

# Discovering Gaps in Interprofessional Education Through Immersive Simulation: A Cross-Sectional Observational Study

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## Background

- Interprofessional education (IPE) is widely recognized as an essential element in the training of healthcare professionals to enhance competencies needed for successful interprofessional (IP) collaboration.<sup>1,2,3</sup>
- Ineffective IP communication, specifically inadequate patient handoff reports, can contribute to delays in treatment and adverse patient outcomes, including falls, injury, and death.<sup>4</sup>
- Use of the Situation-Background-Assessment-Recommendation (SBAR) Tool facilitates effective provider-to-provider communication.<sup>5</sup>
- Nurses have long used SBAR, and utilization of the tool has become more widespread among other healthcare professionals, including physical therapists.<sup>5,6,7</sup>

## Purpose

The overall aim of this study was to explore the impact of a simulation-enhanced IPE (Sim-IPE) activity focused on communication and teamwork on selected outcomes in prelicensure nursing and physical therapy (PT) students. Specific objectives were to determine:

- If participating in the Sim-IPE influenced students' perceptions of IPE as measured by the Student Perceptions of Interprofessional Clinical Education-Revised (SPICE-R) instrument.<sup>8</sup>
- If participating in the Sim-IPE influenced students' perceptions of their ability to demonstrate IP competencies as measured by the IP Collaborative Competency Attainment Scale (ICCAS).<sup>9</sup>
- If students could demonstrate collaborative IP competencies as objectively evaluated using the IP Collaborator Assessment Rubric (ICAR).<sup>10</sup>
- If students could deliver an effective SBAR report within the Sim-IPE as objectively evaluated using the SBAR Brief Assessment Rubric for Learner Assessment (SBAR-LA).<sup>11</sup>

## Sim-IPE Scenarios

Three scenarios<sup>12</sup>, utilizing standardized patients (SPs), were designed to encompass IP communication and collaboration:

- Patient JB, 70yo, admitted with right ischemic stroke, experiencing left-sided weakness and slurred speech, requires transfer to chair for meals.
- Patient BI, 25yo, admitted with fractures of left humerus and femur following motor vehicle accident. Non-weight bearing on left leg. Requires transfer to wheelchair for transport to radiology.
- Patient GF, 40yo, is post-operative Day 1 following left total hip replacement. Requires ambulation to bathroom.

## Design and Methods

This cross-sectional observational study included a convenience sample of first-degree Bachelor of Science in Nursing, second-degree Master of Nursing, and Doctor of Physical Therapy (DPT) students. All students were enrolled in prelicensure programs of study.

### Instruments

- Administered pre- and post-activity, SPICE is a 10-item instrument that measures attitudes toward IP health care teams and the team approach to patient care.<sup>8</sup>
- Administered post-activity as a retrospective pre- and post-activity assessment (as designed), the ICCAS is a 20-item self-assessment of 5 IP competency domains (communication, collaboration, roles & responsibilities, patient-centered care, conflict management).<sup>9</sup>
- Utilized by evaluators who reviewed recordings of the activity:
  - the SBAR-LA is a 10-item scoring rubric to assess effectiveness of SBAR delivery<sup>10</sup>
  - the ICAR measures student performance on IP competency domains<sup>11</sup>
- Administered post-activity, the Simulation Effectiveness Tool-Modified (SET-M) is a 19-item tool that students completed to evaluate the effectiveness of the activity.<sup>13</sup>

## Results

### Participants

- 118 total participants: 54 PT students and 64 nursing students

### SPICE-R

- Means for nursing students lower than PT students on all 10 items at both timepoints
- Mean differences were significant on 7 out of 10 items at Time 1 and on 2 out of 10 items at Time 2
- Significant collective increases noted for 3 items from Time 1 to Time 2

### ICCAS

- Means for nursing students lower than PT students on all 20 items at both timepoints
- Mean differences were significant on 3 out of 20 items at Time 1 and on 2 out of 10 items at Time 2
- Significant collective increases noted for 18 items from Time 1 to Time 2

### Student Perception of SBAR Performance

- Nursing students reported greater confidence in delivering an effective SBAR handoff report
- 55% of all participants indicated that they need to improve in making recommendations when giving an SBAR handoff report

### ICAR

- There were no significant differences between nursing and PT student performance in any subscale
- Student performance fell below 50% on all subscales

### SBAR-LA

- Students were most effective in delivering Background information and least effective in providing Recommendations when delivering an SBAR handoff report
- Nursing students' Situation (2.54 v. 1.62) and Total (6.96 v 5.85) means were significantly higher than PT students.

