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Sir,
The development of a virtual reality training programme for ophthalmology: study must take into account visual acuity and stereopsis

We read with interest the important study undertaken by Saleh et al.[1]

However, the only exclusion criterion for selection of candidates was novices with more than 2 h of simulation/ intraocular surgical experience. The authors do not mention whether a baseline test of visual acuity and stereopsis was recorded for participants. The importance of stereopsis in achieving satisfactory skills in ophthalmic surgery remains debated.[2] Recent studies have demonstrated that a decreased stereoacuity results in a statistically significant decrease in simulated surgical performance for most participants.[3,4] We suggest that all ophthalmic simulator-based studies should measure participant visual acuity and stereoacuity to ensure reliable results.

The authors also discuss the emergence of a 'learning curve' achieved in repeated tasks. In our simulator-based studies evaluating parameters affecting surgeon performance, we minimised the learning curve before data collection.[5] Using one attempt level 1, one attempt level 2 and six attempts level 4 forceps module, stabilised scores for our participants. Applying the same methodology to other modules might produce similar results and could be used in training.

Conflict of interest

The authors declare no conflict of interest.

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Sir,
Response to Swampillai *et al*

We thank Dr Swampillai et al for their correspondence[1] regarding our article.[2] In our study, the main inclusion criterion was ophthalmic trainees with minimal surgical experience[2] (as defined in the paper). No other essential or desirable criteria from the ophthalmology training selection process were tested as trainees recruited had already passed through all this process. As Swampillai et al rightly pointed out, the importance of stereopsis in achieving satisfactory skill in ophthalmic surgery still remains debated.[3] There are various gradations of stereopsis impairment, and until a clear relationship between these and surgical skills performance is defined their influence on data can only be speculated. There is also a range of other potential extraneous factors that could potentially influence surgical performance, some described, for example, sleep deprivation,[4] and likely many more that have not been examined formally. It was for this combination of reasons that during the study, outset inclusion and exclusion criteria were defined as they were.

Defining the surgical learning curves will become central as the use of simulators broadens. We thank Swampillai et al for highlighting their observation and pretraining description. Importantly, our study showed that there were statistically significant differences in the results between the different tasks, thus the learning curves are likely to vary significantly depending on the task selection. Without more detailed quantitative analysis of how the simulator scores vary during this pre-training process, along with its effects thereafter,