



Applicant Characteristics for a Successful Plastic Surgery Match

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Introduction

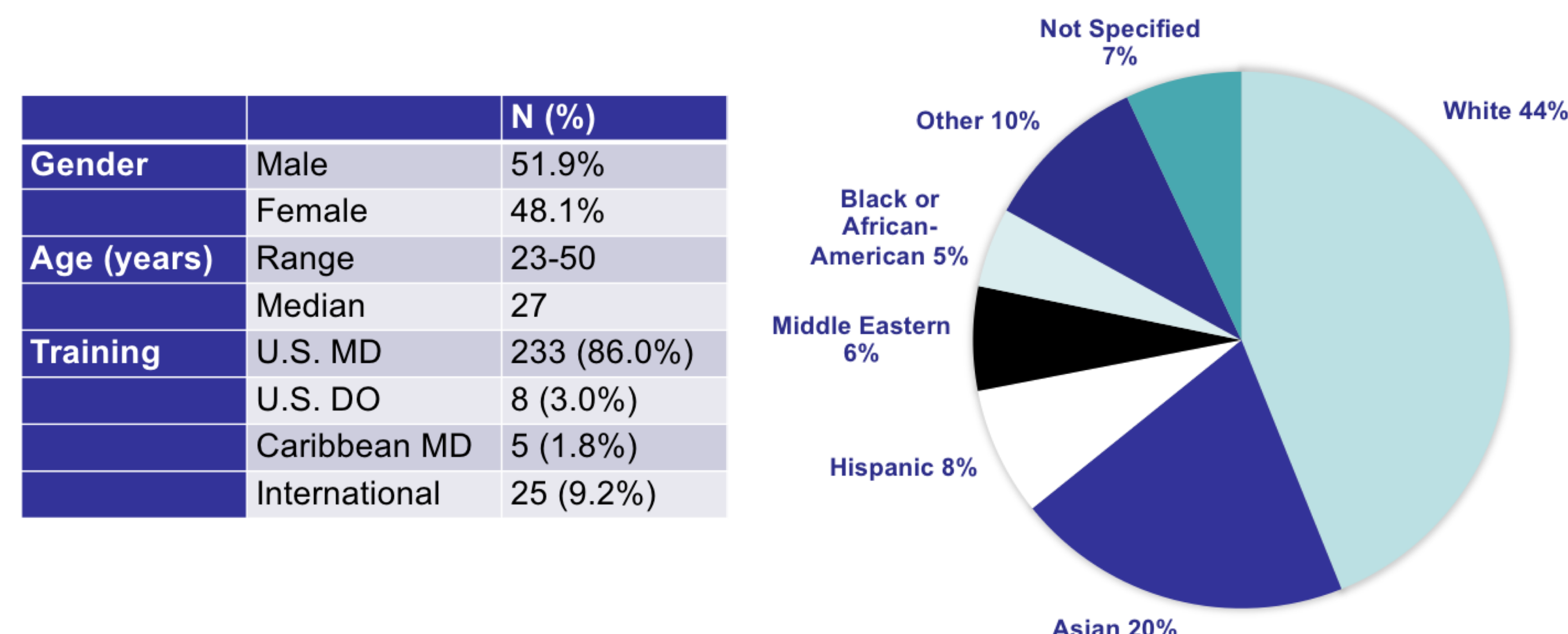
- Plastic Surgery is often one of the most competitive specialties in the National Resident Matching Program (NRMP) residency match
- In 2020, 282 applicants applied for 180 positions
 - 165 of 229 U.S. final year MD students matched (72.1% match rate)
 - This was the specialty with the lowest match rate in 2020
- Medical students may seek to improve their application through a variety of means, such as pursuing research or taking a gap year
- Objective of this study is to understand the importance of these factors

Methods

After IRB approval, data was collected from applications submitted to the Johns Hopkins / University of Maryland combined PRS residency program in the 2020-2021 application cycle. Public information gathered from the Internet include final match status, as well as college rankings and medical school research rankings. Multiple logistic regression was run for final match status for US MD applicants only. For demographics, data for groups with less than n=5 are not reported in percentages in order to maintain anonymity of applicants. "Total academic productivity" was defined as the summation of peer-reviewed publications, other-than-published (submitted) publications, book chapters, poster presentations and oral presentations.