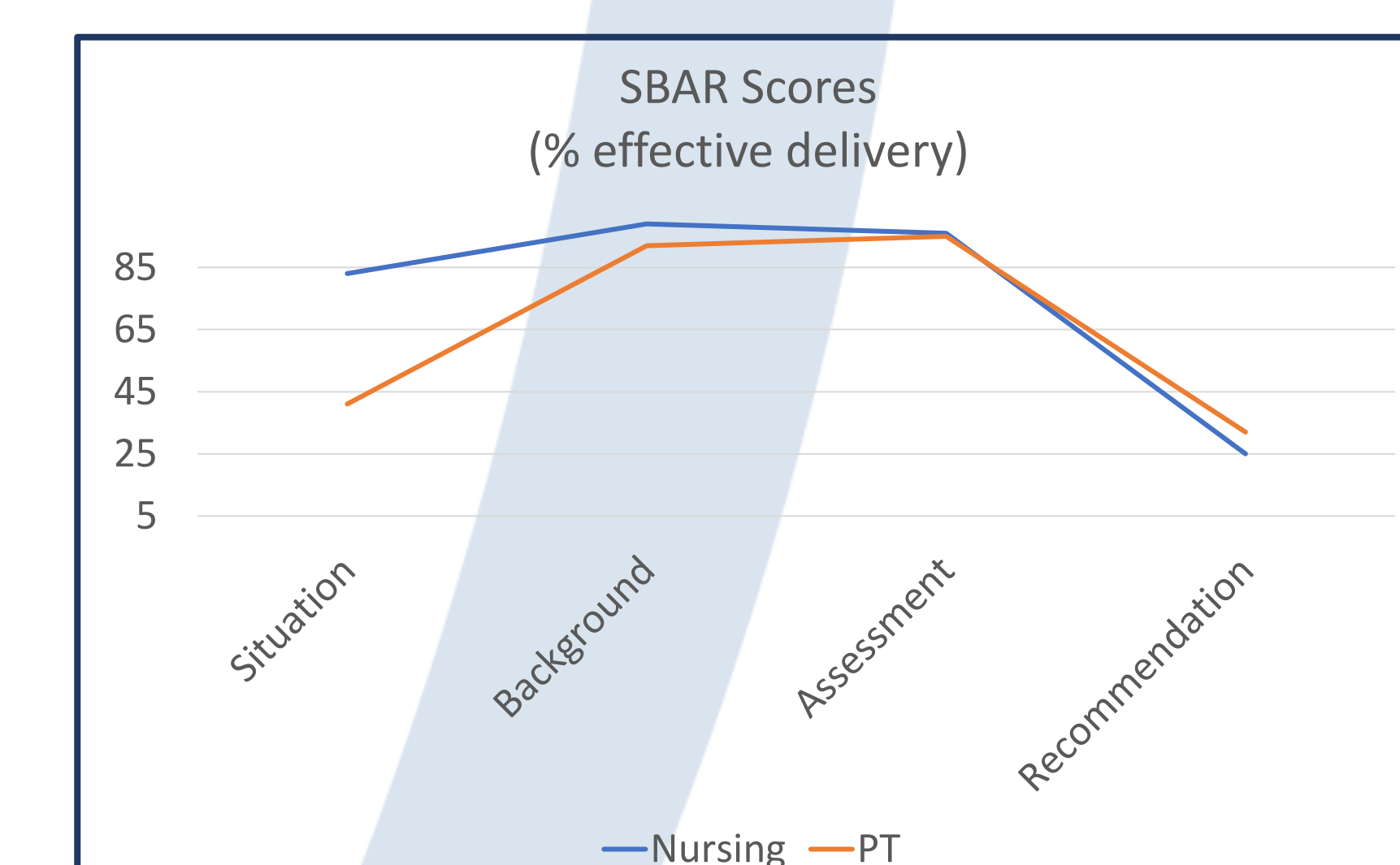
