



# Trends in Cornea Fellowship Applications and Applicant Characteristics: A San Francisco Match Analysis

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## Abstract

**Purpose** We investigate trends in cornea fellowship positions filled over time and applicant characteristics associated with matching into cornea fellowship.

**Methods** Characteristics of cornea fellowship applicants were assessed using deidentified 2010 to 2017 San Francisco (SF) Match data. Publicly available SF Match cornea fellowship data including the number of participating programs, number of positions offered, number of positions filled, percentage of positions filled, and number of vacancies from 2014 to 2019 were also analyzed as data from 2010 to 2013 were unavailable.

**Results** From 2014 to 2019, the number of cornea fellowship programs increased by 11.3% (mean 2.3% per year,  $p = 0.006$ ) and the number of positions offered increased by 7.7% (mean 1.4% per year,  $p = 0.065$ ). Of 1,390 applicants from 2010 to 2017, 589 (42.4%) matched into cornea. After controlling for potential covariates, graduation from a U.S. residency program (odds ratio [OR]: 6.15, 95% confidence interval [CI]: 4.05–9.35,  $p < 0.001$ ) and a greater number of interviews completed (OR: 1.35, 95% CI: 1.29–1.42,  $p < 0.001$ ) were associated with increased odds of cornea fellowship match. A greater number of applied programs (OR: 0.97, 95% CI: 0.95–0.98,  $p < 0.001$ ) was associated with decreased odds of matching into cornea fellowship. The proportion of applicants matching into cornea fellowship increased until 30 applications.

**Conclusions** The number of cornea fellowship programs and positions increased from 2014 to 2019. Graduation from a U.S. residency program and a greater number of interviews completed were associated with an increased likelihood of cornea fellowship match. Unlike applying to any ophthalmology subspecialty fellowship, applying to greater than 30 cornea fellowship programs was associated with decreased odds of matching.

## Keywords

- cornea
- fellowship
- San Francisco Match
- applicant characteristics

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Over the last 15 years, the percentage of U.S. ophthalmology residents pursuing fellowship has nearly doubled.<sup>1</sup> As reported by the San Francisco (SF) Match, the number of fellowship positions has also increased with 433 fellowship positions offered in 2019, a 13% increase from 2014.<sup>2</sup> Cornea fellowship, in particular, is highly sought after by ophthalmology residents. In fact, it is the second most common ophthalmic subspecialty pursued after retina.<sup>2</sup> From 2014 to 2019, an average of 94 cornea fellowship positions were offered annually.<sup>2</sup> In 2019, over 86% of positions offered were filled.<sup>3</sup>

Several studies have evaluated the characteristics of applicants who successfully match into ophthalmology residency,<sup>4–6</sup> but few such studies exist for successful ophthalmology fellowship applicants.<sup>7,8</sup> Furthermore, these findings are largely based on surveys of fellowship program directors.<sup>7,8</sup> In contrast, a recent study used deidentified data from the SF Match and found that the following characteristics are associated with a successful match across all ophthalmology fellowships: being a U.S. ophthalmology residency graduate, a graduate from a top 10 ophthalmology residency program, a U.S. medical school graduate, and ranking a greater number of programs.<sup>3</sup>

To our knowledge, no studies to date have investigated cornea fellowship applicant characteristics or factors associated with successfully matching into a cornea fellowship program. Determining these factors may be of interest to prospective cornea fellowship applicants. Moreover, this study may offer valuable insight to residency and fellowship program directors. Thus, the purpose of our project is to address this knowledge gap by studying characteristics of cornea fellowship applicants and examine factors associated with a successful cornea fellowship match.

## Methods

This study was considered exempt by the Johns Hopkins University School of Medicine Institutional Review Board.

