

Conclusion: Results of this study indicate that snuffout phenomenon is rare among our patients. This finding is encouraging, considering the high prevalence of glaucoma in our environment and the frequently late presentation of our patients with advanced glaucoma.⁶ A study in India,⁷ and others in Greece⁸ and Turkey⁹ similarly reported no case of snuffout phenomenon in their patients. A cause of significant reduction in vision identified in a few post-trabeculectomy patients in this study was development of cataract. This study suggests that concern for snuff-out phenomenon should not deter ophthalmologists from offering surgery to patients with advanced glaucoma.

REFERENCES

1. Desinayak N. Wipe-out following glaucoma filtration surgery: A practical consideration in glaucoma management. *Odisha J Ophthalmol.* 2022;29(1):1-3.
2. Lawan A. Pattern of presentation and outcome of surgical management of primary open angle glaucoma in Kano, Northern Nigeria. *Ann Afr Med.* 2007;6(4):180-185.
3. Egbert PR. Glaucoma in West Africa: a neglected problem. *Br J Ophthalmol.* 2002;86:131-132.
4. Costa VP, Smith M, Spaeth GL, Gandham S, Markovitz B. Loss of visual acuity after trabeculectomy. *Ophthalmology.* 1993; 100(5): 599-612
5. World Health Organization. Change the Definition of Blindness. Available from: www.who.int/blindness/change-the-definition-of-blindness. [Date Accessed 2023 August 22]
6. Kizor-Akaraiwe NN, Monye HI, Okeke S. Awareness and knowledge about glaucoma and proportion of people with glaucoma in an urban outreach programme in Southeast Nigeria. *BMJ Open Ophthalmol.* 2017;1:1-10.
7. Bhadra TR, Ghosh RP, Saurabh K, Mitra A, Ghosh AK, Bhadra T. Prospective evaluation of wipe-out after glaucoma filtration surgery in eyes with split fixation. *Indian J Ophthalmol.* 2022; 70(10):3544-3549.
8. Topouzis F, Tranos P, Koskosas A, Pappas T, Anastasopoulos E, Dimitrakos S, et al. Risk of sudden visual loss following filtration surgery in end-stage glaucoma. *Am J Ophthalmol.* 2005;140 (4):661-6.
9. Baser EF, Seymenoglu G, Mayali H. Trabeculectomy for advanced glaucoma. *Int Ophthalmol.* 2011;31 (6):439-46.

Ophthalmic Simulation-based Surgery Digital Class Lab at University of Abuja Teaching Hospital (UATH): The setting-up, GLASS training and participants' feedback

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Introduction: Of about 250,000 ophthalmologists worldwide, there are 2,700 in Sub-Saharan Africa (SSA), a ratio of 1.8 ophthalmologists per million population^{1,2}. In addition to the low numbers, ophthalmic surgical proficiency is a challenge.

Treatable by surgery, cataract is the most common cause of blindness affecting 12.6 million of the 36-million blind people worldwide. It is the main cause of vision loss in Nigeria¹. Small-incision-cataract-surgery (SICS) is a widely accepted, appropriate, affordable procedure and delivers high-quality vision outcomes³. Similarly, for

advanced glaucoma, surgical treatment is a main option.

However, there are concerns of safety, quality, and efficiency of surgical training for cataract and glaucoma surgery. Therefore, training ophthalmologists to perform these operations safely and efficiently is of major ophthalmic public health significance³.

The simulation-based surgery training was recently introduced for enhancement and refinement of skill acquisition with remarkable results. We report our experience at University of Abuja Teaching Hospital (UATH).

Methods:

Sim-Lab set-up: The SimLAB is located in a 6X4ft room. The facilities include: (a) furniture -5 tables and chairs, cabinet with partitions/spaces, and white board; (b) digital class lab comprising 4 stemi 305 microscopes, LAN Network linking the 65" LGTV and 4 iPads using Zeiss LabScope application, and internet for interaction with international/external faculty; (c) surgical items - glaucoma and cataract surgical instruments, Phillips simulated eyes for Manual SICS and trabeculectomy, and capsulorhexis eye models.

GLAucoma Simulation-based Surgery (GLASS) Training:

The advanced glaucoma surgery course was a blended course with two weeks online facilitated meetings to discuss surgical videos specific for the course. This was followed by a 5-day face-to-face GLASS component which comprised:

1. Performing full trabeculectomy on Trab-Sim eyes using the Zeiss Stemi 305 microscopes (Figure 1); recording the procedure on iPad, and then watching the recording and self-assessing (reflective learning); using a scoring system - the ophthalmic simulated surgical competency assessment rubric (Sim-OSSCAR) for trabeculectomy.
2. Practicing releasable sutures on foam and sclera flap on apples.

