



## Short Communication

# Fostering interprofessional collaboration and critical thinking between nursing and physical therapy students using high-fidelity simulation

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## ABSTRACT

This curricular resource describes a method of interprofessional collaboration between nursing and physical therapy students. The purpose is to describe an experience using high fidelity simulation (HFS) to foster interprofessional collaboration and critical thinking in a mock critical care setting. Nursing and physical therapy students are introduced to HFS prior to interprofessional collaboration. A total of 79 students over 4 academic years evaluated the experience. Retrospective qualitative analysis from student reflections revealed the following themes: realistic, life-like learning experience; valuable learning tool; collaboration and teamwork; and reflection on action. HFS is a valuable tool to incorporate into curriculum to assess learning outcomes that are expected of health care professionals. Interprofessional collaboration could lead to stronger patient-centered care given the sharing of knowledge that occurs across disciplines.

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## 1. Format

Physical therapy and nursing students engaged in an interprofessional high fidelity simulation (HFS) scenario focusing on critical care in groups of 6–8 individuals with additional students observing. Students were expected to focus on interprofessional communication and responding appropriately to changes in patient status.

## 2. Target audience

Undergraduate nursing students and graduate level physical therapy (DPT) students formed interprofessional teams. At least two nursing students and three to five DPT students participated in each scenario. Two faculty members representing Nursing and Physical Therapy educational programs were responsible for the development and oversight of the simulation activity.

## 3. Objectives

The broad objective was to foster interprofessional collaboration and critical thinking in a mock critical care setting. Specifically, students were expected to apply SBAR (Situation, Background, Assessment, and Recommendations) communication technique within interprofessional teams. Students were responsible for the assessment of and response to change in patient status using HFS. Following the scenario, students complete peer and self-assessments of performance followed by guided debriefing from the instructors.

## 4. Activity description

Prior to the interprofessional experience (IPE), students are exposed to HFS through their respective programs. Students are presented with basic shells of 2 cases developed by the instructors to prepare for the experience. Diagnoses for the cases are coronary artery bypass graft or thoracotomy in an intensive care unit setting. In both scenarios, the “patient” has a foley catheter, chest tube, multiple intravenous lines, and dressings. Nursing students review the medical diagnosis, lab values, medications, and SBAR (situation, background, assessment, recommendation) communication

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technique prior to the IPE. DPT students review the brief case scenario and names of the medications, but do not receive lab values until the start of the lab, as they are expected to determine if lab values would indicate alteration of the physical therapy session.

Each scenario has a 20-min time limit. One nursing student or instructor plays the role of the patient voice from the control room. The instructors provide cues to the person regarding appropriate responses for the patient. The IPE lab begins with 2 nursing students completing a brief nursing assessment of the patient. The nursing students then provide report to the DPT students using the SBAR technique. The DPT students work in groups of 3–5 to evaluate the patient. In each case, the patient scenario evolves “on the fly” to adapt to the students responses. The DPT students are expected to recognize and manage problems like cerebrovascular accident, myocardial infarction, low glucose levels, or dealing with patients who have difficult psychosocial concerns or family dynamics. At the end of the scenario, DPT students are expected to report back to the nursing students using the SBAR technique. Each student participates in only one case using the HFS and then acts as an observer for a second case. Up to 8 people are actively engaged in the scenario with up to 8 additional students observing during the simulation. The instructors run a total of 6 scenarios in the same day, which allows approximately 40–50 students to complete the IPE. Students participate in multilayer reflection as part of the debriefing process as described in the assessment section.

## 5. Assessment

During the scenarios, students are assigned a specific student to observe and provide feedback using the guiding peer assessment questions. Students complete the peer assessment in “real time” as the scenario is running. Following completion of the scenarios, students complete the self-assessment tool. Prior to the faculty led debriefing, the instructors review the peer and self-assessments for consistency and identify any points that may have been observed by the instructors that were not captured by the student assessments. Two videotaped HFS scenarios (one of each diagnosis) are reviewed in a large-group class session. The debriefing process allows all of the students to watch the video and provide feedback regarding whether or not objectives have met. The instructor provides additional guidance, clarification, and/or instruction to ensure that the objectives have been met.

Peer assessment questions included:

1. What did the student do well during the scenario?
2. What needs a little more work?
3. General feedback for the group

Self-assessment questions included:

Case Scenario (Diagnosis) -

1. What were your primary concerns in this scenario?
2. Did you miss anything in getting report on this patient?
3. Did you have sufficient knowledge/skills to manage this situation?
4. What did you do well in this scenario?
5. If you were able to do this again, what would you do differently?

For the DPT students, the following questions were also added to the self-assessment regarding management of the patient:

6. What are your goals for this patient?
7. Frequency/duration for patient

Other questions that the instructor may use during the guided

debriefing included:

1. If you could do something differently, what would that be?
2. Did you feel you needed more information? What information would that be and how would you obtain it?
3. What guided your decision making process? What did you see? Hear? Smell?
4. What information/data did you use when making your decision?
5. Were you reminded of a previous experience? Did this influence your thinking?
6. What were your specific goals? Priorities?
7. What other courses of action did you consider?
8. Did you follow a known rule, policy, procedure, algorithm?
9. If your decision was not the best, what training, knowledge, or information could have helped?
10. How much was time pressure a factor in your decisions/actions?

(Guided debriefing questions adapted from Jeffries<sup>1</sup>)

## 6. Evaluation

Following the IPE debriefing, all students were invited to complete a series of nine questions regarding their experiences. Data were collected over 4 years with a total of 79 of the 123 invited participants from the Nursing and Physical Therapy programs completing the reflections (response rate 64%). This project was approved by the Institutional Review Board.

The data gathered from the participants reflections were analyzed using an adapted version of Colaizzi's seven step method.<sup>2</sup> Three researchers were involved with data analysis: 2 were direct instructors of the IPE, high fidelity simulation experience (RP, JM) and 1 researcher had expertise in qualitative data analysis (MK). Each of the three researchers involved in the IPE individually read the participants responses. Written reflections were read and re-read to obtain a general sense of the compiled responses. For each written reflection, faculty members extracted significant statements that pertain to the IPE. Meanings were formulated from these significant statements. The formulated meanings were sorted into categories and clustered into themes by the individual researchers. The findings of the evaluation were integrated into an exhaustive description of the IPE. Members of the research team then came together to discuss what themes they had each identified. Finally, validation of the themes was based on consensus of the researchers. Rigor was addressed throughout data analysis by assessing the credibility, transferability, dependability, confirmability and authenticity as previously described by Guba and Lincoln.<sup>3</sup>

Four themes emerged from data analysis: (1) HFS provides a realistic, lifelike learning experience; (2) HFS is valuable learning tool; (3) HFS stimulates and supports collaboration and teamwork, and (4) HFS helps engender reflection on action.

## 7. Impact

The impact of the IPE using HFS is illustrated through the following themes and exemplar statements.

### 7.1. Theme one: realistic, life-like learning experience

Both DPT and nursing students indicated that the IPE HFS lab was realistic and provided them with drawn-from-life scenarios requiring them to interpret a patient's healthcare status. Students expressed that the HFS experience was much better than a learning

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