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Simulation-Based Interdisciplinary Team Learning—Pilot Study

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Presenters

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Simulation-Based Interdisciplinary Team Learning—Pilot Study



A Collaborative Effort by Brian Patterson, Adam Altman, Brittani Purkeypille, Bethany Sibbitt, Zach IIGiovine, Nick Christian, Josh Wenzell, Natasha Mehta, and Dr. Raymond Ten Eyck

Objective

- 1.) To determine the baseline attitudes of students from different health professions toward Interprofessional Education (IPE).
- 2.) To assess the change in student attitudes toward IPE and simulation-based education after participation in an interprofessional simulation lab.

Background

Currently, IPE is becoming widely integrated into healthcare professional education and regulating bodies (e.g. the LCME) have added IPE as a curricular requirement.^{1,2,5,6} Recent studies have concluded that students value IPE, but there are a number of challenges associated with initial engagement. Many schools are unsure how to approach this interdisciplinary integration.^{4,5} In addition to IPE, simulation has become an important tool in the education of health professionals. As the first exercise at Wright State University involving interprofessional groups composed completely of undergraduates, interested students from the Boonshoft School of Medicine, the WSU College of Nursing and Health, and the Cedarville College of Pharmacy collaborated to



conduct a series of IPE cases in the Department of Emergency Medicine's high-fidelity simulation lab. In order to support a continuous improvement process and identify strengths and weaknesses of the interprofessional simulation, we collected data from all participating students.^{1,3,5,6}

Methods

Our study was approved as an exempt protocol by the University IRB. We conducted repeat surveys of an interprofessional group of students assessing their attitudes prior to and immediately after completing a series of simulations. The survey included 6 Likert scale questions, as outlined below, as well as a comments section. Paired t-test and frequency analysis were utilized for each of the survey questions to determine baseline status and determine any statistically significant change from baseline.

Student Survey Questions

All responses are recorded on a Likert Scale

Strongly Disagree Disagree Neutral Agree Strongly Agree

ATTITUDES TOWARD SIMULATION TRAINING

- 1.) I am very experienced with *high-fidelity* healthcare clinical simulations.
- 2.) Clinical simulation sessions are beneficial to my education.
- 3.) An *Interdisciplinary* Simulation Lab, such as this, provides a unique learning environment that enhances team-based student learning and collaboration.