### Deidentified Data

Deidentified applicant data were provided by the SF Match for match cycles from 2010 to 2017. Characteristics analyzed included application year, whether the applicant graduated from a residency program that ranked among the U.S. News and World Report's top 10 hospitals for ophthalmology that match year, whether the applicant graduated from a U.S. residency program, whether the applicant graduated from a U.S., Canadian, or international medical school, visa status, whether the applicant graduated with an allopathic medical degree, the number of applications submitted, the number of interviews completed, the number of programs ranked, and scores from United States Medical Licensing Examination (USMLE) step 1, 2, and 3. Visa status referred to the country where applicants held the visa, not their country of citizenship. Other visa referred to visas from countries other than the United States and Canada. Data on sex of applicants were not available during this time period. Applicants who made "inquiries only but did not pay,"

withdrew from the match, or had incomplete applications were excluded from all analyses.

Applicants were stratified by match status (matched in cornea vs. did not match), and applicant characteristics were compared between groups. Cornea fellowships not including anterior segment and refractive fellowships were used in our analysis.

Matched applicants were further stratified by match year, and characteristics were compared across years 2010 to 2017. Pearson's chi-square test was used to compare categorical variables, and Wilcoxon rank-sum test or Kruskal-Wallis test was used, as applicable, for continuous variables.

A multivariable logistic regression model was used to estimate the effects of other covariates on an applicant's odds of matching into cornea fellowship. The following covariates were used: location of graduating residency program (inside or outside of the U.S.), ophthalmology residency program ranking (within or out of the top 10), medical degree (allopathic or not), the number of applications submitted, the number of interviews completed, and scores from USMLE step exams 1, 2, and 3. Covariates were evaluated for the degree of collinearity in a pairwise fashion. Pearson's correlation coefficient of magnitude  $\geq 0.7$  was considered suggestive of collinearity. Due to the correlation with the number of interviews, the number of programs ranked was not included in the regression analyses. Applicant visa status and medical school location were not included in the regression analyses due to correlation with residency program location.

### Publicly Available Data

Publicly available cornea fellowship data from the SF Match for match years 2014 to 2019 were analyzed. Data from 2010 to 2013 were not available. A linear regression model on log-transformed response variables was used to estimate the annual change in the number of participating programs, number of positions offered, number of positions filled, percentage of positions filled, and number of vacancies.

All statistical analyses were completed using RStudio (R version 4.0.2) with statistical significance set at  $p < 0.05$ .

## Results

From 2014 to 2019, the number of programs participating in the cornea fellowship match increased by 11.3% from 62 to 69 (mean 2.3% per year,  $p = 0.006$ ), the number of cornea fellowship positions offered increased by 7.7% from 91 to 98 (mean 1.4% per year,  $p = 0.065$ ), the number of cornea fellowship positions filled increased by 4.9% from 81 to 85 (mean 0.8% per year,  $p = 0.548$ ), the number of vacant cornea fellowship positions increased by 30.0% from 10 to 13 (mean 4.6% per year,  $p = 0.485$ ), and the percentage of cornea fellowship positions filled decreased by 2.6% from 89.0 to 86.7% (mean 0.5% per year,  $p = 0.541$ ; ► **Table 1**).

Of 1,541 fellowship applicants, 151 (9.8%) participants were excluded due to missing information regarding whether they graduated from a residency program that ranked among the U.S. News and World Report's top 10 hospitals for

**Table 1** Trends in cornea fellowship match from 2014 to 2019

Category	2014	2015	2016	2017	2018	2019	Overall percentage change	Percentage of change per year <sup>a</sup>	p-Value <sup>a</sup>
Participating programs (n)	62	64	63	67	69	69	11.3	2.3	<b>0.006</b>
Positions offered (n)	91	91	91	97	93	98	7.7	1.4	0.065
Positions filled (n)	81	81	78	90	79	85	4.9	0.8	0.548
Vacancies (n)	10	10	13	7	14	13	30.0	4.6	0.485
Percentage of positions filled	89.0%	89.0%	85.7%	92.8%	84.9%	86.7%	−2.6	0.5	0.541

Note: Statistical significance indicated in bold.

