tests.

RESULTS
A total of seventy three students received tutoring from nine tutors (five tele-tutors, and three in-person tutors). There were a total of 34 responses received which is a 46.6% response rate.

Table 1: Shows the descriptive statistics of satisfaction with online tele-tutoring vs in-person tutoring.
Table 2: Shows the descriptive statistics of online tele-tutoring vs in-person tutoring comparing the satisfaction with the individual tutors.

Kolmogorov-Smirnov test did detect differences in frequency distributions between satisfaction with tele-tutoring vs in-person tutoring (p-value <0.0001).

Two tailed t-tests found statistically significant differences in six of the questions (data included in handout). Questions such as “Tutoring helped me more easily answer multi-part, higher order (COMLEX style) questions” showed a p-value of 0.004, and “Tutoring improved my general study techniques” showed a p-value of 0.016.

Kolmogorov-Smirnov test did not detect differences in frequency distributions between satisfaction with the tutor themselves for tele-tutoring vs in-person tutoring (p-value 0.169).

Two tailed t-tests found statistically significant differences in two of the questions that asked about the quality of the tutors themselves (data included in handout).

CONCLUSION
The implementation of a novel tele-tutoring program at Lincoln Memorial University DeBusk College of Osteopathic Medicine connected high performing OMS II/OMS IV students with OMS II students for academic tutoring, who otherwise would not have been geographically accessible. The survey responses from students whose main modality of tutoring was via tele-tutoring suggested to have a statistically significant higher satisfaction level with their experience as compared to the in-person tutors. This is important because it makes evident the utility of implementing a tele-tutoring program at rural osteopathic medical schools, whose OMS II/OMS IV students are rotating at distant hospitals. There was no statistical difference between the tutors themselves.

This research is merely a pilot study with limitations that future studies should address including population size and response bias. An additional limitation of the study was that some students switched between tutors, or attended tutoring sessions that they were not assigned to in order to enhance their learning. Despite some students attending multiple tutoring sessions, we still believe that this preliminary data is promising and suggest that tele-tutoring could be used as an additional resource to enhance medical student learning without compromising the quality of the tutoring experience. Further research should be conducted to explore its utility.

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