ATTITUDES TOWARD TEAM TRAINING

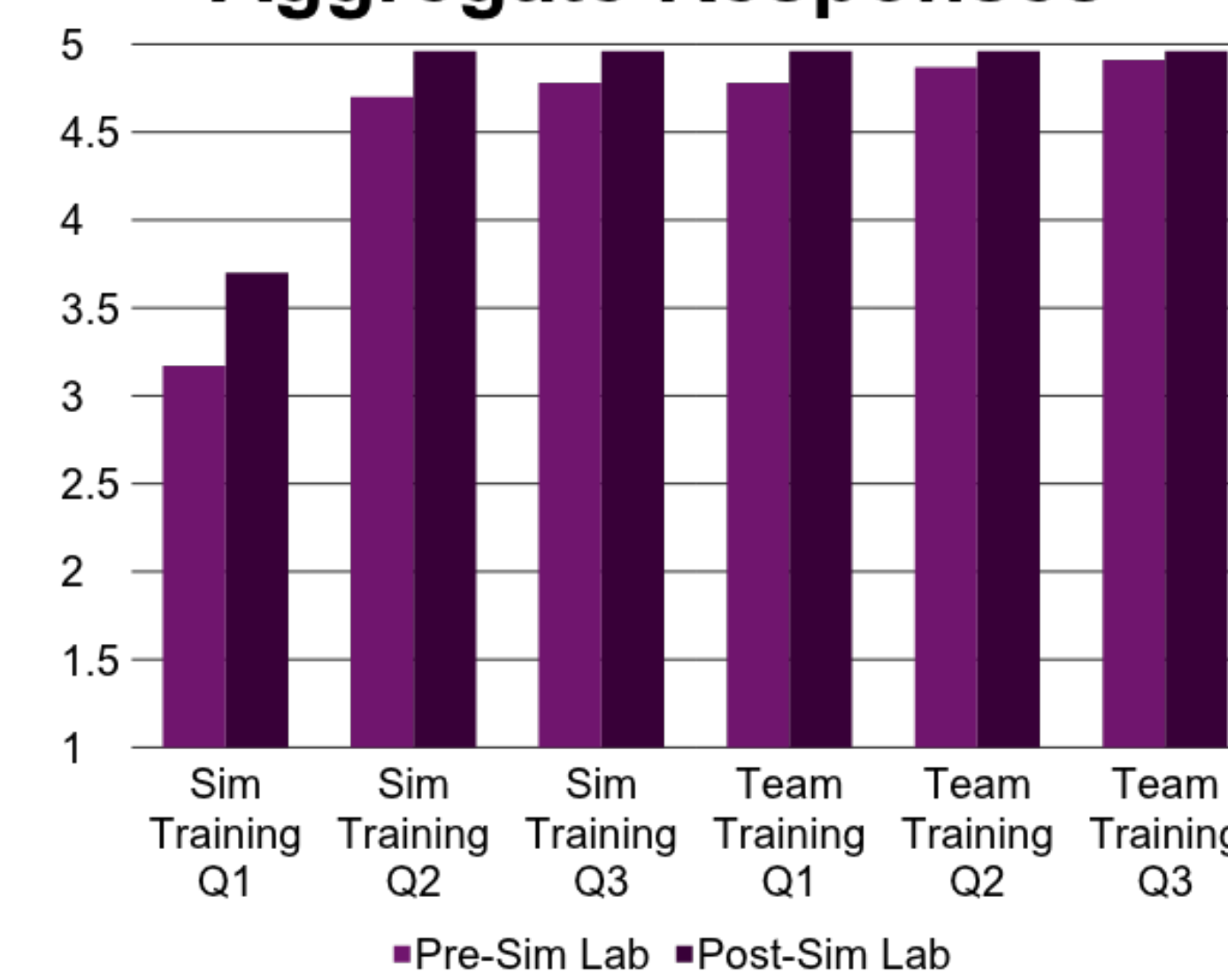
- 1.) I think it is important to work with students from other health professions.
- 2.) As a future healthcare provider, I believe my curriculum and educational objectives should include *Interdisciplinary* team-learning activities.
- 3.) There should be more opportunities for health professional students to work together.

