

What Is Your Name and Where Are You Going? The Distribution of Non-Common Names Among 2024 United States Residency Match Specialties

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Abstract

Background: First names have been studied as an indicator of an individual's background, and have been shown to have associations with socioeconomic status and discriminatory practices. There are many studies in the literature that demonstrate discrimination against traditionally black names and studies have shown some names can be predictive of socioeconomic status independent of race.

Objectives: To determine the prevalence of non-common names among Matched applicants of different specialties.

Methods: In this observational study 2024 United States Residency Match lists (from 18 institutions from 14 different states) were obtained through convenience sampling, and a total of 2378 Matched applicants were identified. Match participant names were compared with the 200 most common names (according to the Social Security website) of three consecutive decades from the 1980s through the 2000s to cover the expected birth years of the applicants in the 2024 residency Match cycle, and designated as common or non-common. The frequency of non-common names was reported by specialty.

Results: Of the 2378 Matched applicants, 1023 (43.0%) of which had non-common names. Non-common names were significantly over-represented in internal medicine (47.8% non-common, $p=0.023$), general surgery (51.8% non-common, $p=0.032$), and dermatology (56.5% non-common, $p=0.062$). They were significantly under-represented in pediatrics (35.9% non-common, $p=0.041$) and orthopedic surgery (34.1% non-common, $p=0.079$).

Conclusion: This study establishes a novel, easily replicable metric that may serve as a baseline for tracking diversity trends across medical specialties over time.

Keywords: Cultural Diversity; Internship and Residency; Workforce Diversity

Background

When I was applying for residency in the United States as an international medical graduate, I was told to apply wide- even to apply for all of the programs if I could afford it. But if I could not, I should skip the programs that would not take me. Those programs were not necessarily the best programs though. So how could I identify them? *Open the website, look at the residents' names. You will know which ones will not take you. You can skip those.*

Surely, I can't have been the only one who had this experience. I made a game of it. I took great institutions, one subjectively diverse, one subjectively not very diverse. I would have people read me the first names of the residents from random years and disciplines: the PGY 2 psychiatry residents, the PGY 3 urology residents, the internal medicine interns, the graduating class

pathology residents: take your pick. Reading the first names only, I would tell you with perfect accuracy which program was from which institution. The first names seemed to be some indicator of diversity.

We know from the literature that names carry information (1). A well-studied phenomenon is how traditionally black names are discriminated against, usually done by submitting identical applications or CVs with different names and measuring the impact of the names themselves (2-6). Figlio (6) described factors associated with low socioeconomic status independent of race in traditionally Black names. Could names also be an indication of cultural diversity?

This study aims to determine if the frequency of non-common names among matched applicants varies significantly across US residency specialties.

Objectives

To determine the prevalence of non-common names among Matched applicants of different specialties.

Methods

The Social Security website provides a database of the 200 most common names from each decade (7). The most common names for boys and girls from the 1980s, 1990s, and 2000s were collected from the website and the redundancies were removed resulting in a list of 499 discrete names from the three decades. Names that appeared in the resulting database were designated as “common”. These decades were selected to cover the expected birth years of the applicants in the 2024 residency Match cycle.

All available US medical school Match lists that were posted online in a format from which data could be extracted were included in the study. Many of these Match lists from various institutions were found on the Student Doctor forum (8) in addition to Google search results of the term “match list”. Since the data were extracted from US medical school Match lists, no international medical graduates were included. Despite the fact that all Match lists that were found were used in the study, the convenience sampling was a major limitation which may have skewed the data.

The first names of the Match applicants were subsequently compared to the database of common names and each name was designated as common or non-common, based on whether it appeared on the list exactly. This comparison was case sensitive. The gender of the names was not included in analysis, so as long as the name of the applicant matched the name on the common name list, it was considered common, even if the gender was mismatched.

