

# Using a Patient Code Simulation Scenario to Change Attitudes Toward Interprofessional Learning and Collaboration Among Nursing and Physical Therapy Students

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## INTRODUCTION & BACKGROUND

The literature reports that health care simulation can enhance learning and clinical skills, improve communication skills, decrease performance anxiety, increase self-confidence in psychomotor skills and critical thinking abilities and assist students in critical analysis through reflection on their own performance, as well as the performance of those around them. Working collaboratively with other disciplines is important and developing this skill is particularly essential to those entering the medical profession. The School of Nursing and the Institute for Physical Therapy Education at Widener University collaborated to create and employ an interdisciplinary simulation that focused on patient safety, communication, and teamwork between the two disciplines.

## PURPOSE

The purpose of this study was to examine changes in physical therapy (PT) and nursing (RN) student attitudes towards interprofessional collaboration (IPC) and learning (IPL) following an opportunity to engage in a clinical scenario involving a simulated cardiac arrest occurring in the acute care environment.

## METHODS

**Participants:** PT (n=42) and RN (n=35) students assigned to the intervention group participated in a 90-minute IPL experience featuring high fidelity human simulators (HFHS). A control group consisting of PT (n=41) and RN (n=33) students not formally exposed to IPL and simulation was also included.

**Materials:** Three surveys were completed pre and post-IPL: (1) the Interdisciplinary Education Perception Scale (IEPS) - measures student perceptions toward collaboration with other professional disciplines; (2) the Readiness for Interprofessional Learning Scale (RIPLS) - examines student preparedness for educational activities designed to increase effectiveness in collaborative practice; and (3) the Attitudes Toward Health Care Teams Scale (ATHCTS) - developed to compare the attitudes toward teamwork and collaboration.

**Learning Experience:** Each interprofessional team met and reviewed the "patient's" medical chart prior to the simulation. The goal for the 30 minute simulation encounter was to get the patient out of bed while closely monitoring the physiological responses to activity. PT students were assisted by the RN students during the transfer of the patient from the bed to a chair. Once in the chair, the patient's blood pressure and oxygen saturation levels dropped, heart rate increased and ventricular tachycardia soon appeared on the electrocardiogram monitor. Eventually, a full code occurred and the students worked together in responding to the medical emergency. The encounter concluded with a 45 minute debriefing session.

**Data Analysis:** A 2 (group – learning intervention vs. control) by 2 (time -

Table 1. Simulation Summary.

PT Student Roles during the Simulation	RN Student Roles During the Simulation
Meet with the RN students 15 minutes prior to patient interaction to review the chart and establish the plan for the interaction with the patient.	Meet with one PT student 15 minutes prior to the patient interaction to review medical status with PT student and hear the plan for the interaction.
Students enter room and introduce themselves to the patient	
Assess patient's pain level, cognition, vital signs and ability to mobilize. Begin room set up for a transfer of the patient from the bed to a chair.	Perform general examination of patient's status including the wound, and line/tube assessment and management.
PT student takes the lead on dependently transferring the patient out of bed to chair with assistance from one nursing student.	One RN student assists with transfer, one RN student observes monitor while other RN students observe patient/therapist interactions.
BP drops, EKG changes to ventricular tachycardia and students (all) are expected to respond.	
PT student takes the lead for the transfer of the patient back to bed with RN student assistance.	RN students either get or direct other team members to get code cart, AMBU bag and AED.
PT students begin compressions and breaths and the code team is called	RN students assist and lead PT students through code.
The patient regains pulse and consciousness by the end of the code and the simulation ends	

Table 2. Participant Demographic Information for the Interprofessional Learning and Control Groups.

Participant Demographics		Groups					
		Intervention Group			Control Group		
		PT	RN	Total	PT	RN	Total
Gender	Female (n)	28	34	62	29	30	59
	Male (n)	14	1	15	12	3	15
Ethnic Identity	Asian (n)	-	-	-	1	1	2
	Black/AA (n)	-	5	5	1	5	6
	Hispanic (n)	1	-	1	-	-	-
	Caucasian (n)	41	29	70	39	26	65
Highest Degree Earned	No Degree (n)	-	30	30	3	23	25
	Associates (n)	-	4	4	-	4	4
	Bachelors (n)	42	1	43	36	6	42
	Masters (n)	-	-	-	2	-	2
Age	Mean (yrs)	25.1	25.2	25.1	24.2	26.9	25.4
	SD	3.1	6.6	5.0	2.1	9.7	6.7

Table 3. Means and Standard Deviations for the Intervention and Control Groups on the Interprofessional Education Perception Scale (IEPS), Readiness Toward Interprofessional Learning Scale (RIPLS) and the Attitude Toward Health Care Teams Scale (ATHCTS) Pre and Post the High Fidelity Human Simulation Learning Activity.