Results

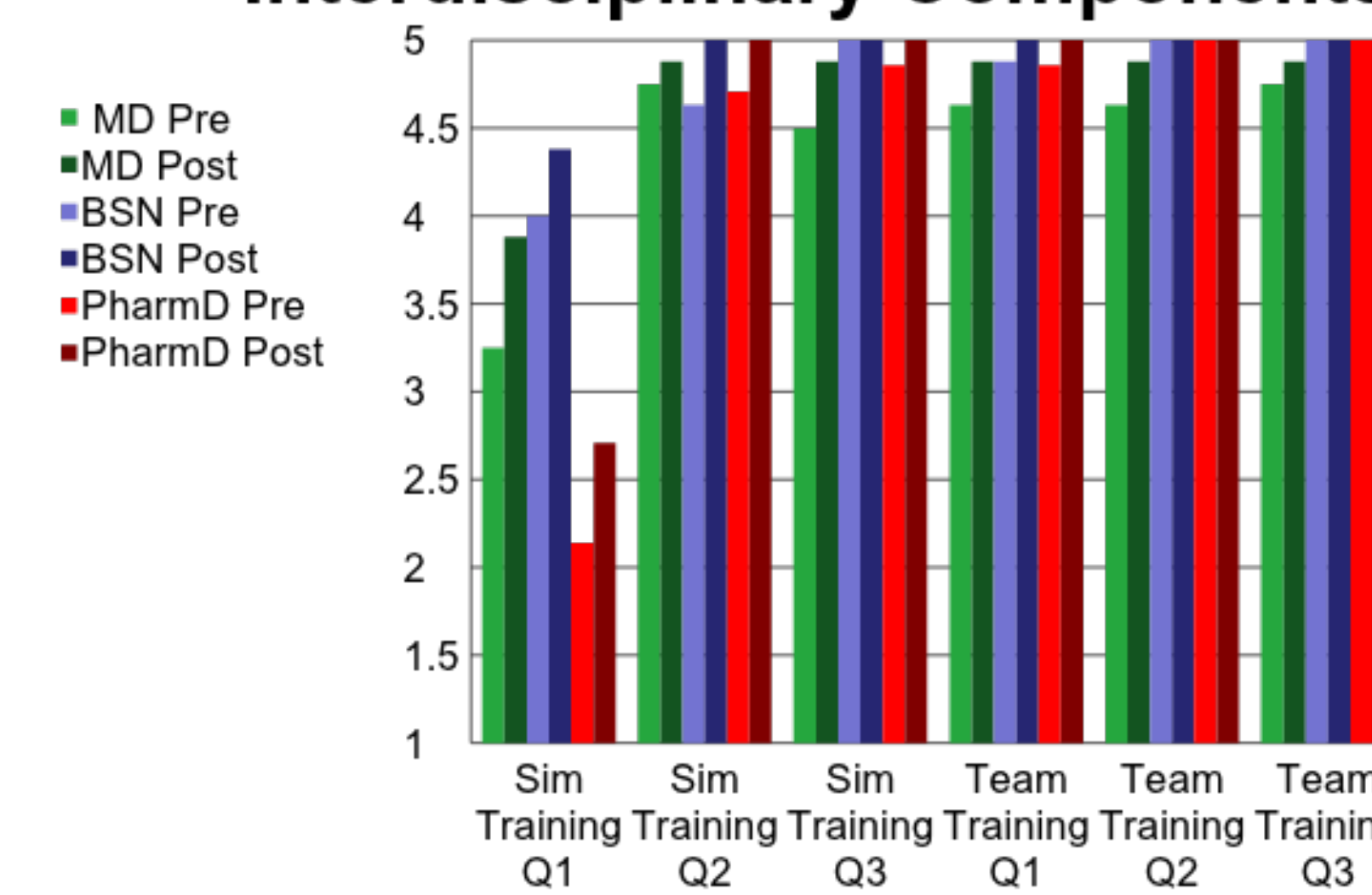
Students from all three health professions demonstrated overall positive attitudes toward IPE and simulation training. Results from four of the survey questions demonstrated a statistically significant positive increase in differences between pre-simulation and post-simulation survey.

Baseline responses indicate a strongly positive attitude towards IPE. In comparison to pre-simulation survey responses, post-simulation responses demonstrated statistically significant increases in students' experience and perceived value of high-fidelity healthcare clinical simulation. Additionally, there were statistically significant increases in students' perceived value of interdisciplinary team training and its importance in the future of medical education.

