



COVID-19 and the Ophthalmology Residency Match: Data from Applicants' Perspectives

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Abstract

Background The coronavirus disease 2019 (COVID-19) pandemic has had a profound impact on medical education, particularly for those applying to residency programs in 2020 to 2021. This study describes the challenges for potential ophthalmology residency applicants so that residency leadership can make informed decisions about changes to the process.

Methods A survey was distributed electronically via social media and medical school ophthalmology interest groups from June 18, 2020 to July 2, 2020 to individuals interested in applying to ophthalmology residency in the United States. Survey questions included demographics and perceived impacts of COVID-19 on ability, confidence, intention to apply, and perceptions toward changes in the application process for the 2020 to 2021 ophthalmology residency application cycle.

Results One-hundred sixteen total responses were received. Eighty-six responses (74%) were from individuals intending to apply in the 2020 to 2021 application cycle. Most respondents (86%) felt that their application would be affected by COVID-19 with 51% feeling less confident. Only four (5%) felt that they could adequately compile a rank list following a video interview, and over half (51%) anticipated applying to more programs than they originally intended. Academic plans of seven (8%) respondents were significantly altered via deferral of application or cancellation of a research year. Thirty-nine (45%) students reported delayed ophthalmology electives, with less than half (41%) feeling that they had adequate clinical exposure to be prepared for residency.

Conclusion The COVID-19 pandemic has had a substantial impact on the 2020 to 2021 ophthalmology residency application cycle. As stakeholders begin to approach this cycle, these findings will help them make effective and informed decisions to create the best overall experience for all involved.

Keywords

- ▶ COVID-19
- ▶ residency
- ▶ applications
- ▶ student perceptions

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The coronavirus disease 2019 (COVID-19) global pandemic has had a tremendous impact on society, and medical education has been no exception. On March 17, 2020, the Association of American Medical Colleges recommended a suspension of all clinical activities, including the Visiting Student Application Service.¹ On March 18, 2020, the American Academy of Ophthalmology recommended that ophthalmologists only provide emergency care, causing a 79% reduction in patient visits.²⁻⁴ This coincided with the time when hundreds of third and fourth year medical students typically participate in ophthalmology electives. For the majority of these students, exposure to ophthalmology is now limited to a condensed fourth year packed with core rotations, residency applications, and United States Medical Licensing Examination (USMLE) Step preparation.

The Coalition for Physician Accountability subsequently released recommendations that all residency interviews be conducted virtually.⁵ As a result, the Association of University Professors of Ophthalmology (AUPO) has moved interviews virtually and capped interviews to a maximum of 20 per applicant.^{6,7} Furthermore, the AUPO, in conjunction with the San Francisco Match, have extended application submission deadlines, interview dates, and rank list deadlines by several weeks, creating new challenges to consider for applicants and residency programs alike.⁷

To most effectively address these challenges, it will be vital for residency program directors to have as much information as possible about the perspectives and specific challenges faced by this year's applicant pool. Herein, we report a survey of residency applicants, with the aim to provide information to ophthalmology residency directors, medical students, educators, and physicians involved in the mentorship of ophthalmology residency applicants about the effects of COVID-19 and the concerns of the cohort that will be applying during the 2020 to 2021 ophthalmology match cycle.

Methods

A survey was created using Yale Qualtrics to evaluate the impact of COVID-19 on medical students' ability, confidence, intention to apply, and perceptions toward changes in the application process for the 2020 to 2021 ophthalmology residency application cycle (see eAppendix for full survey). The study was approved by the Yale School of Medicine Institutional Review Board.

The survey was distributed via social media (Twitter, Instagram, Reddit, Discord), two ophthalmology focused podcasts,^a and direct outreach to ophthalmology interest groups at US medical schools. The survey was open for completion from June 18, 2020 to July 2nd, 2020. Using the total number of applicants from the 2019 to 2020 match cycle (554), we calculated that a sample size of 82 would be needed for the results to be representative of the total population with a 10% margin of error at the 95% confidence level.

^a Eyes for Ears and Straight from the Cutter's Mouth.

