

# ACCELERATING DEVELOPMENT OF SIMULATION-BASED MEDICAL SKILL TRAINING PROGRAMS: A COMPARATIVE EVALUATION RESEARCH STUDY

Christina L. Stephan

Kristofer Hagglund, PhD

## ABSTRACT

A shift in Military utilization of Live Tissue Training (LTT) to Simulation-based training (SBT) for combat casualty care training programs is currently underway. While each has been reported to be effective, there is little high quality research comparing traditional LTT with SBT learning outcomes. This study entails the direct comparison of LTT and SBT in a randomized, pre-test post-test experiment. Changes in trainee knowledge, psychomotor skill, and self-efficacy are assessed using established measures. Stress and emotion are known to play a role in performance and learning. This study also investigated the use of sweat measurement as a possible indicator of a stressful response to the training situation.

Statistical analyses showed no significant difference between the training groups in any of the learning measures. The change in electrodermal activity was non-significant between the two training groups. Participant evaluations revealed strong belief among trainees that LTT was of greater value to the training participants, however, participants suggested that LTT should be continued for combat casualty care training while SBT could be useful to other groups of learners. A more limited use of LTT would address the concerns regarding the use of live tissue. The comparison of learning outcomes in this controlled study provides new evidence to support further integration of SBT in combat casualty training. The study results will inform trauma education planning so that the most effective training methods available for military personnel preparing for combat casualty care can be utilized.