It is unknown whether efforts to expand access to neurosurgery worldwide have translated to an increase in global neurosurgery workforce, particularly in low- and middle-income country. The main objective of the study was to quantify the number and distribution of consultant neurosurgeons worldwide, while also identifying temporal and geographic trends in the neurosurgery workforce in different income levels and WHO regions, and analyzing what factors might contribute to the growth of a national workforce.

This study was a subanalysis of an electronic cross-sectional survey administered to participants identified through neurosurgery societies, personal contacts, and online searches of all 193 countries and 26 territories, independent states, and disputed regions as defined by the World Bank (WB) and United Nations between October 2022 and March 2023. Population-weighted statistics for the consultant neurosurgery workforce and resource availability were estimated, and linear regression analysis was conducted to identify correlations with growth in the workforce.

Data were obtained for 192 countries (99.5%) and 25 additional territories, states, and disputed regions (96.2%). One hundred seventy-seven respondents participated in the survey. There were an estimated 72,967 neurosurgeons worldwide, representing a global pooled density of 0.93 neurosurgeons per 100,000 people and a median country density of 0.44 neurosurgeons per 100,000 people. The authors found an increasing density of consultant neurosurgeons, from low-income countries (0.12 per 100,000 people), to lower-middle-income countries (LoMICs; 0.37), to upper-middle-income countries (UpMICs; 1.13), and high-income countries (2.44). The WHO African and Southeast Asia regions had the lowest pooled neurosurgeon density, while the Western Pacific region (WPR) had the highest density. There were 29 countries, 14 territories, and 1 independent state with no neurosurgeons. Neurosurgeons in countries with higher income-level designations had more frequent access to resources and equipment. The annual growth rates in workforce density were highest in LoMICs (26.0%) and UpMICs (21.3%), and the most rapid annual growth was in the Southeast Asia region (33.0%). Regression analysis revealed that an increasing population quartile, the Eastern Mediterranean region (relative to the WPR), the presence of a national neurosurgery society, increasing global development aid, and national gross domestic product were associated with relative growth in national neurosurgeon density.

The authors estimate a global consultant neurosurgeon workforce of nearly 73,000 neurosurgeons, with stark disparities in the density and growth of the workforce in different WB income-level groups and WHO regions. The presence of a neurosurgery society was correlated with the growth of the workforce, and this study identified several regional targets for further intervention to expand access to neurosurgery [1].

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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 1: Consultant neurosurgeon density. J Neurosurg. 2024 Jan 16;141(1):1-9. doi: 10.3171/2023.9.JNS231615. PMID: 39508199.