Building Sustainable Neurosurgical Systems in Developing Countries

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BACKGROUND

Africa accounts for a significant percentage of the global burden of neurosurgical disease. While 15% of the unmet global neurosurgical need is from Africa, only 1% of the global neurosurgical workforce is located on the continent. There is a clear disparity in access to neurosurgical services throughout Africa due to deficiencies in funding, prioritization, policy effort, resources, and workforce. To address this unmet need, various interventions have been instituted to alleviate the burden of neurosurgical conditions across the continent. The World Health Organization and Lancet Commission developed a health system framework to use when evaluating health systems, which was used by our team to evaluate the neurosurgical system in two sub-Saharan African countries. Subsequently, we developed a research proposal to investigate the barriers to neurosurgical service delivery in sub-Saharan Africa.

CONTEXTUAL FRAMEWORK

- Service Delivery
- Workforce & Training
- Infrastructure/Equipment/Technology
- Health Financing
- Data Management
- Neurosurgical Leadership & Governance

NIGERIA

Nigeria only has 1 neurosurgeon for every 1.9 million citizens, with a high concentration of neurosurgeons in urban areas. In 2017, Nigeria's Federal Ministry of Health developed the country's National Surgical, and Obstetrics, Anesthesia Plan (NSOAP), although recommendations for improvement include referral system adaptations, improvements in infrastructure and data collation.

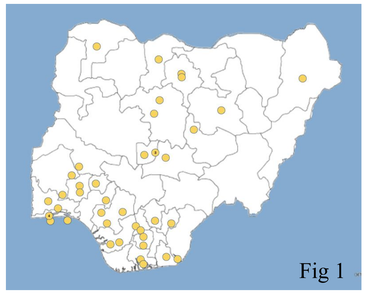
Fig 1

UGANDA

Uganda faces a similar disease burden, with only 1 neurosurgeon per 3.8 million residents. Various efforts to identify interventions for neurosurgical care, and more broadly, surgical care delivery in Uganda, are reported in the literature. Without an implemented national NSOAP, there are many recommendations like the establishment of research grants, increased training of workforce members, and the establishment of nationwide electronic medical records.

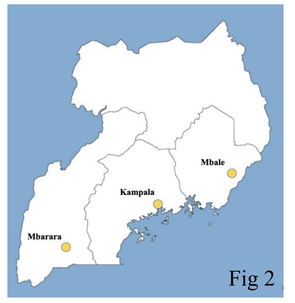

Fig 2

SUMMER RESEARCH: OBJECTIVES

Barriers to Neurosurgical Service Delivery in Sub-Saharan Africa

Objectives:

1. To identify the specific barriers to neurosurgical service delivery in SSA.
2. To assess the magnitude and impact of these barriers on patients/caregivers, health providers and health systems in SSA.
3. To propose interventions to address these barriers in SSA.

Government & Health System Level		1. Weak health policy 2. Lack of surgical plan 3. Lack of funding/misappropriation 4. Referral system challenges
Hospital Level		1. Availability of equipment 2. Emergency services 3. Staff shortages
Individual Level	Seeking Care	1. Lack of early detection 2. Patient & caregiver literacy 3. Personal & cultural belief systems
	Reaching Care	1. Inadequate prehospital care 2. Lack of nearby neurosurgical services 3. Personal & cultural belief systems
	Receiving Care	1. Inadequate accessibility to neuroimaging diagnosis 2. Costs of neurosurgical care

Fig 3

METHODOLOGY

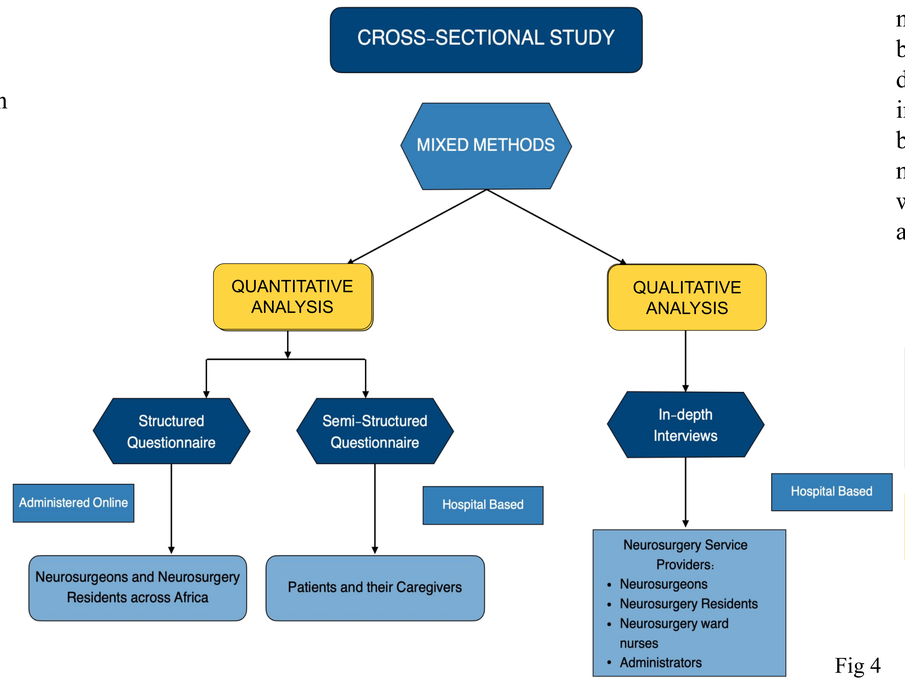

Fig 4

NEXT STEPS

Distribution of surveys to neurosurgeons and patients to assess barriers to neurosurgical service delivery will occur in six countries of interest. Additionally, interviews will be conducted of neurosurgeons, neurosurgical residents, neurosurgical ward nurses, and hospital administration.

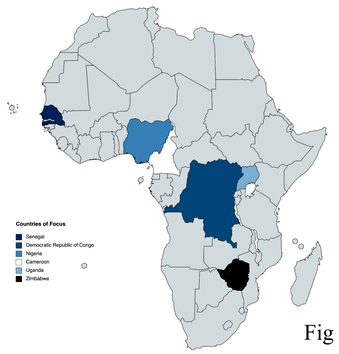

Fig 5

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