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Attitudes and Opinions of U.S. Neurosurgical Residents Towards Research and Scholarship: A National Survey

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Objective

Evaluating the factors that impact neurosurgery resident research interest on a national level.

Methods

All U.S. neurosurgical residents were surveyed in 2017 evaluating limiting factors for pursuing research. Residents with higher number of publications than the cohort median were studied.

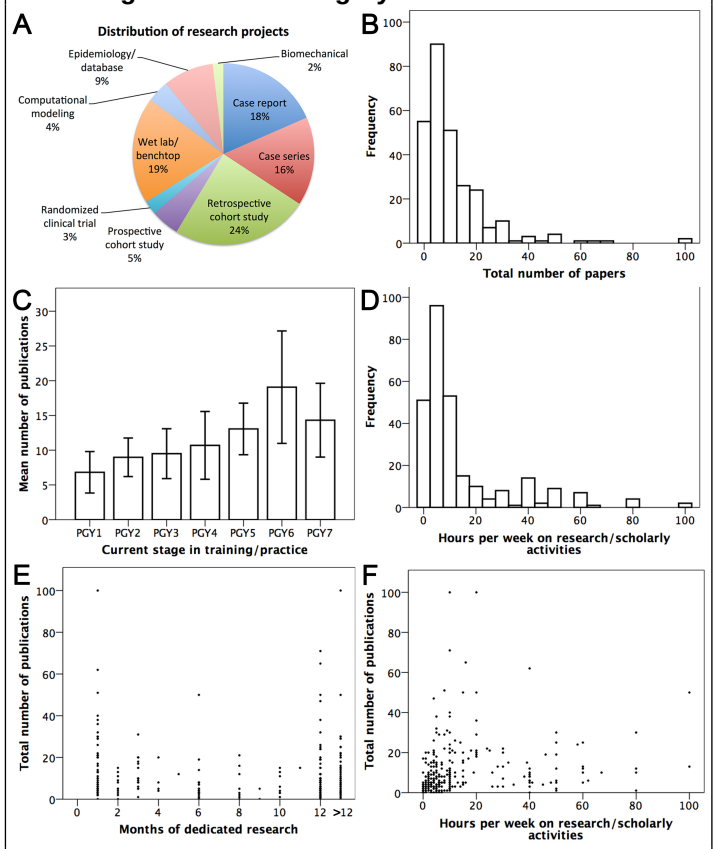
Results

Surveys were returned from 278 residents (20% response) in 82 residency programs and 30 states. Residents desired academic positions (54.2%), followed by private practice with some research (40.3%), private practice alone (5.4%), and other (1.1%). A mean±SD of 11±14 publications was seen and correlated with residency year. The most common type of research involved retrospective cohort studies (24%) followed by lab/benchtop (19%), and case reports (18%). Residents spent on average 14.1±18.5 hours a week on research with most residents having =12 (54.6%), or 1 (19.8%) month of protected research. The most common available departmental resources included protected research time (70.5%), access to medical students and/or undergraduates (64.4%), and internal funding (45.3%). Residents with higher numbers of publications cited mentorship (p=0.01), research exposure (p=0.001), neurosurgery conference exposure (p=0.04), formal education prior to residency (p=0.01), and internal funding sources (p=0.05) as most important for them. These residents showed a significantly higher number grants of $1,000-9,999 (p=0.0001, p=0.0001) or >$10,000 (p=0.002, p=0.05), (applied and received respectively). The three most limiting factors for pursuing research among all residents were time (91.0%), call scheduling (47.1%), and funding/grants (37.1%). About half of residents (49.6%) were encouraged with continued neurosurgical research, while the rest were neutral (36.0%) or discouraged (13.7%).

Conclusions

This study evaluates, for the first time, factors impacting resident views towards research, limitations in research endeavors, and discusses strategies to improve research opportunities.

Figure 1: Neurosurgery resident research



A) The distribution of participant research projects is shown. B) The distribution of resident publications numbers with an average of 11±14 manuscripts was seen. C) There was a significant increase in the mean number of publications with increased PGY level (=1.7, p<0.0001, linear regression). D) Most residents spent some time each week devoted to research activities. E) Most residents had dedicated time for research. F) Hours spent per week were compared with scholarly activities.

Table 1: Study conclusions

1. Program directors and chairs can implement strategies to minimize the three top limiting factors for resident research, which included adequate time, call scheduling, and funding/grants, while improving factors to promote research, such as faculty mentorship and exposure to research. Additional access to resources (e.g., database support, biostatisticians, medical editor) may help in the setting of limited time available for resident research.

2. National leaders should recognize that nonacademic neurosurgeons, i.e., those in private practice, may nonetheless wish to remain actively involved in research efforts that advance the field.

3. Academic departments with residency programs must hire and cultivate faculty who are themselves academically productive and committed to mentorship.

4. Resident neurosurgeons have a desire for cross-institutional collaboration. This is already facilitated in part by programs including RUNN and the resident Boot Camps, but a collaborative national or international platform remains to be established.