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Why is research from developing countries underrepresented in international health literature, and what can be done about it?

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Although the highest burden of disease is concentrated in low- and middle-income countries (LMICs), data from the Institute for Scientific Information show large gaps in scientific production between industrialized and developing settings (1). In the fields of medicine and public health, the overwhelming majority of publications originate in the United States and Western Europe. Scientific papers where researchers from developing countries are the sole authors represent a very low proportion of published manuscripts.

Over the past few years, several articles have analysed various aspects related to the underrepresentation in international journals of public health problems and research conducted in LMICs (2–5). Complex and interrelated contributing factors have been identified; five are elaborated below.

Poor research production. Scientific production is poor in developing settings, both in terms of quantity and quality, because of a critical lack of continuous support for research and development activities including basic infrastructure from both local governments and international agencies, and lack of incentives for research activities. Furthermore, professional researchers are undervalued and their salaries are low, a situation that reflects the lack of status accorded to scientific production and contributes to a scarcity of full-time researchers ad hoc.

Poor preparation of manuscripts. Even manuscripts exhibiting high-quality research may not meet the requirements of peer-reviewed international public health journals in terms of language and scientific presentation. Although some journals' policies include assistance for writing and language editing, this support does not meet the needs. Language proficiency remains a fundamental barrier for scientists whose mother tongue is not English. Poor presentation may also result from a lack of the skills required to develop coherent arguments. Indeed, unlike developed countries where writing skills are an essential component of higher education, writing abilities in LMICs are

usually acquired informally on an ad hoc basis, at a later stage in a professional career.

Poor access to scientific literature. Authors from developing countries are often not adequately prepared to participate in the international scientific debate, as they have limited access to the published literature. Out-dated and insufficient or underresourced library stocks, high journal subscription fees and poor Internet access and computer availability represent serious limitations.

Poor participation in publication-related decision-making processes. Developing country experts are seriously underrepresented on editorial boards and review rosters of international journals. Editorial boards of journals devoted to diseases that mostly occur in developing country settings (e.g. tropical medicine) where local experts are not proportionately represented are an example of this situation. As a result, submissions from poor countries are usually evaluated by experts who may not be knowledgeable about the constraints associated with conducting research in these settings and, therefore, do not have a positive attitude to provide the guidance that may make the work publishable.

Bias of journals. Editors, editorial boards and reviewers of international medical journals may be insufficiently interested in the areas to which most researchers from developing countries devote their work, and may consider them unoriginal or irrelevant for their readership. The existence of a bias against the so-called “diseases of poverty” has also been suggested (6). This lack of interest may also reflect the preferences of the readership or the advertisers. In addition, researchers from poor settings have a limited capacity to buy reprints, which constitute a substantial source of income for scientific journals. Finally, international journals are usually more willing to consider papers that originate from prestigious research centres in developed countries than those from lesser-known academic entities, particularly when the authors are exclusively researchers from developing countries.

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Ref. No. 04-015768

Important steps to deal with some of the causes of this unequal representation have been implemented or suggested.

- WHO's initiative to expand developing countries' access to primary biomedical information constitutes a key effort to engage wider audiences that are currently unable to afford paid subscriptions to journals. For example, the Reproductive Health Library has been implemented as a source of up-to-date evidence for reproductive health care in developing countries.
- Collaboration between researchers from industrialized and developing countries has been proposed as a way to improve the quality of manuscripts and increase the likelihood of publication. The balance of power in such a relationship is an issue in this process.
- Increasingly active regional representation on editorial boards and the assignment of special reviewers to papers submitted from developing settings could also improve acceptance rates.
- Expanding access to the scientific literature through free electronic journals and workshops, and translation of abstracts or full articles into languages spoken in developing regions would contribute to easing the scientific isolation in which researchers from poor countries often work.
- Special issues of international journals and calls for papers with a regional focus would also help encourage submissions from developing countries.

All these interventions make intuitive sense and can be implemented. However, in order to suggest potentially effective strategies to increase the representation of health research conducted in settings with limited resources, a comprehensive and detailed knowledge of the current situation is required. Empirical data should come from rigorous surveys with large, representative

samples from both sides of the equation — researchers from developing countries and staff of international journals, including editors-in-chief and other key players such as assistants, reviewers and editorial staff who are instrumental in making preliminary decisions about whether or not papers can continue through the review process and eventually be published.

To be consistent with essential principles of health research, ongoing and new interventions should be carefully evaluated in terms of their feasibility, acceptability, sustainability and cost-effectiveness. All of these initiatives will require resources and long-term commitment from journals and international donors collaborating in health research capacity building. The investment will certainly pay off. As we enhance our understanding of the reasons behind the lack of visibility of poor countries in the international literature, we will develop the tools to disrupt the negative feedback cycle in which poor production of new scientific knowledge both results from and contributes to limited support for research and innovation in settings that need them most. ■

Conflicts of interest: none declared.

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