Centralization

Increasing centralization of high-level neurosurgical practice at academic centers has increased the need for academic neurosurgeons. The lack of systematic metrics-based analyses among neurosurgery trainees and the recent pass-fail USMLE system necessitates a multiparametric approach to assess academic success among trainees.

Methods: We conducted a comprehensive analysis of the University of Miami residency program using two datasets, one containing applicants' pre-residency metrics and a second containing trainees' intra-residency metrics. Intra-residency metrics were subjectively and anonymously assessed by faculty. Univariate and multivariate logistic regression analyses were performed to determine differences among academic and non-academic neurosurgeons and identify predictors of academic careers.

Results: Academic neurosurgeons had a significantly higher median Step 1 percentile relative to non-academic neurosurgeons (p=0.015), and medical school ranking had no significant impact on career (p>0.05). Among intra-residency metrics, academic neurosurgeons demonstrated higher mean rating of leadership skills (MD=0.46, p=0.0011), technical skill (MD=0.42, p=0.006), and other intra-residency metrics. Higher administrative and leadership skills were significantly associated with increased likelihood of pursuing an academic career (OR=9.03, 95%CI[2.296 to 49.88], p=0.0044). Clinical judgment and clinical knowledge were strongly associated with pursuit of an academic career (OR=9.33 and OR=9.32, respectively with p=0.0060 and p=0.0010, respectively).

Conclusions: Pre-residency metrics had little predictive value in determining academic careers. Furthermore, medical school ranking does not play a significant role in determining a career in academic neurosurgery. Intra-residency judgment appears to play a significant role in career placement, as academic neurosurgeons were rated consistently higher than their non-academic peers in multiple key parameters by their attending physicians [1].

1)
Govindarajan V, Shah AH, Morell AA, Borowy V, Ingle SM, Mendez Valdez MJ, Rivas S, Eichberg DG, Luther E, Lu V, Heiss J, Komotar RJ, Levi AD. Predicting Academic Career Placement via Development of Novel Intra-Residency Metrics. World Neurosurg. 2023 Feb 23:S1878-8750(23)00234-6. doi: 10.1016/j.wneu.2023.02.080. Epub ahead of print. PMID: 36841537.