Simulation Training for Emergency Burn Care

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Introduction
Burn injury is a major medical problem in the United States. Each year burn injuries result in more than 500,000 hospital emergency department visits and approximately 50,000 acute admissions (American Burn Association, 2007). Quality of care in the first hours following burn injury has a major impact on long term patient outcomes. Pre-hospital personnel provide the care these patients receive prior to arriving at a burn center or hospital, therefore their knowledge about burn patient management can improve patient survival rates. Due to the limited number of burn centers, most management of burns is conducted outside the burn center environment. Pre-hospital providers must possess the essential skills needed to manage these patients safely and effectively until transport to a burn center. For these providers who live in remote areas, it can be difficult to acquire the skills needed to provide efficient, timely, quality care. The Simulation, Teaching and Academic, Research (STAR) Center at West Penn Hospital and Saint Francis University’s Center of Excellence for Remote and Medically Under-Served Areas (CERMUSA), recognizing the importance of education in emergency burn care treatment, collaborated on a pilot research study utilizing high-fidelity patient simulators as a teaching tool for an educational program on emergency burn care.

Methods
This study consisted of a four-hour course (two hours of live or video/distance education and/or two hours of hands-on clinical demonstration) to educate nurses, physicians and pre-hospital personnel with essential skills needed to assess and stabilize patients during the first critical hours following a burn. Researchers hypothesized that using high-fidelity simulation based training could increase clinical competency and knowledge when added to an existing didactic curriculum. Researchers also studied the effectiveness of delivering this type of education at a distance compared to in-person classroom instruction by utilizing three different test groups (no simulator, education via video teleconferencing (VTC)), (on-site simulation with instruction via video teleconferencing), and (on-site simulation and instruction).

Provider Areas
West Penn Burn Center

West Penn Burn Center

Ohio
Pennsylvania
West Virginia
Maryland

Results
A total of 28 individuals participated in this study. Post-tests were completed on the day of training and six weeks post-training. The return rate of six-week post-tests was 86%. Post-test scores (mean) on the day of training were 97%± (Loretto), 97%± (Johnstown), and 100%± (Pittsburgh). Six week post-test scores (mean) were 93%± (Loretto), 88%± (Johnstown), and 98%± (Pittsburgh). These scores indicate that providing education via VTC using simulation is as good as education received on site. In addition, participants stated they liked hands-on practice with the simulator and the ability to interact during real-time with participants and faculty at other remote sites. In the future, larger groups with more than three sites should be tested to see if the efficacy of the instruction remains the same.

Discussion
Preliminary results indicate that providing education via VTC using simulation is a potential learning tool.

Category
Education

COI Statement
The authors state they have nothing to disclose.

References