

Pilot implementation of a structured laparoscopic suturing training program: Effects on resident confidence

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Introduction

- Laparoscopic suturing is a critical skill for general surgery residents.
- No structured laparoscopic suturing curriculum currently exists at our institution.
- The operating room is a challenging learning environment for complex technical skills, due to time constraints, limited feedback, and patient safety priorities.

Objective

- **Evaluate whether our structured laparoscopic suturing simulation program improves general surgery residents' confidence in performing laparoscopic suturing.**

Methodology

Participants

- General surgery residents at Memorial University.
- 13 residents completed pre-training survey.
- 7 residents completed paired pre- and post-training surveys.

Training Program

- 5-month pilot simulation curriculum.
- Monthly 1-hour sessions using laparoscopic box trainers.
- Residents freely practiced skills derives from FLS tasks.
- Staff surgeons provided real-time feedback and instruction.

Evaluation

- Pre-training and post-training questionnaires.
- Resident confidence in laparoscopic suturing assessed.
- Paired analysis using **Wilcoxon signed-rank test**.



Resident practicing laparoscopic suturing using box trainer.

Results

Resident Self-Reported Confidence

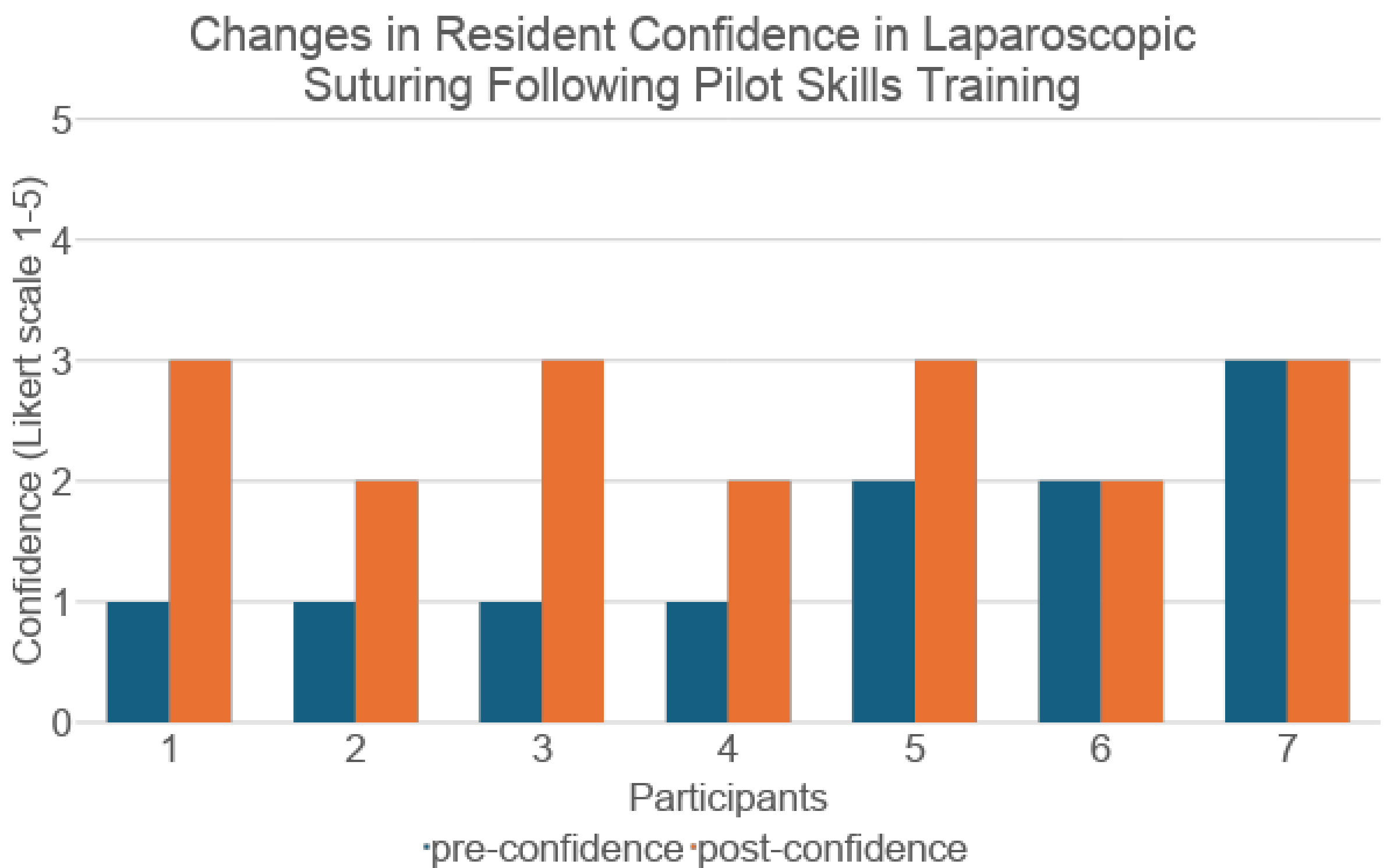
- Median confidence increased from 1 (IQR 1–2) to 2 (IQR 2–3).
- Median increase: 100%
- **Statistically significant improvement (p = 0.027).**

Participation

- Median attendance: 4 of 5 sessions.
- Most residents reported minimal independent laparoscopic suturing practice outside clinical exposure.