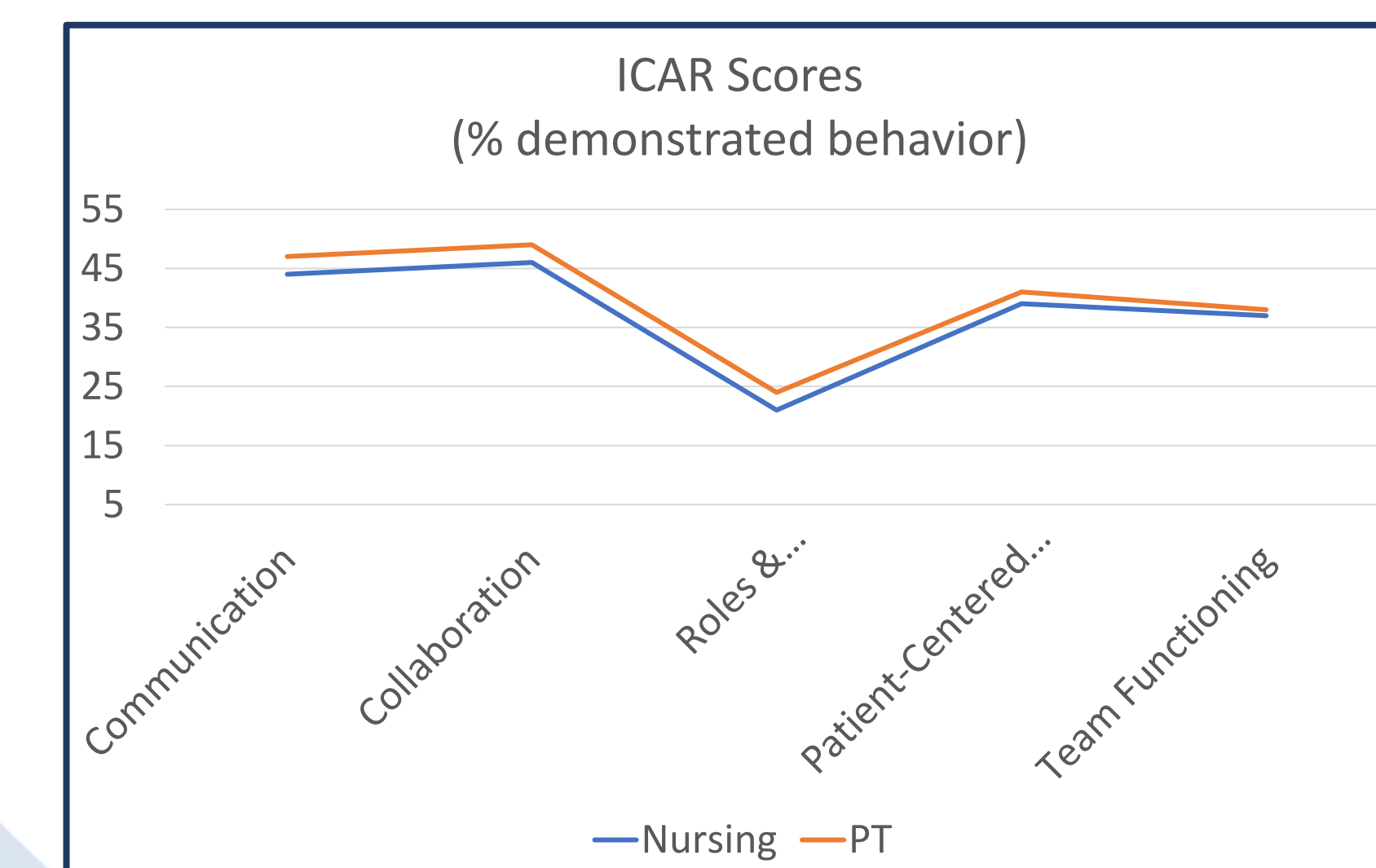
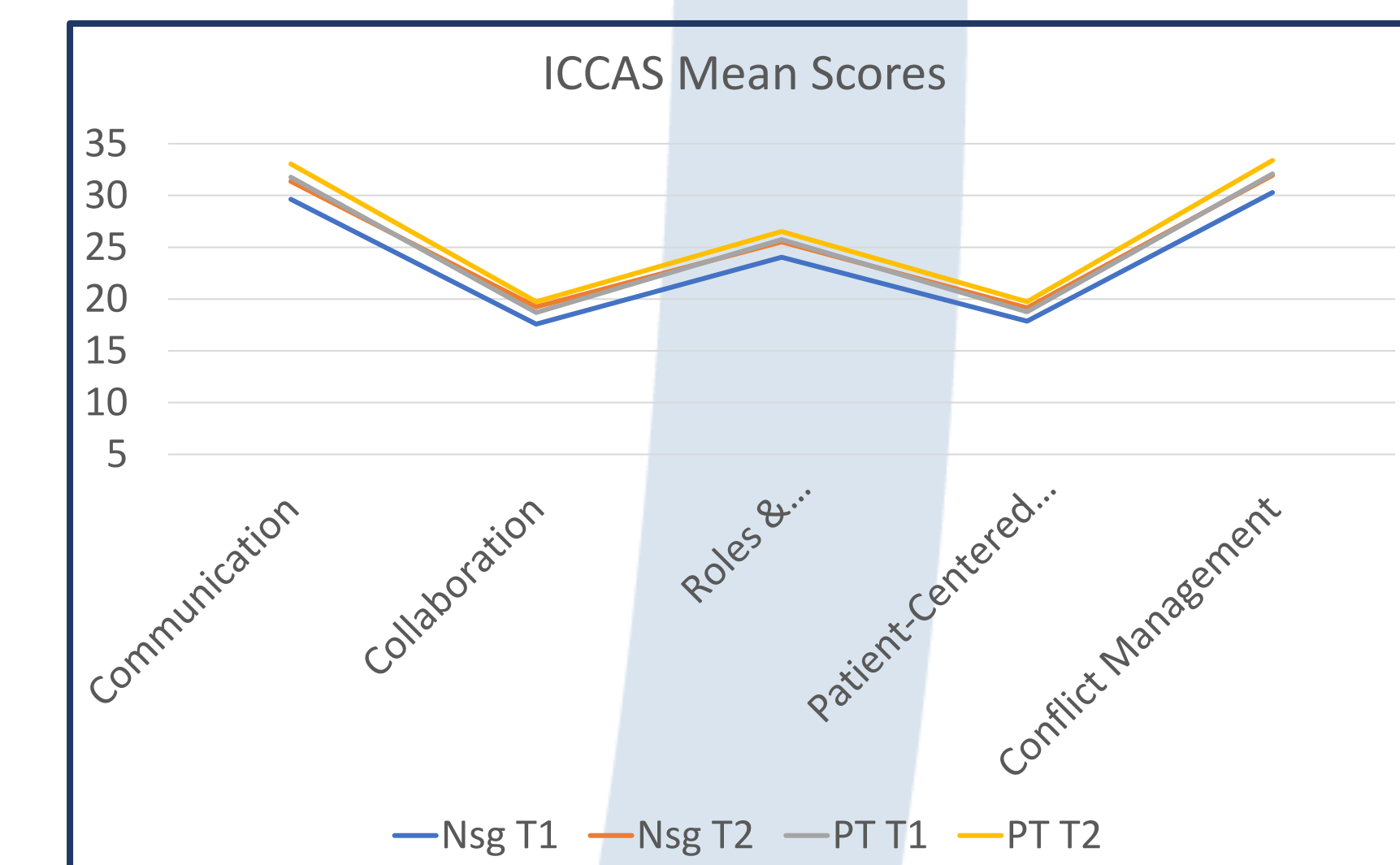
