

## Global research disparity

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In some parts of the world, such as the United Kingdom (UK) and the United States of America (USA), engaging in medical research is a natural part of a doctor's journey. In fact, it is quite common for doctors to achieve a Master's degree or PhD in addition to their clinical postgraduate training, sometimes as a prerequisite to better employment opportunities or out of a genuine passion for academia. In other parts of the world, however, medical research is a luxury, not widely available even to those doctors who are passionate about it. This article will examine both sides of the coin. Countries will not be referred to as high, middle or low income as has become the norm, nor will the older dichotomy of developed and developing countries be used. There exist high-income countries which, despite their higher GDP, have yet to achieve the necessary benchmarks in other areas (including education and research) to be classified as developed countries. To avoid naming countries, the article will refer to geographical locations as either *research-inherent* (where research is a commodity) or *research-deficient* environments (where research is a luxury). Even in research-inherent countries, certain hospitals or institutions may be research-deficient, particularly in peripheral or rural areas. The reader will naturally be able to locate their specific country or institution within this divide.

## Research as a commodity

In research-inherent environments, the ability to conduct, present and appraise medical research is ingrained early into medical students as part of their undergraduate education. They continue to carry this culture forward into their postgraduate training and later in their professional lives. In fact, the competition for research positions and research grants in the UK and the USA is fierce. Moreover, the job market favours doctors with a rich research portfolio, so that even if they do not enjoy research, they find themselves compelled to engage in it in order to improve future employment opportunities. However, those who do wish to engage in research may find ample opportunities and mentors to support their endeavours, with the possibility of combining both research and clinical practice, as is the case in the UK. It is also worthy of note that all high impact scientific journals are published in research-inherent nations, and so young researchers have an early opportunity to participate in the peer review and publication processes with their more experienced mentors on the editorial boards. It is in such environments that the adage "publish or perish" was conceived.

Engaging healthcare professionals early in research fosters a more scientific working environment driven by evidence-based medicine, thereby enriching clinical practice through guidelines. This ultimately reflects in the quality of patient care. It also creates a solid and uniform practice against which professionals are assessed and held accountable in their field.

However, the obligation for unwilling individuals to engage in research can be daunting and may place undue pressure on their time and their ability to deliver optimal patient care. Although there should be a societal obligation towards medical research, perhaps this should only be geared towards individuals who are truly invested, while others should not be penalized or denied professional advantages for preferring a different career path.

## Research as a luxury

In research-deficient environments, medical research is a luxury due to the presence of certain obstacles. These obstacles can be broadly classified into human and non-human factors.

The non-human factor that comes most often to mind is lack of funding. Whereas this is true in many economically underprivileged parts of the world, in other settings, money may be generally available yet specifically lacking in research due to a culture that overlooks the importance of research and hence the need to allocate funding. Other non-human factors include the absence of research infrastructure including laboratories and simulation centres, excessive bureaucracy in applying for grants and ethical approval, lack of time dedicated for research, and a lack of incentive or encouragement for participation in research. Research positions particularly in the more prestigious universities and centres may only be accessible to a select few, who may or may not come with the required merit or enthusiasm.

Human-related factors include the lack of a skilled workforce. In many places, there are very few skilled healthcare professionals to cater for a large population of patients. Therefore, there is high demand on these professional to dedicate all their practice to direct patient care, sometimes being forced to choose between either a full-time clinical or research career without the possibility of combining both. During their training, they may not receive sufficient education in research methodology, so that despite being skilled clinicians they may not be capable researchers. To further compound matters, immigration of these professionals to more research-inherent nations creates a loss in human capital for their mother countries. On the other hand, those who persist in pursuing research in challenging environments will have to navigate the infrastructural, ethical and cultural barriers. Among patients, there are two diverging attitudes in these environments; patients are either unscrupulous and blindly accept recruitment as research subjects or, when made aware of their participation, refuse under the premise that they are “being experimented on”. Human-related obstacles in research-deficient nations, therefore, are complex, intertwined and encompass healthcare professionals and leaders, governments, and patients.

The bottom line is that research-deficient nations remain consumers rather than producers of published research, which is neither representative of, nor applicable to, their patient demographic. It is unfortunate that these nations are usually densely populated, with a high burden of both communicable and non-communicable diseases and a relative lack of focus on health promotion and disease prevention. Therefore, those who need scientific research the most have the least access to it.

| Summary of factors contributing to global research disparity                        |  |  |  |
|---|--|--|--|
|  | <u>Commodity</u>                       |  | <u>Luxury</u>                            |
|  | Robust academic culture & facilities   |   | Insufficient funding                     |
|  | Improved employment opportunities      |   | No protected research time               |
|  | Incentives & awards                    |   | Understaffing/limited research expertise |
|  | Focus on evidence-based medicine       |   | Lack of research infrastructure          |
|  | Mentorship & publication opportunities |   | Excessive bureaucracy                    |

### Three quick (and cheap) solutions

Achieving equity and narrowing the global divide in research is a gargantuan task, which merits further articles on the subject. Here, are three possible ways to increase global research capacity.

First, there is value in cooperation between researchers from across the globe. International collaboratives became especially popular during the COVID-19 pandemic as the new nature of the disease, coupled with the general lack of knowledge on its nature, mandated that healthcare professionals from different countries around the world collaborate to pool their data and experiences and subsequently publish research together. The Internet and technology made such collaborations possible. Since then, the value of such international collaborative groups has been recognized not only in increasing the amount of data and sharing experiences, but also in creating opportunities for healthcare professionals in research-deficient areas to engage in global research. These collaboratives also take research mentorship beyond geographic borders.

Second, the Internet, social media and now artificial intelligence (AI) provide widely accessible and inexpensive platforms for researchers to design, communicate, and disseminate their work. It is hoped that technology will be the great equalizer in all healthcare domains, and research is no exception.

Finally, where governments and institutions either lack or refuse to provide funding, global pharmaceutical, business and technology giants may prove invaluable in their ability and willingness to fund research and to invest in research-dedicated establishments. Of course, caution, honesty and transparency must be exercised when conducting and reporting research supported by private funders.

### Conclusion

There exists a stark global disparity in research culture and opportunities where certain environments are research-inherent and a bigger portion of the world is research-deficient. Whereas conducting research should not be forced upon unwilling participants (both healthcare professionals and patients) as an essential commodity and an employment prerequisite, there must exist a choice to engage in research on the individual level, and an obligation at the community level. Both human and non-human factors must be optimized to create the ideal environment for conducting and publishing research. Global cooperation in the form of international research collaboratives, judicious use of technology and social media, and financial support from private enterprises provide a beacon of hope for establishing equity in healthcare research.

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