Neurosurgical Training Program

- High Conductivity Saline Nanodroplets-Enhanced Thermoacoustic Imaging for Brain Tumor Detection
- The Initial Experience of Turkish Neurosurgical Stroke Centers: A National Study
- Predictive Factors and Impact of Delayed Spine Surgery: A Nationwide Retrospective Cohort
- Video gaming facilitates adaptation to surgical exoscopes - a laboratory experiment
- Evaluation of the clinical effectiveness of bundled care interventions on pressure ulcer incidence in neurosurgical patients
- Additive Manufacturing, Thermoplastics, CAD Technology, and Reverse Engineering in Orthopedics and Neurosurgery-Applications to Preventions and Treatment of Infections
- Advancing Neurosurgical Oncology and AI Innovations in Latin American Brain Cancer Care: Insights from a Center of Excellence
- Photogrammetry Foundations and Guidelines for Acquisition of High-Definition 3-Dimensional Models Using Photographic Cameras and Smartphones: An Optimized Tool to Improve Neuroanatomy Research and Education

Neurosurgical Resident Training Program

A sustainable neurosurgical workforce depends on robust training pipelines, but the size and distribution of the global neurosurgery trainee workforce has not been described. The objective of this study was to identify the types of training programs that exist in the global neurosurgery workforce, the support that trainees receive, the diversity of trainee experiences, and the accreditation processes that exist to regulate training programs.

This study was a subanalysis of a cross-sectional survey administered online in all 193 countries and 26 territories, independent states, and disputed regions as defined by the World Bank and United Nations. Participants were identified through neurosurgery society leadership, the personal contacts of the coauthors, and bibliometrics and search engine searches. Population-weighted statistics were constructed and segregated by country income level and WHO regions.

Data were obtained for 187 countries (96.9%) and 25 additional territories, states, and disputed regions (96.2%). There were an estimated 1261 training programs and 10,546 trainees within the regions sampled, representing a global pooled density of 0.14 neurosurgery trainees per 100,000 people and a median national density of 0.06 trainees per 100,000 people. There was a higher density in high-income countries (HICs; 0.48 trainees per 100,000 people) compared with upper-middle-income countries (0.09 per 100,000), lower-middle-income countries (0.06 per 100,000), and low-income countries (LICs; 0.07 per 100,000). The WHO European (0.36 per 100,000) and Americas (0.27 per 100,000) regions had the highest trainee densities, while the Southeast Asia (0.04 per 100,000) and African (0.05 per 100,000) regions had the lowest densities. Among countries with training programs, LICs had the poorest availability of subspecialty training and resources such as cadaver laboratories and conference stipends for trainees. Training program accreditation processes were more common in HICs (81.8%) than in low- and middle-income countries (LMICs; 69.2%) with training programs.

Gupta et al. estimate that there are at least 1261 neurosurgery training programs with 10,546 total trainees worldwide. The density of neurosurgery trainees was disproportionately higher in HICs than LMICs, and the WHO European and Americas regions had the highest trainee densities. The trainee

workforce in LICs had the poorest access to subspecialty training and advanced resources [1)]

1)
Gupta S, Gal ZT, Athni TS, Calderon C, Callison WÉ, Dada OE, Lie W, Qian C, Reddy R, Rolle M, Baticulon RE, Chaurasia B, Dos Santos Rubio EJ, Esquenazi Y, Golby AJ, Pirzad AF, Park KB; WFNS Global Neurosurgery Committee; EANS Global and Humanitarian Neurosurgery Committee; CAANS Executive Leadership Committee. Mapping the global neurosurgery workforce. Part 2: Trainee density. J Neurosurg. 2024 Jan 16;141(1):10-16. doi: 10.3171/2023.9.JNS231616. PMID: 39508227.