ABSTRACT

Introduction. Combining online learning with the more traditional face-to-face (F2F) clinical instruction appears to provide opportunity to engage learners at remote clinical training sites. The purpose of this research study is to describe and evaluate the effectiveness of the blended-learning format for 3rd year medical students who participated in the pediatric blended learning supplement by investigating post-exercise survey responses, end-of-rotation examination (COMAT) scores and final course grades. Methods. 264 OMS III students completed the four-week pediatric clerkship in the 2014/15 academic year (78 blended learning supplement, 186 traditional F2F). Students in the study group were provided opportunity to complete a post-exercise survey regarding their experience with the blended learning format. End-of-rotation examination (OMS III) scores and final course grades were also compared between groups.

Results. Overall students valued the blended learning experience. 53 percent of post-exercise survey responses (PES) agreed or strongly agreed with “The integration of eLearning and face-to-face learning helped me learn pediatrics.” Overall, 85% reported “I was satisfied with the overall learning experience.” A large number of comments requested an increase in the amount of clinical exposure and F2F time with patients. COMAT scores did not differ between groups (p=0.321). Compared to the control group, more students in the blended learning group received a final grade of Honoris (p=0.015).

Conclusion. Results of this study support the use of blended learning in a clinical training environment. Students valued the blended learning approach. While end-of-rotation examination scores were not improved, they may have benefited from the blended learning supplement by receiving higher course grades. Online activities may enhance but should never fully replace face-to-face learning with real patients.

INTRODUCTION

• E-learning initiatives, such as online and blended learning, are slowly being integrated into a number of health educational programs such as medicine, nursing, physical therapy, nutrition, social work, and pharmacy.\(^{1,2}\)
• Although many formal definitions exist, blended learning is essentially the integration of online and face-to-face engagement to facilitate learning between students, teachers and resources.\(^{3,6}\) Blended learning is more than a collection of digital technology, games and tools; rather, it is a pedagogical strategy to integrate learning technologies with face-to-face learning.\(^{6}\) Blended learning provides great opportunity to engage learners at remote locations, whereby the learners participate in online activities, anytime and anywhere.\(^{7}\) Through blended learning, learners may engage in a variety of e-learning activities such as online content reviews, discussion boards, interactive blogs, wikis, web conferencing, self-reflection and group activities.
• Blended learning is particularly well-suited for clinical education, whereby medical students rotate in geographically distributed training sites; a blended-learning program could improve consistency across training sites, maximize learning opportunities, reduce the burden of clinical preceptors at the onsite training facilities, allow students to link experiences to previous knowledge, and increase the number of educational opportunities for students. Previous studies provide supportive evidence and evidence for blended-learning; however, rigorous pedagogical research is still lacking.\(^{8,9}\)

PURPOSE

In this study, we describe a 3rd year clinical rotation in pediatrics facilitated partially online as a blended learning supplement. The program combines online learning (through asynchronous discussion boards and blogs, podcasts, video demonstrations, didactic presentations, scenario-based instruction, menu-driven simulation and virtual patients, online reference material and resources), and face-to-face clinical instruction with a faculty preceptor. We also evaluate the effectiveness of this blended-learning program through course evaluation (post-exercise survey responses), performance outcomes (end-of-rotation examination scores and final course grades).

RESULTS

78 students participated in the 2014/15 academic year

• 3 of 18 training sites

• 78 (29.5%) participated in the blended learning supplement

186 (70.5%) participated in the traditional face-to-face course.

Methods

Sample

264 OMSIII in the 2014/15 academic year

• 78 (29.5%) participated in the blended learning supplement

186 (70.5%) participated in the traditional face-to-face course.

CONCLUSION

• Results of this study support the use of blended learning in a clinical training environment.
• Students valued the blended learning approach.
• End-of-rotation examination (COMAT) scores were not improved.
• Students may have benefited from the blended learning supplement by receiving higher overall course grades.
• As more medical educators utilize blended learning, it is important to investigate the best balance between learning with technology and learning in a face-to-face setting. Online activities may enhance but should never fully replace face-to-face learning with real patients.

REFERENCES


RESULTS

78 students participated in the 2014/15 academic year

• 3 of 18 training sites

• 78 (29.5%) participated in the blended learning supplement

186 (70.5%) participated in the traditional face-to-face course.

Methods

Sample

264 OMSIII in the 2014/15 academic year

• 78 (29.5%) participated in the blended learning supplement

186 (70.5%) participated in the traditional face-to-face course.

CONCLUSION

• Results of this study support the use of blended learning in a clinical training environment.
• Students valued the blended learning approach.
• End-of-rotation examination (COMAT) scores were not improved.
• Students may have benefited from the blended learning supplement by receiving higher overall course grades.
• As more medical educators utilize blended learning, it is important to investigate the best balance between learning with technology and learning in a face-to-face setting. Online activities may enhance but should never fully replace face-to-face learning with real patients.

REFERENCES


ACKNOWLEDGEMENTS

We wish to thank each of the student participants for volunteering, the faculty for their dedication and enthusiasm to explore new educational strategies and technologies, Marcus Bell, PhD for his assistance with statistical analysis, and David Teter for his critical review of the manuscript.