Results

In total, 271 applicants were analyzed. Results are reported below. N is not reported for groups < 5 to maintain applicant anonymity.



Results

Type of Medical Training

	U.S. MD	U.S. DO	Caribbean MD	IMG	p-val
N	233	8	5	25	
Step 1	246.3	244.6	245.4	241.1	0.225
Step 2 CK	264.5	249.1	252.0	244.4	0.913
Gap Year	29%	13%	20%	8%	0.105
Medical School Senior	89%	100%	80%	8%	<0.001
Publications	5.8	4.3	3.0	24.7	<0.001
PS Publications	2.4	1.6	0.2	9.9	<0.001
Total Productivity*	21.9	18.6	12.8	51.6	<0.001
PRS Chief LOR	72%	50%	0%	33%	<0.001

* Total Productivity: Publications, Publications (Other than Published), Book Chapters, Posters, Oral Presentations

Academic Productivity

	Top 40 Medical School	Not in Top 40	p-value
N	93	140	
Gap Year	37	31	0.004
Average Publications (SD)	7.8 (8.5)	4.4 (5.9)	0.001
Average PS Publications (SD)	3.7 (6.5)	1.5 (3.6)	0.005
Total Productivity	27.3 (22.1)	18.4 (17.2)	0.001

	Gap Year	No Gap Year	p-value
N	68	165	
Average Publications (SD)	10.6 (10.0)	3.8 (4.4)	<0.001
Average PS Publications (SD)	5.8 (7.8)	1.0 (2.2)	<0.001
Total Productivity	38.1 (25.9)	15.3 (11.2)	<0.001

Home Plastic Surgery Program

	Home Program	No Home Program	p-value
N	169	64	
Gap Year	49	19	0.917
Average Publications (SD)	6.0 (7.4)	5.1 (6.8)	0.367
Average PS Publications (SD)	2.5 (5.3)	2.0 (4.3)	0.502
Total Productivity	22.7 (20.9)	19.9 (16.3)	0.335

What Matters for Research?

	R square	Odds Ratio (95% CI)	p-value
Publications	0.149	1.180 (1.086, 1.282)	<0.001
First-Author Pubs	0.144	1.506 (1.224, 1.853)	<0.001
PS Pubs	0.126	1.329 (1.114, 1.585)	0.002
Total Productivity	0.205	1.074 (1.042, 1.106)	<0.001

Results

Regression Model

Predicted 87.6% of successful matches correctly, 64.4% of non-successful matches correctly

	p-value	Odds Ratio	95% CI	
Home Program	0.187	1.885	0.736	4.829
Top 40 Medical School	0.683	1.205	0.492	2.955
Step 1 Score	0.003	1.059	1.020	1.100
AOA Status	0.047	2.473	1.013	6.036
Top Undergraduate	0.012	2.689	1.241	5.825
Gap Year	0.986	0.991	0.368	2.671
Total Academic Productivity	<0.001	1.078	1.036	1.122
PRS Chief Letter	0.420	0.677	0.262	1.747
Average LOR Rank	<0.001	0.192	0.092	0.401

Regression Model (No Step 1)

Predicted 86.9% of successful matches correctly, 67.1% of non-successful matches correctly

	p-value	Odds Ratio	95% CI	
Home Program	0.176	1.881	0.753	4.696
Top 40 Medical School	0.646	1.229	0.510	2.963
Step 1 Score	-	-	-	-
AOA Status	0.002	3.760	1.601	8.829
Top Undergraduate	0.012	2.598	1.232	5.476
Gap Year	0.460	0.706	0.280	1.780
Total Academic Productivity	<0.001	1.071	1.032	1.111
PRS Chief Letter	0.902	0.945	0.388	2.306
Average LOR Rank	<0.001	0.193	0.093	0.400

Conclusions

- Match rate for this cohort was 59.8% (66.5% of U.S. MDs)
- No difference in USMLE scores by type of training, but academic productivity varied significantly
- Individuals from top-ranked research institutions were associated with having greater academic productivity and more often taking gap years
- Model could predict 87.6% of successful matches and 64.4% of non-successful matches
- This predictive ability is maintained even without Step 1, lower accuracy in predicting non-matches
- Model cannot capture certain factors, such as qualitative assessments or contact between faculty
- Awareness of these factors will allow programs to reflect on characteristics that they deem to be important, and allows for conversation regarding the potential for bias associated with cutoffs or algorithms