Virtual Reality Simulation: A Promising Training Tool for Unicompartmental Knee Arthroplasty

VR technology is perceived as a beneficial teaching tool for UKA by surgical trainees, and can serve as an adjunct to conventional surgical training methods.

Illustrated guides, cadaver dissections, and imitation bones used by surgical residents for training do not completely replicate the settings of unicompartmental knee arthroplasty (UKA)...

...a common but complex multi-step procedure used to treat knee osteoarthritis.

Can virtual reality (VR) improve surgical competence over traditional technique guides and videos for performing UKA?

Randomized controlled trial
22 orthopaedic surgery trainees

Guide/control group
VR group

UKA surgical performance assessment using SawBone model

No significant differences in

Surgical time
Mean surgical times
Guide 42.4 minutes
VR 43.0 minutes (P = 0.9)

Objective structured assessment of technical skills (OSATS) validated rating system
Mean total OSATS
Guide 15.7
VR 14.2 (P = 0.59)

Post-assessment survey on experience and perception
Confidence level in majority of participants
77% Resident education
86.4% Case preparation

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