Urology. 2011 Oct 14. [Epub ahead of print]

Validating the Use of the Mimic dV-trainer for Robotic Surgery Skill Acquisition Among Urology Residents.

Korets R, Mues AC, Graversen JA, Gupta M, Benson MC, Cooper KL, Landman J, Badani KK.

Source

Department of Urology, Columbia University, College of Physicians and Surgeons, New York, NY.

Abstract

OBJECTIVE:

To compare robotic surgery skill acquisition of residents trained with Mimic dVTrainer (MdVT) and da Vinci Surgical System (dVSS) console. No standardized curriculum currently exists for robotic surgical education. The MdVT is a compact hardware platform that closely reproduces the experience of the dVSS.

METHODS:

Sixteen urology trainees were randomized into 3 groups. A baseline evaluation using dVSS was performed and consisted of 2 exercises requiring endowrist manipulation (EM), camera movement and clutching (CC), needle control (NC), and knot-tying (KT). Groups 1 and 2 completed a standardized training curriculum on MdVT and dVSS, respectively. Group 3 received no additional training. After completion of the training phase, all trainees completed a secondary evaluation on dVSS consisting of the same exercises performed during baseline evaluation.

RESULTS:

There was no difference in baseline performance scores across the 3 groups. Although Group 3 showed no significant improvement in EM/CC domain (P = .15), Groups 1 and 2 had statistically significant improvement in EM/CC domain (P = .039 and P = .007, respectively). The difference in improvement between Groups 1 and group 2 was not statistically different (P = .21). Only Group 2 trainees showed significant improvement in the NC and KT domains during secondary evaluation (P = .02).

CONCLUSIONS:

Curriculum-based training with MdVT or dVSS significantly improves robotic surgery aptitude. Similar improvements are seen for exercise domains shared between MdVT and dVSS groups. Follow-up studies are necessary to assess the efficacy of MdVT over a wider spectrum of domains.