

Assessing for gender bias in ophthalmology resident evaluations

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Abstract

Objective: To assess for gender bias in ophthalmology resident surgical evaluations.

Design, Setting, and Participants: Cross-sectional study at a single institution. Participants were faculty cataract surgery attendings and postgraduate year 4 (PGY-4) residents.

Main Outcome and Measures:

- Masked scores (gender unknown to evaluators): ICO-OSCAR for phacoemulsification scores
- Unmasked scores (gender known to evaluators): residents' PGY-4 surgical evaluation scores by cataract surgery attendings

Purpose: The aim of this study is to assess for gender bias in faculty evaluations of ophthalmology residents.

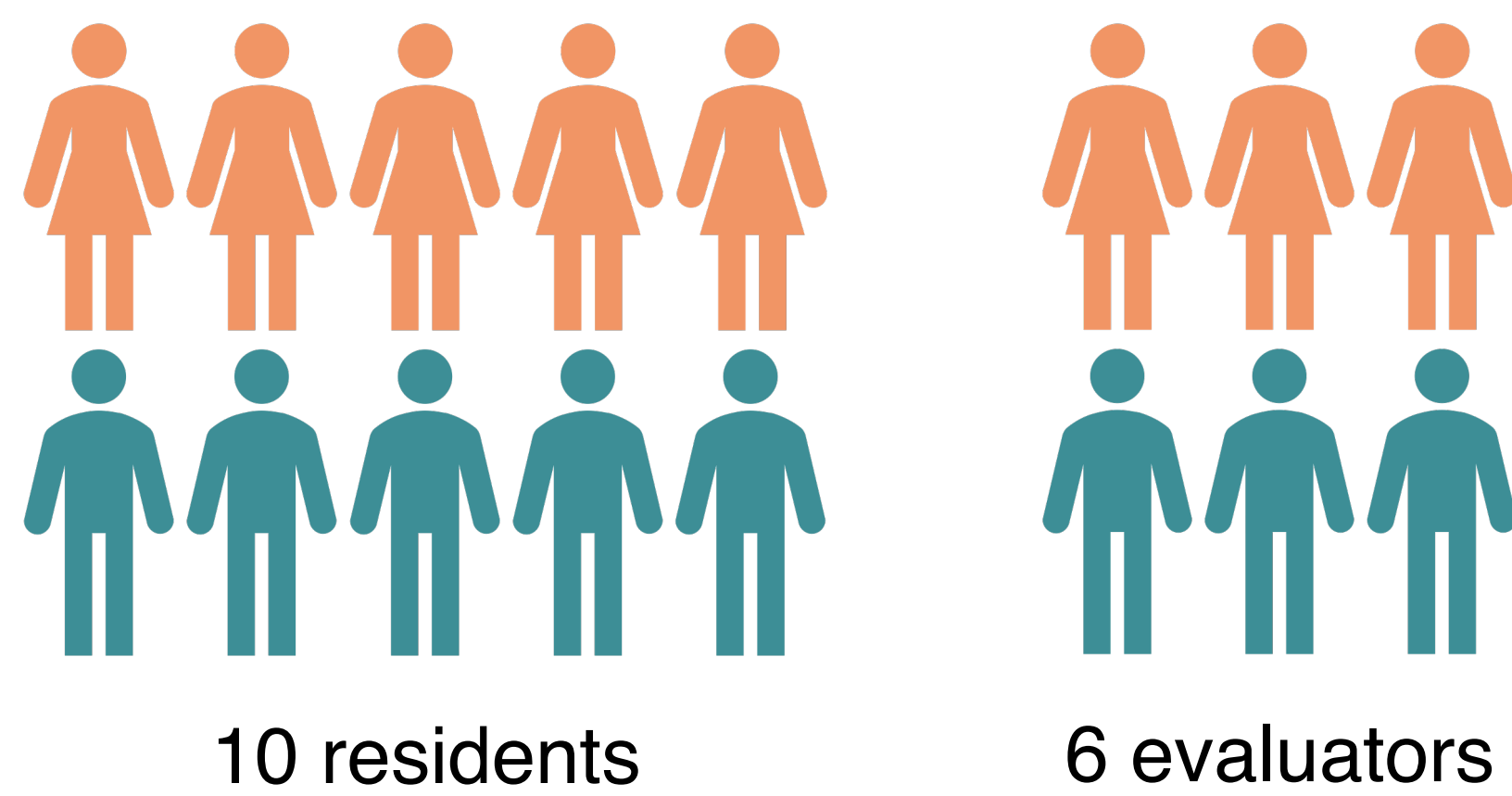
Introduction

Literature to date has shown the presence of gender bias and stereotyping in faculty evaluations of resident physicians across specialties.^{1,2} While gender gaps in ophthalmology are well-documented,³ there is limited research on this topic in the realm of resident evaluations.