Student Survey-Aggregate Responses

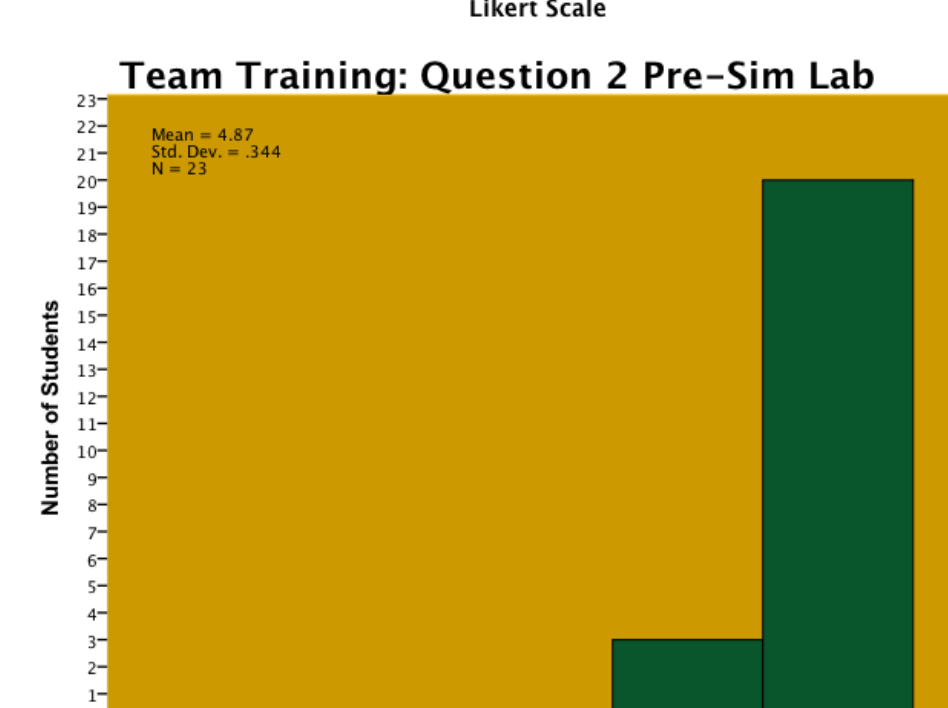
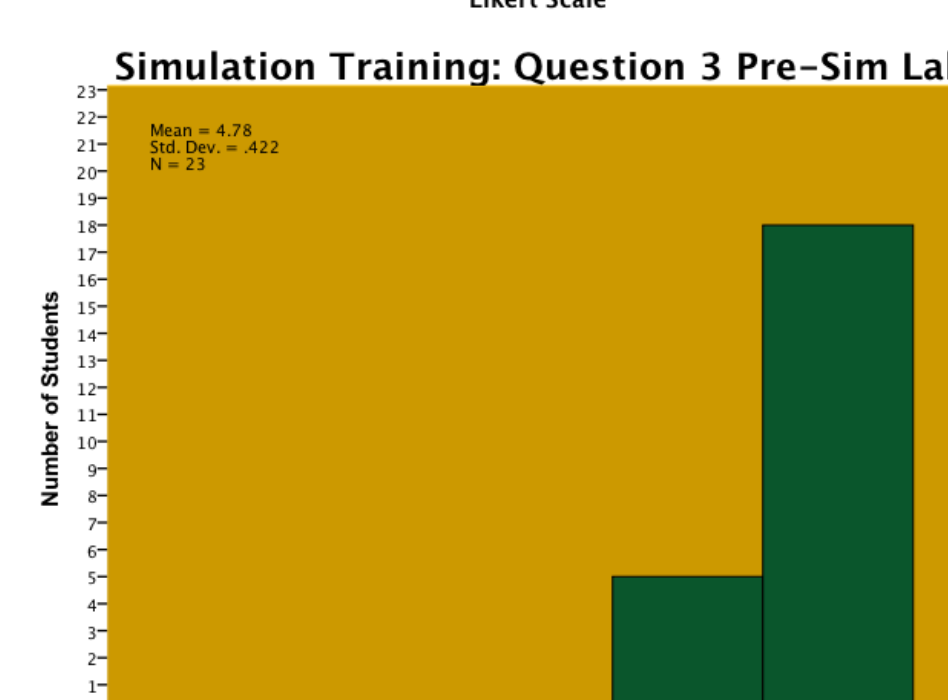
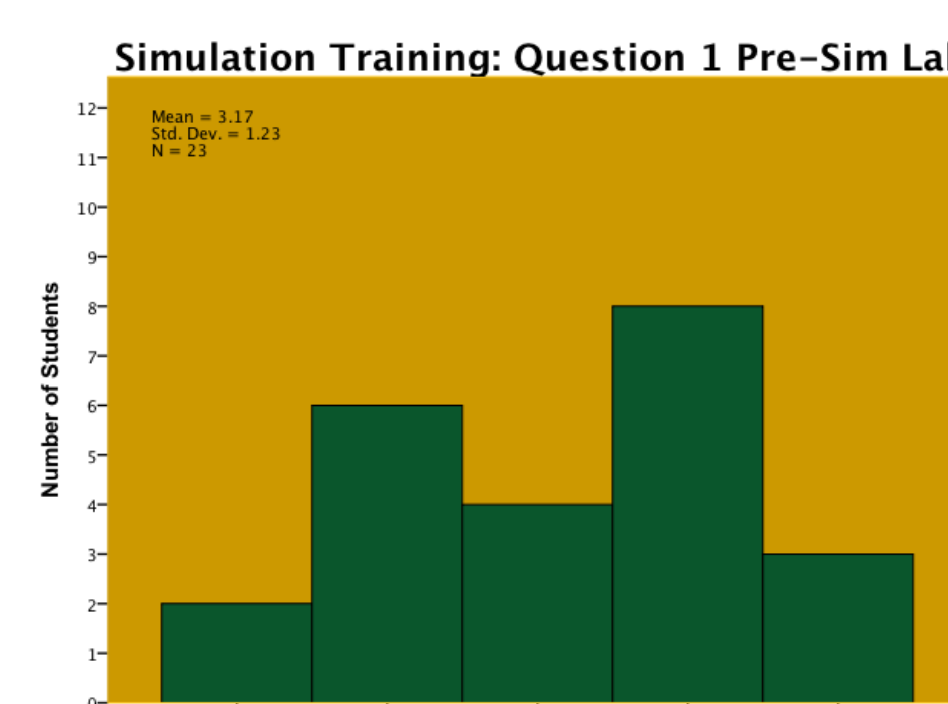


