

Commentary: Comparison of video observation and direct observation for assessing the operative performance of residents undergoing phacoemulsification training

Ghiasian *et al.* have conducted a prospective study in a university hospital (70 surgeries) to compare the effectivity of video observation and direct observation in training residents in performing phacoemulsification.^[1] They concluded that video observation was as effective as direct observation in evaluating “general or global” skills, but direct observation was superior in noting the “task-specific” details. They used the International Council of Ophthalmology’s Ophthalmology Surgical Competency Assessment Rubric for phacoemulsification (ICO-OSCAR; phaco).^[2] The study used high-end phaco machines and Lumera microscope, with the majority of surgeries being performed under topical anesthesia, for training six 4th-year residents, who had previous experience of 80–120 phacoemulsification surgeries.^[1] They have acknowledged the limitation of its relatively small sample and a single-center study.

A trainer is always supposed to be next to the trainee to help if difficulty arises, either by advice or by direct intervention.^[3] This is especially important while learning a psychomotor skill where human safety is concerned, as in training surgeons, pilots, and drivers. However, trainers are usually short of time vis a vis the trainees. A medical college teacher is supposed to examine patients, perform investigations, perform surgeries, give lectures, supervise journal clubs, conduct exams, and do administrative tasks.^[4,5] Even if the teacher-student ratio is 1:2, the surgical trainer rarely has time to be 1:1 with her trainee all the time. Strict hand holding is usually reserved for first-timers, teaching a new technique, and for slow learners. For the rest, the seniors are around to keep an eye on, while the trainee performs the surgery. Some seniors are around for multiple trainees. But some steps of cataract surgery like performing the capsulorhexis and emulsifying the last piece of the nucleus needs close supervision.

Video-assisted training has been used with success in general surgery to teach laparoscopy skills.^[3,6] Football coaches have used video observation to train their wards by watching their team members (and rivals) videos to give valuable feedback.^[7] As have golf coaches to improve their trainees’ swing.^[8]

Trainers are rarely supervised by a single faculty; senior residents and peers also assist the faculty. The side-viewing scope of the operating microscope allows a single person to see while a video monitor allows many. Moreover, if the surgery is recorded, it can be easily shared and seen by many, when they find time – like lunch hours, during a commute, or when they have spare time between different tasks. Video-assisted performance evaluation and feedback allows others, who were spatially and temporally not present, to give their opinion.^[1,6] The recorded clip can be seen again and again and the surgeries could be compared over time. Video observation has been used to teach trabeculectomy and pediatric cataract surgeries.^[9,10]

In today’s COVID-19 pandemic times, the options for learning cataract surgery are limited.^[11] Simulation and wet lab would allow residents to learn without patients, and video observation would allow them to make the most of their limited surgical exposure.^[1,4]

Direct observation allows for direct intervention and is thus ideal and safer for the patient, but it is not always feasible. It allows verbal and nonverbal communication between the trainer and trainee which can influence the surgical outcome.^[1] However, it is also prone to subjectivity by the trainer, and performance anxiety, stress, and nervousness for the trainee. Video observation may increase efficiency, and it also limits rater burnout from fatigue and loss of concentration^[1] with the advantage of anonymity, objectivity, and lack of observational bias.

Both methods can complement each other to allow better training.

Video observation can be done even by established surgeons to improvise and seek a second opinion, to ask other peers in a case that had been eventful. It would allow surgeons to

judge improvements over time and have positive medico-legal implications.

Parikshit Madhav Gogate^{1,2,3}

¹Department of Ophthalmology, D.Y. Patil Medical College, Pimpri,
³Community Eye Care Foundation, Dr. Gogate's Eye Clinic, Pune,
Maharashtra, India, ²Honorary Lecturer, School of Medicine,
Dentistry and Biomedical Engineering, Queens University, Belfast,
United Kingdom

Correspondence to: Dr. Parikshit Gogate,
Community Eye Care Foundation, Dr. Gogate's Eye Clinic,
102-202, Kumar Garima, Tadiwala Road, Pune - 411001,
Maharashtra, India.
E-mail: parikshitgogate@hotmail.com

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