

# AB049. SOH21AS067. Use of virtual reality simulation in surgical training: a systematic review on predictive validity and current use in surgical curricula

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**Background:** Use of simulated surgical learning is an evolving training modality within surgical trainees. Its use in transferring simulation based skill to the operating room is an integral aspect of its use as a pedagogical tool for surgical trainees in an era of reduced working hours and fewer intraoperative opportunities. These systems may allow trainees to upskill in simulated scenarios leading to improved skillsets and patient safety. The aim of this review was to evaluate if acquisition of surgical skills developed in simulated procedures result in improved intra-operative performance and whether this be integrated into current surgical curriculums.

**Methods:** A systematic search using PubMed, OVID Medline and CINAHL was conducted. Articles included were based on specific inclusion and exclusion criteria. Critical appraisal tools were used to assess each article authenticity, applicability and quality of results.

**Results:** Twenty-six studies were reviewed in full and included in this paper for review, according to PRISMA guidelines. Thematic analysis yielded four main themes; Predictive validity, Surgical curriculum, Timing of training, Clinical outcomes. All studies demonstrated validity.

**Conclusions:** A heterogenous group of studies demonstrated mixed findings in the predictive validity of virtual reality learning. However, adaptation into surgical curricula in conjunction with other forms of surgical education yielded positive results, with predictive validity demonstrated in surgical trainees. Further research is required to elicit optimal training stages, and use of simulation in development of non-technical skills.

**Keywords:** Predictive validity; postgraduate training; simulation training; surgical trainees; surgical curricula

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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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