

# Identifying Important Neurosurgical Residency Program Characteristics in a Nationwide Survey of Neurosurgical Residents



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### Introduction

Neurosurgical residents utilize many factors when evaluating training programs over the course of residency. Our study aims to identify which residency program characteristics are deemed most important by residents and understand the effects of resident demographics on their emphasis of various factors.

### Methods

We conducted an anonymous nationwide REDCap survey of post-graduate year (PGY) 2 and PGY 7 neurosurgical residents using the Likert scale (Figure 1). Differences in survey responses were assessed using Mann-Whitney U and Kruskal-Wallis tests.

Figure 1

Please rank the following based on a 5-point scale (1-not important, 2-less important, 3- neutral, 4-important, 5-most important)

1. Residency program’s reputation?
2. Operative autonomy?
3. Annual number of operative cases?
4. Relationships/camaraderie among current residents?
5. Emphasis on research experience/exposure?
6. Ability to attend research conferences and clinical courses?
7. The program’s overall emphasis on wellness?
8. Ability to sub-specialize within residency?
9. Geographic location of residency program?
10. Call schedule?
11. Prestige and quality of faculty members?
12. Presence of physician extenders (NP’s and PA’s) to help with service obligations?
13. Cost of living?
14. Number of female residents in the program
15. Racial/ethnic diversity of the program?

Residency Perspectives Survey

### Results

Eighty-eight PGY-2 and PGY-7 residents (21.8 %) completed the survey. The responding residents placed the greatest emphasis on camaraderie among residents, operative autonomy, and number of operative cases without significant differences between resident classes. However, PGY-2 residents reported significantly higher importance in a program's emphasis on research, sub-specialization within residency, geographical location, call schedule, wellness, and presence of physician extenders when compared to PGY-7's,  $p<0.05$ . Males placed a greater emphasis on research than female respondents; however, female respondents placed significantly more importance on program location, cost of living, and the number of other female residents in the program,  $p<0.05$ . Residents with an additional post-graduate degree placed more emphasis on research opportunities within a residency program,  $p<0.05$ . Resident race/ethnicity played a significant role when determining the importance of presence of diversity, number of female residents, and cost of living,  $p<0.05$  (Table 1).

### Conclusions

All residents placed the greatest importance on resident camaraderie, operative autonomy, and number of operative cases. However, PGY-2s placed greater importance on a program's emphasis on research, sub-specialization, location, wellness, and call schedule than PGY-7s. Some of these differences may reflect national trends in work hour restrictions and earlier adoption of a specialized focus. The survey also highlights important distinctions in race and gender preferences of residents when evaluating their residency programs.