Methods

- Attendings evaluated anonymous videos of cataract surgery performed by the residents to evaluate the residents' surgical skills using the ICO-OSCAR for phacoemulsification. Gender is masked to evaluators.
- The residents' surgical evaluation scores from their PGY-4 rotations were collected. Only scores given by cataract surgery attendings were collected. Gender is known (unmasked) to evaluators.
- Data were analyzed using student's t-test and two way ANOVA.

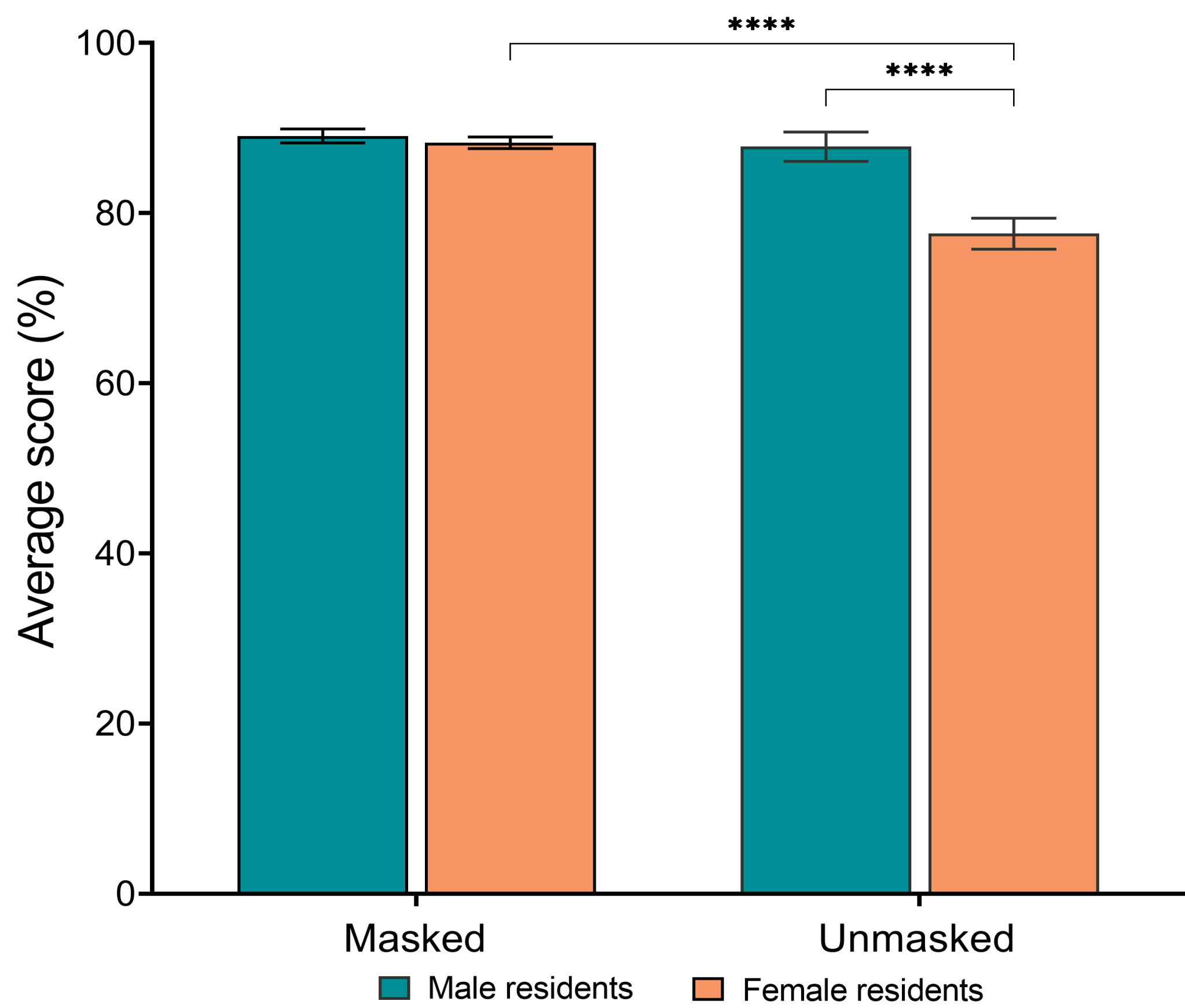
Results



Two way ANOVA results for masked and unmasked scores

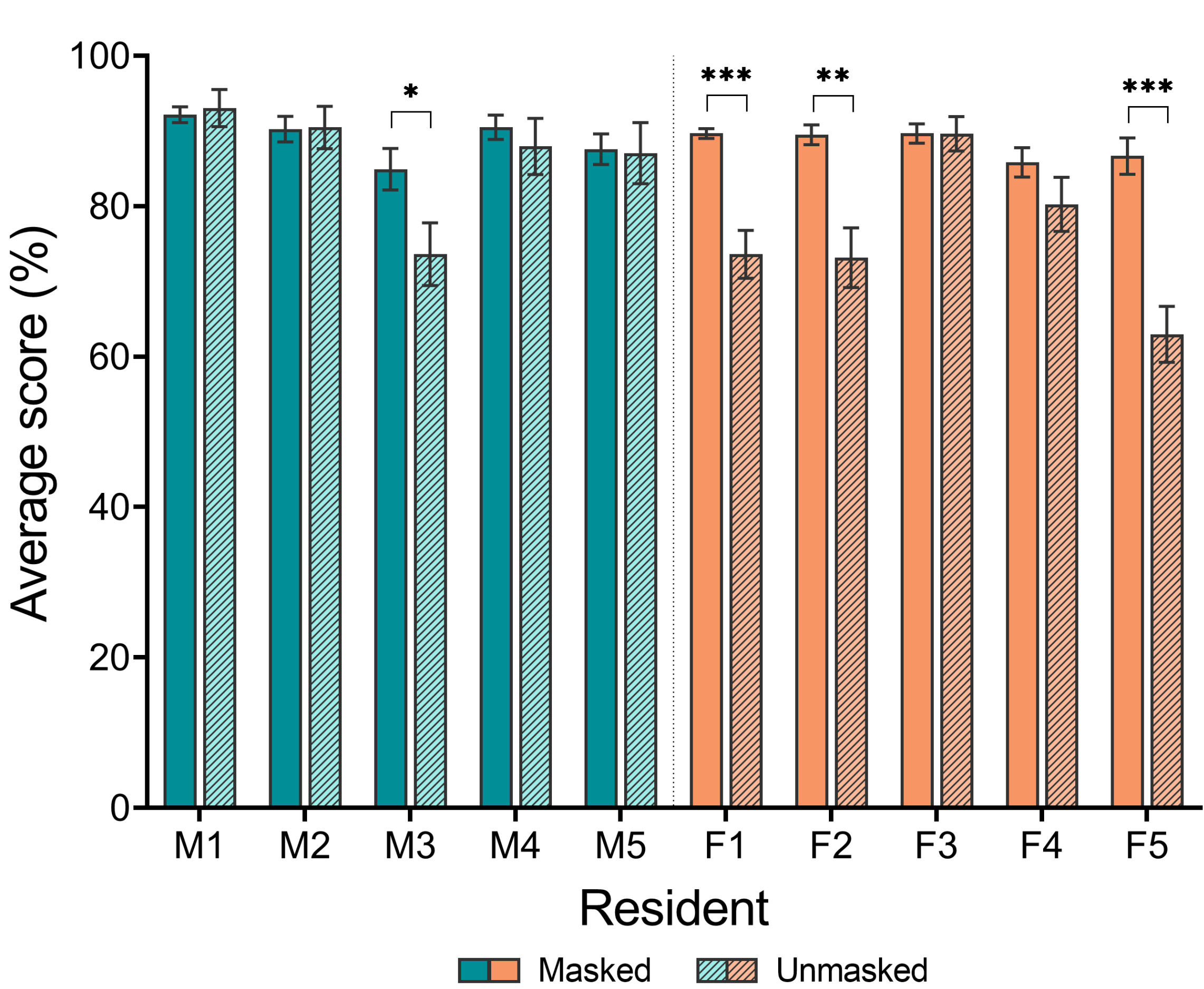
	Source	df	F	P
Masked	Resident gender	1	.588	.45
	Evaluator gender	1	2.909	.09
	Resident gender x evaluator gender	1	.088	.77
	Error	116		
Unmasked	Resident gender	1	11.716	<.001
	Evaluator gender	1	.940	.33
	Resident gender x evaluator gender	1	.229	.63
	Error	116		

Masked vs. unmasked scores of residents by gender



- No significant difference was found between female evaluators' mean scores of female residents and male residents.
- Female residents' mean unmasked score was significantly lower than their mean masked scores ($P<.001$).
- Male residents' mean masked and mean unmasked scores did not differ significantly ($P=.49$).

Individual residents' masked vs. unmasked scores



- Three female residents and one male resident were found to have significant differences between their masked and unmasked mean scores.

Limitations

- Unequal study arms
- Small sample size
- Confounding
- Single institution

Conclusion

- When gender was known to evaluators, female residents were scored significantly lower than both their male counterparts and their own scores when gender was masked.
- While this study had low statistical power, our findings suggest that masking gender and other characteristics relating to identity to evaluators may uncover implicit bias in resident evaluations.

Literature cited

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3. Gill H, Niederer RL, Shriver E, Gordon LK, Coleman AL, Danesh-Meyer HV. An eye on gender equality: A review of the evolving role and representation of women in ophthalmology. *American Journal of Ophthalmology*. 2022;236:232-240.

Funding

This study did not receive funding.

COI Disclosure

No conflict of interest exists for any author.

Acknowledgments

Special thank you to Jasleen Singh, MD