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## **Does training on a virtual reality robotic simulator improve performance on the da Vinci surgical system?**

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### **Abstract**

#### **PURPOSE:**

The primary objective of this study is to determine if training on the Mimic dV-Trainer (MdVT) simulator results in improved ability on the da Vinci surgical system (dVSS) using exercises with inanimate objects.

#### **MATERIALS AND METHODS:**

Twelve trainees (MdVT group) and 10 residents and one fellow (dVSS group) were recruited for the study. Each participant in the MdVT group completed one session of five exercises on the dVSS that were scored for timing and accuracy, followed by four training sessions on the MdVT, and concluded with a final session on the dVSS in which the initial exercises were repeated. Improvement on the dVSS exercises was compared with dVSS group who completed four to six training sessions using the same exercises on the dVSS without any simulator training.

#### **RESULTS:**

Both groups had similar significant improvements in the Letter Board and String Running exercises for both timing and accuracy. The MdVT group demonstrated significant improvement in the Pattern Cutting and Peg Board times. Only the dVSS group significantly improved in the Knot Tying time and the Peg Board accuracy.

#### **CONCLUSION:**

Training with the MdVT provided similar improvement on five exercises performed on the dVSS when compared with training on the dVSS alone. The use of this simulator in resident and student training may help bridge the gap between the safe acquisition of surgical skills and effective performance during live robot-assisted surgery.