

AB090. SOH22ABS103. Evaluating the impact of supervision on orthopaedic trainee stress response during simulated orthopaedic procedures: a crossover randomised trial

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Background: Simulation-based education and training is most effective when mirroring real life scenarios. In conventional training, skill acquisition occurs for surgical trainees intraoperatively; in the presence of a supervising consultant to provide guidance. Though simulation-based surgical training tools are thought to accelerate technical surgical skills; the relationship between simulation in non-technical skill acquisition is not well established.

Methods: This was a crossover-randomised controlled trial (RCT) to evaluate the impact of attending supervision on Orthopaedic trainee stress response during a simulated Orthopaedic procedure. Orthopaedic trainees were recruited and asked to complete a proximal femoral nail module twice; once independently, and once under direct attending supervision, whilst wearing a heart rate monitor. Mean and maximum heart rate was recorded. Simulated performance was assessed using validated simulator-based metrics. Students' *t*-test was used to evaluate the impact of supervision on trainee heart rate, and performance ranking.

Results: Twenty participants were included for analysis. Both supervised and unsupervised mean heart rate (HR) was significantly higher ($P=0.001$) than baseline recorded heart rates. Supervised mean and maximum HR were significantly higher than unsupervised HR during module completion

($P=0.015$; $P=0.001$). Performance metrics demonstrated superior performance in senior level participants, with a decrement in performance during supervision, failing to reach significance.

Conclusions: The development of accretion of technical and non-technical skills required in surgical training pathways may derive benefit from the use of simulation-based training in surgical residents with both supervised and unsupervised sessions. Additionally, performance in simulation-based tasks correlated highly with level of experience, signalling its potential use in competency-based assessment used in surgical training.

Keywords: Non-technical skills; performance; simulation; stress response; trainee education

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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