

## Neurosurgeons as Researchers in Developing Countries

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Locally driven research is indispensable for improving global health and promoting health equity. The COVID-19 pandemic has largely exposed the weakness of the global health system where a disease anywhere in the world is your disease in no time. The diagnostic modalities used and the intervention carried out based on research done in high-income countries (HICs) are fraught with danger—the patient population is different, the diagnostics may not be available or cost-prohibitive locally, and the recommended treatment may not be replicable. Strengthening research capacity in low and middle-income countries (LMICs) with different geography and culture is one of the most effective and sustainable ways of advancing health and development in these countries.<sup>1</sup> Conducting research is the most scientific method to: (a) understand the epidemiology of the disease, (b) determine the utility and applicability of diagnostic tests, (c) select the best treatment modalities, and (d) develop new tools and methodologies to measure and promote health equity.<sup>2</sup>

A major problem to look into is the sheer scarcity of clinical scientists (clinicians concurrently involved in research) in the LMICs. Clinicians should be at the forefront as they have first-hand access to patients. Oppenlander and colleagues in their article, “Research in Spinal Surgery” in 2014 argue that “if spine surgeons do not want poor-quality studies to dictate and limit their clinical decisions, then the responsibility rests with this group of practitioners to design high-quality studies to justify certain treatment modalities.”<sup>3</sup> There is no second argument to this statement. However, the research output from developing countries is low due to weak research capacity and multiple barriers to publishing in high-impact journals.<sup>4,5,6</sup> Despite being home to over 80% of the world's population, LMICs are hugely underrepresented in world literature. With an increasing demand for research and publication from academia and regulating bodies like Medical Education Commission, we need to engage ourselves more in research activities. Only doing clinical work will make us good technicians, not scientists, and will be depending largely on non-clinicians dictating to us what we should be doing.

Several strategies can be adopted to change the present situation. Neurosurgeons due to long hours of clinical

and operative work often do not have dedicated time for research and publication. Adequate infrastructure and incentivization of the research should be done by the government and institutional levels. Protected time for clinicians for research is another way to handle the barriers to research. In LMICs, we have enormous research potential that can be carried out in a cost-effective way responsive to local needs. A concerted individual, national and international effort is critical to significantly improve the situation. Global solidarity and collaboration in tackling the inequity in research between HICs and LMICs is much needed.

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