

**ABSTRACT**

**Background and aims:** The work environment of paramedics contains significant stressors for individuals. These stressors lead to mental health concerns, the use of disability stress leave, and the erosion of paramedics' personal support systems. However, relatively little is known about the effects of these stressors on paramedics' ability to care for patients during the stressful events. If stress impairs clinical performance, it could have a significant impact on patient management, potentially resulting in suboptimal patient care. In order to generate the necessary knowledge to guide the development of support and training interventions for those individuals who routinely encounter acutely stressful events, we need to understand the factors that contribute to performance during acutely stressful events. The goal of this research project is to measure the subjective and physiological responses and the performance of paramedics during acutely stressful clinical scenarios. We will also examine the contributions of coping styles and prior exposure to traumatic events on the paramedic responses and performances.

**Methods:** Twenty flight paramedics will participate in a low and a high stress scenario in a high fidelity patient simulator. We will measure their subjective responses (state anxiety), physiological responses (heart rate, cortisol levels) and their performance in both scenarios. Prior to participating in the scenarios, they will complete questionnaires assessing their coping styles and their prior exposure to traumatic events.

**Data analysis:** To analyze the effects of stress, each of the subjective, physiological, and performance measures will be the dependent measures in separate mixed-design analyses of variance. The scenarios (low vs high stress) will be the repeated-measure and order of scenarios (low 1<sup>st</sup>, high 1<sup>st</sup>) will be the between-subject variable. Bonferroni corrections will be used due to the number of analyses being conducted. To assess the contribution of coping styles and prior exposure, we will conduct a multivariate regression analysis with CISS and IES as the predictor variables and the subjective, physiological, and performance measures as the multiple dependent variables.