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JUST in Time Health Emergency Interventions

- Research - Publications -



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Manganas A., Tsiknakis M., Leisch E., Ponder M., Molet T., Herbelin B., Magnenat-Thalmann N. and Thalmann D. (2004). **JUST in Time Health Emergency Interventions: An innovative approach to training the citizen for emergency situations using Virtual Reality Techniques and Advanced IT Tools (The VR Tool)**. The Journal on Information Technology in Healthcare, 2(6):399-412.

[Online access.](#)

ABSTRACT

Objective: To develop a virtual reality (VR) tool to aid personnel in dealing with real medical emergencies. The tool is designed to help trainees improve their knowledge and skills in dealing with health emergency situations, and particularly to help them overcome their psychological barriers in a real emergency.

Design: The JUST VR system consists of a hardware platform and a dedicated software application. The hardware platform comprises two separate but networked PCs, a set of high-end virtual reality devices and a stereo projection display. Each interactive medical emergency scenario simulation involves four main actors: the trainee, the virtual assistant, the virtual victim and the simulation supervisor. The simulation supervisor monitors and adjusts the simulation course whilst the trainee observes and makes decisions that are executed by the virtual assistant.

Setting: The VR tool can be used in any suitably equipped room. **Methods:** The VR simulator was evaluated by twenty non-medical personnel in a specially adapted room in a hospital in Italy. Each participant dealt with one of two different medical scenarios and then completed a questionnaire. This was designed to assess their impression of their actual presence in the scenario and the degree of reality of the simulation.

Results: Results from the questionnaire revealed that in general participants were convinced of their 'feeling of presence' in the scenario and the degree of reality of the simulation.

Conclusion: The JUST VR Tool can realistically simulate medical scenarios that trainees can interact with. The system should help to overcome some of the weaknesses of present training methods by helping personnel overcome psychological barriers that may impair their decision-making process in real emergencies. The system also supports the traditional learning phase and should improve knowledge retention. The JUST VR Tool is a valuable tool for complementary training of personnel dealing with emergency situations. Its clinical benefits, however, remain to be established.