Trends in dermatology resident applicant experience and training time in the United States, 2015-2020

To the editor: Medical schools have launched programs to reduce students' length of training and debt burden, such as 3-year "accelerated" pathways and tuition exemptions.[1,2] However, little has been reported regarding the trends that may extend medical school training for students applying to dermatology, which is a competitive specialty for both US and international medical students. The aim of this study was to evaluate the trends in medical school training time for dermatology applicants.

Data were collected using Electronic Residency Application Service applications for interviewees at the Penn State College of Medicine Dermatology Residency Program between 2015 and 2020. The length of time in medical school was calculated using the difference between applicants' projected graduation and matriculation dates. Interviewees who spent more than 4 years in medical school and were not MD/PhD candidates were denoted as "nontraditional" applicants. Total research output was defined by the sum of publications, abstracts, and presentations. Regression analysis was used to determine if differences in years of medical training was correlated with the variables within the dataset.

The average training time of dermatology interviewees increased from 4.7 to 5.4 years ($P = .08$). Excluding the MD/PhD interviewees, the average length of time in medical school fluctuated between 4.3 and 4.5 years ($P = .80$). The percentage of interviewees that took more than 4 years to graduate from medical school increased from 40% to 63% ($P = .20$). Within the total interviewee pool, the percentage of MD/PhD interviewees increased from 6.7% to 25%. Excluding the MD/PhD interviewees, the percentage of "nontraditional" interviewees also increased from 36% to 50% ($P = .74$) (Table I).

Over the same period, interviewees' average research output grew from 13.2 to 29.4 ($P < .001$), an increase of 122% in 6 application cycles (Fig 1). Regression analysis showed that total research output, research experiences, work experiences, and volunteering experiences showed a positive correlation with the length of time in medical school, and Step 1 score was negatively correlated ($P < .05$ for all).

Table I. Descriptive statistics of dermatology interviewees per application year

Applicant characteristic	2015	2016	2017	2018	2019	2020
Total number of interviewees	30	32	27	40	35	40
% Female (n)	60 (18)	63 (20)	59 (16)	68 (29)	54 (29)	58 (23)
Average age at time of application, y (SD)	26.2 (1.6)	27.5 (2.4)	27.3 (1.8)	27.5 (3.3)	28.1 (3.7)	29.1 (3.8)
Average Step 1 score (SD)	244 (14.7)	246 (12.9)	250 (12.1)	246 (13.6)	248 (17.0)	244 (11.6)
Average number of research experiences (SD)	5.1 (3.2)	5.1 (3.9)	4.6 (2.2)	5.4 (3.1)	5.3 (2.8)	7.2 (4.3)
Average number of work experiences (SD)	2.8 (2.2)	2.9 (1.9)	2.8 (1.6)	2.4 (1.9)	3.9 (2.6)	3.5 (2.6)
Average number of volunteering experiences (SD)	10.2 (4.4)	10.1 (4.4)	8.0 (3.7)	8.7 (4.3)	8.7 (5.3)	10.2 (4.0)
Average total research output across all interviewees (SD)	13.2 (9.3)	14.6 (10.5)	11.1 (6.7)	17.0 (12.0)	20.5 (10.2)	29.4 (25.2)
Average total research output excluding MD/PhD (SD)	12.8 (9.5)	14.3 (10.9)	10.4 (6.2)	15.3 (11.9)	19.9 (10.8)	27.8 (28.3)
Average years in medical school training across all interviewees (SD)	4.7 (1.3)	4.5 (1.0)	4.7 (1.2)	5.2 (1.7)	5.3 (1.9)	5.4 (1.7)
Average years in medical school training excluding MD/PhD (SD)	4.4 (0.6)	4.3 (0.5)	4.4 (0.6)	4.5 (0.7)	4.4 (0.6)	4.5 (0.5)
Percentage of all the interviewees who are MD/PhD (n)	6.7 (2)	6.3 (2)	7.4 (2)	20.0 (8)	22.9 (8)	25.0 (10)
Percentage of all the interviewees who are "nontraditional" (n)	33.3 (10)	28.1 (9)	33.3 (9)	30.0 (12)	28.6 (10)	37.5 (15)

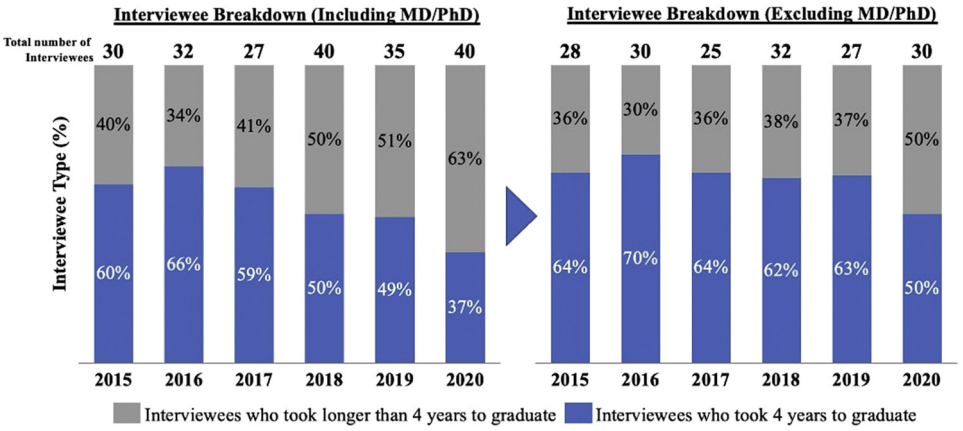

Fig 1. Percentage of interviewees by length of training in medical school per application year.

This study allows program directors to better understand the dermatology applicant pool. Evaluation of work, volunteering experiences, and personal statements are subjective in nature. Because of competition and subjectivity of some Electronic Residency Application Service metrics, students may improve their profiles with additional years to conduct research and pursue work or volunteering experiences,[3] especially in light of a lower Step 1 score. It is worth investigating whether this trend will continue as the United States Medical Licensing Examination (USMLE) Step 1 switches to a pass/fail scoring system in 2022. Furthermore, because research fellowships and graduate degrees are often unpaid or require tuition, an increase in training time may hinder recent progress on lowering debt and deter the students from lower socioeconomic backgrounds from entering dermatology.[4]

Although our study was limited to a single institution, dermatology applicants apply to over 50 programs on average,[5] which suggests that our institution may have received a representative sample of all the applicants. This study leads to further questions, such as whether increasing years of medical school training is a means to an end and what role do the leaders in dermatology play in this trend. Further evaluation is needed to determine whether similar trends are occurring at other institutions and in other specialties.

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Funding sources: None.

IRB approval status: Reviewed and approved by Pennsylvania State University IRB (approval #00013818).

Key words: general dermatology; medical education.

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Conflicts of interest

None disclosed.

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https://doi.org/10.1016/j.jdin.2022.03.001