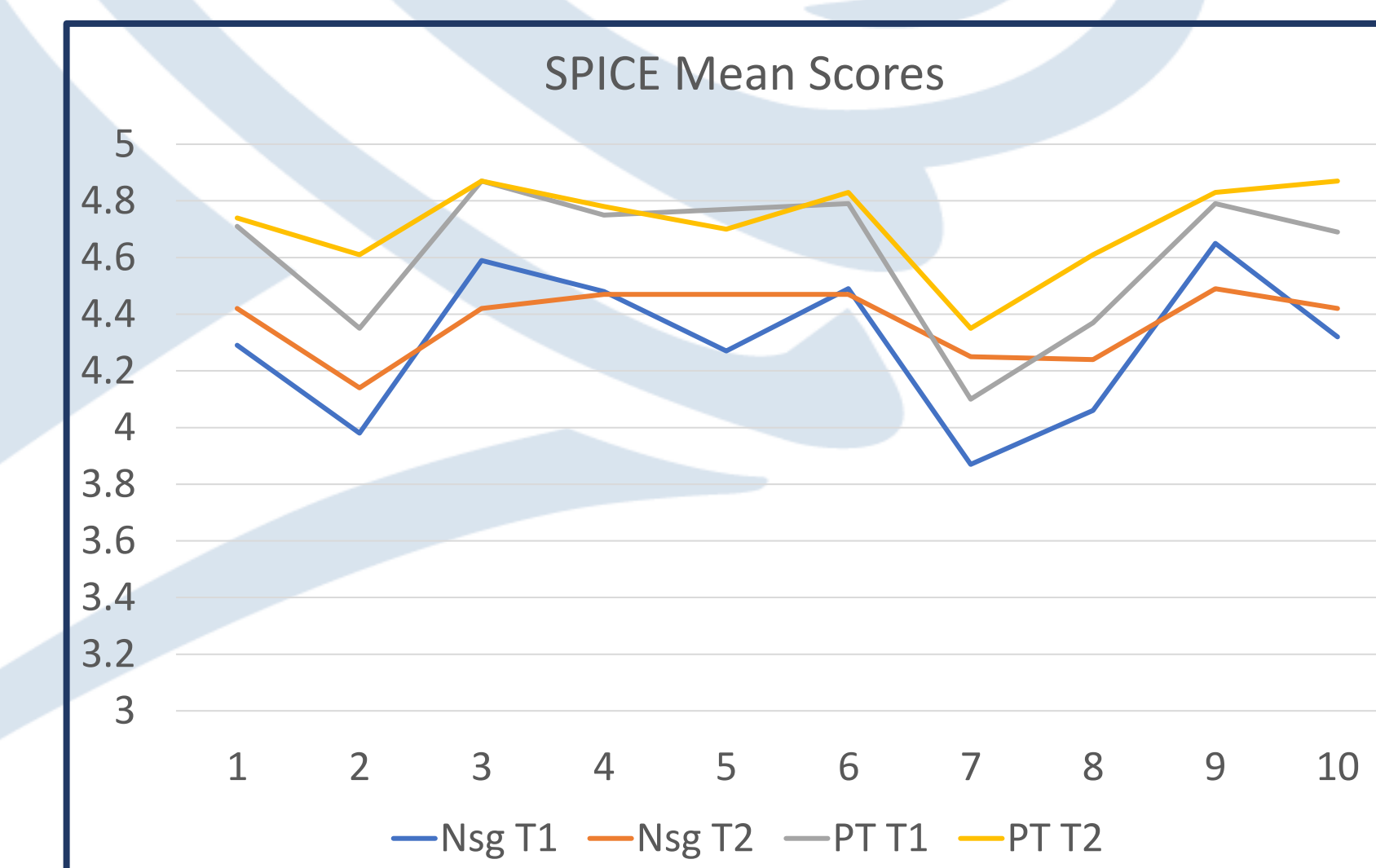
### SET-M

