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The Indelible Marks on Dermatology: Impacts of COVID-19 on Dermatology Residency Match using the Texas STAR Database

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Graduate Medical Education Rounds

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The Indelible Marks on Dermatology: Impacts of COVID-19 on Dermatology

Residency Match using the Texas STAR Database

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Abstract

With changes to interview format and away rotations, the COVID-19 pandemic has reshaped the residency application process. In this retrospective cohort study of data from the nationwide Texas Seeking Transparency in Applications to Residency (STAR) survey, we sought to understand how the pandemic has impacted applicants in the 2021 dermatology Match. We compared applicants in the “post-COVID-19” Match year (2021) to “pre-COVID-19” Match years (2018-2020) regarding match rates, interview costs, residency geographic connections, and number of interviews attended. A total of 439 dermatology applicants who completed the Texas STAR survey were included. There was no difference in percentage of applicants with a geographic connection to their matched program (43.88% vs. 47.20%). Compared to prior cycles, applicants in the 2021 Match attended a higher percentage of interview offers (96% vs 90%, $P < 0.0001$) and more applicants attended 16 or more interviews ($p=0.0489$). Applicants in the 2021 Match reported an average savings of \$5000 compared to prior cycles. Virtual interviews offer savings for applicants but may encourage interview hoarding. Though applicants did not perform away rotations, there was no increase in geographic connection for matched applicants. Stakeholders should consider these data when evaluating the pros and cons of virtual interviewing post-pandemic.

Introduction

The 2019 coronavirus disease (COVID-19) pandemic has transformed the residency application process. With in-person interviews moved to a virtual format, financial and logistical barriers to attending interviews are reduced. This raises a concern for “interview hoarding,” a phenomenon in which applicants attend a disproportionately large number of interviews. Without away rotations, students’ ability to establish meaningful relationships with faculty at other programs is limited.¹ Away rotations have been cited as a crucial opportunity for students to “audition” at programs outside their home institution and for programs to determine a candidate’s “fit” for the residency.^{2,3} Without this critical component, one might expect increased geographic connections between applicant and matched residency. Though this has not been shown in recent otolaryngology Match data, the implications of the pandemic on the dermatology Match are still unknown.⁴

In light of multiple changes to the application process during recent interview cycles, we sought to evaluate whether there were significant differences in interview distribution, geographic clustering, and application-related costs in the “post-COVID-19” Match (applicants matching in March 2021) compared to previous, “pre-COVID-19” cycles.

Methods

Sample

Data was collected from the Texas Seeking Transparency in Applications to Residency (STAR) database, a collection of nationwide self-reported information from residency applicants who applied to any residencies in the United States. Student affairs deans opt in to participate and invite fourth year medical students to complete the survey between Match day and April 10th of each application cycle. The only applicants unable to take the survey are those whose medical schools do not opt-in to participate.

Applicants included in the present study applied to dermatology residency programs and completed the Texas STAR survey between 2018 and 2021. The overall response rate for all applicants, regardless of specialty was 47% in 2018, 38% in 2019, 47% in 2020, and 40% in 2021.⁵ The number of participating schools has increased from 78 in 2018 to 123 medical schools in 2021.⁵ Exclusion criteria for different analyses included respondents who indicated matching but reported applying to 0 programs or attending 0 interviews as well as applicants who did not report any data in question, such as cost.

Texas STAR survey

The Texas STAR survey asks applicants to report information as it appeared on their residency applications, including board scores, academic achievements and extracurricular work. Respondents are also asked the number of interviews offered, interviews attended, matching status, geographic connection to programs, whether they completed an away rotation, virtual seminar attendance (2021 applicants only), as well as total application costs.

Data Analysis

Data were analyzed using Prism (GraphPad, version 9.3.1). The following statistical tests were used: Figure 1, Fisher’s exact test; Figure 2, Fisher’s exact test; Figure 3, Fisher’s exact test.

Results

A total of 439 dermatology applicants responding to the Texas STAR survey met inclusion criteria. This total represents 98.6% of all survey respondents applying to dermatology and includes 332 applicants in 2018-2020 and 107 applicants in 2021.

