UNIVERSITY of MARYLAND
SCHOOL OF MEDICINE

Novel Skills Lab to Improve Interest in Ophthalmology and Confidence in Surgical Skills in Undergraduate Underrepresented Minorities

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Background

Vision impairment disproportionately impacts underrepresented minorities (URMs) in the US. Ophthalmology is less diverse with respect to gender, race, and ethnicity compared to other specialties. Providing high quality care to the growing and diverse US population begins by increasing the workforce diversity.

From 2005 to 2015, only **6%** of practicing ophthalmologists, **5.7%** of ophthalmology faculty, and **7.7%** of ophthalmologist residents were minorities.[1, 2] In the 2023 San Francisco (SF) Match, only **20%** declared minority status of 514 matched applicants. However, URMs make up **19%** of medical students, but comprise only **6.3%** of ophthalmology residents, the lowest of any medical subspecialty.



Purpose: Evaluate the efficacy of an ophthalmology surgical workshop in increasing interest in ophthalmology and improving confidence in surgical skills in a diverse undergraduate population.

Table 1. Participant demographics.

Total	N = 32	Race	N = 32
Male	(11) 34.4%	Caucasian/Asian	15 (46.9%)
Female	(21) 65.6%	African American	13 (40.6%)
		Hispanic/Latino	3 (9.4%)
		Other	1 (3%)

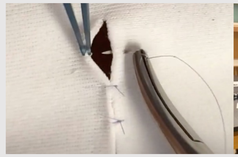
Methods

In this nonrandomized interventional 16-question survey study, 32 students from preprofessional societies and honors programs for underrepresented minorities (URMs) participated in a surgical skills wet-lab led by a physician team.

Pre- and post-surveys assessed participants' interest in ophthalmology, stress in performing the skill, understanding of the surgical skill, and confidence level in skill on a Likert scale from 1 (none) to 10 (extremely).


Station 1: Cataract surgery with a boiled tomato.


Station 2: Scleral pass with a silicone ball.


Station 3: Conjunctival closure with a picture frame and spandex fabric.


Station 4: Eye exam station to practice ophthalmoscopy, use of the Snellen card, and fundoscopy.

	Count	Interest	Stress	Eye-Exam	Conjunctival Closure	Scleral Pass	Cataract Surgery
Non-minority Males	7	**0.034**	0.056	0.059	**0.015**	0.115	**0.001**
Minority Males	4	0.196	**0.005**	0.319	0.196	0.248	0.302
Non-minority Females	8	0.058	**0.005**	**0.003**	**0.001**	**0.001**	**0.001**
Minority Females	13	**0.016**	0.096	**0.001**	**<0.001**	**<0.001**	**<0.001**

Table 2. Student's T-test was used to compare the mean Likert value scores between subgroups.

Results

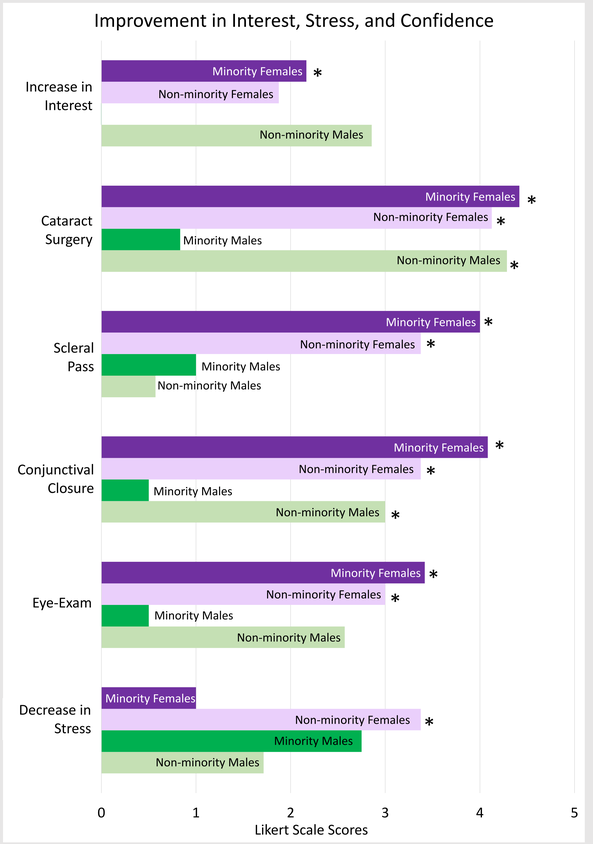


Figure 1. Minority females had the greatest increase in interest in ophthalmology ($p < 0.01$) and understanding of all four stations ($p < 0.001$) than any other subgroup.

Conclusion

Our pilot study demonstrates a novel ophthalmology skills wet-lab that increases interest in ophthalmology ($p < 0.001$) and confidence level in clinical and surgical skills ($p < 0.001$) and decreases stress in performing the skills ($p < 0.001$) in a cohort of students from diverse backgrounds.

Considering the limited exposure of ophthalmology in clinical curriculums and shortage of diversity in the field, recurring wet labs are crucial to fostering mentorship and showcasing representation. The wet-labs are low-cost and easily reproducible for all training levels and all medical schools.

Future Directions: We plan to expand our wetlab to a national level, by creating a comprehensive and centralized curriculum that is supported by a network of ophthalmologic experts and aimed for underrepresented minority undergraduate and medical students.

References

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