Qualitative Feedback

- Participants reported:
- Improved technical fluency.
 - Increased confidence with laparoscopic suturing.
 - Value of dedicated simulation time with staff supervision.

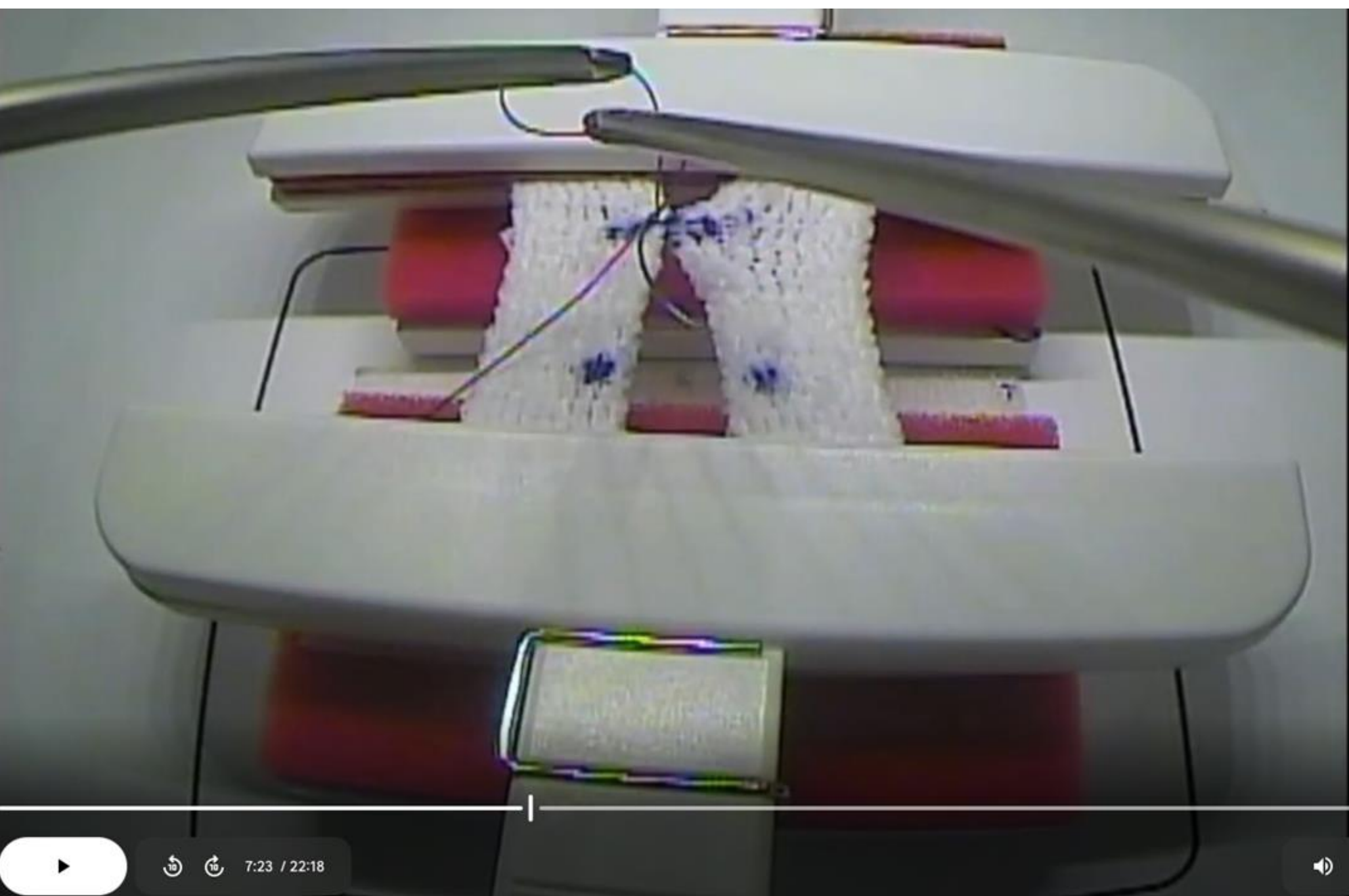


Conclusion

- A structured laparoscopic suturing simulation program is **feasible and well received** by residents.
- Participation was associated with **significant improvement in resident confidence** performing laparoscopic suturing.
- The pilot identified a clear need for **protected simulation training within the residency curriculum**.

Future Direction

- Monthly **protected daytime simulation sessions** have now been implemented in the residency schedule.
- The next phase of the project is funded and in-progress.
- Phase 2 includes **video-based evaluation of bowel anastomosis technical performance** using blinded staff assessment.



Video-based assessment of bowel anastomosis simulation from Phase 2.

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