Project Objective

Healthcare students benefit from inter-disciplinary learning opportunities, including the practice of communication and collaborative strategies essential for real-world patient care. Faculty are increasingly using simulation-based inter-professional education (IPE) experiences to enhance inter-disciplinary practice. As students of rurally-located educational programs have specific barriers to IPE participation, an innovative solution may be the use of telehealth tools. Telehealth is remote healthcare provision to patients at distant sites using technology-based tools. A simulation-based IPE experience using these tools not only provides students the opportunity to work with the technology, but addresses issues inherent in providing IPE experiences to rurally-located students. The purpose of this project was to examine the feasibility and acceptability of a simulation-based IPE experience for pre-licensure nursing, pharmacy, and medical students on a rurally-located campus.

Methods

Using a mixed-methods, explanatory sequential approach, this project: 1) examined the feasibility of implementing a simulation-based IPE experience using telehealth tools; and 2) evaluated student perceptions of inter-professional teamwork, roles and responsibilities, and patient outcomes for collaborative practice, both pre- and post-scenario. Twenty-nine participants included fourth year nursing (n=16), third year medical (n=8), and fourth year pharmacy (n=5) students. The students first completed a questionnaire regarding knowledge of and attitudes toward IPE, and were then randomly assigned to one of five IPE groups consisting of 5-7 students. Each group completed an advanced cardiac simulation scenario in which the nursing and pharmacy students were in the simulation lab, and the medical students “remoted in” using a telehealth robot. The scenario concluded with a video-recorded debriefing session; subsequently, the students completed post-surveys.

Results

Quantitative data were analyzed using SPSS. Results revealed 94% agreed/strongly agreed the IPE experience resembled a real-life situation. 100% of nursing/medical students and 80% of the pharmacy students indicated they would recommend this experience to their peers. Significant positive changes in attitudes towards using an inter-professional team approach were noted for pharmacy students, especially in regards to patient outcomes, reduced costs, and improved patient-centered care.

Qualitative data were transcribed and analyzed using thematic analysis. Four themes emerged: 1) better understanding of technology; 2) improved communication among team members; 3) benefit of true to life experience; and 4) increased knowledge level and confidence.

Participant suggestions for improvement included: 1) improve the simulation/telehealth equipment orientation; 2) consider a grand round-type simulation; and 3) address technical challenges with the robot, e.g., volume control.

Conclusion
Complex healthcare now requires a collaborative and team approach to patient care. A simulation-based IPE approach using “remote in” technology allows for the development and mastery of these competencies. Although limited by a small sample size, this project confirmed it is feasible and acceptable to offer simulation-based IPE in a rural setting facilitated by the use of telehealth tools, and collaborative teamwork is enhanced by using “remote in” technology during a simulation-based IPE activity. Future work will incorporate student suggestions to improve the experience, as well as integrate students from other healthcare disciplines, such as physician assistant students.

Title:
Simulation-Based Interprofessional Education in a Rural Setting: Development and Evaluation of a "Remote-In" Telehealth Scenario

Keywords:
Rural, Simulation-Based IPE and Telehealth

References:


Abstract Summary:
Complex healthcare now requires a collaborative team approach to patient care. Simulation-based interprofessional education (IPE) is challenging to implement especially on a rural campus. A simulation-based IPE approach using “remote in” technology is an innovative way to deliver team-based patient centered care.

Content Outline:

I. Introduction

A. A single-disciplinary approach to healthcare education does not give students the opportunity to practice effective communication and collaborative skills essential to interdisciplinary, real-world patient care.

B. IPE combined with simulation-based experiential patient scenarios represents an innovative approach in enhancing learning, as hands-on practice allows students to develop and master core competencies, promotes interdisciplinary collaboration and communication skills, and protects patients. However, implementation of this approach may be challenging for programs serving distance student populations.

C. A simulation-based IPE experience using telehealth tools not only provides students the opportunity to work with the technology, but addresses issues inherent in providing IPE experiences to rurally-located students.

