Promotion and Reporting of Research from Resource-Limited Settings

Chesmal Siriwardhana[1–3]

[1]Global Public Health, Migration & Ethics Research Group, Faculty of Medical Science, Anglia Ruskin University, Cambridge, UK. [2]Institute of Psychiatry, Psychology & Neuroscience, King's College London, London, UK. [3]Institute for Research & Development, Colombo, Sri Lanka.

ABSTRACT: Driven by global burden of disease and inequalities in health care, research activities in resource-poor settings have radically increased. However, a corresponding increase in reporting of research from these settings has not been observed. This article critically explores the importance of promoting and reporting of health research from resource-poor settings, current trends, and practices, and discusses the key challenges faced by researchers from such settings. These challenges include changing face of open-access (OA) and online publishing, the threat of predatory OA journals, authorship and international partnership ethics, attitudinal problems hindering research reporting, and a lack of alternative publishing spaces. A combined, decisive effort is needed to bridge the gap between research activity and reporting in resource-poor settings.

KEYWORDS: low and middle income countries, resource-poor settings, research reporting, research promotion, publication divide, global health, public health

CITATION: Siriwardhana. Promotion and Reporting of Research from Resource-Limited Settings. *Infectious Diseases: Research and Treatment* 2015:8 25–29 doi:10.4137/IDRT.S16195.

TYPE: Perspective

RECEIVED: June 30, 2015. **RESUBMITTED:** August 9, 2015. **ACCEPTED FOR PUBLICATION:** August 14, 2015.

ACADEMIC EDITOR: Douglas MacPherson, Editor in Chief

PEER REVIEW: Six peer reviewers contributed to the peer review report. Reviewers' reports totaled 1488 words, excluding any confidential comments to the academic editor.

FUNDING: Author discloses no funding sources.

COMPETING INTERESTS: Author discloses no potential conflicts of interest.

CORRESPONDENCE: chesmal@gmail.com

Paper subject to independent expert blind peer review. All editorial decisions made by independent academic editor. Upon submission manuscript was subject to anti-plagiarism scanning. Prior to publication all authors have given signed confirmation of agreement to article publication and compliance with all applicable ethical and legal requirements, including the accuracy of author and contributor information, disclosure of competing interests and funding sources, compliance with ethical requirements relating to human and animal study participants, and compliance with any copyright requirements of third parties. This journal is a member of the Committee on Publication Ethics (COPE). Provenance: the authors were invited to submit this paper.

Published by Libertas Academica. Learn more about this journal.

Background

Global burden of disease has increased, driven by inequalities in health care, geopolitical turmoil, financial crises, humanitarian crises, and changing faces of disease and climate change, among many other factors. The major share of increased disease burden is reported from low- and middle-income countries (LAMIC), where resource limitation hinders research and treatment development efforts to tackle health problems.[1] Perhaps not surprisingly, increased disease burden in LAMIC has also been linked to an increased number and type of research conducted in these settings. Potential reasons for the increase in LAMIC research activity are manifold. Shaped by historical events and developments in the global health movement and its offshoots such as global mental health, continuing interest in global (public) health has led to an increase in research addressing global health issues, especially in resource-poor settings. Further, with increasing globalization and human mobility, health problems previously considered as "local" have become "global," leading to a paradigm shift in thinking and approach among the scientific community, especially in the developed world. The ethical imperative to find solutions to pressing health problems in resource-poor settings has also driven the increase in research activity. Pharmaceutical research, sometimes motivated by bigger profit margins due to low cost of research in LAMIC, has also increased, although populations in low-resource settings do not often benefit from these research. Rapid advances in biotechnology, genetics, and nanotechnology industries have also contributed to an increase in LAMIC research, albeit with mixed benefits to local populations. Others have highlighted a "humanitarian need" to conduct research in resource-poor settings, in order to address the vast inequalities in health and to improve the well-being of populations in the global south.[2]

Despite an increase in research conducted in resource-poor settings of the global south, specific resources supporting the research activity remain limited. Most research depends on funding from the developed world, channeled through international funding programs by governments or research funding agencies located in the global north. In addition to funding, another key limitation is the lack of human resources, such as insufficient cadre of trained researchers, inadequate opportunities for training and capacity building. The loss of researchers to brain drain is another issue exacerbating the human resource gaps in resource-poor settings. Importantly, researchers who work in resource-poor settings increasingly struggle with the promotion and reporting of their research activities, which has a cascading negative effect on the proliferation of science in the global south. This article aims to explore issues around the promotion and reporting of health research from resource-poor settings, based on author's collective experience as a researcher and a science communicator from a LAMIC setting and other published evidence.[3,4] This article looks at why promotion and reporting of research from resource-poor settings is important, explores current trends,

and discusses several established and emerging challenges. For the purpose of this article, all LAMIC countries are considered as resource-poor settings, while acknowledging that some countries may have better resources than others.

