

Simulated Injury Videos as a Tool to Improve Paramedic Student Tourniquet

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INTRODUCTION

Background: Training laypersons to use tourniquets in hemorrhage scenarios can save lives¹. However, inappropriate tourniquet application can also cause unnecessary pain and nerve damage.² Therefore, novices need more realistic training in managing hemorrhage.

Research Question: Can perceptual learning³ techniques be used to improve performance when training novices in hemorrhage control?

Hypothesis: A series of iterative videos of heterogenous wounds will improve decision making in simulated hemorrhage scenarios by paramedic students compared to a paper- based control.

MATERIALS & METHODS

- A silicone molding system with simulated blood was used to create a series of wounds.
- Molds were then applied over tubing to a model's arm or leg and differing amounts of blood flow were simulated.
- Brief video clips were created with differing amounts of hemorrhage.
- Clips were assembled in a Google document.

RESULTS

- 71 Video clips of simulated wounds were created
- Wounds ranged from small distal wounds without hemorrhage to large mangled extremities with arterial bleeding
- Sample videos can be viewed via the QR code below



FUTURE PROJECT

- Create a compendium of 30 videos that have been validated by a panel of trauma surgeons
- Enter videos into E-prime software to generate a series of 45 video stimuli with immediate feedback
- Recruit 40 paramedic students
- Randomize participants into a control of paper Stop the Bleed power point and a video intervention group
- Submit participants to a series of simulated hemorrhage control scenarios measuring:
 - Tourniquet accuracy
 - Time to hemorrhage control decision
 - Estimated blood loss
 - Surg-TLX (task load index) survey
- Compare results using mixed effects logistic regression for binary answers and fixed effects regression for categorical data

REFERENCES & ACKNOWLEDGEMENTS

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