Laparoscopic skill Acquisition and Learning curves: Insights from the GLAP Telesimulation Training Program

Authors: Cano-Arias Rocío G., MD; Colunga-Tinajero Carlos A, MD; Damián-Negrete Roberto, MD; YanowskyReyes Guillermo, MD; Jacqueline Narvaez

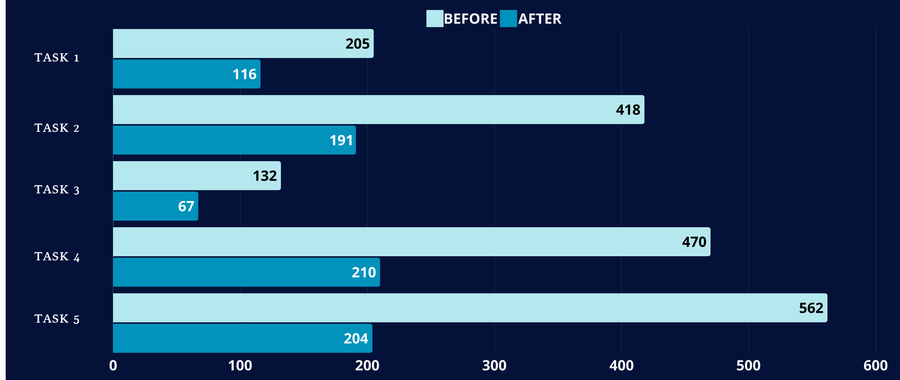


INTRODUCTION

Currently, minimally invasive procedures are the gold standard for many surgical interventions, requiring surgeons to have early exposure to this surgical modality during their training. The development of basic laparoscopic skills on simulators/trainers is an indispensable tool for this purpose. The aim of this study is to evaluate the learning curve of basic laparoscopic skills according to the FLS tasks in residents of different academic levels, as well as its impact on performance during laparoscopic procedures on patients

METHODS

Between 2021 and 2023, the intervention was carried out in three different stages, including a total of 24 pediatric surgery residents across all four academic levels. Initially, the times it took them to complete the five FLS tasks were recorded. Then, a telesimulation intervention was conducted with local mentors and SAGES mentors from different countries, consisting of twelve sessions per group (both theoretical and practical). Afterward, the times it took them to perform the five tasks were measured again. Additionally, a survey was conducted with participants after completing the course and following their participation in various laparoscopic surgeries, during which they had the opportunity to serve as lead surgeons under the supervision of a senior surgeon



RESULTS

t.All participants in the study showed a significant reduction in the time taken to complete the tasks after the intervention (telesimulation) compared to the initial times. The quality standards for performing the tasks as dictated by the FLS were maintained. The average time reduction across the group for the five evaluated tasks were as follows: 43.4% for the first task, 54% for the second, and 49.2%, 55.2%, and 63.6% for the next three. Interestingly, there were no significant differences in the improvement between different academic levels, meaning the time improvements were similar across all four levels

CONCLUSION

Practicing basic laparoscopic skills on simulators is an effective way to develop minimally invasive surgery skills for surgeons in training. Likewise, telesimulation is a useful tool for real-time mentoring, even from a distance. Developing these skills translates into greater proficiency and confidence in the operating room, a better learning curve, and increased safety for patients. This model is safe, reproducible, and yields good results, even for first-year residents.