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An Innovative Use of Telepresence Robots for Educating Healthcare Professional

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Abstract. Telehealth enhances communication across distances, facilitates teamwork, and increases access to care, particularly in rural areas. As the use of telehealth technology assimilates into clinical practice, its integration is also needed in clinical curricula. Students participated in 2 pediatric scenarios in teams of 3 to 4 prelicensure nursing students, with one nurse practitioner student participating via a telepresence robot. Forty-eight prelicensure and 5 nurse practitioner students completed surveys following the clinical simulations. We found that it was feasible to use a telepresence robot as a tool in clinical simulation, to introduce telehealth, and students reported high mean scores on the acceptability of using the robot. While there are challenges, incorporating telepresence technology into simulations opens up many opportunities to both engage students in telehealth with patients and other clinicians, and to engage students in their education when they are learning at a distance.

Keywords. Telehealth, distance based education, telepresence, simulation

1. Introduction

The adoption of telehealth technologies eliminates location as a barrier to accessing quality health care. This opens up new possibilities for clinicians to engage with patients and other clinicians with an internet connection across the world and in real-time. Realizing the benefits of telehealth requires care teams to engage with patients and each other in new ways. Telehealth enhances communication across distances, facilitates teamwork, and increases access to care [1]. As the use of telehealth technology assimilates into clinical practice, its integration is also needed in clinical curricula.

Implementing telehealth through the use of a telepresence robot can potentially enhance interprofessional education, promote role development of students, and enable them to improve their communication and teamwork skills. A telepresence robot is a remote-controlled, wheeled device with a display to enable video chat and video conferencing, among other purposes. This project assessed the feasibility and acceptability of a telepresence robot as a tool to introduce telehealth and to engage distance-based students in clinical simulations.

2. Methods

Students participated in pediatric scenarios in teams of to prelicensure nursing students, with one nurse practitioner student participating via a telepresence robot. Forty-eight prelicensure and 5 nurse practitioner students completed surveys and feasibility and acceptability following the clinical simulations.[9]

3. Results

It was feasible to use the telepresence robot in this project, and both groups of students reported high mean scores on the acceptability of using the robot. Telepresence technology provided students the opportunity to participate in simulations without distance being a barrier. This provided the nurse practitioner student with the opportunity to be the clinical provider at a distance.

Table. Acceptability of the Telepresence Robot in the Clinical Simulation

	Prelicensure students[a] M (SD)	NP students[b] M (SD)
Teaching methods were helpful and effective.	4.16 (0.62)	4.2 (0.45)
The simulation provided me with a variety of learning materials and activities to promote my learning the class objectives.	4.39 (0.72)	4.4 (0.55)
I am confident that I am mastering the content of the simulation presented to me.	3.72 (1.08)	4.4 (0.55)
I am confident that I am developing skill & required knowledge to perform necessary tasks in a clinical setting.	4.21 (0.75)	4.6 (0.55)
I am confident this simulation covered critical content necessary for mastery of class learning objectives.	4.25 (0.84)	4.6 (0.55)

[a] n=45 [b] n=5

4. Discussion

We found that it was feasible to use a telepresence robot as a tool in clinical simulation, to introduce telehealth, and students reported high mean scores on the acceptability of using the robot. While there are challenges, incorporating telepresence technology into simulations opens up many opportunities to both engage students in telehealth with patients and other clinicians, and to engage students in their education when they are learning at a distance [2,3].

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