Learning Outcomes		Groups			
		Intervention Group		Control Group	
		Pre	Post	Pre	Post
IEPS	Competency & Autonomy	84.1 ± 7.3	<b>88.5 ± 6.87<sup>†</sup></b>	81.7 ± 7.1	82.05 ± 7.1
	Perceived Need for Cooperation	63.4 ± 7.3	<b>67.9 ± 6.1<sup>†</sup></b>	63.5 ± 7.9	63.1 ± 6.5
	Perception of Actual Cooperation	78.8 ± 8.3	<b>83.0 ± 7.1<sup>†</sup></b>	76.2 ± 8.0	76.3 ± 7.2
RIPLS	Understanding Other's Values	53.2 ± 8.1	53.6 ± 8.9	52.5 ± 8.0	52.5 ± 8.4
	Team Work & Collaboration	40.9 ± 4.4	<b>43.6 ± 2.9<sup>†</sup></b>	39.6 ± 4.2	39.7 ± 4.3
	Professional Identity	30.0 ± 4.2	<b>32.7 ± 3.8<sup>†</sup></b>	29.3 ± 3.5	29.2 ± 3.8
ATHCTS	Roles and Responsibilities	10.9 ± 2.4	11.1 ± 3.0	11.4 ± 2.0	10.8 ± 2.2
	Team Value	<b>47.0 ± 5.5<sup>†</sup></b>	<b>51.9 ± 4.1<sup>†</sup></b>	44.2 ± 5.4	45.6 ± 5.7
	Team Efficiency	17.4 ± 4.6	<b>19.2 ± 5.8<sup>†</sup></b>	16.8 ± 3.6	16.9 ± 3.7
	Administrative/MD Centrality	14.1 ± 5.0	13.9 ± 5.6	14.0 ± 4.2	13.3 ± 3.7

\* statistically significant within group difference p<.006; † statistically significant between group difference p<.006

*I really enjoyed this experience despite the mistakes that were made. Interprofessional teams are an essential component to administering effective care to patients. Opportunities like this one give students a chance to not only work as a team, but to experience patient care from multiple perspectives. I would hope this type of experience continues to be a part of both curriculums.*



*I loved the simulation; it put me in an environment that I had never been in before and allowed me to experience a challenging, nerve-racking, crucial moment within my patient's treatment session and forced me to think quickly on my feet. I have usually only ever gone into a treatment session with a set plan and this simulation made me quickly have to change my plan and make decisions to keep the patient safe. I liked working with nursing as well to get a feel for their role versus our role as PTs and where things should and should not overlap.*

## RESULTS

Results are presented in Table 3. For the **IEPS**, the interaction of group with time was statistically significant for the subscales examining competency and autonomy (p<.001), perceived need for cooperation (p<.001) and changes in perceptions of actual cooperation (p<.001).

The interaction of group with time for the **RIPLS** was statistically significant for Teamwork and collaboration (p<.001) and Professional identity (p<.001).

Finally the interaction of group with time was statistically for the **ATHCTS** subscales examining Team Value (p<.001) and Team Efficiency (p=.006).

The control group was not significantly different from the learning intervention group at the start of the study and did not change

*Overall, this was an extremely helpful experience in that it allowed for both PTs and nurses gain a better understanding of one another's profession. This also demonstrated that best patient care is achieved when different health disciplines work together in collaboration.*

*It's impossible for everyone to know everything, so it's important that we understand what others are bringing to the table and provide the best care possible.*

## DISCUSSION & CONCLUSIONS

The study results support the effectiveness of including HFHS as part of an IPL experience designed to foster the skills necessary for IPC. In the learning intervention group, the patterns of within and between group differences indicate improvements in attitudes toward IPL and teamwork in comparison to the control group. Simulation provided a meaningful context for students to work collaboratively and implement the skills needed to work interprofessionally. Participation in the simulation and the related educational activities positively altered student attitudes toward learning from and working with peers in other healthcare disciplines. The changes arising from the 90-minute learning experience are an important step in developing the skills needed to work effectively with other healthcare professionals on teams.



