“INNOVATIVE LOW-COST MODELS FOR MASTERING CRITICAL STEPS IN TAPP HERNIA REPAIR”

Becker B, MD; Castiglioni E, MD; Grunauer M, MD; Abedrapo S, MD; Rui-Wamba J, MD; Aguilera M, MD; Vildosola C, Intern; Gaete M, MD, MSc; Varas, MD, MSc; Pontificia Universidad Católica De Chile

INTRODUCTION

Transabdominal preperitoneal (TAPP) repair is widely used but has a prolonged learning curve. Critical-step errors may lead to complications, yet accessible procedure-specific simulators remain limited. We developed a low-cost physical model to practice three key TAPP steps.

METHODS

Low-cost pelvic simulators reproduced pelvic curvature relevant to TAPP repair. **Targeted steps:** Peritoneal flap creation, mesh positioning, intracorporeal peritoneal closure

The model incorporated a reusable silicone flap and a Velcro-based mesh deployment system. Educational impact was assessed using a structured 5-point Likert survey.

Reaction and satisfaction were analyzed according to Kirkpatrick Level 1, scores of 3.5–4.2 were considered as good and ≥4.3 as excellent.

RESULTS

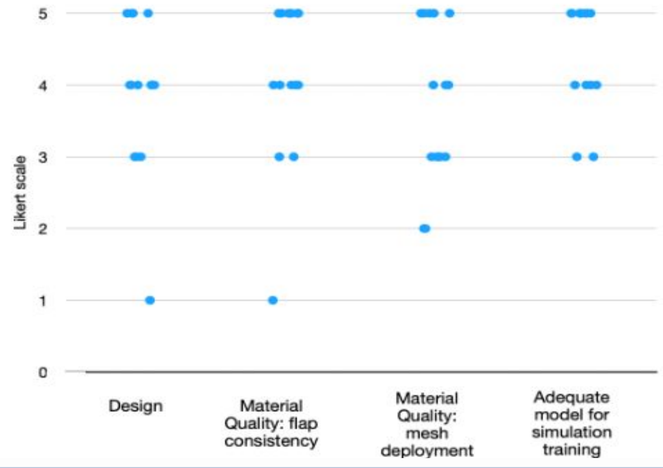
n = 15
10 general and 5 digestive

4.5
Adequacy as a training model

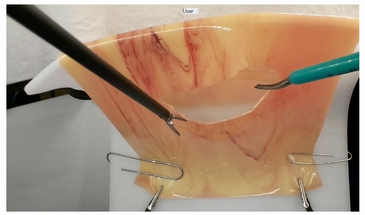
4.1
Peritoneal flap consistency

3.7
Mesh deployment

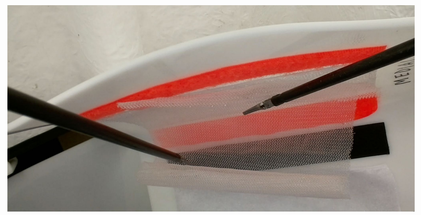
Mean design score: 4.0. Expert ratings favored the model across design, material quality, and educational value.



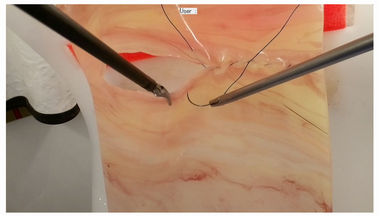
MODEL SNAPSHOTS



Peritoneal flap creation



Mesh positioning



Intracorporeal closure

CONCLUSION

Low-cost TAPP models were feasible and highly rated for design, material quality, and educational value. They offer an accessible, cost-effective way to practice three critical procedural steps.