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SO YOU WANT TO BE A ROBOTIC SURGEON? THE EFFECT OF BASELINE PSYCHOMOTOR ABILITY AND VIDEO-GAME EXPERIENCE ON ROBOTIC SURGICAL SKILL: A RANDOMISED CONTROL TRIAL**D Hay, K Ahmed, P Dasgupta, B Challacombe***MRC Centre for Transplantation, King's College London, London, UK; ² King's Health Partners, Department of Urology, Guy's Hospital, London, UK***Presenting Author Email:** danielroberthay@gmail.com**Senior Author Email:** ben.challacombe@doctors.org.uk

Introduction: We assessed whether expert mentoring improved the rate of uptake of robotic surgical skill and whether general advanced psychomotor ability (PMA), and specific video-game experience (VGE) had any impact on robotic surgical skill.

Method: Twenty robotically naive medical students were blinded and randomised to two cohorts; control (CC) and intervention (IC). Each student's initial performance on a variety of da Vinci Skills Simulator (dVSSim) exercises was measured and then reassessed following an independent practice (CC) or mentor guided practice session (IC). Outcome metrics were overall score, time to completion, economy of motion and master workspace range. Quantitative, questionnaire data was collected to evaluate the relationship between robotic surgical skill, PMA and VGE. Statistical analysis was performed with SPSS software utilising the independent t-test.

Result: On average, overall score for CC improved by 16.8% compared to 43.3% for the IC ($p=0.04$). Time to completion improved by 26.2% (CC) vs. 40% (IC), economy of motion by 16.5% vs. 25% and master workspace range by 8% vs. 11%. PMA correlated with better initial performances for all metrics, especially for overall score ($p=0.003$) and economy of motion ($p=0.03$). Students with more VGE had overall scores that were on average 20% better than those with little or no experience and this relationship was also seen for economy of motion and master workspace range.

Conclusion: Expert mentoring leads to a greater improvement in performance than independent practice alone. Advanced PMA correlates with greater innate robotic skill, as does VGE, but to a lesser extent.

Take-home message: 1) Expert mentoring leads to a greater improvement in performance than independent practice alone. 2) Advanced PMA correlates with greater innate robotic skill, as does VGE, but to a lesser extent.