Developing Mastery of Suturing and Knot-Tying in the Early Hospital-Based Training Years

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Introduction

Simulation training improves basic surgical skills but the creation of a curriculum that develops mastery among all early hospital-based trainees has not been established. This study assesses need, develops and tests a formal simulation-based suturing and knot-tying curriculum that facilitates obtainment of mastery.

Methods

All subjects (n=53) performed a simple-interrupted suture with three square-knots using instrument tie and 2-handed techniques. Curriculum trained subjects (n=14 MS3) viewed a 10-min video during one-hour concurrent feedback sessions and were provided the mastery checklist, on-demand video, and unlimited access for self-practice during clerkship. Final performance was recorded and assessed using a 23-parameter checklist and compared to historic controls (n=39, MS3-PGY1, sampled April-June) by chi-squared test.

Results

Average self-practice time was 3-hours including video-view time. Mastery among traditionally trained early hospital-based subjects was 23% (17%MS3, 33%MS4, 50%PGY-1). Mastery among curriculum trained subjects was 93% (IRR=0.8, p<.0001).

Discussion

Mastery is not generally obtained during traditional early hospital-based training. A well structured, self-directed, simulation-based curriculum assures obtainment of mastery, with limited instructor involvement and trainee time. Such a curriculum could be extended to all early hospital-based trainees, including rising interns. This method may augment trainees’ O.R. experience, promote surgical confidence and improve patient care without impacting the 80-hr work week.