

Introduction

Both aviation and medicine are professions in which high stakes decisions need to be made by a team in time-sensitive crisis situations. Crew Resource Management (CRM) is used in aviation to enhance communication, situational awareness, and decision-making. The principles of CRM can be adapted and applied to medicine to assist in Crisis Resource Management among health care providers.

Purpose

To assess the perceived change in student's self-reported confidence across 4 domains after completion of an online Crisis Resource Management course:

- **Communication**
- **Help-Seeking Behavior**
- **Situational Awareness**
- **Psychological Safety**

Methods

Design: Prospective, longitudinal study using online courseware.

Population: 2nd year medical students at Columbia University prior to starting their clinical year.

Intervention: Online Crisis Resource Management Course and pre and post course surveys administered to students.

Outcome Measures: Students retain anonymity but matched to pre and post course data.

Mean change determined across each domain using paired t-tests to assess change in perceived confidence.



COLUMBIA

PRINCIPLES OF CRISIS RESOURCE MANAGEMENT

COMMUNICATION

Communicate Effectively

During a crisis, how confident are you that you can...



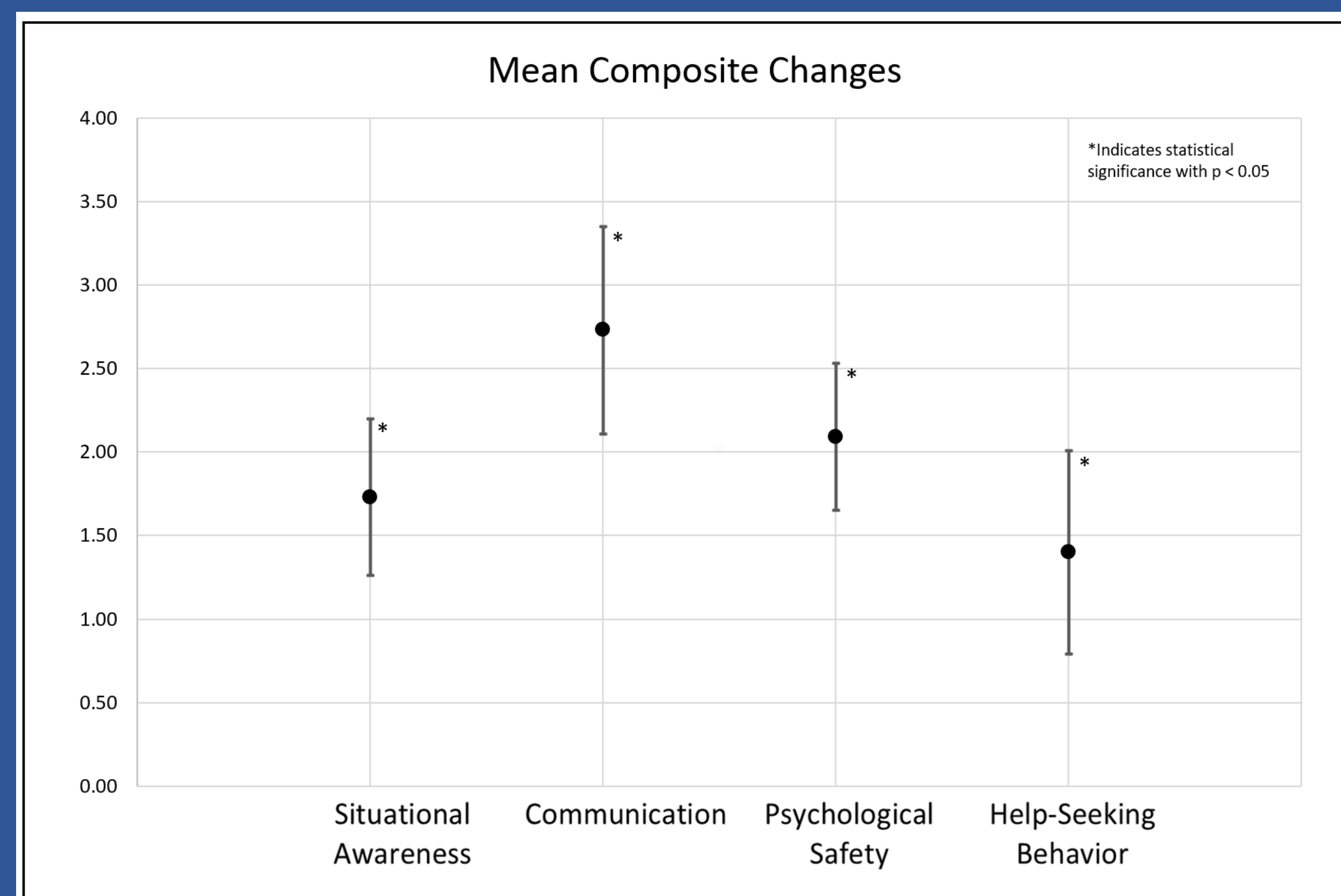
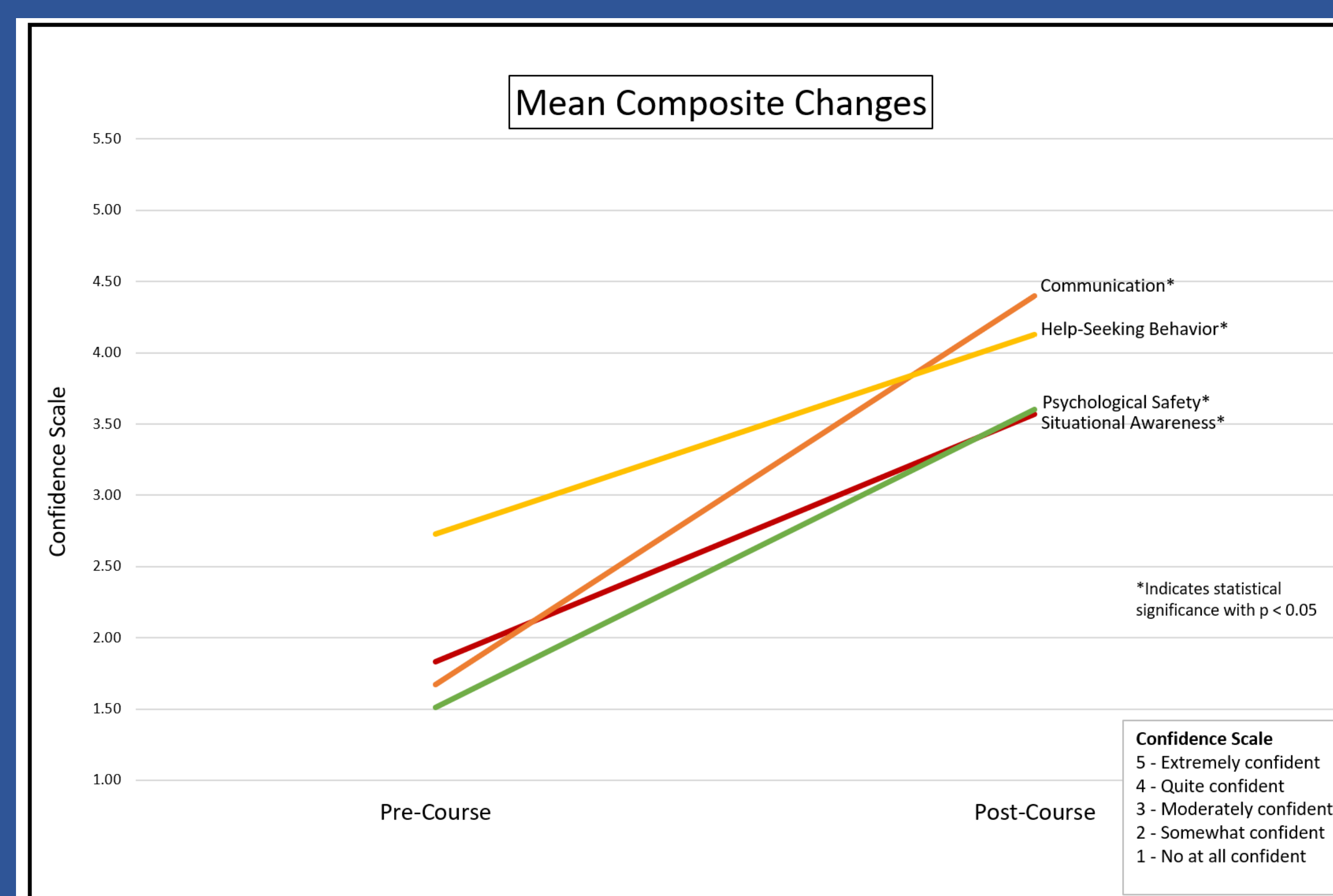
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Attain situational awareness (perceive what is going on around you)

