TITLE: Virtual Simulation: Methods of Improving Interprofessional Team Performance

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RESEARCH PROJECT DESCRIPTION (brief overview of background, hypothesis, methods, role of medical student, funding and relevant publications -- SHOULD NOT EXCEED ~ 250 WORDS)

Background: Preventable errors in the operating room are often associated with compromised communication. Team training improves information exchange and reduce errors. Limitations on team training include availability of operating rooms due to clinical activity, demands on time for training residents and nurses, and personal variables which complicate team training effectiveness. Our work using mixed reality virtual humans was developed to overcome the practical limitations of team training through the use of interactive avatars simulating critical communication events in the operating room. These events include briefing, debriefing, acute change in operative plan, emergent change of care plans not limited to the operative procedure, and other unplanned events
Hypothesis: We hypothesize that mixed reality virtual humans can be used to provide teamwork skills necessary to improve communication in interprofessional teams.
Methods: Baseline data is collected from real-time observations in the OR to assess interprofessional team communication. Simulation exercises will be developed using these events to train team members in communication. Decay of knowledge and skill will be measured over time through simulation exercise and real-time observations.
Role of Medical Student: Opportunities for medical student(s) include assistance in developing simulation exercises, analysis of communication failures, and/or assessment of simulation performance for outcome measures. Involvement over the summer allows the medical student an opportunity to present their research at the University of Florida COM Research Day and to be a member of the team presenting data at national surgical meetings.
Funding: Funding is local with additional submissions for regional and national support.
Relevant Publications:

A pilot study to integrate an immersive virtual patient with a breast complaint and breast examination simulator into a surgery clerkship. Deladisma AM, Gupta M, Kotranza A, Bittner JG 4th, Imam T, Swinson D, Gucwa A, Nesbit R, Lok B, Pugh C, Lind DS. Am J Surg. 2009 Jan;197(1):102-6. doi: 10.1016/j.amjsurg.2008.08.012. PMID: 19101251
Medical student satisfaction using a virtual patient system to learn history-taking communication skills. Deladisma AM, Johnsen K, Raij A, Rossen B, Kotranza A, Kalapurakal M, Szlam S, Bittner JG 4th, Swinson D, Lok B, Lind DS. Stud Health Technol Inform. 2008;132:101-5. PMID: 18391266

Leveraging virtual humans to effectively prepare learners for stressful interpersonal experiences. Robb A, Kopper R, Ambani R, Qayyum F, Lind D, Su LM, Lok B. IEEE Trans Vis Comput Graph. 2013 Apr;19(4):662-70. doi: 10.1109/TVCG.2013.35. PMID: 23428451

Teaming Up with Virtual Humans: How Other People Change Our Perceptions of and Behavior with Virtual Teammates. Robb A, Cordar A, Lampotang S, White C, Wendling A, Lok B. IEEE Trans Vis Comput Graph. 2015 Apr;21(4):511-9. doi: 10.1109/TVCG.2015.2391855. PMID: 26357101