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hour for developing countries

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ABSTRACT

Global neurosurgery is relatively a new sub-discipline of global surgery. It is an area of study, research, practice, and advocacy that focuses on enhancing health outcomes and promoting health equity for all individuals around the world who are afflicted by neurosurgical disorders or require neurosurgical care. Low- and middle-income countries (LMICs) around the world have not benefited from advances in neurosurgery; most have little or no neurosurgical capacity in their entire country. The need of the hour is that a global problem necessitates a global response with a common vision and objectives.

INTRODUCTION

Global neurosurgery is relatively a new sub-discipline of global surgery.¹ "Global neurosurgery" can be defined as an area of study, research, practice, and advocacy that focuses on enhancing health outcomes and promoting health equity for all individuals around the world who are afflicted by neurosurgical disorders or require neurosurgical care.² It should be made sure that neurosurgery is completely integrated into the growth of the global surgery movement. Every year, 5 million crucial neurosurgical cases go untreated, all of which are in low- and middle-income countries.³ A sufficient number of medical professionals, facilities, and training programs for neurosurgery are still lacking in the majority of underdeveloped countries. The World Health Organization (WHO) and World Federation of Neurosurgical Societies (WFNS) have had a very positive role in global neurosurgery. Research is an integral part of global neurosurgery and according to studies, despite having a high disease burden, low- and middle-income countries have a poor representation in research publications.² The need of the hour is that a global problem necessitates a global response with a common vision and objectives.

DISCUSSION

Global neurosurgery is a subset of global surgery that lives in relative obscurity in the context of global health. Despite its recent popularity, global neurosurgery has been around for decades, with amazing work

Keywords

global neurosurgery,
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countries



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being done all over the world. Because of the individual and collective efforts of neurosurgeons around the world, modern neurosurgery has become one of the most complex specialties in healthcare. Massive advances in patient care have transformed the field, transforming previously inoperable cases into standard practice. This progress has affected countless lives, but its impact has been disproportionate. Low- and middle-income countries (LMICs) around the world have not benefited from advances in neurosurgery; most have little or no neurosurgical capacity in their entire country.⁴

When it comes to surgical subspecialties such as neurological surgery, access to care ranges from uneven to non-existent in some cases. Many parts of the world, particularly in LMICs, have one neurosurgeon for every 10 million people, making access to neurosurgical care a luxury rather than a right.² Research is an essential component of global neurosurgery. It can help to shape policy, support training, and spread new ideas. Furthermore, and particularly in the developing world, research educates the public about disease trends, interventions, outcomes, and potential barriers to quality, safe, accessible, and affordable care. But according to studies, despite having a high disease burden, low- and middle-income countries have a poor representation in research publications.² The Global Neurosurgery Committee (GNC) Action Plan aims to advance relevant research, particularly in developing countries.^{5,6}

The Lancet Commission on Global Surgery was formed in 2013 with the mission of "developing and assembling the best evidence on the state of surgery worldwide". The following is a summary of their report's findings:

- 5 billion people worldwide do not have access to "safe, affordable surgical, and anesthesia services when needed".
- 9 out of 10 people in LMICs lack access to basic surgical treatment.
- 18.6 million people die each year due to lack of essential surgical care, more than 3 times the number of deaths due to HIV/AIDS, tuberculosis, and malaria.
- 143 million additional surgical procedures are needed in LMICs each year.
- 2.2 million more surgeons, anesthetists, and obstetricians are needed.
- The cost of addressing this need is estimated at US \$350 billion by 2030.
- The cost of not responding to this need will result in losses estimated at US \$12.3 trillion over next 15 years.⁶

The first step in addressing the global demand for safe, affordable, and equitable neurosurgical care is to identify current resources and needs. To provide the necessary data, research efforts at both the global and local levels are required. The WFNS GNC is actively involved in studies to determine the global neurosurgical workforce, broken down by country-specific numbers and markers, in order to determine where the greatest need exists and where additional efforts should be directed to address those needs. Knowing the density of neurosurgeons in a country, however, is only the first step; educational programmes are required to train more neurosurgeons. The distribution of training centres around the world is being studied, but the barriers to training access are still being investigated. Once a sufficient number of neurosurgeons have been trained, the issue of limited resources and the need for appropriate neurosurgical equipment that is both suitable and sustainable in various LMICs remains. Programs such as the WFNS Foundation Neurosurgical Equipment Support aim to provide donated equipment to LMIC neurosurgeons who would not otherwise be able to afford it. The GNC is currently analysing the WFNS programme to determine the suitability and sustainability of such equipment in LMIC settings, as well as the effectiveness of such equipment donation programmes.⁵

Role of WHO in Global Neurosurgery

WHO is the United Nations (UN) health technical branch, and its primary functions include:

1. Provide leadership and engaging partnerships
2. Shape the research agenda
3. Develop norms and standards
4. Articulate ethical, evidence-based policy options
5. Provide technical support
6. Monitor and assess health situations and trends.⁷