Findings were reported by residency specialty and a Chi-square test [using the Social Science Statistics online Chi-Square calculator (9)] was used to determine significantly different levels for each category (individually compared to all others) that had at least 40 samples, between the frequency of common and non-common names within that category. Essentially, each specialty was divided by those who matched into it versus those who did not and was stratified based on whether their name was common or non-common. Significance was set at $p < 0.05$. The expected frequency for each Chi-square test was the proportion of non-common names among the Matched applicants in all other specialties. The Chi-square test results are, however, exploratory and uncorrected, and should be interpreted with caution. When both a preliminary position and a categorical position was reported, the categorical position was considered only.

Results

2024 Match lists from 18 institutions from 14 different states were analyzed, accounting for 9.2% of all Matched MD and DO senior medical students based on the NRMP results and data report (10). These institutions include a variety of institutions including high tier academic centers, as well as lower tier programs. A total of 2378 Matched applicants were identified, 1023 (43.0%) of which had non-common names.

The most common names among medical students were Matthew (28), Sarah (24), and Emily (24). Among non-common names, Madeleine (8) was the most frequently occurring, followed by Saad (4) and Harrison (4).

The frequency of common and non-common names of the Matched applicants by state of their medical school is shown in Table 1.

The frequency of common and non-common names of the Matched applicants by the specialty they matched into is shown in Table 2.

Uncorrected p-values suggested an over-representation of non-common names in internal medicine, general surgery, and dermatology and under-representation in pediatrics and orthopedic surgery. Preliminary positions (medicine, surgery, and transitional) were all among the categories that had a smaller number of Matched applicants ($N < 40$). A number of categories had less than 5 Matched applicants, which are shown in aggregate as “other” in Table 2. These positions included Internal Medicine-Psychiatry, Oral and Maxillofacial Surgery, Child Psychiatry, Neurodevelopmental Disabilities, Psychiatry-Family Medicine, and Triple Board.

Three of the names in our study (0.1%) met the criteria described by Figlio (6) that denoted names associated with low socioeconomic status. They matched into internal medicine, pathology, and radiology.

Discussion

The frequency of names may represent something about a person and their culture. It is unclear exactly what though. Names have been used many times in lieu of ethnicity when needed, in many cases with success (11). Non-common names are a heterogeneous group, including people from ethnic minorities, but also names of celebrity children such as Apple, North, and X Æ A-12. Of course, the most prevalent non-common names would actually be those that rank just above 200 for each decade- most would be names that would not be associated with non-white ethnic minorities. For example, in 2024, the 201st through 210th most common names for girls were Haven, Scottie, Gemma, Ana, Tatum, Arabella, Lila, Molly, Stevie, and Blake and for

boys were Bentley, Zayden, Messiah, Abraham, Alex, Adonis, Kaiden, Timothy, Knox, and Tate (7). This is the limitation of looking at names as measure of diversity. This limitation may of course be addressed to some extent by further subcategorizing the names into ethnic groups. Just as we have done with traditionally Black names, we could also look into how Arabic names, East Asian names, South Asian names, and Latin names perform differently. The strength is that it cannot be easily manipulated, so if it is an indicator of something, it can be easily compared between groups and time points. Names are not easily changed and they are relatively objective and less subject to misreporting.

Using the same methodology it was previously shown that non-common names constituted 32.2% of radiology residents that were US graduates and were PGY 2 (R1) in 2013, 31.8% in 2014, 31.7% in 2015, and 32.0% in 2016. (12) In our study 43.7% of those Matched in radiology in 2024 had non-common names. If this figure is representative, that is the proportion expected to be PGY 2 in 2025. In isolation, not much can be said, maybe non-common names are trending toward popularity, but between groups and throughout time, maybe it does.

