



Short Communication

Interprofessional simulation education designed to teach occupational therapy and nursing students complex patient transfers



Rennie Jacobs, PhD, LOTR, CHT^{a,1}, Ellen Beyer, DNP, MBA, MN, RN, PHCNS-BC, APRN^{b,*}, Katherine Carter, DNP, MSN, PHCNS-BC^c

^a Louisiana State University Health Sciences Center, New Orleans, 1900 Gravier Street, Room 836, New Orleans, LA 70112, USA

^b Louisiana State University Health Sciences Center, New Orleans, 1900 Gravier Street, Room 4A16, New Orleans, LA 70112, USA

^c Louisiana State University Health Sciences Center, New Orleans, 1900 Gravier Street, Room 301, New Orleans, LA 70112, USA

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ABSTRACT

Objective: The objective of this study was to use interprofessional education to improve the knowledge and skill levels of nursing students regarding safe patient transfers, and occupational therapy students regarding safe handling of a patient's medical lines during transfers.

Methods: A prospective mixed methods approach was used for data collection of an interprofessional education simulation experience centered on transferring a client with two or more medical lines.

Results: Forty-nine nursing and occupational therapy students participated in the study. Significant increases ($p < .05$) in skill levels were found in all areas assessed, for both professions. Changes in IPE perceptions differed between the professions; however, both groups felt more respect from the other profession after the simulations.

Conclusions: Results support that IPE can assist in improving skill levels, and is an important factor in teaching students how to communicate, collaborate, and learn from other health care professions.

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Format

An introductory education and debriefing were conducted in a classroom setting with all participants. The interprofessional education (IPE) simulation was conducted in a nursing lab with small groups including both nursing students and occupational therapy (OT) students. Each small group simulated three scenarios, students alternated acting as the standardized patient. Each simulation was approximately 20 min.

Target audience

Twenty-nine Master of Occupational Therapy students in the fourth semester and 20 Bachelor of Science Nursing students in the first senior semester were included in the simulations. Participation in the three events associated with the simulations (introductory education session, simulation experiences in small groups, and debriefing session) were mandatory as part of the group's respective course content.

Objectives

The aim of this study was to use an IPE simulation format to improve the perceptions, knowledge, and skill levels of nursing students regarding safe patient transfers, and OT students regarding safe handling of a patient's medical lines during transfers.

Activity description

In recent years, increased attention has been placed on utilizing IPE as part of the overall academic process with a specific challenge to produce a "collaborative practice-ready workforce".¹ While often logistically difficult to execute,² students report that IPE opportunities allow for both increased professional collaboration and professional competence.³ IPE experiences have been shown to be specifically valued by students when addressing patients with complex health care needs, and this educational strategy method can lead to better health care results.⁴

Transferring complex medical patients from one surface to another requires safe-handling techniques, proper body mechanics, and knowledge of safe-handling of invasive medical lines such as drains and feeding tubes. Transfer training is a standard part of all occupational therapy (OT) curricula, however safety with medical

* Corresponding author.

E-mail address: EBeyer@lsuhsc.edu (E. Beyer).

¹ Permanent address: 910 Turquoise Street, New Orleans, LA 70124, USA.

line management may not be addressed until a student begins their fieldwork component of the program and, depending on the clinical setting, a student may never have to manage a patient with multiple medical lines while in school.

This study was created out of feedback from OT students after 12-week clinical experiences. Prior to fieldwork, students receive a lecture on the acute care setting, and spend class time with a clinician in a hospital setting who reviews aspects of an intensive care unit, including complex medical patients with medical lines. This is done in large group setting, and does not allow for individuals to physically manipulate any of the equipment. This limited exposure does not adequately prepare students for independent management of medical lines, and students report a continued fear of safely transferring medically complex patients during the beginning weeks of their fieldwork. Nursing faculty were contacted to discuss opportunities for working in the Nursing Education Simulation Lab. After discussion, it was found that both nursing and OT students could benefit from an IPE experience to better prepare them to safely mobilize and transfer complex medical patients.

