Comparison of UAV Technology versus No UAV Technology in Identification of Hazards at a MCI Scenario in Primary Care Paramedic Students

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Introduction

The proliferation of unmanned aerial vehicles (UAV) technology has the potential to fundamentally change the situational awareness of incident commanders allowing greater safety to first responders. Most studies of this technology have been descriptive in nature. The aim of this study was to compare UAV to non UAV technology in hazard identification using paramedic students during a simulated MCI. It was hypothesized that there is no difference in hazard identification order and time to hazard identification.

Methods

A randomized controlled study was conducted with twenty-one students in their first year of a PCP program. They were randomized into either a UAV group or a non UAV group. The study scenario was based on a highway accident involving ten vehicles with seven hazards. Each group was given a 60 minute lecture on UAV technology and a 30 minute lecture on hazards. Each subject entered the scene after receiving a brief narrative. Having been informed that there were 7 hazards to be identified the UAV group remained at the UAV ground station while the non UAV group was able to approach the scene. After identifying all hazards the time to identification and order was recorded. Primary outcome measures were the difference in time to identification and difference in identification order.

Results

The mean time (SD, range) to identify the hazards were 3'40'' (1'37'', 1'48''-6'51'') and 2'43'' (55'', 1'43''-4'38'') in UAV and non UAV groups respectfully corresponding to a mean difference of 58''(P=0.11). A non parametric permutation test showed a significant (P=0.04) difference in the hazard identification order driven by two hazards, fuel and workplace hazardous material information system placard.

Conclusion

This study demonstrated that there is a statistical difference in the identification order of hazards. Interestingly, the results were unable to identify a difference in time to hazard identification.