<sup>a</sup>Percentage change per year and p-values calculated using linear regression models on log-transformed response variables, where percentage change =  $100 \times (\exp(\text{coefficient}) - 1)$ .

ophthalmology that match year. All other variables had no missing data. Of 1,390 fellowship applicants included in this analysis, 589 (42.4%) matched into cornea. Applicants who matched into cornea fellowship in the years 2010 to 2017 match cycles were more likely than their unmatched counterparts to have graduated from a top 10 ophthalmology program (10.9 vs. 4.5%,  $p < 0.001$ ), a U.S. residency program (93.4 vs. 42.2%,  $p < 0.001$ ), and a U.S. medical school (91.1 vs. 39.1%,  $p < 0.001$ ) (►Table 2). Matched applicants were more likely to be U.S. citizens (90.8 vs. 37.2%,  $p < 0.001$ ) and less likely to be international medical graduates (IMGs, 92.8 vs. 42.8%,  $p < 0.001$ ). Matched applicants also applied to more programs (20 vs. 9,  $p < 0.001$ ), interviewed at more programs (9 vs. 1,  $p < 0.001$ ), and ranked more programs (9 vs. 1,  $p < 0.001$ ). Finally, matched applicants scored higher on USMLE step 1 (238 vs. 227,  $p < 0.001$ ), step 2 (242 vs. 230,  $p < 0.001$ ), and step 3 (225 vs. 217,  $p < 0.001$ ) compared with unmatched applicants.

Among matched applicants, there was yearly variation in the number of applied programs ( $p = 0.005$ ), number of interviews completed ( $p = 0.001$ ), and number of programs ranked ( $p = 0.001$ ) from 2010 to 2017 (►Table 3). During this time period, matched applicants applied to a median of 15 to 24 applications, completed a median of 8 to 11 interviews, and ranked a median of 8 to 10 programs. There was also yearly variation in USMLE step 2 (median 236 to 249,  $p < 0.001$ ) and step 3 (median 220 to 229,  $p = 0.03$ ) scores.

Graduation from a U.S. residency program (odds ratio [OR]: 6.15, 95% confidence interval [CI]: 4.05–9.35,  $p < 0.001$ ) and a greater number of interviews completed (OR: 1.35, 95% CI: 1.29–1.42,  $p < 0.001$ ) were associated with increased odds of matching into cornea fellowship (►Table 4). A greater number of applied programs (OR: 0.97, 95% CI: 0.95–0.98,  $p < 0.001$ ) was associated with decreased odds of matching into cornea fellowship.

The proportion of applicants matching into cornea fellowship increased up to 30 applications (►Fig. 1). Of the 1,390 cornea fellowship applicants, 1,172 (84.3%) applied to 30 or fewer programs and 218 (15.7%) applied to greater than 30 programs. Of 1,172 applicants who applied to 30 or fewer applications, 437 (37.3%) were IMGs and of 218

applicants who applied to greater than 30 programs, 38 (17.4%).

The proportion of applicants who matched into cornea fellowship rose with an increasing number of interviews completed (►Fig. 2). All applicants with greater than 18 interviews matched into cornea fellowship. Of the 1,390 fellowship applicants, 880 (63.3%) completed 7 or fewer interviews, 502 (36.1%) completed 8 to 18 interviews, and 8 (0.6%) completed greater than 18 interviews. Of 880 applicants who completed 7 or fewer interviews, 436 (49.5%) were IMGs.

## Discussion

Cornea fellowship is the second-most common fellowship into which applicants match, with nearly one-quarter of all applicants matching into this subspecialty.<sup>3</sup> While the number of programs participating in the cornea fellowship match increased from 2014 to 2019, the percentage of positions filled did not change significantly per year and experienced an overall decrease. This may be explained by a greater increase in the number of positions offered compared with the number of positions filled.

The findings of the present study mirror those of a recent study in which objective data from the ophthalmology fellowship match were used for all subspecialties.<sup>3</sup> Similar to successful applicants to all fellowships, successful cornea fellowship applicants were more likely to have graduated from a U.S. residency program, rank more programs, and score higher on USMLE step 1, 2, and 3 than unmatched applicants.

