Plastic Surgery Program Leadership Perspectives on Doximity Residency Navigator Rankings: Do We Need a Better Guide for Prospective Applicants?

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INTRODUCTION: Doximity has become integrated into the residency application process without any clear merit, comparing programs based on reputation and research. Our study aims to gather program directors' and Chiefs/Chairs' perspectives on the Doximity ranking system and to assess what a better system might entail.

METHODS: A 16-question survey was sent to 177 program directors and Chief/Chairs of plastic surgery residency programs. The questions covered three categories: (1) demographic information; (2) Doximity ranking perceptions; (3) input on characteristics of a better tool. The responses were statistically analyzed.

RESULTS: Ninety-three questionnaires were received (53%). Twenty-nine (31%) respondents represented programs in the Northeast, 23 (25%) South, 20 (21%) Midwest, and 21 (23%) West. Seventy-three (79%) respondents were male and 16 (17%) female. 90% of respondents ($n = 84$) believe Doximity rankings are not accurate, all indicating their institution should be ranked higher. No significant association between program geography and ranking satisfaction was observed (p = 0.75). Only 33% ($n = 31$) of respondents were aware of Doximity methodology. Most respondents (95%; $n = 88$) do not recommend the use of Doximity to medical students. Most participants (87%; $n = 81$) are willing to share resident case logs to inform a future tool. "Strength of technical training/preparedness" was ranked most highly as important training program qualities.

CONCLUSIONS: The results of this program leadership survey show dissatisfaction with and a lack of understanding of the Doximity system. When considering future steps, program leadership support a strength-based categorization system and sharing case logs to guide student decision-making. (J Surg Ed 79:1076−1081. © 2022 Published by Elsevier Inc. on behalf of Association of Program Directors in Surgery.)

KEY WORDS: Doximity, Ranking, Residency programs, Medical student, Mentorship

COMPETENCIES: Medical Knowledge, Professionalism, Interpersonal and Communication Skills

INTRODUCTION

The Plastic Surgery residency application process has become increasingly competitive in recent years. From 2016 to 2021, applicants into integrated plastic surgery programs increased 56%, contrasting sharply with an 18% increase in intern positions—ultimately requiring applicants to apply more broadly in hopes of matching.[1] Further complicating this picture, both the 2020 to 2021 and 2021 to 2022 match cycles limited away rotation opportunities due to the SARS-CoV-2 pandemic, restricting applicants' ability to evaluate program quality in person.[2,3] Otherwise, applicants have access to program websites,

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FREIDA[TM] AMA Residency Database, and social media to assess training atmosphere. Students must choose between programs due to interview date conflicts—a decision point that limits which programs the applicant can rank and one that requires sufficient information to match the program and the applicant. Needless to say, this application experience may not provide students with enough information to make a 6- to 7-year training decision, even with COVID restrictions aside.

In the 2020 plastic surgery match, the median matched U.S. MD ranked 14 programs, a number which was likely higher in 2021 due to substantially increased competitiveness.[4] Thus, students must differentiate between programs based on limited online information and a single interview day.[3,5,6] To further inform ranking decisions, students have turned to the only ranking service available for plastic surgery—The Doximity Residency Navigator.[7] Doximity offers students a ranking of all plastic surgery programs based on either "research" or "reputation." The research rank reflects the collective h-index of recent program alumni and current residents, while the reputation rank reflects a statistically weighted value produced from survey-eligible physicians who each nominate 5 programs with the best clinical training. Doximity also provides resident satisfaction data through a similar survey. This methodology is prone to bias and does not accurately or objectively measure program quality.[8] Despite these flaws, multiple studies have reported that Doximity rankings influence interview and ranking decisions.[9,10]

For these reasons, the field of plastic surgery must endeavor to understand how residency applicants can be better informed to make application, interview, and ranking decisions. The only ranking system, Doximity, falls short of presenting applicants with robust information.[8] Thus, our team of multi-institutional collaborators sought to take the first step in developing a better system than the current status quo. Through a survey of all Program Directors (PDs) and Chiefs/Chairs (CCs), our study aims to characterize perspectives on the current program ranking system and to evaluate viewpoints on what a future system might entail.

METHODS

An electronic 16-question survey (Online Supplement 1) was created and distributed to 177 plastic surgery residency PDs and CCs of independent and integrated Accreditation Council for Graduation Medical Education-accredited plastic surgery programs. Surveys were sent in April 2021 and responses were collected through May 2021. The survey was approved by the Institutional Review Board.