OT students are well trained in patient mobility and transfers. Once receiving directions, students often simulate mobility and transfers on each other in a gym-like setting that has mats or hospital beds.⁵ Although this allows for active learning, the students are typically comfortable with one another and assist the “therapist” beyond what an actual patient would or could do. Students often report that once in the clinical setting, transfers are much more difficult to perform, considering the patient’s ability to comprehend the directions, the level of assistance needed, and the complexity of the environment (i.e. medical lines, machines, IV poles, etc.). Nursing students receive simulation training for medical line management; however, these students often receive little training in safe patient handling techniques, which is a major risk factor for musculoskeletal injury. Lee et al⁶ found that 74% of critical care nurses performed manual patient lifts and transfers. Currently, there is a gap in what is taught in nursing education regarding patient mobility and transfers, and what is expected of nurses in the clinical setting.⁷

Methods

The study design was a prospective mixed methods data collection of an IPE simulation experience centered on safety with transferring a patient with one or more medically invasive lines. Approval for this study was obtained from the Institutional Review Board at Louisiana State University Health Sciences Center – New Orleans. Student responses for the pre and post questionnaire were anonymous.

The single intervention IPE simulation experience included three components (an introductory education session, simulation experiences in small groups, and debriefing session) that followed a period of preparatory work for each individual discipline. Early in the 2014 spring semester, nursing students were refreshed in proper medical line management, and OT students were refreshed in safe and effective patient transfers. Both topics had been covered previously in the respective curricula. Trainings were held in each discipline’s respective departments by faculty associated with the project. OT students prepared educational handouts on proper transfer techniques, safe handling of transfer equipment, and several pieces of adaptive equipment that may be used by a patient during a nursing visit. Nursing students performed a similar task of preparing educational handouts on the safe and effective management of oxygen and patients’ invasive lines. After compilation, all materials were made available both electronically and by hardcopy for the cohort prior to the simulation experience.

Two days prior to the first simulation experience, the cohort attended a one-hour “meet and greet” education session, where

they were divided into their simulation groups. The education session included a presentation about the history, purpose, and benefits of IPE. A description of the IPE project was distributed and read aloud to the cohort. At the conclusion of the education session, students who agreed to participate in the study completed the pre-simulation Interdisciplinary Education Perception Scale (IEPS)⁸ and their discipline specific pre-simulation questionnaire rating themselves on perception of their skill level associated with either medical line management or safe patient transfers.

Simulations were held over two days to accommodate all of the student groups. Each group enacted 3 different scenarios over a one hour time frame. The nursing students were responsible for educating the OT students on the medical lines associated with the patient described in each scenario. The OT students were responsible for educating the nursing students in how to safely transfer the described patient using transfer equipment such as gait belts and sliding boards. OT and nursing students acted as the standardized patient in the simulations, and standard-issue medical equipment (attached in place with tape) were used for the simulations. The afternoon following the last day of simulations, all students and faculty associated with the IPE experience participated in a debriefing. Faculty facilitated the discussion, and students were encouraged to freely discuss their thoughts and feelings. Benefits, barriers, changes in perceptions, and recommendations for future experiences were identified and documented for future qualitative analysis.

Evaluation

Interprofessional learning was evaluated using two methods. First, perception of IPE was assessed both before and after the simulations using the Interdisciplinary Education Perception Scale (IEPS).⁸ The IPES is an 18-item questionnaire that utilizes a six-point Likert-type scale from strongly disagree (1) to strongly agree (6), and assesses perceptions of both their own profession and other professions. Luecht et al⁸ categorized the IEPS into four sub-scales: Competency and Autonomy, Perceived Need for Cooperation, Perception of Actual Cooperation, and Understanding Others’ Value. Reliability and validity have been established,^{8,9} and the authors report a high overall internal consistency alpha value of 0.872.

Table 1
Results for nursing pre- and post-simulation training.

Questionnaire items	Pre-test Mean nursing	Post-test Mean nursing	p-Value
1. How would you rate yourself on your ability to safely and successfully roll a patient?	3.25	3.75	0.014
2. How would you rate yourself on your ability to safely and successfully transfer a patient from supine to sit?	2.90	3.65	<0.01
3. How would you rate yourself on your ability to safely and successfully transfer a patient from sit to stand?	2.65	3.65	<0.01
4. How would you rate yourself on your ability to safely and successfully assist a patient in scooting from bed to chair?	2.55	3.75	<0.01
5. How would you rate yourself on your ability to safely and successfully transfer a patient using a stand-pivot transfer from bed to chair	2.35	3.70	<0.01
6. How would you rate yourself on your knowledge of Occupational Therapy?	1.85	2.85	<0.01

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