

Prioritization of Diversity During the Residency Match: Trends for a New Workforce

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ABSTRACT

Background The medical community has been paying increasing attention to diversity. Nascent research suggests that the physician workforce may be experiencing value shifts in this area.

Objective This study aims to understand how residency applicant perspectives toward diversity may be evolving.

Methods The National Resident Matching Program surveys all applicants regarding factors they consider important when ranking residency programs. Survey data from 2008–2017 were analyzed for changes in respondent perceptions of cultural, racial, and ethnic diversity of geographic location (*geographic diversity*) and cultural, racial, ethnic, and gender diversity at the destination institution (*institutional diversity*). We calculated weighted averages and visualized: percentage of respondents citing diversity as a factor when applying for interviews; and mean applicant ratings of diversity when ranking programs, using a 5-point scale (1, *not important*, to 5, *extremely important*).

Results Respondents at 5 time points ranged from 13 156 to 16 575, with response rates from 42.4% to 58.5%. Between 2008 and 2017, the percentage of applicants citing diversity as a consideration when applying to interview increased from 27.8% to 33.2% for geographic diversity and from 22.3% to 33.8% for institutional diversity. Applicants' mean ratings of importance of diversity when ranking programs increased from 2.7 to 4.2 for geographic diversity and from 2.4 to 4.2 for institutional diversity.

Conclusions Over the past 9 years and across specialties, a growing percentage of applicants are considering geographic and institutional diversity when applying to interview at residency programs. Applicants report that both forms of diversity are increasingly important when ranking programs.

Introduction

The demand for diversity in medicine originates from and influences both the patient and the provider sides of care. Racial, ethnic, and cultural minorities, who represent a growing portion of the United States, have been shown to experience unequal health care outcomes.¹ Furthermore, African Americans, Hispanic Americans, and American Indians constitute over 25% of the population but only 6% of physicians, 9% of nurses, and 4.2% of medical school faculty.² This disparate workforce may reinforce health inequities by providing health care to minorities that is lower quality and less culturally competent.^{3–5} In response, medical institutions have developed research and policies for selecting and training more representative trainee and faculty provider populations.^{6,7}

Scant research has examined whether residency applicants' attitudes toward diversity are changing. Recent studies suggested that incoming generations of physicians might be experiencing value shifts around diversity, broadly defined as the inclusion of

individuals who belong to underrepresented groups (eg, gender, age, cultural, racial, and religious minorities, as well as people with disabilities). Studies within medical schools have found that students strongly support incorporating issues of diversity into education.^{8–10} Research has also made intergenerational distinctions, finding that resident physicians were more comfortable than faculty members in addressing sociocultural diversity in medicine.¹¹ This study expands on this research by investigating residency applicants' attitudes toward diversity, particularly as they influence early career decision-making. Through the review of surveys from the National Resident Matching Program (NRMP), this report examines how residency applicants' perspectives on diversity may be evolving.

Methods

We collected data from reports released by the NRMP, based on surveys of applicants who participated in the residency match that the organization has conducted since 2008 (biannually since 2009). The NRMP Applicant Survey, which is distributed in the 18 days between the Rank Order List Certification Deadline and Match Week, elicits information on factors applicants consider during the matching process. Specifically, after being presented with a list

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Editor's Note: The online version of this article contains the percentages of residency applicants citing diversity as a factor in selecting programs and residency applicants' mean importance ratings of diversity in ranking programs.