Study data were collected and managed using REDCap electronic data capture tools hosted at the University of Pennsylvania.[11,12]

The survey was developed through iterative revision of content with questions designed to characterize the Doximity ranking system and determine qualities important to an accurate ranking system. Sixteen total questions collected: (1) demographic information on survey recipients; (2) belief in accuracy and credibility of Doximity rankings; (3) characteristics that would be important in a future ranking system; (4) perceived need for a more objective ranking system.

Completed surveys were statistically analyzed. Content analysis was done of short answer responses, grouping them based on content and theme to quantify the results. Statistical analysis was performed using Microsoft Excel. Responses were summarized in the form of frequencies and percentages. Furthermore, a Fisher's exact test was conducted to determine whether there was any association between program location and perception of Doximity rankings.

RESULTS

A total of 93 questionnaires were completed, representing a 53% response rate from the 177 plastic surgery PDs and CCs.

Demographics

The average age of the survey respondent was 53 years. Twenty-nine (31%) respondents represented programs in the Northeast, 23 (25%) in the South, 20 (21%) in the Midwest, and 21 (23%) in the West. Seventy-three respondents (79%) were male, 16 (17%) were female, 2 (2%) were other, and 2 (2%) preferred not to specify. Of the respondents, 44% were PDs, 41% were CCs, and 15% were both (Table 1).

Respondent Assumptions and Beliefs

Nearly all respondents (90%, $n = 84$) reported that the Doximity rankings were either very inaccurate or slightly inaccurate. Eighty-four (91%) respondents indicated that the Doximity ranking system inaccurately reflected their program's ranking relative to others nationally. Of these respondents, all 84 (100%) believed their institution should be ranked higher. There was not a significant association between program location and perception of Doximity rankings (p = 0.75).

One-third ($n = 31$) of survey respondents indicated they were aware of how Doximity rankings are assigned. A majority of respondents (52%, $n = 48$) of respondents did not know how these rankings were assigned, while 16% ($n = 15$) stated they were unsure. Most respondents

TABLE 1. Demographic Characteristics of Respondents

	Respondents(n = 93)
Sex	
Male	73 (78.5%)
Female	16 (17.2%)
Other	2 (2.1%)
Prefer not to specify	2 (2.1%)
Regional location	29 (31.2%)
Northeast	23 (24.7%)
South	20 (21.5%)
Midwest	21 (22.6%)
West	
Program Director or Chief	
Program Director	41 (44.1%)
Chief	38 (41%)
Both	14 (15.1%)

(n = 88; 95%) did not recommend the use of Doximity rankings to medical students when applying for residency programs.

Beliefs About a Different Ranking System

When asked about whether they would favor a system in which programs are placed into tiers rather than individually ranked, an equal number were supportive and unsupportive (n = 37; 39%), and 20 (21%) were uncertain. A majority of survey respondents (n = 81; 87%) indicated they would be willing to characterize programs based on strength rather than an actual ranking system. Most participants (n = 81; 87%) also expressed a willingness to share chief resident case volume/variety to inform a potential future ranking system.

When asked to rank metrics in order of importance based on how much they contribute to a strong residency program, "strength of technical training/preparedness" was ranked most highly, with an average score of 9 (Table 2). Following this, breadth of exposure was ranked the second most highly, with an average score of 8.7. Required resident research year was ranked the lowest, with an average score of 2.282.

The final survey question asked respondents to describe what metrics would be important to include in a residency ranking system/application guide. Respondents answered most frequently with comments that included "volume and diversity of cases," "board pass rate," and "culture of the program" (Table 3). Other comments included "preparedness for practice," "goal of residency, to turn out academic surgeons or private practice," "preparedness for practice," "clinical experience," "independent operating/decision making skills," and "job placement."

TABLE 2. Average Score for Each Component that Contributes to Training Program Quality

Component	Average Score
Strength of technical training/ preparedness	8.99
Breadth of exposure	8.69
Success of graduates obtained in post-graduate role	7.27
Research Productivity of Program	5.67
Diversity of faculty and residents	4.96
Well-known faculty	4.82
Chief resident cosmetic clinic	4.74
Allowing time for personal wellness/life	4.34
Program size	3.14
Required resident research year	2.28

TABLE 3. Qualitative Feedback on Important Metrics to Consider in Future Residency Rankings

Topic Area	Number of Responses
"Volume and diversity of cases"	9
"Board pass rate"	7
"Culture of the program"	6
"Preparedness for practice"	3
"Job placement"	3
"Independent operating and decision making skills"	2
"Graduates in academic versus non-academic positions"	2
"Goodness of fit"	1
"Research opportunities"	1
"Whether program has fellowship"	1
"NIH funding"	1
"Duration of general surgery training"	1

