EDITORIAL

Teaching clinical ultrasonography to undergraduates. A need for systematic training programs

La formación de estudiantes de pregrado en ecografía clínica. La necesidad de programas sistémáticos de formación

Bedside focused ultrasound use has increased dramatically as the demand for quick, efficient diagnostic bedside imaging has increased. Currently, focused bedside ultrasound is used to assist clinicians with diagnostic evaluations, invasive procedures and therapeutic interventions in multiple specialties. As a result of rapid technological advancement and miniaturization of devices, the development of uses and applicability in the various fields of medicine has outpaced the professional education of those practitioners who could use them. The skills of focused ultrasonography will need to be integrated into the medical educational process so future practitioners can keep pace with this steady innovation.

Teaching ultrasound within medical school has experienced tremendous growth over the last few years as training programs have developed novel methods to integrate ultrasound teaching. Multiple schools have established integrated ultrasound programs where ultrasound is incorporated into all 4 years of training. Further, articles have described how ultrasound can be used to enhance the teaching of anatomy, physiology, physical examination and an introduction to clinical practice. Additionally, there have been reports on ultrasound as both one month and longitudinal electives. Though many medical schools acknowledge the importance of teaching focused ultrasound, the integration of ultrasound education is highly variable which may be due to a number of key barriers including lack of space in current curricula, lack of financial support, equipment and of trained faculty.

In this issue of Rev Clin Esp, García de Casasola Sánchez et al. address the lack of trained faculty to instruct young practitioners in the use of focused bedside ultrasound. Authors have described their experience with teaching ultrasound by using peer mentors. Each of the peer mentors was a senior student with previous training in ultrasound that included a 5 h theoretical/practical course along with 20 supervised scans. The 20 scans were conducted over a 10-day period on clinical patients with active disease processes. These peers then had an objective evaluation of 5 scans to demonstrate proficiency. Peer mentors then trained 24 other medical students. These secondarily trained students underwent 10–15 h of online course material followed by 20 ultrasound examinations supervised by the “peer mentors” (total time 15 h). The authors discovered that the use of peer mentors to secondarily train their colleagues in basic cardiac and abdominal ultrasound was feasible. The majority of scans were rated as 2.78±0.19 on a scale of 1–3 (1 = poor; 2 = regular; 3 = excellent). Interestingly, there was significant variability in the identification of key anatomical images by these students which was higher in the cardiac ultrasound views. This suggests that the training through peer mentors is feasible and imparts elementary knowledge, but may need to be augmented for long term practitioner success.

We applaud the authors for investigating this important topic area. Previous work in this area has evaluated the use of peer mentors for ultrasound education and has demonstrated positive results. However, in comparison to this evaluation, peer mentors in these studies were extensively trained with either a full time elective for 2–4 weeks with didactics, video review and many proctored scans or had been involved in a one-year longitudinal ultrasound program with monthly didactics, online didactics and quizzes, journal club, monthly hands-on faculty sessions and clinical research. This study presents a streamlined system which would train senior students and thus allow for more available mentors to instruct junior students. Future studies will need to focus on (a) the optimal training paradigm to prepare peer to peer and near peer mentors for focused ultrasound teaching; (b) key curriculum components necessary for medical student teaching to maximize scan time versus didactic time, and (c) understanding the long term benefits of ultrasound training with peer mentors.

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knowledge retention of medical students following peer mentoring education compared to traditional teaching roles.

As ultrasound continues to expand in the practice of medicine with multiple providers from multiple specialties, there will be a need for more systematic training programs. The faculty and personnel required to meet the demand will continue to grow and many times outstrip the current resources of a school or department. Near peer and peer to peer mentoring may be an alternative for this shortage of competent faculty. Focused ultrasound can be taught to medical students but takes a considerable investment in time and energy from the requisite faculty. It takes experts in focused ultrasound to be engaged in training these “peer mentors” to be able to convey this information to other novice learners. The authors have contributed to this growing body of knowledge of students serving as peer to peer and near peer mentoring in the effort to learn focused bedside ultrasound. This strategy can work, is feasible, and needs further study on how best to implement this student driven personnel strategy for ultrasound training.

References


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