Discussion

Why is it important? For resource-poor LAMIC, social, educational, technological, and economic domain development is a top priority in order to overcome problems related to poverty, food insecurity, overcrowding, sanitation, noncommunicable/communicable disease (eg, pandemic levels of HIV and TB in some LAMIC), war, and climate change. In turn, social, educational, technological, and economic development fundamentally depends on the advancement of science through research in these settings[5] and benefits from having a tightly interwoven network of actors engaged in promoting and using scientific research to further the expansion of these domains.

In addition, exchange of new knowledge generated through research activity with the wider global scientific community is essential for improving quality, increasing quantity, and ensuring continuity. Promotion and reporting of research findings from resource-poor settings enable comparison, contrasting, critique, and dialogue between peers from similar settings and from more "resource-rich" settings. This process can facilitate increased attention to LAMIC research, generate funding, and promote North–South/South–South collaborations.

Trends and patterns in research reporting from resource-poor settings. Despite the importance of promotion and reporting research from resource-poor settings, the global academic publishing and dissemination system is neither receptive nor built to accommodate the sharing of work from LAMIC researchers. Developed to serve the needs and requirements of the scientific community from developed countries (global north), it is rife with practices that promote systemic inequality between researchers from resource-rich and resource-poor settings.[6–8] Over the years, a lot of effort has been dedicated to eradicate inequalities in international research promotion and publication systems through initiatives, such as open access,[9] establishment of guidelines,[10] and ensuring dedicated funding. While these efforts have encouraged research reporting from resource-poor settings, significant gaps still remain.

Patel and Sumathipala in a pioneering study on the international representation of psychiatric literature reported that only 6% of published articles cover over 90% of the world population.[11] They reported a higher rate of publication in European psychiatry journals when compared to American journals, and that acceptance rates for manuscripts originating from non-Euro-American countries were generally lower.[11] In a follow-up study conducted a decade later using similar criteria, Helal et al reported a rate of 6.8% for psychiatric literature originating from LAMIC.[12] Compared to 6% reported in 2011, there is only a negligible increase over a decade. However, they also reported a general increase in the proportion of LAMIC articles across all considered journals.[12]

Similar trends in the low representation of LAMIC research have been reported in many other health and biomedical subject areas.[13–18] While the general trend has been a parallel and corresponding increase in both the amount of LAMIC research and their representation in international academic publication outlets, the rate of increase, ease of publication, acceptance rates of manuscripts, and especially those solely authored by LAMIC researchers remain significantly low. In addition, a "transatlantic divide" in LAMIC research publishing has been reported.[19]

Challenges in promoting and reporting research from resource-poor settings. Langer et al identified several important factors that may contribute to the underreporting of research from LAMIC.[17] They include quantity and quality issues in research production, substandard manuscript preparation, limited access to current evidence, underrepresentation in editorial and publication decision-making, and lack of interest (bias) from international journals.[17] While these factors are well established and still continue to hinder promotion and reporting of research from LAMIC, other more recently emerging factors reflect the rapid changes in global academic publication and dissemination landscape.

Open-access (OA) initiative, online publishing, and predatory journals. During the last 10–15 years, revolutionary changes have happened in online academic publishing. There is an increase in the number of journals adopting the online publishing model, gradually limiting the print versions. The changes in the business model of the top publishing companies have led to novel ways of limiting the publication of expensive print journals instead of turning to online subscription and advertisement-based revenue generation. Some journals have completely ceased publishing print versions and have used web-publishing advantages to increase their journal publication frequency and readership. The global proliferation of Internet access has enabled a far wider reach for online journals than traditional printed journals. Researchers in LAMIC have significantly benefitted from online publishing, as up-to-date developments in science published in online journals take less time to filter down to far corners of the world compared to their print-version counterparts.

The OA movement, targeting free and fair distribution of scientific knowledge especially among researchers from resource-poor settings,[9] has capitalized and built on the online publication platforms. Initiatives, such as PLOS and BioMed Central, have radicalized scientific publishing and made a huge positive impact on research reporting from resource-poor settings. Established traditional journals have also adapted the OA model, combining online publishing and OA to provide space for research reports in the areas of health research that were traditionally not given prominence. Neglected tropical diseases, public health, mental health, and broader global health are some of the subjects to have benefitted from the online publishing and OA combination.

However, research reporting from resource-poor settings is facing a mixture of old and new barriers in the age of digital publishing. Barriers with language, quality, quantity, standards, and editorial bias still exist and prevent researchers from resource-poor settings benefitting from these initiatives. The new barriers stem from the business models of online OA publications, as most OA journals require a publication fee payment from authors. These payments can range from 500 to 1500 or more, often exceeding a monthly salary of a LAMIC researcher or a considerable portion of a local-currency research grant. While there are systems in place to offload this burden from authors through additional provisions in research grants and fee waiver offers to researchers from most LAMIC, a lot of authors are hindered by the financial constrains of OA publishing.