DISCUSSION

The residency application process requires applicants to discern differences between programs and to act based on program preference at multiple decision points—selecting away rotations, identifying where to submit applications, choosing between interviews when dates conflict, and ultimately ranking programs for the match. In plastic surgery, these decisions lead to a 6- to 7-year training commitment.[13] To successfully navigate this process, applicants need access to accurate and consistent program information. As it stands, Doximity Ranking Navigator attempts to meet this need, but has many flaws.[8,10]

The results of our survey show that previously reported applicant dependence on Doximity rankings is in direct discordance with 90% of PDs' and CCs' clear belief that these rankings, at least specific to plastic

surgery, are inaccurate.[10] Moreover, the vast majority of plastic surgery PDs and CCs do not recommend the use of Doximity rankings for the application process. In agreement with this finding, Wilson et al. showed that Doximity reputation rankings do not accurately encompass all quality measures necessary to characterize a training program.[8] Interestingly, despite this lack of confidence in the validity of Doximity rankings, a wide range of plastic surgery-specific research continues to employ the system as a stand-in for program rank.[14-20] Unlike plastic surgery, many other specialties have both Doximity rankings and U.S. News and World Report rankings, providing balancing perspectives. For both the sake of applicant decision-making and research quality, a new system should be devised.

In this vein, a team of researchers at the University of Alabama conducted a study that ranked plastic surgery residency programs based on faculty academic achievement.[21] In contrast, Doximity's research ranking reflects the h-index of recent alumni, the ratio of current and recent residents publishing, and active grants/clinical trials.[7] When comparing these two systems, only one program in the top 3, 8 programs in the top ten, and 17 programs in the top 25 rankings overlapped. Also, the actual ranking of the programs in this study differed from that of Doximity. As it stands, the two research ranking systems very likely complement each other, as one reflects faculty achievement and the other resident productivity. Unfortunately, research productivity is only 1 component of a training program and a characteristic that does not provide value to applicants who are not interested in academia.[22]

Through our survey, we prompted PDs and CCs to consider the most important qualities of a program. Not surprisingly, "strength of technical training/preparedness" topped the list, followed by breadth of exposure and then success of graduates. Neither of Doximity's rankings (reputation and research), nor University of Alabama's research rankings, incorporate these top 3 factors. As it stands, applicants do not have the ability to assess these qualities across programs, aside from what information programs choose to disclose in "Meet and Greets," online, and during interviews. For this reason, a future system should share graduating chief resident case logs to demonstrate program volume and variety, an effort which our survey shows to have 87% of PD and CC support. In addition to case logs, a website specific to plastic surgery could offer applicants standardized information on each program, such as rotations, resident research activity, board pass rates, attending sub-specialties, resident satisfaction, didactic schedules, resident graduate career paths, among other characteristics.

Importantly, a future system must provide information on diversity and culture. Our respondents ranked diversity of faculty and residents 5 out of 10, reflecting the importance of these program characteristics. Agawu et al. characterized factors medical students used to rank residency programs and found that women and under-represented minorities assess and weigh factors related to culture, inclusion, and diversity more than others.[23] For this reason, a future system should encompass details such as faculty/resident diversity, community outreach, resident wellness/average hours, call schedules, and family life of residents.

This study is not without limitations. While we achieved a 53% response rate, our study has a small sample size of 93 respondents, which likely biases our results due to respondent choice to opt-in. Respondents are also inherently biased to believe Doximity does an inadequate job if they are dissatisfied with their program's ranking. Given the small size of the plastic surgery community, the success of a future ranking system will depend on broad leadership buy-in, requiring larger participation in future efforts to build such a system. Importantly, any future ranking system should consider how to limit bias, as any system that requires program input will be prone to bias. Despite the flaws, we hope to present this study as the first to explore how the plastic surgery community might better serve applicants to make decisions through the arduous interview and match process.

Although the goal of the Doximity Residency Navigator is to aid student decision-making, it is both inaccurate and insufficient for this purpose. For this reason, steps should be taken to begin to develop a better system. As such, future studies should assess plastic surgery applicants' needs and what they would want to see in a system. Prior research exists on medical students' preferences, in general, but not specific to plastic surgery. Thus, a successful project might survey both current applicants and recently matched interns to gather what resources are currently helpful and what a future system can best offer. We present our survey results on PD and CC perspectives as the first step towards achieving a better system for applicants.

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SUPPLEMENTARY INFORMATION

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.jsurg.2022.03.001.