Student Survey-Interdisciplinary Components

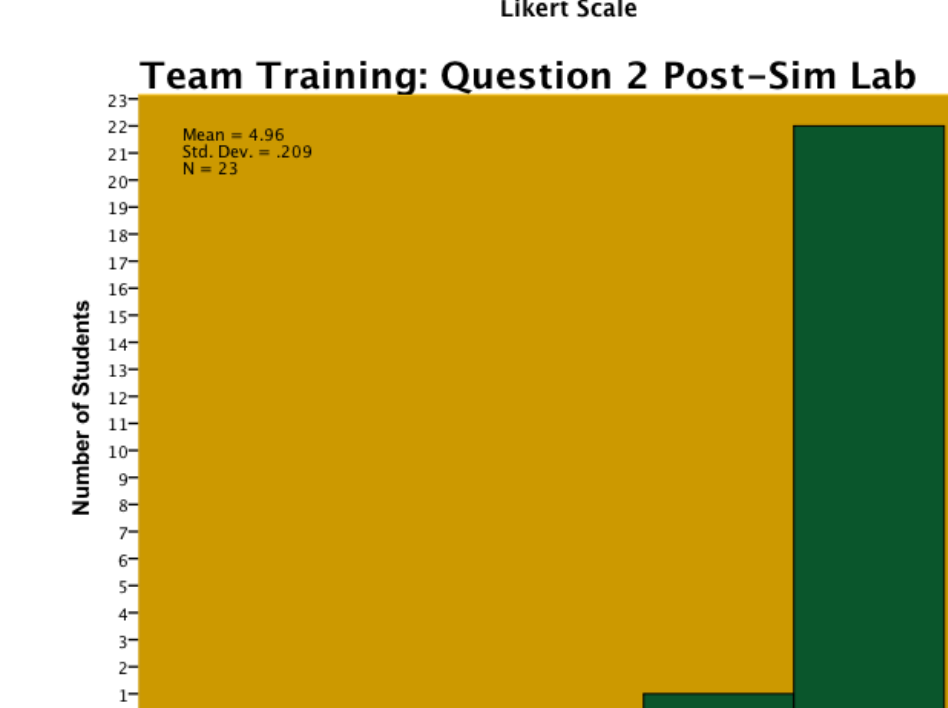
