Cohesion Between Literature and Systemic Efforts to Address Global Neurosurgical Inequity: a scoping review

Edward I. Ham, BS¹,²; Jeongyoon Kim³; Ulrick Sidney²; Jean W. Lartigue²; Saksham Gupta, MD²,⁴; Ignatius N Esene, MD, Ph.D, MPH⁵; Kee B. Park, MD, MPH²

¹Renaissance School of Medicine at Stony Brook University, Stony Brook, NY; ²Program in Global Surgery and Social Change, Harvard Medical School, Boston, MA; ³Bowdoin College, Brunswick, ME; ⁴Department of Neurosurgery, Brigham and Women’s Hospital, Boston, MA; ⁵Neurosurgery Division, Faculty of Health Sciences, University of Bamenda, Cameroon
Disclosure Slide

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Introduction

- **Global Neurosurgery**: the clinical and public health practice of neurosurgery with the primary purpose of ensuring timely, safe, and affordable neurosurgical care to all who need it.

- There was an exponential growth in global neurosurgical (GNS) literature from 2016 to 2018.¹

- Scoping reviews “map the literature on a particular topic or research area and provide an opportunity to identify key concepts; gaps in the research; and types and sources of evidence to inform practice, policymaking, and [additional] research”.²

➢ **OBJECTIVE**: Utilize a scoping review to identify and categorize GNS research based on the health system domains of…

  1. Service Delivery
  2. Workforce
  3. Infrastructure
  4. Financing
  5. Information Management
  6. Governance

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**Methods**

- We searched three databases – PubMed, CINAHL, and EMBASE – for GNS literature published from 1999 to 2019.

- The research team (EH, JK, KBP) created inclusion/exclusion criteria for 2 stages of screening:
  - **Inclusion Criteria:**
    1) Research focused on improving accessibility of neurosurgery in low- and middle-income countries (LMICs)
    2) Primary literature using quantitative, qualitative or mixed-method approaches
  - **Exclusion Criteria:**
    1) Papers without full-texts availability (i.e. conference papers & abstracts)
    2) Studies focused on clinical outcomes/management (i.e. case reports)
    3) Exclusively narrative/descriptive manuscripts (i.e. editorials)

- Health system domains were defined and itemized based on publicly available documents from the Program in Global Surgery and Social Change.
  - The itemized chart was subsequently used to categorize the GNS literature into health system domains (EH, JK)
  - All disagreements in inclusion, exclusion and categorization were resolved through collaborative discussion and expert opinion (KBP).
Results

Figure 1: PRISMA flow diagram outlining the inclusion and exclusion of manuscripts in our review
Results (cont.)

* of the 63 manuscripts (MSS), 6 MSS focused on multiple domains, yielding an adjusted total of 70 MSS.

Figure 2: Sankey diagram showing GNS research distribution by health system domains and subcategories.
Results (cont.)

**Figure 3:** A total of 30 LMICs were represented across the included manuscripts.

**Figure 4:** The first author of the included manuscripts was from a high-income country (HIC) in 71.4% of instances.
Results (summary)

- A total 63 GNS manuscripts were determined to focus on health system domains.
  - Of these, 6 manuscripts focused on multiple domains, yielding an adjusted total of 70 manuscripts.

- Overall, the most represented health system domain was Service Delivery (21 manuscripts), followed by Workforce (19), Infrastructure (15), Financing (12) and Information Management (3).

- A total of 30 LMICs were represented across all manuscripts. In addition, the first author was from a HIC for 71.4% of the manuscripts.
Discussion

- Our novel analysis of the GNS literature revealed promising trends in health system-focused publications:
  - Multiple manuscripts focused on the domains of Service Delivery, Workforce, Infrastructure, and Financing.
    → This indicates that there is some level of cohesion between research efforts and policy-level endeavors.
  - However, our review also showed that there is a significant shortage of GNS research in the domain of Information Management (3 manuscripts).

- Next Steps:
  - Utilize the existing Information Management-focused manuscripts as a blueprint to increase research output in this domain
    → i.e. research into effective data collection tools
  - Further investigate the implementation of more database-focused projects in LMICs
Summary Points

- This review highlighted the pressing need for more research into Information Management in the context of Global Neurosurgery.

- Health system-focused GNS literature only represented 20% of all LMICs (30/143). The GNS community should be aware of this and consider expanding academic efforts to other LMICs.

- Lastly, the trends in authorship should be noted, as many ethical (and practical) issues may arise if there is a disconnect in the objectives of neurosurgeons in LMICs and external efforts to support projects in these areas.