

OBJECTIVE ASSESSMENT OF OPERATIVE DECISION MAKING IN TRAUMA AFTER AN INTENSIVE HANDS-ON COURSE: LONG-TERM RETENTION OF COGNITIVE SKILLS

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Introduction: As surgical trainees have less exposure to operative trauma, there is a greater potential of having gaps in decision-making skills. We have previously validated a novel assessment tool for decision-making in operative trauma and have documented improvement in resident decision-making skills after a hands-on course. However, brief intensive courses have been criticized for not imparting long-term changes in knowledge or practice patterns. The purpose of this study was to assess the durability of cognitive skills learned after a two-day operative trauma course.

Methods: Twenty-two residents participated in a two-day interactive didactic lecture series as well as an animal lab focused on practical strategies in dealing with operative trauma. All participants underwent pre-course and immediate post-course assessment of operative decision-making through a validated 45 minute multimedia short answer examination. Six months after the course, 12 of these 22 residents completed a third similar examination (with different cases) – the retention test.

Results: The retention test demonstrated good reliability (Cronbach's alpha, 0.81) and construct validity as evidenced by a significant positive correlation between test scores and post-graduate year of training ($r=0.9$, $p<0.001$). There was no significant difference between retention test scores and post-test scores. However, both the retention test and post-test scores were significantly higher than pre-test scores (ANOVA, $p<0.05$). This did not change after adjusting for any possibility of differing degrees of difficulty between the exams.

Conclusions: In the context of residency training and trauma education, there is a measurable positive impact of an intensive, hands-on course on operative decision-making. This impact is durable and cognitive skills persist after the immediate post-course period. This data supports and justifies the continued supplementation of traditional residency experiential learning with appropriate laboratory-based skills training.