Matched applicants

In the Texas STAR data sample, there were significantly more applicants who successfully matched into dermatology in 2021 compared to the three previous application cycles (93.46% vs. 85.24%, $p=0.03$) (Fig 1). Importantly, this data only reflects the applicants who self-selected to complete the survey and does not reflect national match statistics.

Geographic connection

Respondents were asked to report if they have a geographic connection, via family or institution, to the program to which they matched. There was no significant difference in percentage of applicants with a geographic connection to their matched program in the 2021 Match compared to the 2018-2020 Matches. (43.88% vs. 47.20%, $p=0.6390$) (Fig 2).

Distribution of interviews

Applicants reported the number of interviews they attended. When considering the total number of interviews attended, regardless of matched status, there was a significant difference in the distribution of number of interviews attended in pre- vs post-COVID-19 cycles ($p=0.0494$) (Fig 3).

In 2019-2020, 9.7% of applicants interviewed at 16 or more programs, whereas in the 2021 Match, 18% of applicants interviewed at 16 or more programs ($p=0.0489$). Additionally, in 2021 applicants attended a larger percentage of interviews offered compared to 2019-2020 (96.4% vs. 90.0%, $P < 0.0001$).

Interview costs

Applicants were asked to report the total interview costs (within a \$500 range). Cost data is available for 2019, 2020 and 2021. Of the 346 dermatology responses for these years, 338 reported total costs associated with the application cycle. The cumulative costs for 2019-2020 applicants were much lower than for 2021 applicants ($P < 0.0001$). The median cost interval range in the 2021 Match was \$2000-2499, whereas for the 2019-2020 cycles it was \$7000-7499.

Discussion

With a shift towards virtual interviews and away from in-person experiences, various stakeholders are concerned about how residency applications and matching opportunities may be affected by the COVID-19 pandemic. Examining the changing Match data can help guide residency application policies, as discussions are ongoing regarding interview caps, preference signaling, and away rotation recommendations for the 2022-2023 application cycle and beyond.⁶ Despite COVID-19-related travel and away rotation limitations, there was no significant change in the rate of reported geographic connections between applicants and their matched programs in the present data. There was, however, a greater percentage of interview offers attended and a higher number of applicants attending 16 or more interviews in the 2021 Match, indicating that “interview hoarding” in the virtual landscape may limit interview opportunities for less traditionally competitive applicants.

It comes as no surprise that virtual interviews are associated with decreased costs compared to in-person interviews; our data shows an average savings of \$5,000 for per applicant upon switching to virtual interviews, potentially eliminating a barrier for those with limited resources. These data depict the potential advantages and disadvantages of virtual versus in-person interviews. Virtual interviews provide substantial cost savings, but introduce a maldistribution in interview attendance, with both of those factors potentially leading to inequities amongst applicants.

Stakeholders will need to balance these advantages and disadvantages in future guidance on the format of interviews.

Limitations to our study include the self-reported nature of the Texas STAR data, with only 38-47% of all residency applicants completing the survey during the years included in this study. However, our findings have been congruent with that of other studies; an orthopedic residency study found that virtual interviews reduce applicant costs by an average of \$6,311.⁷ Additionally, studies using data from the Association of American Medical College Residency Explorer tool and online platforms such as Reddit have not found a significant increase in geographic connections within the dermatology Match.^{8,9}

Conclusions

This retrospective cohort study quantifies the substantial cost savings for applicants with the use of virtual interviews for the dermatology Match, but suggests that these changes may encourage “interview hoarding” and introduce new inequities for applicants. As discussions on further

application reforms are ongoing, we hope that our data and that of future studies will inform evidence-based decision making to improve the application process for applicants and programs alike.