In contrast, a new finding from our analysis showed that applying to a greater number of programs—beyond 30—was associated with decreased odds of matching into cornea fellowship. This association was not found in the prior study evaluating conglomerate data for applicants to any ophthalmology fellowship subspecialty<sup>3</sup> but has been shown for ophthalmology residency applicants.<sup>4</sup> During the 2013 to 2015 ophthalmology residency match cycles, the positive association between the number of applied programs and matching into ophthalmology residency became negative

**Table 2** Characteristics of applicants stratified by match status, 2010 to 2017

		Total number of applicants applying for fellowship	Number of applicants who did not match (%)	Number of applicants who matched in cornea (%)	p-Value <sup>a</sup>
		<i>n</i> = 1,390	<i>n</i> = 801 <sup>b</sup>	<i>n</i> = 589 <sup>b</sup>	
Match year, <i>n</i> (%)	2010	196	117 (59.7)	79 (40.3)	0.808
	2011	187	110 (58.8)	77 (41.2)	
	2012	197	117 (59.4)	80 (40.6)	
	2013	181	108 (59.7)	73 (40.3)	
	2014	162	94 (58.0)	68 (42.0)	
	2015	156	90 (57.7)	66 (42.3)	
	2016	145	78 (53.8)	67 (46.2)	
	2017	166	87 (52.4)	79 (47.6)	
Top 10 ophthalmology program, <i>n</i> (%)	No	1,290	765 (59.3)	525 (40.7)	<0.001
	Yes	100	36 (36.0)	64 (64.0)	
U.S. residency, <i>n</i> (%)	No	502	463 (92.2)	39 (7.8)	<0.001
	Yes	888	338 (38.1)	550 (61.9)	
U.S. medical graduate, <i>n</i> (%)	No	516	464 (89.9)	52 (10.1)	<0.001
	Yes	832	298 (35.8)	534 (64.2)	
Canada medical graduate, <i>n</i> (%)	No	832	298 (35.8)	534 (64.2)	<0.001
	Yes	36	26 (72.2)	10 (27.8)	
International medical graduate, <i>n</i> (%)	No	868	324 (37.3)	544 (62.7)	<0.001
	Yes	475	433 (91.2)	42 (8.8)	
Visa status, <i>n</i> (%)	U.S.	833	298 (35.8)	535 (64.2)	<0.001
	Canadian	36	26 (72.2)	10 (27.8)	
	Other	521	477 (91.6)	44 (8.4)	
Allopathic medical degree, <i>n</i> (%)	No	40	27 (67.5)	13 (32.5)	0.263
	Yes	1,350	774 (57.3)	576 (42.7)	
Number of applications distributed, median (IQR)			9 (4, 19)	20 (12, 29)	<0.001
Number of interviews marked completed, median (IQR)			1 (0, 5)	9 (6, 12)	<0.001
Number of programs on applicant's rank list, median (IQR)			1 (0, 4)	9 (6, 11)	<0.001
USMLE step 1 three-digit score, median (IQR)			227 (214, 239)	238 (228, 248)	<0.001
USMLE step 2 three-digit score, median (IQR)			230 (214, 243)	242 (230, 253)	<0.001
USMLE step 3 three-digit score, median (IQR)			217 (206, 228)	225 (215, 234)	<0.001

Abbreviations: IQR, interquartile range; USMLE, United States Medical Licensing Exam.

Note: Statistical significance indicated in bold.

<sup>a</sup>p-Values generated using Pearson's chi-square test for categorical variables and Wilcoxon rank-sum test for continuous variables.<sup>b</sup>Total number (%) of missing observations: Not matched, 112/913 (12.3%); Matched in cornea, 39/628 (6.2%).

with greater than 48 applications.<sup>4</sup> In the present study, the inflection point was observed with only 30 applications. Because not all ophthalmology residents choose to pursue fellowship training and an even smaller subgroup choose to pursue cornea fellowship training, specifically, it is unsur-

prising that the optimal number of applications needed to match successfully is lower for cornea fellowship applicants than for ophthalmology residency applicants. For cornea fellowship applicants, the odds ratio of successfully matching with a greater number of programs was slightly less than 1.

