



Multidisciplinary teams performing simulated trauma resuscitation have improved teamwork scores based on level of experience

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Background Teaching and assessment of non-technical skills in trauma and resuscitation continues to evolve. Simulation provides a safe environment where individuals can acquire these skills. Trauma and resuscitation are seldom an individual effort. For this reason teams could benefit from a shared model of instruction and learning. Teamwork skills are an important and natural starting point. We hypothesized that more experienced individuals should display superior teamworking skills. This should be true in the setting of individual or team assessment. **Objectives** We assessed multidisciplinary trauma teams with different levels of experience performing simulated trauma resuscitation using individual, team-based, and subjective teamwork assessment tools. **Method** Four teams completed two different simulated trauma resuscitation scenarios using a Human Patient Simulator. Each team had three team members, including a trauma team leader, an airway manager, and a trauma nurse. The teams varied by experience, including a student team, a junior resident and nurse team, a senior resident and nurse team and a staff physician and highly experienced nurse team. By retrospective video review, two independent raters scored the teams using two established teamwork assessment tools. The BARS (Behaviorally Anchored Rating Scale) was used to assess individual teamwork skills, and the TPOT (Team Performance Observation Tool) was used to assess global teamwork skills for each multidisciplinary team. Participants also completed a subjective teamwork questionnaire at the conclusion of the second scenario. Mean differences in scores for the BARS, TPOT and the subjective questionnaire were analyzed using ANOVA statistical analysis. Correlation studies of inter-rater reliability for the BARS and TPOT were performed using Pearson's Coefficient. **Results** Mean BARS, TPOT and subjective teamwork questionnaire scores improved significantly with increasing levels of team experience ($p < 0.05$). Inter-rater reliability was high for the BARS ($r = 0.91$) and the TPOT ($r = 0.89$) tool. **Conclusions**

Multidisciplinary trauma teams with different levels of experience performing simulated trauma resuscitation display improved teamwork scores based on individual, global and subjective teamwork assessment scales. These findings support the validity of the BARS and TPOT tools and provide valuable information in the fields of training, education and assessment.