Comparison of self-efficacy and its improvement after artificial simulator or live animal model emergency procedure training.

Hall AB, Riojas R, Sharon D

Abstract:
The objective of this study is to compare post-training self-efficacy between artificial simulators and live animal training for the performance of emergency medical procedures. Volunteer airmen of the 81st Medical Group, without prior medical procedure training, were randomly assigned to two experimental arms consisting of identical lectures and training of diagnostic peritoneal lavage, thoracostomy (chest tube), and cricothyroidotomy on either the TraumaMan (Simulab Corp., Seattle, Washington) artificial simulator or a live pig (Sus scrofa domestica) model. Volunteers were given a postlecture and postskills training assessment of self-efficacy. Twenty-seven volunteers that initially performed artificial simulator training subsequently underwent live animal training and provided assessments comparing both modalities. The results were first, postskills training self-efficacy scores were significantly higher than postlecture scores for either training mode and for all procedures ($p < 0.0001$). Second, post-training self-efficacy scores were not statistically different between live animal and artificial simulator training for diagnostic peritoneal lavage ($p = 0.555$), chest tube ($p = 0.486$), and cricothyroidotomy ($p = 0.329$). Finally, volunteers undergoing both training modalities indicated preference for live animal training ($p < 0.0001$). We conclude that artificial simulator and live animal training produce equivalent levels of self-efficacy after initial training, but there is a preference in using a live animal model to achieve those skills.