Most of the world's populations face ongoing challenges in gaining access to safe, timely, and affordable surgical care, as well as financial risk protection. Global neurosurgery, in particular, has a

significant need to increase the neurosurgical workforce, which includes all sub-specialty fields, particularly paediatric neurosurgery. Furthermore, good imaging and other equipment are required to provide an optimal means of providing comprehensive neurosurgical service delivery. Despite ongoing challenges at WHO, persistent underfunding, political wrangling, bureaucracy, and significant criticism, there have been significant successes and positive ongoing efforts to make the world a healthier, better place. There is no other international body or Member State capable of providing coordinated global leadership or commanding such global respect; no other body can bring all 194 Ministers of Health together in an international forum to set global health priorities. Most LMICs rely on WHO at all levels, particularly the Country Office, which is viewed as an essential ally of the local health ministry; WHO remains a vital asset to achieving a healthier world. By working directly with WHO at all levels and optimising WFNS interactions, including the WHO liaison committee, global neurosurgery would do well to consider WHO as an advantageous, strong, and willing partner.⁷

Role of WFNS in Global Neurosurgery

WFNS is the largest neurosurgical organisation, with over 49,000 neurosurgeons from almost every existing neurosurgical society worldwide. It was founded in 1955 to promote neurosurgery camaraderie among neurosurgeons. Several committees play critical roles under the auspices of the WFNS. The Foundation's activities are organised around three pillars:

1. Education
2. Development of network of training centers
3. Provision of neurological equipment to developing countries.⁸

Recommendations and future directions in global neurosurgery

- Expand the accumulation of human resources.
- By increasing capacity at existing training facilities and launching new programmes, more neurosurgeons, nurses, operating room staff, and anaesthetists need to be taught.
- To address the current deficit as soon as feasible, the idea of task-sharing training for non-

neurosurgeons in basic and emergency neurosurgery should be investigated.

- Encourage LMICs to conduct research in neurosurgery. For contributions coming from LMICs, removing the financial obstacles to publication should be taken into consideration.
- Encourage innovative ideas that are useful and economical.
- By cultivating personal connections with significant organisations, neurosurgery can become a prominent player in the global surgery community.²

More articles on the outcomes of global neurosurgery measures implemented in low-resource countries will aid in the formulation of future strategies. It is a source of pride that neurosurgeons from developed regions have banded together to spread the benefits, love, and joy of neurosurgery to their underserved brothers and sisters. The collaboration and coordination of various societies such as the World Federation of Neurological Surgeons (WFNS), the Asian Congress of Neurological Surgeons (ACNS), the Neurosurgery Outreach Foundation (NOF), and the Foundation for International Education in Neurological Surgery (FIENS) would be a watershed moment in making neurosurgery truly global.⁹

A sufficient number of medical professionals, facilities, and training programmes for neurosurgery are still lacking in the majority of underdeveloped nations. Dedicated neurosurgical beds, beds in intensive care units, and hospitals with the capacity for neurosurgery are all in short supply. Computed tomography, magnetic resonance imaging, and specialist neurosurgery tools are further amenities. Additionally, there are the same issues with neurosurgeons being overrepresented in metropolitan areas as opposed to suburban ones. The main causes of the delayed progress in neurosurgery services in underdeveloped nations have been recognised as poor coordination amongst neurosurgical societies, limited funding, and poor development in neurosurgery education programmes by the governing bodies in those countries. The current measures taken by numerous institutions, organisations, societies, and people, particularly those from high income nations, have led to an increase in the number of qualified neurosurgeons in LMICs. To assure the sustainability of neurosurgery services, self-reliance with

committed education and training should be built in every nation. The ultimate goal of structuring neurosurgery education, human resources, and facilities in all nations around the world should be the equality of access to neurosurgical treatments by all people.¹⁰

A worldwide solution with a common vision and objectives is necessary for a global problem. The authors call on like-minded neurosurgeons to get together, begin the process of developing consensus within the international neurosurgery community, and work with other stakeholders in the provision of global surgical care.

CONCLUSION

The world's low- and middle-income countries have not profited from advancements in neurosurgery. The majority of developing countries still struggle with a lack of medical professionals. However, in recent years, the sector has started to coalesce and important initiatives have been taken to create a cohesive voice. Large-scale collaboration through multilateral, multinational participation is the only real answer to the problems we face in global neurosurgery. The future of global neurosurgery looks promising as the key actors have started working together toward this final resolution.

List of Abbreviations

LMIC: Low- and middle-income country
 LMICs: Low- and middle-income countries
 GNC: Global Neurosurgery Committee
 UN: United Nations
 WFNS: World Federation of Neurosurgical Societies
 WHO: World Health Organization
 ACNS: Asian Congress of Neurological Surgeons
 NOF: Neurosurgery Outreach Foundation
 FIENS: Foundation for International Education in Neurological Surgery

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