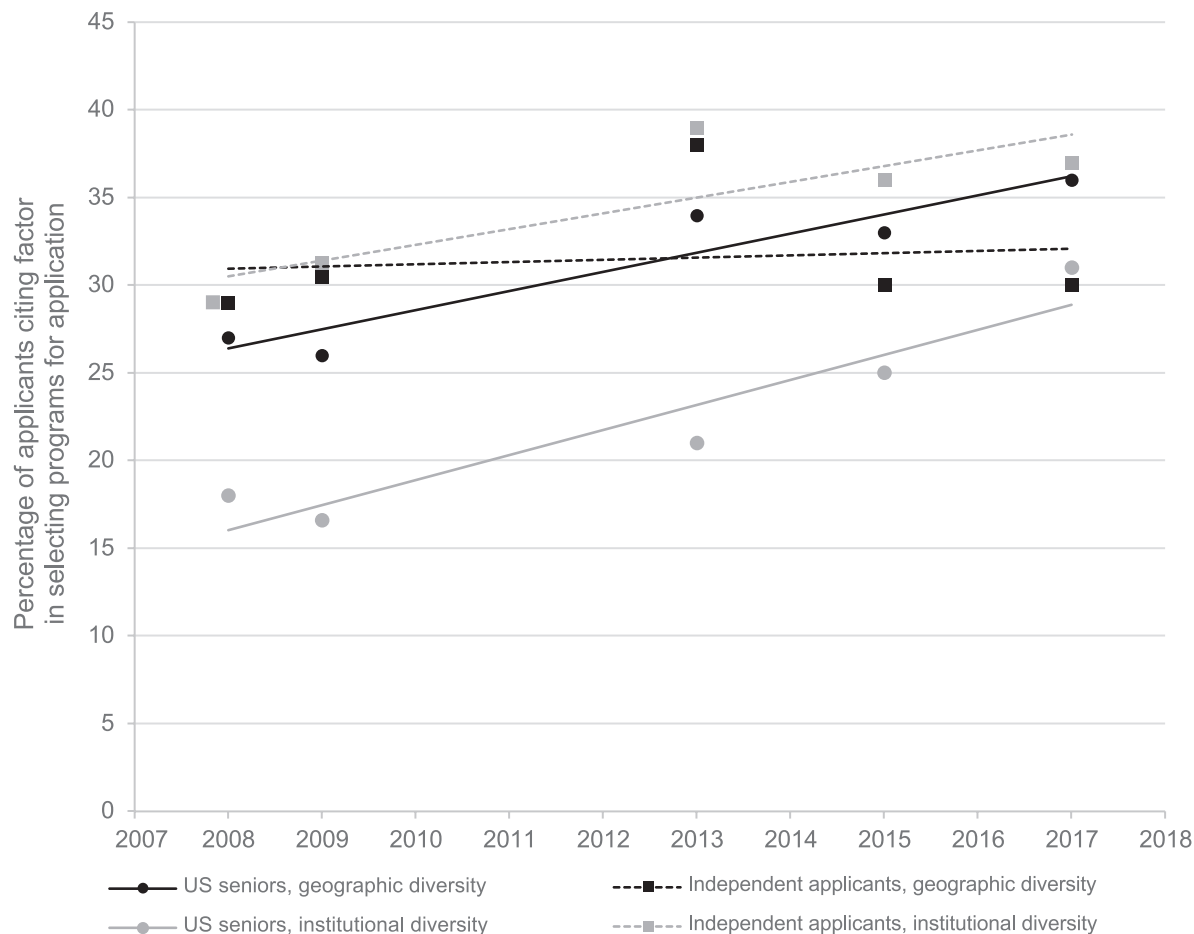


FIGURE 1
Percentages of Applicants Citing Factor in Selecting Programs for Application

of 26 to 45 factors, respondents indicated if they considered each factor when selecting programs for application. If so, they rated the importance of that characteristic in creating their rank-order list using a 5-point scale (1, *not important*, to 5, *extremely important*). Among these factors, we examined cultural, racial, and ethnic diversity of the geographic location (*geographic diversity*), and cultural, racial, ethnic, and gender diversity of staff at the target institution (*institutional diversity*).

These ratings, which were reported by specialty and in aggregate, were entered and parsed by applicant subgroup: US allopathic medical school students (*US seniors*) and all other applicants, including graduates of international and/or osteopathic medical schools (*independent applicants*). First, we examined data across all specialties. We combined US senior and independent applicant data, weighting averages by the number of respondents within each group. These were calculated for each year's response rates and the percentages of applicants citing diversity and mean importance ratings for both diversity measures.

Second, we visualized data points describing subgroup data using scatterplots. Using the least squares method of regression, we then fit linear trend lines to demonstrate general directional movement over time. Finally, specialty-specific data were organized into tables.

Results

Data were collected from all years available, including 2008, 2009, 2013, 2015, and 2017. Although the NRMP conducted the Applicant Survey in 2011, these results were excluded because the report was not uniform with the rest of the series. Response rates ranged from 42.4% to 58.5% of the total applicant pool, with participants numbering, respectively, 16 058, 13 156, 16 575, 16 500, and 15 246.

Respondents rated diversity with increasing importance between 2008 and 2017. During this time, the rate of applicants applying to interviews and considering geographic diversity grew from 27.8% to 33.2%, and the rate considering institutional diversity