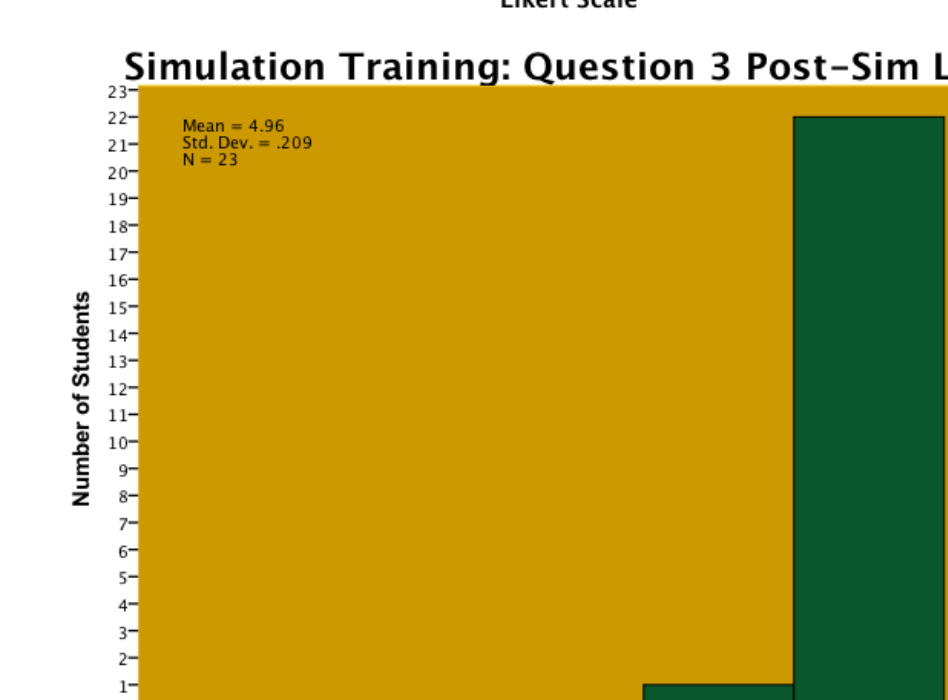
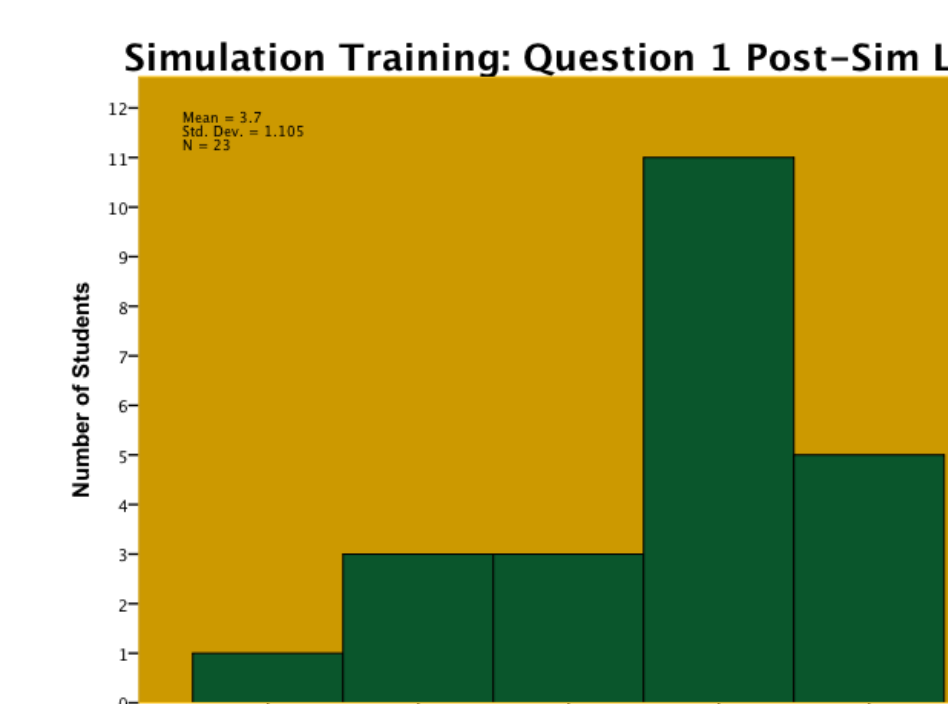


