Characteristics of Neurosurgery's Most Successful Research Programs



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Introduction

With research funding decreasing and NIH grants becoming more competitive, the CNS Research Committee undertook a survey to determine which characteristics of neurosurgery programs correlate with NIH funding.

Methods

In 2008, the CNS Research Committee surveyed ACGME-approved neurosurgery programs. Confidentiality and anonymity was assured with programs assigned numbers. Data was analyzed blind to institution. There was a 62% (60/97) response rate, with 85% (51/60) meeting inclusion criteria neurosurgery training programs in the US which returned completed surveys.

Results were analyzed using three non -parametric analyses: one Kendall's Tau simple correlation and two Kruskal-Wallis tiered analyses to compare groups of institutions ranked by NIH funding separated based on quartiles and also natural gaps in earnings (**Figure 1**).



Results

NIH Funding represented 55.3% of total research funding for US ACGME approved neurosurgery training programs which participated in the survey. Reported NIH funding ranged from 0-\$10,000 with a median of \$768, 591.

Non-Neurosurgeon PhD Investigators, NIH Study Section Participants, Non-NIH Research Funding, and Neurosurgeon Investigators showed the strongest correlation with NIH funding (p<0.01, Figure 2). Analysis of faculty characteristics (Non-Neurosurgeon PhD Investigators, NIH Study Section Participants, and Neurosurgeon Investigators) distinguished the top guartile of neurosurgery programs (Figure 3). Total Residents, NIH-K Awards, and **Required Resident Research Months** also correlated with NIH funding (p< 0.05). External Source Funding, Percent Clinical Funding used for Research, and Resident Research Rotation Call Hours/Week failed to achieve significance.

In addition to survey responses, additional program characteristics were evaluated using department websites, US News & World Report, and Ponce and Lozano's "Highly Cited Works in Neurosurgery." While impact of literature citations correlated with NIH funding, presence of a Vice Chair and US News and World Report Hospital Rank did not achieve significance for the programs included in the survey.

Figure 2. Variables which showed the
strongest correlation with NIH funding
awards

	<u>Simple</u> <u>Correlation</u> <u>Analysis</u>	Quartile Subgroups Analysis	Natural Subgroup Analysis
Non-Neurosurgeon PhD Investigators	0.001	0.001	0.002
NIH Study Section Participants	0.001	0.001	0.002
Non-NIH Research Funding	0.001	0.001	0.003
Neurosurgeon Investigators	0.001	0.001	0.004
Total Residents	0.001	0.001	0.011
NIH-K Awards	0.002	0.024	0.012
Required Resident Research Months	0.006	0.023	0.029

Figure 3. Faculty characteristics that distinguish top quartile of neurosurgery programs based on NIH funding



Programs were divided into quartiles based on NIH funding with 12/13 programs in each quartile

Conclusions

NIH Funding to academic neurosurgery programs is associated primarily with:

- Number of Non-Neurosurgeon PhD Investigators
- Number of NIH Study Section Participants
- Number of Neurosurgeon Investigators
- Amount of Non-NIH Research Funding
- Number of Neurosurgery Residents

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Determine general trends correlated with NIH research funding for academic neurosurgery programs 2) Identify data applicable to strategic decision-making for leaders of

neurosurgery departments

References

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