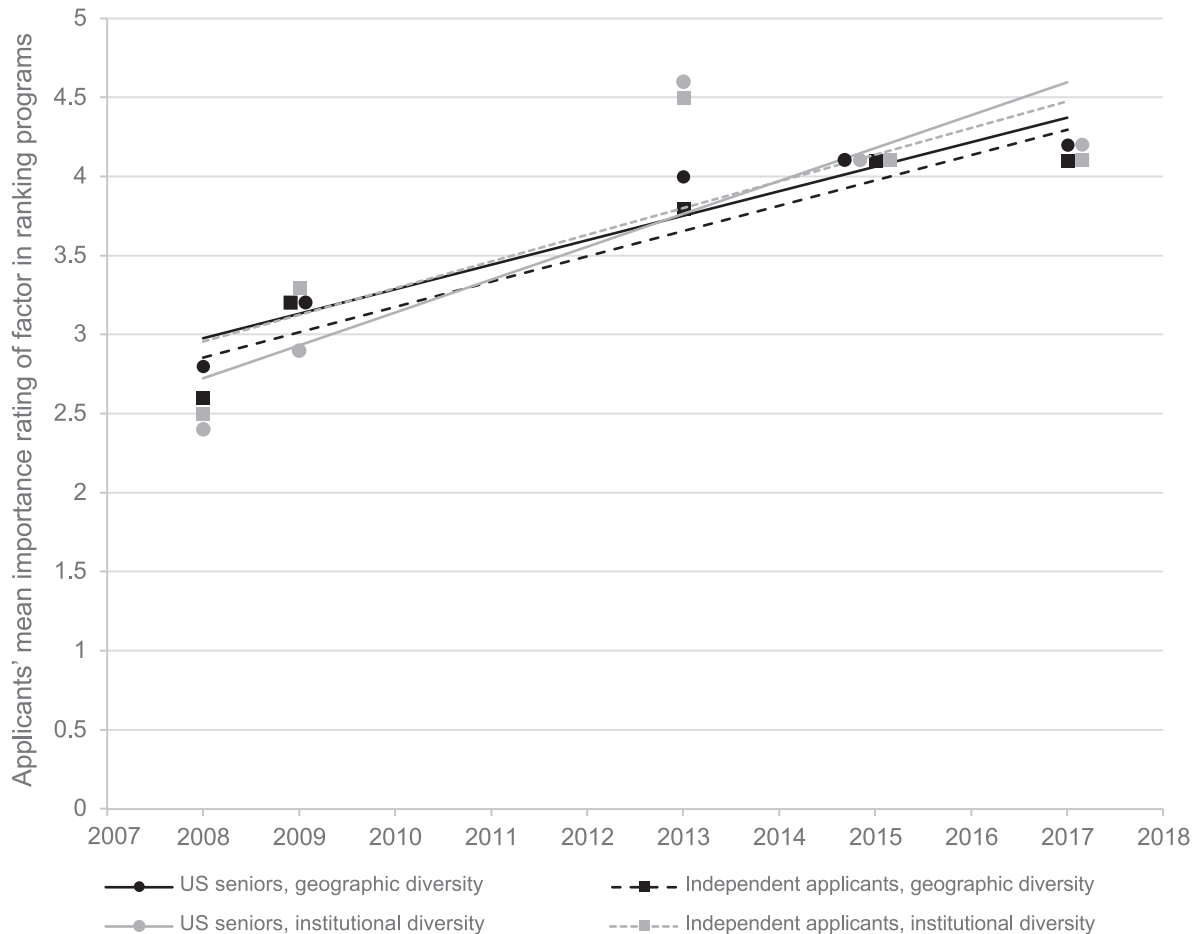


FIGURE 2
Applicants' Mean Importance Rating of Factor in Ranking Programs

grew from 22.3% to 33.8%. As shown in FIGURE 1, the percentage of US senior and independent applicants who cited diversity as a factor in selecting programs has generally risen over time. Only the rate of independent applicants citing geographic diversity has remained relatively level. Furthermore, applicants' 5-point ratings of the importance of diversity during ranking rose during this period: geographic diversity from a mean of 2.7 to 4.2 and institutional diversity from a mean of 2.4 to 4.2. FIGURE 2 demonstrates how applicants' value judgments of diversity have increased within each subgroup. The online supplemental material includes these data by specialty for both the percentages of residency applicants citing diversity as a factor in selecting programs and residency applicants' mean importance ratings of diversity in ranking.

Discussion

This analysis of NRMP residency applicant survey data from 2008 to 2017 reveals that applicants,

regardless of specialty or school type, reported an increase in the importance of geographic and institutional diversity when selecting and ranking programs for the Match. Prioritization of diversity has typically grown within each specialty, regardless of baseline.

While the medical field has acknowledged the importance of diversity, prior studies have not mapped out its perceptions across generations of physicians nationwide. Previous research has found that diversity-related variables may influence medical students' specialty choice and residency program rankings^{12–14} as well as work settings.⁵ These findings suggest that students, residents, and physicians are considering diversity climates in making career decisions. Residency applicants appear to consider diversity not only within their institution but also in the greater environments within which they work and in the patient populations they serve. To our knowledge, this study is the first to examine a large national residency applicant group for reported perspectives regarding diversity over time.

The use of secondary data inherently limits the conclusions drawn. We used publicly accessible reports to describe broad patterns but could not test or conduct more finely grained analyses given proprietary primary sources. Accordingly, these findings are made at the group level and do not speak to the characteristics of individuals. Furthermore, response rates averaged 48.1% across time points. Although the survey items did not focus exclusively on diversity, applicants who more actively considered such factors in decision-making may have self-selected into participation. Finally, the NRMP data reports did not specify question directionality. Accordingly, it is possible that some applicants who rated diversity highly as a factor of consideration sought out less (rather than more) diversity.

Future studies may focus on obtaining and analyzing primary quantitative data to identify associated factors. One potential line of inquiry could explore the exception to the positive trends evinced in our data: the percentage of independent applicants (those who are not US allopathic medical school students) citing geographic diversity as a factor in applying to interview has not increased considerably over time. Researchers could also parse and drill into different forms of diversity (eg, spirituality and thought) and include qualitative methods. Notably, the term *diversity* can be variably defined (eg, the dual dimensions of geographic and institutional diversity in this dataset). Given that such differences can complicate measurement and affect comparison across studies, researchers should continue specifying the operationalization used.

Conclusion

Over the past 9 years and across specialties, a growing percentage of applicants are considering geographic and institutional diversity when applying to interview at residency programs. Applicants report that both forms of diversity are increasingly important when ranking programs.

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