

The Impact of Using a Virtual Reality Simulator on Students Learning to Perform Direct Ophthalmoscopy

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Introduction

The General Medical Council (GMC) sets standards for skills that newly qualified doctors must be able to perform, one of these is performing direct ophthalmoscopy under indirect supervision^[1]. Students at Dundee University Medical School are taught ophthalmoscopy using the Eyesi Direct Ophthalmoscopy Virtual Reality (VR) simulator^[2]. It had previously been taught using medical training manikins. This change in teaching methods had not previously been evaluated.

This poster aims to assess the impact of using a VR simulator on student's confidence and skill at performing direct ophthalmoscopy

Method

A total of 82 students attended a 2-hour workshop in groups of 4-8 over 21 weeks. Students were a mixture of year 4 MBChB and year 3 Scotgem enrolled at Dundee University.

The workshop was delivered by a member of the ophthalmology department over 21 weeks. Students examined a VR patient with healthy eyes and then examined a VR patient who had a unilateral swollen optic disc. Post session students completed an online survey accessible via QR code or email.

Results and Discussion

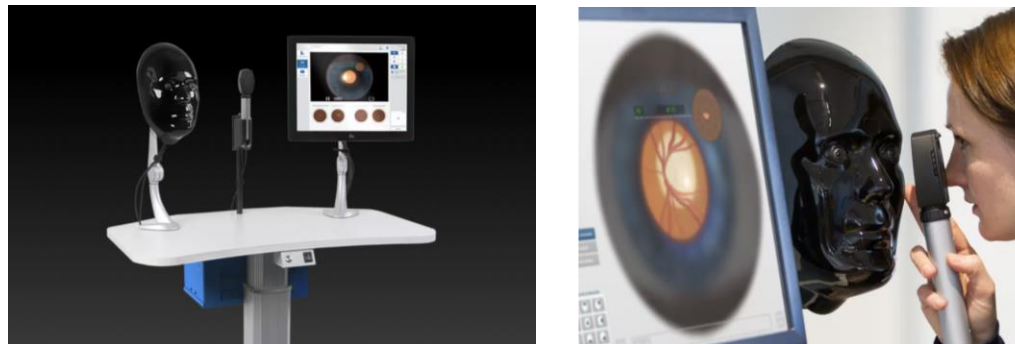
The survey had a 100% response rate with 82 responses, this was likely due to students being offered two methods to complete the survey (email and QR code).

When asked if they felt able to perform direct ophthalmoscopy under indirect supervision, 80 students (98%) selected "yes", 2 students selected "unsure" and 0 students selected no. This suggests that this session was mostly successful in ensuring students were confident that they had reached the standard in ophthalmoscopy as set by the GMC.

When asked how much they agreed with the following statement "I feel more confident performing an ophthalmoscopy exam", 87% of students extremely agreed with 13% somewhat agreeing. When asked how much they agreed with the statement "I feel this session has increased my ophthalmology knowledge", 86% extremely agreed and 14% somewhat agreed.

Students stated the following as the most enjoyable part of the session: "**The teaching equipment is all really good**" "**Using the new technology to teach us how to use ophthalmoscopes**" "**The virtual reality simulator was very useful**"
In total 35 students directly referenced the VR simulator model when asked about the most enjoyable part of the session.

When asked if anything could be improved 23 students gave suggestions; 12 of these suggestions related to students wanting to spend more time using the simulator highlighting how useful they felt the session was in helping them to gain ophthalmology knowledge.



Conclusion

Students responded overwhelmingly positively to the use of a VR simulator as a teaching tool when learning direct ophthalmoscopy. Almost all students felt they had achieved the GMC standard by the end of the session. Therefore, VR simulators can be useful when used to increase student confidence and as a learning aid to reach GMC targets.

References

1. General Medical Council. (2019). Practical Skills and Procedures. https://www.gmc-uk.org/-/media/gmc-site/education/downloads/guidance/practical_skills_and_procedures_a4_july_2023.pdf
2. Haag-Streit. (n.d). <https://uk.haag-streit.com/products/categories/simulators-training/training-simulators/eyes-direct> (Picture 1 & 2)

