Teaching Musculoskeletal Medicine to Undergraduate Students in a Simulated Environment

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Dear Editor,

Musculoskeletal disorders contribute significantly to the workload of many clinicians, in particular to those in general practice and emergency medicine¹. General practice in particular is an area targeted for significant workforce growth over the coming years². However, with expanding student numbers, not all students spend time on a clinical rotation in trauma and orthopaedics. Deficiencies in musculoskeletal knowledge in both medical students and general practice doctors have previously been identified³. This is a problem not just confined to Ireland, undergraduate education in musculoskeletal medicine is recognised as insufficient in many medical schools worldwide⁴. As part of their studies, medical students in NUI Galway complete ‘special study modules’ (SSM). We identified this as an area of opportunity for supplementary structured musculoskeletal teaching. We offered “OrthoSim” as a SSM to Year Four students to deliver musculoskeletal education in a simulated environment.

The module, designed in conjunction with the Irish Centre for Applied Patient Safety and Simulation (ICAPSS), sought to train students in the technical skills (suturing, ATLS assessment, spine trauma management and fracture care) and the non-technical skills (teamwork and decision making) associated with orthopaedics and musculoskeletal medicine. A total of 18 students selected this module making it the largest SSM in the Year 4 medical school curriculum in its first year of offering. Students completed 12 teaching sessions. They practiced technical skills in small groups using simulators with feedback (suturing, joint injections and hand eye coordination). In addition, they worked in teams to manage acute scenarios using hi fi simulation. Each student designed teaching resources and delivered presentations as part of their formal assessment. In the end of module feedback, all students reported a need for more musculoskeletal teaching in the undergraduate curriculum and that they valued the practical exposure to acute trauma scenarios in particular.

In postgraduate education, simulation is increasingly used to teach and assess competencies in surgical disciplines in particular and we sought to emulate this trend in an undergraduate curriculum. Simulation based teaching helps students gain exposure to clinical scenarios and learn practical skills essential for their future careers. Reduced clinical exposure to orthopaedics and musculoskeletal medicine, given
expanding student numbers in many of our undergraduate universities could be detrimental to the competency of many of our future doctors.

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References