

OBJECTIVES

- This study examines the outcomes of establishing a laparoscopic simulation center in the DR for training general surgery residents with the intention of determining the feasibility of implementing a training program in a low and middle income country (LMIC) setting.

INTRODUCTION

In developed countries, minimally invasive surgeries such as laparoscopy are the preferred method of treatment compared with open surgery due to decreased infection rates and expedited recovery times. However, laparoscopy is still underutilized in low and medium income countries (LMICs) due to financial and training burdens. Mount Sinai Hospital in NY introduced a laparoscopic surgery simulation center to a public hospital in Santiago, Dominican Republic (DR).

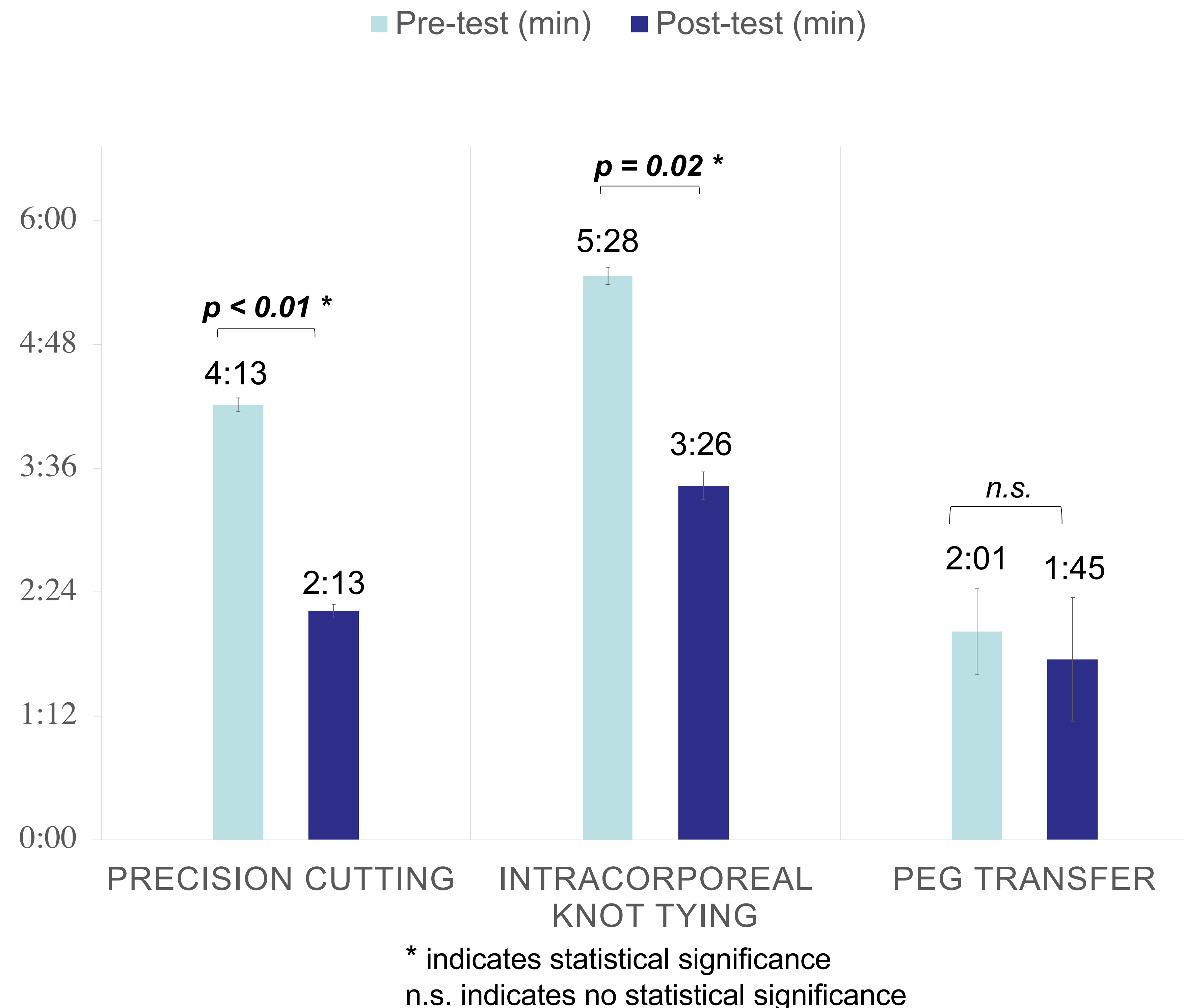
METHODS

- In August 2018, recruitment, simulation program introduction, and preliminary data were collected at the Hospital Jose Maria Cabral y Báez in Santiago, DR. The simulation center consists of three simulation stations in a dedicated room.
- Residents were required to practice one hour per week under the guidance of a general surgery PGY3 Mount Sinai resident.
- Ten months later, number of hours practiced was self-reported and follow-up data was collected.
- Study endpoints include times on 3 simulated laparoscopic tasks:
 1. Peg-transfer
 2. Precision cutting
 3. Intracorporeal knot tying
- Two-tailed paired t-tests were used to determine whether simulation times improved significantly

RESULTS

- Simulation was successfully incorporated into the Dominican general surgery resident training infrastructure.
- Residents averaged 25 hours of practice (range: 8-35; SD = 9.95)
- 85% of residents (11/13 residents) participated
 - 5 PGY1, 2 PGY2, 4 PGY3
- Resident simulation times significantly improved for precision cutting and intracorporeal knot tying.
- There was no significant difference in peg transfer times.
- There was no significant difference between resident years.

RESIDENT SIMULATION TIMES BY TASK



CONCLUSIONS

- The present study shows the successful integration of laparoscopic simulation program into a single LMIC surgical resident training program.
- In a ten month timeframe, resident simulation skills significantly improved in multiple components of laparoscopic surgery.
- With commitment from the local institution as well as the appropriate external resources, establishment of laparoscopic simulation centers are feasible and expandable in low income countries.