**Table 3** Characteristics of matched cornea fellowship applicants from 2010 to 2017

Match year	2010	2011	2012	2013	2014	2015	2016	2017	p-Value <sup>a</sup>
Number matched in cornea	79	77	80	73	68	66	67	79	
Top 10 ophthalmology program, n (%)									
No	68 (86.1)	66 (85.7)	68 (85.0)	68 (93.2)	63 (92.6)	61 (92.4)	58 (86.6)	73 (92.4)	0.403
Yes	11 (13.9)	11 (14.3)	12 (15.0)	5 (6.8)	5 (7.4)	5 (7.6)	9 (13.4)	6 (7.6)	
U.S. residency, n (%)									
No	7 (8.9)	4 (5.2)	4 (5.0)	6 (8.2)	4 (5.9)	4 (6.1)	8 (11.9)	2 (2.5)	0.447
Yes	72 (91.1)	73 (94.8)	76 (95.0)	67 (91.8)	64 (94.1)	62 (93.9)	59 (88.1)	77 (97.5)	
U.S. medical graduate, n (%)									
No	8 (10.1)	8 (10.4)	6 (7.5)	8 (11.0)	2 (3.1)	3 (4.5)	11 (16.4)	6 (7.6)	0.185
Yes	71 (89.9)	69 (89.6)	74 (92.5)	65 (89.0)	63 (96.9)	63 (95.5)	56 (83.6)	73 (92.4)	
Canada medical graduate, n (%)									
No	71 (100.0)	69 (98.6)	74 (97.4)	65 (95.6)	63 (100.0)	63 (100.0)	56 (94.9)	73 (98.6)	0.185
Yes	0 (0.0)	1 (1.4)	2 (2.6)	3 (4.4)	0 (0.0)	0 (0.0)	3 (5.1)	1 (1.4)	
International medical graduate, n (%)									
No	71 (89.9)	70 (90.9)	76 (95.0)	68 (93.2)	63 (96.9)	63 (95.5)	59 (88.1)	74 (93.7)	0.457
Yes	8 (10.1)	7 (9.1)	4 (5.0)	5 (6.8)	2 (3.1)	3 (4.5)	8 (11.9)	5 (6.3)	
Visa status, n (%)									
U.S.	71 (89.9)	69 (89.6)	74 (92.5)	65 (89.0)	64 (94.1)	63 (95.5)	56 (83.6)	73 (92.4)	0.38
Canadian	0 (0.0)	1 (1.3)	2 (2.5)	3 (4.1)	0 (0.0)	0 (0.0)	3 (4.5)	1 (1.3)	
Other	8 (10.1)	7 (9.1)	4 (5.0)	5 (6.8)	4 (5.9)	3 (4.5)	8 (11.9)	5 (6.3)	
Allopathic medical degree, n (%)									
No	2 (2.5)	1 (1.3)	2 (2.5)	1 (1.4)	2 (2.9)	2 (3.0)	2 (3.0)	1 (1.3)	0.983
Yes	77 (97.5)	76 (98.7)	78 (97.5)	72 (98.6)	66 (97.1)	64 (97.0)	65 (97.0)	78 (98.7)	
Number of applications distributed, median (IQR)	15 (10, 24)	19 (13, 26)	19 (12, 27)	24 (14, 32)	22 (15, 29)	21 (14, 29)	23 (14, 30)	23 (14, 36)	0.005
Number of interviews marked completed, median (IQR)	8 (6, 10)	8 (6, 11)	8 (6, 11)	9 (7, 12)	11 (7, 13)	11 (8, 12)	10 (7, 13)	10 (7, 13)	0.001
Number of programs on applicant's rank list, median (IQR)	8 (6, 10)	8 (5, 11)	8 (5, 10)	9 (6, 12)	9 (6, 12)	10 (6, 11)	9 (6, 13)	9 (7, 12)	0.001
USMLE step 1 three-digit score, median (IQR)	233 (224, 244)	238 (220, 246)	239 (229, 248)	235 (226, 244)	240 (228, 250)	239 (230, 251)	240 (230, 251)	240 (232, 246)	0.064
USMLE step 2 three-digit score, median (IQR)	238 (226, 248)	239 (225, 246)	236 (227, 248)	238 (223, 252)	245 (232, 256)	249 (238, 255)	243 (233, 258)	245 (239, 254)	<0.001
USMLE step 3 three-digit score, median (IQR)	224 (216, 231)	220 (215, 232)	220 (212, 229)	224 (212, 235)	228 (219, 233)	228 (215, 237)	227 (217, 237)	229 (220, 234)	0.033

