

- Title** Virtual Reality Systems for the Training of Ophthalmic Surgery
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[http://www.moh.gov.my/index.php/database\\_stores/store\\_view\\_page/30/283](http://www.moh.gov.my/index.php/database_stores/store_view_page/30/283)

**Aim**

To assess the effectiveness/efficiency such as increased surgical proficiency and improves operating times, safety, cost-effectiveness and organizational issues of virtual reality (VR) systems for training of ophthalmic surgery.

**Conclusions and results**

There was fair to good level of retrievable evidence to suggest that the VR systems for ophthalmology training were able to improve surgeon operating performance and skills. Studies also reported that inexperienced residents or surgeons were more likely to benefit from the training curriculum using VR systems. The evidence related to trainees' satisfaction was inconclusive. One study reported that VR programme seemed to improve the surgeons satisfaction as the programme was reported as "more fun" to use (24.1% versus 4.2%) and they were more likely to use this type of programme again compared with the likelihood of using the traditional tools (58.6% versus 4.2%). However, another study reported no significant difference in satisfaction between residents trained by traditional wet-lab versus surgical simulation.

There was limited fair level of retrievable evidence to suggest that VR systems for training of ophthalmic surgery were safe with fewer complications such as posterior capsule tear or perforation.

There was no retrieval evidence on the cost-effectiveness of the VR systems for the training of ophthalmic surgery.

There was fair to good level of retrievable evidence to suggest that VR systems were associated with learning curves.

**Recommendations (if any)**

Based from the review, VR systems for the training of ophthalmic surgery may be considered in addition to the current training systems.

**Methods**

Literature search was done to search for published articles to assess the effectiveness, safety and cost-effectiveness of virtual reality training of surgical trainees in ophthalmic surgery. The following electronic databases were searched via OVID Interface: MEDLINE (1946 to present), EBM Reviews-Cochrane Database of Systematic Reviews (2005 to February 15 2016), EBM Reviews-Cochrane Central

Register of Controlled Trials (February 2016), EBM Reviews-Database of Abstracts of Review of Effects (1st Quarter 2016), EBM Reviews-Health Technology Assessment (1st Quarter 2016) NHS economic evaluation database (1st Quarter 2016), PubMed and Embase database. The last search was run on 13 March 2016. Relevant articles were critically appraised using Critical Appraisal Skills Programme (CASP). Evidence was graded according to the US / Canadian Preventive Services Task Force.

**Further research/reviews required**

Cost implication should be considered before initiating the trainings.

**Written by**

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