- With the exception of the item that addresses pathophysiology knowledge, means on all items exceeded 2.5 (max 3), indicating that students had an overall positive experience.

Compared to the time before the simulation, my ability to collaborate interprofessionally is...			
(% of responses per option)	Much better now	Somewhat better now	About the same
Nursing	59	39	2
Physical therapy	35	43	22

Participant Demographic Characteristics			
Demographic	DPT	Nursing	Total
Age (in years)			
Range	21-35	20-51	20-51
Mean	23.	25	24
Sex (% of group)			
Female	75	89	83
Male	25	9.5	17
Non-binary		1.5	<1
Race (% of group)			
African American or Black	24	29	26
Asian or Asian American	18	19	19
White	54	44	49
Other	2	6	4
Prefer to not answer	2	2	2
Ethnicity (% of group)			
Latino/Latina	10	21	16
Non-Hispanic	90	79	84

Component of SBAR-LA	N (%) met criteria
<b>Situation</b>	
Identified self	20 (49)
Identified patient	32 (78)
Provided second patient identifier	18 (44)
Patient's current status	40 (98)
<b>Background</b>	
Described context	38 (93)
Described recent assessment findings	31 (76)
Provided only facts	39 (95)
<b>Assessment</b>	38 (93)
<b>Recommendation</b>	
Recommended next steps	38 (93)
Provided contact information for follow up	9 (22)



## Conclusions

Overall, collective gains were realized in students' self-reported IP competencies; however, objective evaluation revealed that improvement is needed in all IP competency domains.

Student report matched faculty evaluation that the weakest component of SBAR handoff report delivery was Recommendations.

Self-reported performance should be verified with objective evaluation for greatest accuracy in measuring IP competency.

Matching healthcare professionals on multiple aspects, including point in program, is crucial to successful IPE activities, including simulation.

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