| Pair | Sim Training | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | t | df | Sig. (2-tailed) |
|--------|--|------|----------------|-----------------|---|-------|-------|----|-----------------|
| | | | | | Lower | Upper | | | |
| | | | | | Paired Differences | | | | |
| Pair 1 | Sim Training Q1 Post - Sim Training Q1 Pre | .522 | .846 | .176 | -.156 | .888 | 2.958 | 22 | .007 |
| Pair 2 | Sim Training Q2 Post - Sim Training Q2 Pre | .261 | .449 | .094 | -.067 | .455 | 2.787 | 22 | .011 |
| Pair 3 | Sim Training Q3 Post - Sim Training Q3 Pre | .174 | .388 | .081 | -.006 | .342 | 2.152 | 22 | .043 |
| Pair 4 | Team Training Q1 Post - Team Training Q1 Pre | .174 | .388 | .081 | -.006 | .342 | 2.152 | 22 | .043 |
| Pair 5 | Team Training Q2 Post - Team Training Q2 Pre | .087 | .288 | .060 | -.038 | .212 | 1.447 | 22 | .162 |
| Pair 6 | Team Training Q3 Post - Team Training Q3 Pre | .043 | .209 | .043 | -.047 | .134 | 1.000 | 22 | .328 |

Pre-Simulation Responses



Post-Simulation Responses



Discussion

This pilot study quantitatively and qualitatively demonstrates the student and faculty interest and intrinsic value of IPE and high-fidelity clinical simulation. The statistical analysis of survey responses demonstrates positive baseline attitudes that further significantly increase with simulation-based participation. The student and faculty surveys included an additional comments/suggestions section, which elicited several written responses, including:

- “I strongly believe in IPE... Request our college/school faculty work together to make this happen.” –WSU Faculty
- “Great learning opportunity. I would do it again!” –Student
- “Interdisciplinary Sims should be a regular part of all our curriculums.” –Student
- “This was excellent... Why have we not done this sooner?” –Student

Students trained using an IPE approach are more likely to become collaborative interprofessional team members.^{2,5} Additionally, they are more likely to show respect and positive attitudes toward each other and more effectively work toward improving patient outcomes.² Simulation has become an important tool in health profession education. Simulation provides a safe learning environment for students to practice and develop their skills and to practice collaboration. Currently, WSU BSOM and Nursing and Health both utilize simulation, but have not yet integrated an undergraduate interdisciplinary approach.



Multiprofessional education does not replace, but complements the part of *essentially with one profession.*⁷ Training future healthcare providers to work in such teams improves healthcare outcomes for patients.^{2,5}

Conclusions

This study found that students from all three participating health professions demonstrated overall positive baseline attitudes toward IPE that could be further enhanced through participation in simulation-based exercises. This study provides a model of one method for integrating IPE into curricula for healthcare professionals.

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