- Not at all confident Somewhat confident Moderately confident Quite confident Extremely confident

Results

- Five students completed course and surveys.
- All students were female.
- Three students aged 18-24. Two students aged 25-34.
- Student's perceived confidence increased across all four domains.



Discussion

This online Crisis Resource Management course can increase student's perceived confidence across the four domains.

- Effective **communication** ensures information is transmitted to and received by the appropriate members of the team.
- Improved **help-seeking behavior** ensures that team members ask for help before the crisis deteriorates below an acceptable level.
- **Situational awareness** ensures that team members are assessing both themselves and their surroundings to make the most informed decisions.
- **Psychological safety** promotes a culture where team members can freely express their thoughts without fear of being silenced.

Limitations

- Only female students completed the course.
- Only 2nd year medical students were recruited.
- Study does not assess effects of course after clinical exposure.
- No external metrics to assess student performance in domains.
- Not designed to assess if improved performance across domains will lead to increased patient safety.

Conclusion

- This course can increase student's perceived confidence across the domains, which could translate to improved teamwork in hospital setting.
- Simulation could be added to the course and assessments to monitor progress.
- Further studies are needed to:
 - Assess performance after clinical exposure.
 - Determine if increased confidence results in more effective teamwork.
 - Determine if improved teamwork improves patient safety.