This study evaluates the usability and feasibility of a first-person point-of-view-augmented reality (AR) trainer on needle insertion as a component of central venous catheter placement” Rochlen et al (2016).

Abstract:

INTRODUCTION: The value of simulation in medical education and procedural skills training is well recognized. Despite this, many mannequin-based trainers are limited by the inability of the trainee to view the internal anatomical structures. This study evaluates the usability and feasibility of a first-person point-of-view-augmented reality (AR) trainer on needle insertion as a component of central venous catheter placement.

METHODS: Forty subjects, including medical students and anesthesiology residents and faculty, participated. Augmented reality glasses were provided through which the relevant internal anatomical landmarks were projected. After a practice period, participants were asked to place the needle in the mannequin without the benefit of the AR-projected internal anatomy. The ability of the trainees to correctly place the needle was documented. Participants also completed a short survey describing their perceptions of the AR technology.
RESULTS: Participants reported that the AR technology was realistic (77.5%) and that the ability to view the internal anatomy was helpful (92.5%). Furthermore, 85% and 82.1%, respectively, believed that the AR technology promoted learning and should be incorporated into medical training. The ability to successfully place the needle was similar between experienced and nonexperienced participants; however, less experienced participants were more likely to inadvertently puncture the carotid artery.

CONCLUSIONS: Results of this pilot study demonstrated the usability and feasibility of AR technology as a potentially important adjunct to simulated medical skills training. Further development and evaluation of this innovative technology under a variety of simulated medical training settings would be an important next step.

Reference:


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