Abbreviations: IQR, interquartile range; USMLE, United States Medical Licensing Exam.

Note: Statistical significance indicated in bold.

<sup>a</sup>p-Values generated using Pearson's chi-square test for categorical variables and Kruskal-Wallis test for continuous variables.

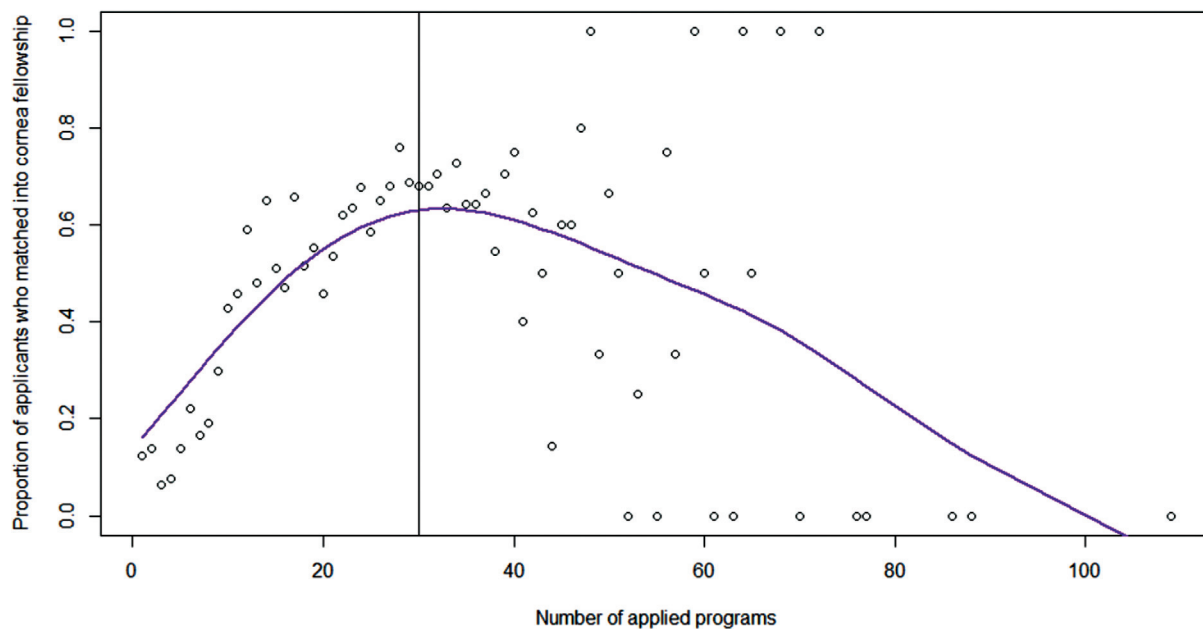
**Table 4** Multivariate logistic regression of factors associated with matching into cornea fellowship

Applicant characteristics	Odds ratio	95% Confidence interval	p-Value <sup>a</sup>
U.S. residency	6.15	(4.05, 9.35)	<0.001
Top 10 ophthalmology program	1.08	(0.65, 1.80)	0.777
Allopathic medical degree	1.64	(0.74, 3.62)	0.221
Number of applications distributed	0.97	(0.95, 0.98)	<0.001
Number of interviews marked completed	1.35	(1.29, 1.42)	<0.001
USMLE step 1 three-digit score	1.01	(0.99, 1.02)	0.34
USMLE step 2 three-digit score	1.00	(0.99, 1.01)	0.656
USMLE step 3 three-digit score	1.01	(1.00, 1.02)	0.081

Abbreviations: USMLE, United States Medical Licensing Exam.