Results

Demographics

A total of 116 completed survey responses were received (► **Table 1**). Eighty-six (74.14%) responses were from individuals applying for the 2020 to 2021 residency application cycle

Table 1 Demographics

Academic stage		
Advanced Clerkship Medical Student	82.56%	71
Research Year Medical Student	8.14%	7
International Medical Graduate	9.30%	8
Gender		
Male	61.18%	52
Female	35.29%	30
Prefer not to answer	3.53%	3
Race		
White	43.96%	40
Asian	40.66%	37
Black or African American	5.49%	5
Hispanic or Latino	5.49%	5
Other	3.30%	3
American Indian or Alaska Native	1.10%	1
Native Hawaiian or Pacific Islander	0.00%	0
Geographic region		
South	30.00%	24
Midwest	21.25%	17
West	18.75%	15
Northeast	17.50%	14
International Medical Graduate	10.00%	8
Medical school type		
MD granting institution—US allopathic	86.05%	74
Other, ex medical school completion outside the United States	8.14%	7
DO granting institution—US osteopathic	5.81%	5
Home Ophthalmology Department		
Yes	82.56%	71
No	17.44%	15
Top 40 medical school		
No	66.28%	57
Yes	32.56%	28
Prefer not to answer	1.16%	1
Ophthalmology elective		
Plan to complete an ophthalmology elective	50.00%	52
Completed an ophthalmology elective—home institution	36.54%	38
Completed an ophthalmology elective—outside institution	5.77%	6
Elective scheduled—outside institution	7.69%	8

(Advanced Clerkship Students, Research Year or International Medical Graduates).

Effects of COVID-19 on Applications, Interviews, and Rank List (- Table 2)

Most respondents (86.04%) felt that their application would be affected by COVID-19. A majority (51.16%) felt less confident in their application. Very few (4.65%) felt that they could adequately assess and complete a rank list through video interviews. Applicants anticipated applying to more programs

Table 2 COVID-19 and applications

Feel like your application is affected?		
Extremely likely	34.88%	30
Moderately likely	51.16%	44
Neither likely nor unlikely	6.98%	6
Moderately unlikely	3.49%	3
Extremely unlikely	3.49%	3
Positive effects?		
No	39.53%	34
Yes	34.88%	30
Unsure	25.58%	22
Top concerns		
Letters of recommendations	23.67%	58
USMLE scores	14.29%	35
Research	14.29%	35
Medical school ranking or reputation	12.65%	31
AOA membership	11.84%	29
Sub-internship evaluations	10.20%	25
Activities and extracurriculars	8.98%	22
MSPE letter	4.08%	10
Confidence		
Less confident	51.16%	44
Neither more or less confident	37.21%	32
More confident	11.63%	10
Ability of residencies to assess through video interview		
No	46.51%	40
Unsure	40.70%	35
Yes	12.79%	11
Ability of create rank list through video interview		
No	69.77%	60
Unsure	25.58%	22
Yes	4.65%	4
Number of applications		
Apply to more programs	51.16%	44
No effect	46.51%	40
Apply to fewer programs	2.33%	2

(Continued)

Table 2 (Continued)

Interviews you would accept		
Attend more interviews	77.65%	66
Attend the same number	20.00%	17
Attend less interviews	2.35%	2
How do you feel about a limitation on the number of interviews a student may submit?		
Strongly agree	31.40%	27
Agree	36.05%	31
Neither agree nor disagree	17.44%	15
Disagree	9.30%	8
Strongly disagree	5.81%	5
Plan to ask mentors for a recommendation		
Yes	47.06%	40
Maybe	43.53%	37
No	9.41%	8
Three most important factors in applying to a residency program		
Location	27.34%	73
Likelihood of interview invitation	22.10%	59
Reputation	18.35%	49
Connection with faculty/mentors at your institution	10.11%	27
Number of residents	8.61%	23
Faculty reputation	8.24%	22
Previous affiliation or collaboration	5.24%	14
Number of fellows	0.00%	0
What things will make you more comfortable assessing a residency program?		
Videos of the residents	26.78%	79
Videos of the faculty	25.42%	75
Videos highlighting possible living areas	21.69%	64
Videos of the city	20.34%	60
Other	5.76%	17

Abbreviations: AOA, Alpha Omega Alpha; COVID-19, coronavirus disease 2019; MSPE, Medical Student Performance Evaluation; USMLE, United States Medical Licensing Examination.

and accepting more interviews this cycle. Letters of recommendation emerged as the top concern for applicants.

Effects of COVID-19 on Testing, Electives, and Rotations (- Table 3)

The academic plans of 7 (8.24%) respondents were significantly altered, either deferring to the next application cycle or cancelling a research year. Home ophthalmology electives were commonly affected by COVID-19, with 39 (45.35%) students reporting delays or rescheduling. Less than half (41.86%) felt that they had adequate clinical exposure to be prepared for residency.