There are many limitations to this brief study. The data was heterogeneous and coming from different sources. Not all programs had the names of their Matched students, and others had limited information. It is after all possible that school with lower Match rates or Match lists that may be less impressive than their prestige from brand name alone may avoid publishing their Match lists, and this in turn may skew the data. While the institutions included high tier academic centers as well as lower tier programs, the access sampling cannot ensure that the sample represents the entire pool of applicants in the residency Match. My hope is that for future years, this information can be obtained from the NRMP directly to provide a complete unbiased dataset. In addition, non-common names may be associated with other things such as city-dwelling, as the medical schools from New York had a much higher rate of non-common names than other states, followed by a distant second California, and non-common names were least frequent in Iowa, Nebraska, and Oklahoma. It is also recognized that the states with larger cities are inherently more diverse with higher immigration rates. These states also demonstrate a larger variety in the types of medical education institutions available. Another direction that may help is subcategorizing the names by ethnicity or geographic origin to differentiate the underlying reasons for non-common names.

A statistical limitation is also present. When accounting for the number of analyses performed, if a Bonferroni correction or False Discovery Rate is used, none of the categories fall into statistically significant territory. This is important in that possibly there are not as many differences among specialties as there may seem and thus, the most important finding may be establishing a benchmark to compare with other years.

Conclusion

No real conclusions can be drawn at the time from this report, although it provides a baseline from which further research can be performed as to whether the frequency of non-common names can be any indicator of diversity. The numerous limitations of the current study are noted in the discussions section, but it is not difficult to imagine future studies that could easily include entire databases and thus remove some of the sampling bias. In addition, comparisons through time could provide interesting information about how trends form and change.

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Conflict of interests: There is no conflict of interest.

Ethical approval: Only publicly available data were used for this study. No patient information was used and no intervention was performed.

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Table 1. The frequency of common and non-common names among the Matched applicants by state of the medical school

State	Common	Non-common	Total	Percentage of Non-common Names
New York	154	237	391	60.6
California	162	143	305	46.9
Alabama	149	94	243	38.7
Minnesota	144	84	228	36.8
Nebraska	107	56	163	34.4
Iowa	102	48	150	32.0
Virginia	79	55	134	41.0
Pennsylvania	76	57	133	42.9
Oklahoma	86	46	132	34.8
Ohio	73	53	126	42.1
Rhode Island	75	47	122	38.5
Florida	57	48	105	45.7
Illinois	49	29	78	37.2
North Dakota	43	26	69	37.7
Total	1356	1023	2379	43.0

Table 2. The frequency of common and non-common names among the Matched applicants by residency specialty

Specialty	Common	Non-common	Total	Percentage of Non-common Names	p-value ¹
Internal Medicine	246	224	470	47.8	0.023
Family Medicine	128	90	218	41.3	0.587
Emergency Medicine	117	81	198	40.9	0.531
Pediatrics	118	66	184	35.9	0.041
Anesthesiology	85	69	154	44.8	0.644
Psychiatry	81	63	144	43.8	0.856
General Surgery	66	71	137	51.8	0.032
Gynecology and Obstetrics	85	49	134	36.6	0.121
Diagnostic Radiology	58	45	103	43.7	0.890
Orthopedic Surgery	60	31	91	34.1	0.079
Neurology	42	23	65	35.4	0.207
Ophthalmology	36	26	62	41.9	0.863
Internal Medicine-Pediatrics	29	18	47	38.3	0.509
Dermatology	20	26	46	56.5	0.062
Urology	26	18	44	40.9	0.775
Otorhinolaryngology	29	14	43	32.6	0.162
Preliminary, Surgery	17	21	38	55.3	
Physical Medicine and Rehabilitation	15	13	28	46.4	
Pathology	18	10	28	35.7	
Preliminary, Medicine	16	11	27	40.7	
Preliminary, Transitional	14	10	24	41.7	
Plastic Surgery	10	11	21	52.4	
Neurosurgery	7	7	14	50.0	
Child Neurology	8	5	13	38.5	
Radiation Oncology	3	8	11	72.7	
Interventional Radiology	7	4	11	36.4	
Vascular Surgery	3	4	7	57.1	
Thoracic Surgery	5	2	7	28.6	
Other ²	6	3	9		
Total	1355	1023	2378	43.0	

¹Chi-square; ²Including Internal Medicine- Psychiatry, Oral and Maxillofacial Surgery, Child Psychiatry, Neurodevelopmental Disabilities, Psychiatry-Family Medicine, and Triple Board