A One-Week Intensive Ultrasound Special Topics Course
For Rising Second-Year Medical Students

Background

Integration of ultrasound education programs into medical school and resident curricula provides a good opportunity for exposure of this critical skill at an early point in the careers of rising physicians. Preclinical ultrasound education also enhances the teaching of gross anatomy. Although in a recent survey of 134 medical schools, nearly 80% of respondents agreed that ultrasound education should be integrated into medical school, less than 40% reported that it is actually taught in their institution. The main barrier to implementation was the lack of financial support for equipment and qualified personnel. At UAB, curricular implementation of ultrasound, although increasing, is still limited and does not include OSCEs or the scanning of live patients with pathologic conditions.

Setting, Materials & Methods

The curriculum consisted of didactic lectures and hands-on scanning sessions with Emergency Ultrasound faculty with standardized patients, ballistic gel phantoms, a high-fidelity simulator, and Emergency Department patients. Students also participated in a team-based Sonogames on the final day of the course.

The students were instructed in the following point-of-care ultrasound (POCUS) exams: cardiac, extended FAST, right upper quadrant, genitourinary, and aorta.

Results

Mean survey scores improved approximately 2 points (on a 5-point Likert scale) in every category assessed. Pooled results from the pre-test revealed that students were able to obtain the correct diagnosis in 53/88 (60.23%), which improved to 74/88 (84.39%) in the post-test. Using a high-fidelity simulator, students were able to obtain a diagnostic view of the pathologic condition in 43/44 (97.73%) of cases, and were able to interpret those images to correctly diagnose 38/44 (86.36%) of cases.

Conclusions

Our results reveal that a five-day intensive ultrasound special topics course can successfully train naive scanners (with a median experience of 2.5 hours of hands-on ultrasound experience prior to the course) to make potentially life-saving diagnoses in 96% of simulated cases. A diagnostic view was obtained in over 97% of cases, but was misinterpreted in several cases. 4 of the 8 misuses were from one student, which may have skewed results. Students were able to correctly interpret ultrasound images and diagnose approximately 24% more cases correctly after the course. Students also demonstrated a significant increase in subjective comfort with performing every POCUS exam assessed. In addition, student confidence in their ability to recognize and differentiate normal anatomy from pathologic images increased significantly.

Acknowledgements


References

1. Medical School Survey
3. Vimadix