Table 3 Testing, electives, rotations

Activities during the COVID-19 pandemic		
Research	22.57%	65
Virtual electives/lectures	21.18%	61
USMLE preparation	13.19%	38
Volunteer work (related to COVID-19)	12.50%	36
Clinical rotations	10.76%	31
Assisting family members or loved ones	9.72%	28
Volunteer work (unrelated to COVID-19)	6.94%	20
Plans for the 2020–2021 academic year		
I planned to apply during the 2020–2021 cycle and still plan to	80.00%	68
I planned to complete a research year and still plan to	1.18%	1
As a result of the pandemic I now plan to take a research year	5.88%	5
As a result of the pandemic I will no longer be taking an intended research year and will apply in the 2020–2021 cycle instead	2.35%	2
I am unsure whether my plans will be changed	7.06%	6
Other:	3.53%	3
USMLE test delays		
None	38.10%	40
Step 1	1.90%	2
Step 2 CK	27.62%	29
Step 2 CS	32.38%	34
USMLE complete before ERAS deadline		
USMLE Step 1	50.36%	70
USMLE Step 2CK	34.53%	48
USMLE 2CS	15.11%	21
Core clerkship delays		
Yes	45.35%	39
No	54.65%	47
Home ophthalmology elective delays		
Yes	45.35%	39
No	54.65%	47
Adequate clinical exposure prior to graduation?		
Yes	41.86%	36
No	11.63%	10
Unsure	46.51%	40
Participate in a virtual elective outside of your medical school		
Yes	10.47%	9
No	53.49%	46
Maybe	36.05%	31

Abbreviations: COVID-19, coronavirus disease 2019; USMLE, United States Medical Licensing Examination.

Discussion

Our results demonstrate that most respondents felt that COVID-19 has affected their application. Concerns over clinical exposure, application strength, and virtual interviews were prominent. These effects manifested in several ways, most consequentially in those respondents who deferred their 2020 application plans.

Applicants were particularly concerned about the changes to the interview process due to COVID-19. About 95.35% of respondents felt that the shift to virtual interviews will make it difficult to assess programs and vice versa. This uncertainty was highlighted by the findings that respondents are planning on applying to more programs and accepting more interviews due to COVID-19. The SFMatch preemptively capped the number of interviews a student may attend at 20,⁷ a choice supported by most applicants. Applicants suggested several ways to make this interview season easier for them. Most felt that videos of the residents, faculty, the city, and possible living areas would help them evaluate a program. Additionally, they felt that there should be adequate informal time where applicants could socialize with residents, such as what might be found at a pre-interview dinner.⁸

A majority of our respondents reported concerns over inadequate clinical exposure. Almost half (45.35%) reported delays to their core clerkships and ophthalmology electives. We postulate this produces two different anxieties about applicants' future careers. First, applicants may worry that changes to their core clerkships will render them ill prepared for the clinical responsibilities of intern year. Second, as ophthalmology is a specialty that is often underrepresented in preclinical and clinical medical education,⁹ elective exposure is critical for interested students to confirm their interest in the field. Furthermore, advanced electives allow applicants to showcase themselves and acquire critical letters of recommendation. Our results confirmed this concern, with applicants listing letters of recommendation as their top concern about their application this cycle.

COVID-19's effect on applications can also be positive. About 34.88% of respondents viewed the disruptions of the global pandemic as a boon to their applications. Most applicants from this group (67%) reported the unexpected free time gave them increased opportunity to engage in research. While it is not possible to ascertain from our results if the potential positive benefits of COVID-19 were evenly distributed, it is possible that the shutdown unfairly benefitted individuals at universities with access to strong ophthalmic research departments, mentors, or other well-established programs.

There are several limitations to this study. First, the study was a self-report survey and thus susceptible to a response bias. Students may have overstated their concern or may be unaware of the realities of the match as they have not experienced it. Second, although the survey was distributed in a variety of avenues, it is likely a majority of respondents discovered our survey through social media or podcasts. However, our demographic results are similar to publicly available information from previous match cycles.^{10,11} Compared with the 2020 cycle, fewer respondents were female (41.6–35%).¹¹ Ethnically, the

percent of white and Hispanic respondents decreased from 2012 (64–44% and 9–5.5%), while the percent increased for Asian (26–41%) and African American (<1–5.5%) respondents.¹⁰ In 2020, the largest demographic from was from the South or Southeast (31.9%), matching the 30% of respondents to this survey. Third, it is impossible to accurately determine how many individuals received the survey and calculate a response rate. While we assume the total to be 554 (number of applicants from last year's Match), it is probable our survey did not reach every applicant.

Conclusion

The COVID-19 pandemic has affected every facet of medical education, creating significant uncertainty in medical education and the residency process. Our findings highlight particular concerns for applicants during the 2020 to 2021 ophthalmology residency interview cycle and some suggestions for how to begin to address these issues.

Authors' Contributions

All authors have contributed substantially to the conception and design of the work, have drafted and revised the manuscript critically, have final approval of the final version, and agree to be accountable for all aspects of the work.

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Conflict of Interest

Mr. Steren reports other from Yale Medical Student Fellowship, outside the submitted work. Dr. Sridhar reports grants from NIH, outside the submitted work.

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