II. Body

A. Main Point #1: This project 1) examined the feasibility of adding an IPE component to current simulation experiences in a rurally-located program; 2) determined necessary resources to implement simulation as a component to IPE; and 3) measured student perception of interprofessional teamwork, roles and responsibilities, and patient outcomes for collaborative practice.

1. Supporting point #1: Scenario Development

a) The simulation was designed to mimic how telehealth might be utilized in a real-life, emergent situation, with each student performing their disciplinary roles.

b) During the scenario, nursing and pharmacy students implemented interventions recommended from the medical student team leader that “remoted-in” using telehealth technology.

2. Supporting point #2: Data Collection

a) Quantitative data: Pre and Post- assessment using Student Perceptions of Interprofessional Clinical Education-revised (SPICE-R2) and NLN Simulation Design Scale

b) Qualitative date: Student perceptions of the IPE experience were explored through a faculty-led, video-recorded debriefing exercise addressing 1) first thoughts regarding the
experience, 2) what went right and why, and 3) what would you do differently and why. Additionally, the post-assessment SPICE-R2 questionnaire included narrative response questions.

3. Supporting point #3: Data Analysis

a) Joint display of data results

B. Main Point #2: Results

1. Supporting point #1: Correlational statistics

a) Significant difference (α = 0.05) between the nurse-pharmacy groups for patient outcomes for collaborative practice. The pharmacy students reported higher scores post-intervention in regard to improved patient outcomes using an interprofessional team approach. Additionally, the t-test showed a marginal significance for the same group in response to roles and responsibilities for collaborative practice.

b) All students rated it was “important” or “very important” to have real-life factors, situations, and variables built into the simulation. Ninety-four percent of students surveyed post-simulation rated “agree” or “strongly agree” that the simulation included all three items.

2. Supporting point #2: Thematic Analysis

1. Better understanding of technology – “It helped by advancing my understanding of advances in technology”

2. Improved communication among team members – “…we had to rely on other members to help us identify what was happening” and “I will never underestimate the importance of teamwork”

3. Benefit of true to life experience – 100% of medicine and nursing students and 80% of pharmacy students would recommend this experience to their peers

4. Reinforced knowledge level and confidence – “it helped me to be more comfortable and confident in working with other disciplines.”

C. Lessons Learned

1. Supporting point #1: IPE on a rural campus is feasible

a) using “remote-in” technology

2. Supporting point #2: Orientation

a) More deliberate orientation process to equipment
3. Supporting point #3: Scenario Selection
   a) ACLS scenario was loud and chaotic and hard to hear or see using robot – consider changing the scenario to IPE grand-round

4. Supporting point #4: Technical challenges
   a) Address sound and visual issues with robot and allow for more practice

5. Supporting point #5: Key elements for success
   a) Strong supportive partnerships
   b) Early buy-in from stakeholders

6. Supporting point #6: Implications for healthcare education and future nursing research
   a) Scenario development – soft skills in crucial conversations – delivering bad news to patients and families

III. Conclusion

A. Complex healthcare now requires a collaborative and team approach to patient care. IPE trains students to work as part of a healthcare team. The IOM (2010) charged academic institutions to make a real obligation to incorporate IPE into the curriculum, and accreditation agencies identified IPE as essential form of education to achieving safe, quality patient-centered care

B. Human patient simulation has proven to be an effective tool for bridging the gap between classroom didactic material and its application in the clinical setting.

C. Through a hands-on approach using various learning modes simultaneously, IPE with a simulation-based experiential learning approach allows for the development and mastery of these competencies, which promotes collaborative teamwork while protecting patients. Using “remote-in” technology in a simulation-based IPE activity is one way to foster IPE in a rural setting.

First Primary Presenting Author

Primary Presenting Author

Ann Scott, DNP, RN, CCRN, CNE
University of South Carolina
College of Nursing
Clinical instructor
Columbia SC
USA

Author Summary: Ann Scott currently is on the faculty of the University of South Carolina College of Nursing. She has been in nursing education for 14 years. She has extensive experience with clinical simulation and student engagement.