Note: Statistical significance indicated in bold.

<sup>a</sup>p-Values generated using multivariable logistic regression. All covariates used are shown in the table above.

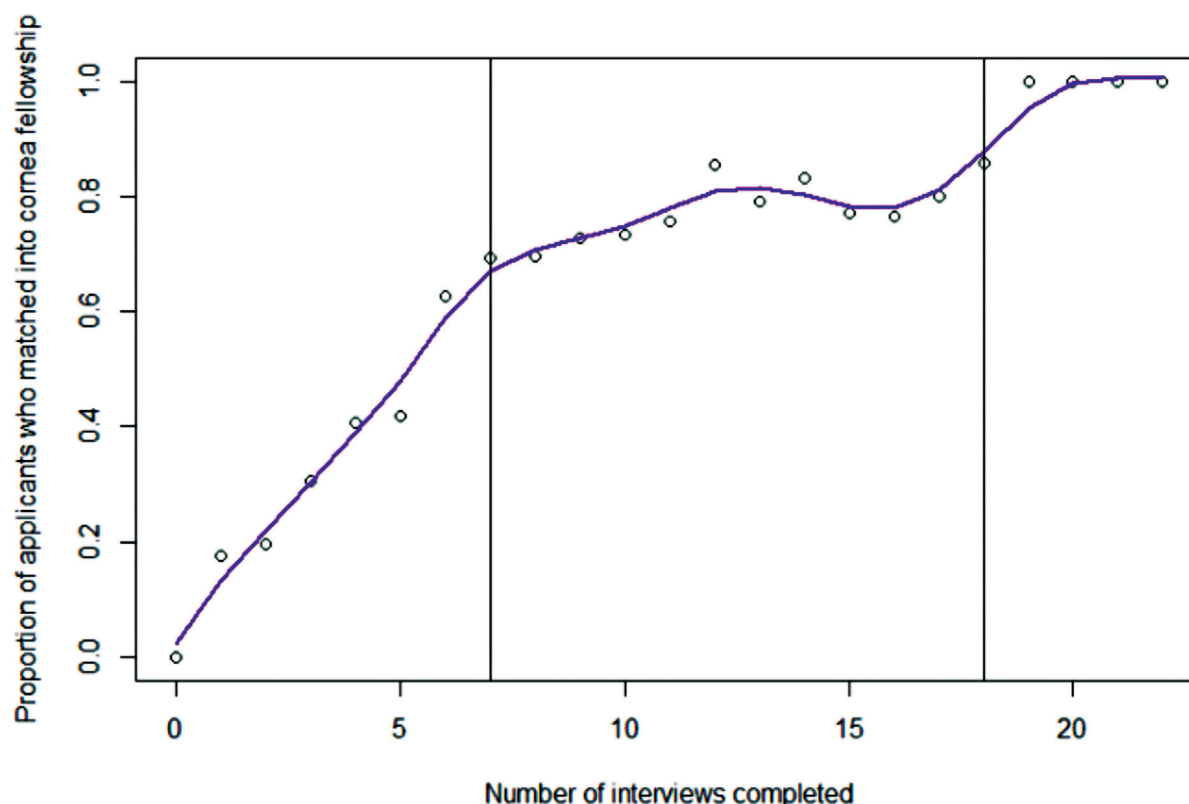
**Fig. 1** Proportion of applicants who matched into cornea fellowship during match cycles 2010 to 2017 for each number of applied programs.

This is likely indicative of stronger applicants applying to fewer programs. However, it is important to consider the strength of individual applications when counseling applicants to maximize their chances of receiving more interviews. Overall higher odds of matching with fewer applied programs likely suggest that stronger applicants feel more confident in their ability to match and, therefore, apply to fewer programs on average.

