

Commentary: A questionnaire-based assessment of Safe Eye Examination (SEE) technique

Training in ophthalmology has always been based on an apprenticeship learning model and trainees are assumed to be competent when they have seemingly performed a minimum number of procedures. One of the problems associated with this model is the inconsistency in the knowledge and skills gained by the students, due to nonuniformity in their clinical exposure and learning opportunities. Furthermore,

there are growing ethical concerns over the use of patients for training purposes.^[1] Such learning can further be challenging due to patients' comfort, their dislike of being treated as "guinea pigs," and time constraints.^[2] Classroom lectures, hands-on demonstrations, and surgical training being crucial components of a medical training program make it imperative to incorporate auxiliary methods of teaching. As per the recent Medical Council of India/National Medical Commission curricular reforms, it is mandatory for all teaching institutes to have skills lab and simulators for student training purposes.^[3]

The COVID-19 pandemic has further affected the entire teaching-learning scenario at all levels. With the country facing

lockdown, postponement of elective surgeries was made mandatory to curb the spread of the disease. Ophthalmology, being a branch dealing largely with elective surgeries, has been significantly affected. In an online survey conducted by Mishra *et al.*^[4] to assess the effect of lockdown on ophthalmic training programs of India, it was found that the COVID-19 lockdown had adversely affected the learning of a majority of ophthalmology trainees across the country. This adverse scenario further and urgently necessitated the use of alternative strategies to continue with the teaching process, without putting the faculty, students, or patients at any undue risks of COVID-19 transmission.

Simulators offer a platform for trainees to refine their clinical and surgical skills, thereby enabling focused, competency-based training.^[1] Simulated training reduces training costs, increases accessibility, allows objective measurement of performance outcomes, and improves patient safety during and after training. It also allows students to learn and relearn from their mistakes. A variety of simulators have been designed and evaluated to date. Medical simulation can take many forms including manikins, wet labs, simulated patients, virtual and augmented reality, gaming, etc.^[5] The most popular ones are the cataract surgery simulators like Eyesi (VRmagic Holding AG, Mannheim, Germany), PhacoVision® (Melerit Medical, Linköping, Sweden), MicroVisTouch® (ImmersiveTouch, Chicago, IL, USA), and the HelpMeSee (HMS) Eye Surgery Simulator (HelpMeSee Inc. NY, USA).^[4] Quite a few have also been developed for nonsurgical training, for example, for ophthalmoscopy.

Ophthalmoscopy is a vital skill that can help to diagnose many sight-threatening and life-threatening conditions. However, many students frequently face difficulties in performing a proficient funduscopy. Besides, it is difficult to effectively teach this skill due to the absence of a monitor screen attached to the ophthalmoscope.^[2] Chung *et al.*^[6] described a simple model for teaching direct ophthalmoscopy but which faced problems of intense light reflection, low quality, and loss of space perception by the examiners. Pao *et al.*^[7] improvised on the same through "The Human Eye Learning Model Assistant." Later developments like the EYE Exam Simulator (Kyoto Kagaku Co., Kyoto, Japan), Eye Retinopathy Trainer® (Adam, Rouilly Co., Sittingbourne, UK), and virtual reality-based simulators like the EYESi Direct and Indirect Ophthalmoscope simulator (VRmagic) are quite complex and expensive.^[8]

This study aims to assess a novel method of Safe Eye Examination (SEE) technique using a model eye based on the original Reti Eye model (Aurolab, Aravind Eye Care, Madurai); wherein instead of the originally provided template films, the authors utilized images of pathological fundi, for teaching students the identification of various retinal diseases through indirect ophthalmoscopy.^[9] Apart from the merits of any such simulator of providing a scope for repetitive practice without affecting patient care, lack of requirement to dilate the pupils of patients, and absence of phototoxicity in the patient secondary to prolonged light exposure, "SEE" provides additional advantages of being feasible, inexpensive, highly effective, easily replicable, and simple to use without the need for any special training. It also allows the possibility of teaching rare or unusual cases, with the convenience of easy disinfection. It was successfully utilized in the Diplomate of National Board (DNB) and Bachelor of Science (B.Sc.) Optometry final practical examinations. Though simulators do provide a great opportunity for objective skills assessment, it needs to be kept in mind that before using in high-stakes assessments, rigorous validation of these tools is required.^[1]

While there is no substitute for learning and practicing clinical examination techniques on patients and performing surgical procedures in real life; simulation technology has definitely opened up new avenues in medical training.^[4] They not only provide and enhance a graded and stepwise learning experience but also help to ensure patient safety by allowing the learners to rehearse and rectify before the actual show.

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