Table 1

Factor	Overall (n=88)	PGY2 (n=48)	PGY7 (n=40)	p	Male (n=70)	Female (n=18)	p	African American (n=3)	Asian (n=19)	Caucasian (n=50)	Hispanic/Latino (n=6)	Other (n=10)	p
Residency Program Reputation	3.69 +/- 0.807	3.71 +/- 0.713	3.68 +/- 0.917	0.878	3.71 +/- 0.836	3.61 +/- 0.697	0.531	4 +/- 0	3.63 +/- 1.011	3.72 +/- 0.701	3.33 +/- 1.211	3.8 +/- 0.788	0.871
Operative Autonomy	4.39 +/- 0.633	4.33 +/- 0.595	4.45 +/- 0.677	0.25	4.39 +/- 0.643	4.39 +/- 0.607	0.94	4.33 +/- 0.577	4.31 +/- 0.582	4.42 +/- 0.609	4.66 +/- 0.516	4.2 +/- 0.918	0.725
# of operative cases	3.92 +/- 0.805	3.96 +/- 0.824	3.88 +/- 0.791	0.513	3.94 +/- 0.832	3.83 +/- 0.707	0.427	4.33 +/- 0.577	3.63 +/- 0.76	3.96 +/- 0.879	4.16 +/- 0.752	4 +/- 0.471	0.286
Camaraderie among residents	4.51 +/- 0.587	4.60 +/- 0.536	4.40 +/- 0.632	0.124	4.54 +/- 0.606	4.39 +/- 0.501	0.189	4.33 +/- 0.577	4.57 +/- 0.606	4.46 +/- 0.613	4.66 +/- 0.516	4.6 +/- 0.516	0.805
Emphasis on research	3.1 +/- 1.029	3.27 +/- 1.026	2.90 +/- 1.008	0.048	3.23 +/- 1.009	2.61 +/- 0.978	0.021	3.66 +/- 0.577	3.15 +/- 1.014	2.9 +/- 1.054	3.33 +/- 0.816	3.7 +/- 0.948	0.147
Research Conferences	3.19 +/- 0.993	3.33 +/- 1.018	3.03 +/- 0.947	0.069	3.27 +/- 1.034	2.89 +/- 0.758	0.104	4 +/- 0	3.21 +/- 0.976	2.96 +/- 0.988	4 +/- 0.894	3.6 +/- 0.843	0.038
Emphasis on Wellness	3.17 +/- 1.127	3.48 +/- 1.031	2.80 +/- 1.137	0.003	3.11 +/- 1.198	3.39 +/- 0.777	0.555	4.33 +/- 0.577	3.05 +/- 0.911	3.08 +/- 1.226	3.83 +/- 0.752	3.1 +/- 1.1	0.16
Subspecialize within residency	3.19 +/- 1.049	3.42 +/- 1.069	2.93 +/- 0.971	0.014	3.24 +/- 1.082	3 +/- 0.907	0.306	3.66 +/- 0.577	3.21 +/- 0.787	3 +/- 1.16	4.16 +/- 0.983	3.4 +/- 0.699	0.155
Location	3.35 +/- 1.126	3.71 +/- 1.129	2.93 +/- 1.289	0.004	3.21 +/- 1.272	3.89 +/- 1.078	0.041	4.33 +/- 0.577	2.78 +/- 1.436	3.4 +/- 1.228	3.66 +/- 0.816	3.7 +/- 1.159	0.212
Call Schedule	2.94 +/- 1.108	3.21 +/- 1.148	2.63 +/- 0.979	0.008	2.9 +/- 1.131	3.11 +/- 1.022	0.533	4 +/- 0	2.31 +/- 1.204	3 +/- 0.989	3.66 +/- 0.816	3.1 +/- 1.286	0.019
Faculty members	3.5 +/- 0.994	3.56 +/- 0.943	3.43 +/- 1.059	0.632	3.49 +/- 1.059	3.56 +/- 0.704	0.964	4.33 +/- 0.577	3.36 +/- 1.382	3.44 +/- 0.907	4 +/- 0.632	3.5 +/- 0.707	0.342
Physician Extenders Present	3.33 +/- 1.069	3.58 +/- 0.986	3.03 +/- 1.097	0.028	3.27 +/- 1.115	3.56 +/- 0.855	0.336	4.33 +/- 0.577	3.15 +/- 1.067	3.2 +/- 1.087	4.33 +/- 0.816	3.4 +/- 0.843	0.043
Cost of Living	2.72 +/- 1.105	2.88 +/- 1.044	2.53 +/- 1.037	0.125	2.6 +/- 1.055	3.17 +/- 0.923	0.035	4 +/- 0	2 +/- 0.942	2.82 +/- 1.023	2.83 +/- 0.752	3.1 +/- 0.994	0.004
# of female residents	2.00 +/- 0.994	2.10 +/- 1.057	1.88 +/- 0.911	0.332	1.83 +/- 0.932	2.67 +/- 0.97	0.002	3.33 +/- 0.577	1.47 +/- 0.772	2.04 +/- 1.009	2.33 +/- 0.816	2.2 +/- 1.032	0.02
Racial/ethnic diversity	2.24 +/- 1.135	2.44 +/- 1.219	2.00 +/- 0.987	0.081	2.19 +/- 1.183	2.44 +/- 0.921	0.342	4 +/- 0	1.89 +/- 1.149	2.16 +/- 1.037	3 +/- 1.264	2.3 +/- 1.159	0.02

Survey Responses