Although medical school location was not included as a covariate in our regression analysis due to collinearity with residency program location, IMG status is known to be associated with decreased odds of matching into any ophthalmology fellowship.<sup>3</sup> In 2015, IMGs comprised approximately 25% of the graduate medical education population and only approximately 5% of ophthalmologists.<sup>9</sup> Within ophthalmology, about one-third of matched pediatric oph-

thalmology and strabismus fellows were IMGs in 2013 to 2015, significantly more than all other ophthalmology subspecialties combined.<sup>10</sup> In our analysis of matched cornea fellowship applicants, only 3.1 to 11.9% were IMGs. The variation in IMG representation between ophthalmology subspecialties suggests that some subspecialties, like cornea, may be more competitive than pediatric ophthalmology and strabismus. An alternative, though less likely, hypothesis is that IMGs have an unusual preference for pediatrics and strabismus over other subspecialties. In support of the former hypothesis, one study found that cornea fellowship had the lowest percentage of vacancies of all ophthalmology fellowships over the last decade.<sup>3</sup> Given our finding that graduating from a U.S. residency program is associated with an increased likelihood of matching into cornea fellowship, it may be beneficial for IMGs interested





**Fig. 2** Proportion of applicants who matched into cornea fellowship during match cycles 2010 to 2017 for each number of interviews completed.

in subspecializing in cornea to pursue residency training in the U.S.

Interestingly, the rate of successfully matching into cornea fellowship was similar among applicants who graduated from a U.S. residency program (61.9%) and those who graduated from a top 10 U.S. residency program (64.0%). In addition, we did not find that graduation from a top 10 U.S. residency program increased an applicant's odds of a successful match. It is possible that applicants from top 10 U.S. residency programs may apply to more competitive fellowship programs which may account for similar match rates.

Despite the significant difference in USMLE scores between matched and unmatched applicants, scores were not associated with an increased likelihood of matching into cornea fellowship. Our findings are consistent with that of the prior study in which scores were not associated with an increased likelihood of matching into any ophthalmology fellowship.<sup>3</sup> This suggests that fellowship program directors place a greater value on other applicant qualities. Indeed, a 2009 survey-based study found that program directors for retina, cornea and external disease, and glaucoma fellowship programs valued the interview process, letters of recommendation from subspecialty faculty, and the ability to work and communicate with others above all other factors when selecting among applicants.<sup>7</sup> In addition, a 2009 survey of program directors for the American Society of Ophthalmic Plastic and Reconstructive Surgery-sponsored fellowships in the U.S. and Canada identified the same three criteria as most

important in aiding the selection of fellows.<sup>8</sup> Of 16 criteria ranked in order of importance, medical school performance, including USMLE scores, was ranked 9th, suggesting a low weight placed on USMLE scores at the fellowship level.<sup>8</sup>

To our knowledge, no other studies have used objective data to examine applicant characteristics associated with a successful cornea fellowship match. Strengths of this study include the large sample size and use of objective data from the SF Match. Limitations of the study include our inability to stratify unmatched applicants by the subspecialty to which they applied, exclusion of applicants who did not submit a formal fellowship application through the SF Match, our inability to comment on any causal relationships due to the cross-sectional nature of the data, and lack of data regarding unmatched applicants since SF Match does not provide data on what happened to those who did match due to confidentially reasons.

## Conclusions

This study used objective metrics to analyze trends in the number of participating cornea fellowship programs and positions and to describe applicant characteristics associated with matching into a cornea fellowship program. Over the last several years, the numbers of cornea fellowship programs and positions have increased. After controlling for potential covariates, factors associated with increased likelihood of matching into cornea fellowship included graduation

from a U.S. residency program and completing a greater number of interviews. Unlike applying to any ophthalmology subspecialty fellowship, applying to a greater number of cornea fellowship programs was associated with decreased odds of matching. The findings of this study may be informative for future cornea fellowship applicants and program leaders.

#### **Presentations**

None.

#### **Publications**

This submission has not been published anywhere previously and is not simultaneously being considered for any other publication.

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#### **Conflicts of Interest**

None declared.

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