High-fidelity human patient simulators compared with human actors in an unannounced mass-casualty exercise.

Abstract:
High-fidelity simulators (HFSs) have been shown to prompt critical actions at a level equal to that of trained human actors (HAs) and increase perceived realism in intrahospital mass-casually incident (MCI) exercises. For unannounced prehospital MCI exercises, however, no data are available about the feasibility of incorporating HFSs. This case report describes the integration of HFSs in such an unannounced prehospital MCI drill with HAs and provides data about the differences concerning triage, treatment, and transport of HFSs and HAs with identical injury patterns. For this purpose, 75 actors and four high-fidelity simulators were subdivided into nine groups defined by a specific injury pattern. Four HFSs and six HAs comprised a group suffering from traumatic brain injury and blunt abdominal trauma. Triage results, times for transport, and number of diagnostic and therapeutic tasks were recorded. Means were compared by t test or one-way ANOVA. Triage times and results did not differ between actors and simulators. The number of diagnostic (1.25, SD = 0.5 in simulators vs 3.5, SD = 1.05 in HAs; P = .010) and therapeutic tasks (2.0, SD = 1.6 in simulators vs 4.8, SD = 0.4 in HAs; P = .019) were significantly lower in
simulators. Due to difficulties in treating and evacuating the casualties from the site of the accident in a timely manner, all simulators died. Possible causal factors and strategies are discussed, with the aim of increasing the utility of simulators in emergency medicine training.

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