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Figures

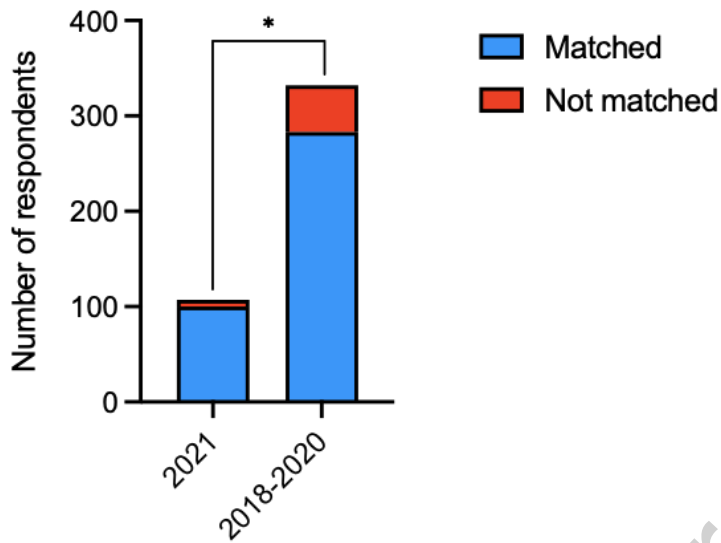


Figure 1: Total and matched survey respondents in 2021 Match year vs 2018-2020 Match years ($p=0.0296$, Fisher's exact test). 2021 data exclude 3 matched applicants who reported attending 0 interviews. 2018-2020 data exclude 3 matched applicants who reported attending 0 interviews.

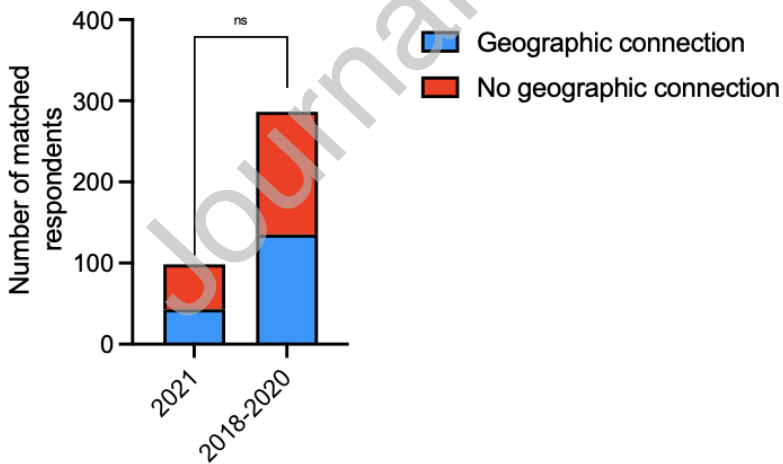


Figure 2: Reported geographic connection for matched survey respondents in 2021 Match year vs 2018-2020 Match years ($p=0.6390$, Fisher's exact test)

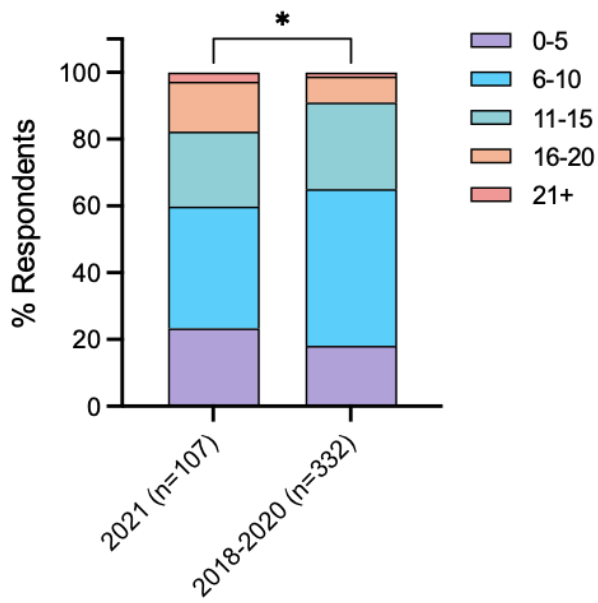


Figure 3: Distribution of reported interviews attended in pre- vs post- COVID Match cycles. All tests of significance were calculated using absolute values, shown as percentages. Combined interview attendance distribution by percentage, $p=0.0494$ (Fisher's exact test)