The course participants had live surgery demonstration by the trainers with step-by-step commentary/teaching. Trainees performed at least one trabeculectomy, from start to finish. Post-operative evaluation of trabeculectomy patients included discussions on surgical complications and management of complications.



Figure 1. A cross-section of participants practicing various steps of trabeculectomy on simulator eyes

One of the participants went further to operate on two patients upon return to base hospital with the assistance of one of the trainers who was physically present to guide. Feedback was obtained from the participants.

Results: There were 19 respondents of which 74% (14/19) reported they gained greatly; 79% said the course was beneficial/very beneficial. All participants (19/19) appreciated the benefits of shared learning and the experience of a sim-LAB course.

Report on one of the participant's two surgical cases performed upon return to base hospital, post-GLASS training showed achievement of target IOP in both cases from 29mmHg to 7.5mmHg by week 2 and from 37mmHg to 13.1mmHg by week 4 respectively.

Discussion: The simulation-based surgery laboratory offers easy skill acquisition when guided by experts. It demystifies the surgery and the supposedly difficult steps: Capsulorhexis in SICS, releasable sutures and construction of inner block in trabeculectomy.

Simulation-based surgery training is highly desired by trainers and trainees as it improves surgical proficiency and confidence as well as patient safety. Shared learning and networking experiences are added benefits for centralised surgical course and our facilities need to be enhanced for such training.

References

1. Dean WH, Buchan J, Gichuhi S, Philippin H, Arunga S, Mukome A, Admassu F, Lewis K, Makupa W, Otiti J, Kim MJ, Macleod D, Cook C, Burton MJ. Simulation-based surgical education for glaucoma versus conventional training alone: the GLAucoma Simulated Surgery (GLASS) trial. A multicentre, multicountry, randomised controlled, investigator-masked educational intervention efficacy trial in Kenya, South Africa, Tanzania, Uganda and Zimbabwe. *Br J Ophthalmol*. 2022 Jun;106(6):863-869.
2. Annoh R, Banks LM, Gichuhi S, Buchan J, Makupa W, Otiti J, Mukome A, Arunga S, Burton MJ, Dean WH. Experiences and Perceptions of Ophthalmic Simulation-Based Surgical Education in Sub-Saharan Africa. *J Surg Educ*. 2021 Nov-Dec;78(6):1973-1984.
3. Kyari, F and Awoyesuku E. Leveraging on technology to improve training outputs and outcomes: GLAucoma Simulation-based Surgical (GLASS) training. Lecture delivered at West African College of Surgeons 63rd AGM on 21 March 2023.

A Performance based test to assess activities of daily living in Glaucoma patients and its Correlation with Self-Reported Questionnaire

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Background: Glaucoma is a group of diseases characterized by loss of retinal nerve fibre layer and visual field loss¹. Glaucoma is the commonest cause of irreversible blindness worldwide and the second leading cause of blindness worldwide after cataract². In Nigeria, it remains the leading cause of irreversible blindness accounting for 16.7% of

blindness among individuals aged 40 years and above³.

Progressive vision loss from glaucoma has significant impact on quality of life⁴. This has been assessed using subjective methods in form of questionnaires but physical performance-based assessment may offer several advantages over self-reported questionnaires⁵. Previous studies in Nigeria reported reduced quality of life in glaucoma patients using self-reported questionnaire^{6,7}.

The aim of this study was to assess the quality of life in primary open angle glaucoma patients using both subjective (National Eye Institute Visual Function Questionnaire-25) and objective tests (Compressed Assessment of Ability Related to Vision (CAARV)) and to examine correlation between both methods.

Methods: This was a cross sectional study of adult Primary Open Angle Glaucoma (POAG) patients on medical therapy at the Guinness Eye Centre, Onitsha Nigeria between January to May 2019. The patients were selected by systematic sampling technique.

Patients responded to questions on socio-demographics and completed the National Eye Institute Visual Function Questionnaire-25 (NEI-VFQ-25)⁸. All patients also completed the Compressed Assessment of Ability Related to Vision (CAARV)⁹, which is a performance-based test with four items including motion detection, recognizing facial expression, reading street sign and finding objects in a room. Ocular examination and central visual field test using automated perimetry were also done.

Results: One hundred and seventy-one patients, aged 40-83 years, (mean 59.1±11.1) were studied; there were 79(46.2%) males and 92(53.8%) females. The scores of the Compressed Ability to Perform Activities Related to Vision are shown in Table 1. The mean CAARV total score was 24.64±5.27. The mean NEI-VFQ-25 score was 83.2±19.30. CAARV correlated significantly with NEI-VFQ scores ($r=0.679$, $p<0.001$). Both CAARV and NEI-VFQ-25 correlated significantly with visual acuity and visual fields of both better and worse eye. CAARV was more strongly correlated with better eye visual acuity as shown in Figure 1.

Discussion: The results of this study demonstrated reduced quality of life in glaucoma patients using self-reported questionnaire (NEI-