Although OA movement has been promoted with the best intentions for researchers from resource-poor settings, the newly emerging trend in predatory OA journals is a strong, destructive threat to the scientific credibility of research reported from LAMIC.[20–22] These OA journals mostly originate from South Asia and Africa, and lure unsuspecting, mainly early career researchers from LAMIC to submit articles with false promises of fast peer review and low OA fees.[21] However, the peer-review process of these journals are often deeply flawed or nonexistent, and if carefully checked, their editorial board members either have faked profiles or have been deceived themselves (again mostly LAMIC researchers). The flawed, sometimes legally questionable, practices of these predatory OA journals are damaging research promotion and reporting from resource-poor settings at an alarming pace.[20,21] For an example, this author typically receives at least three e-mail requests per day from predatory OA journals, requesting manuscripts and offering editorial board memberships or free publication of any material. Given the large number of such requests, the extent of damaging reach of these predatory journals is worrying.

Fortunately, these dangers are increasingly recognized by the publishing industry, researchers, and editorial community.[23] The Open Access Scholarly Publishers Association, the Committee on Publication Ethics, and World Association of Medical Editors are some of the organizations involved in regulating the OA publishing practices. The Directory of Open Access Journals, an online directory of high-quality OA publications, also offers a best practice guide for OA publishing.[24] There are other helpful resources[25] and informal guidance on OA publishing available for LAMIC researchers, such as the "five-point plan on how to avoid predatory journals" by Jocalyn Clark.[26]

Authorship, international partnerships, and ethics. Increasingly, health research in resource-poor settings takes place with the involvement of global consortia and partnerships that cut across national, cultural, and socioeconomic boundaries. These collaborations have augmented philanthropic and humanitarian motives[2] to reduce the disproportionate health burden borne by populations in resource-poor settings and to enhance research capacity, promotion, and reporting, often encouraged by funding agencies, such as the Wellcome Trust and Bill & Melinda Gates Foundation. These organizations, especially the Wellcome Trust, also provide specific support for research promotion and dissemination including public engagement and OA publishing. However, implementation and ground practices of international collaborative research in resource-poor settings raise important ethical questions.[2] Most ethical issues are raised by the differentials in power, knowledge, and resources between partners across the resource divide. For example, more often than not, research priorities and agendas for funding are set by organizations/collaborative partners from the developed world, and their LAMIC counterparts, such as researchers or governments, are regularly not consulted. Capacity building initiatives often involve researchers from developed countries spending time in LAMIC institutions,[2] but similar opportunities for LAMIC researchers are curbed by immigration policies un-conducive to such reverse exchanges. Even in more ethical or fair partnerships, researchers from developed countries hold an edge on their LAMIC counterparts over career progress and research publishing due to superior training, language ability, and higher levels of financial/institutional support. For example, in 2014, a Kenyan court ruled that a successful UK–Kenya research partnership has discriminated against local Kenyan scientists, preventing career advancement when compared to their UK colleagues.[27]

Authorship is a critical issue in research reporting, especially for researchers from resource-poor settings engaged in international partnerships.[28] Current guidance material on authorship, often strictly followed by prominent journals, provides an unfair edge to not only authors from resource-rich settings but also to native English-speaking authors, who are again mostly from Euro-American countries. Levels and types of contribution to research that judge authorship eligibility can become a complex issue due to different cultural perceptions that define "contribution."[28] In this author's practice, junior researchers who recruited participants and collected data have been given authorship, based on their relative contribution to the project, regardless of intellectual input to a particular publication. However, collaborators, editors, and reviewers from Euro-American countries who try to adhere to a strict interpretation of prevailing authorship guideline criteria have questioned this definition of contribution. Smith et al proposed empirical research into authorship ethics in global health research partnerships and recommended increasing awareness and developing standards of practice.[28] Overcoming malpractices and inequalities in authorship is an ethical imperative to enhance research promotion and reporting from resource-poor settings.

Attitudes toward research reporting from resource-poor settings. In the author's experience, attitudinal issues around research reports from LAMIC can be highly restrictive

and damaging. Paternalism, sensationalism, and groupism are three such damaging practices, especially when borne by collaborators, editors, and reviewers from resource-rich settings. Some academic collaborators from developed countries tend to have an ingrained idea that they "know the best," whether research methodology or strategy, how to write an article, or which journal to publish in. For their colleagues from resource-poor settings, this dangerously emanates residual whiffs of leftover imperialistic attitudes. Editors of prominent journals are sometimes driven by an irrational need to publish "sensational," "groundbreaking," or "world changing" research, conveniently forgetting that research reports from resource-poor settings may very well be doing exactly that, albeit for a forgotten population in a far corner of the world. Reviewers, even those from LAMIC but based in resource-rich countries and institutions are sometimes caught in the hype.

Another damaging tendency detrimental to the progress of research reporting from LAMIC is "groupism." Defined as "the tendency to conform to the cultural pattern of a group at the expense of individualism and cultural diversity,"[29] this damaging practice in the context of global health research can be observed among researchers from both LAMIC and developed countries. It occurs when they form tightly knit groups and try to dominate one subject area, sometimes fiercely preventing newcomers from acquiring competitive funding, publishing, or working in their domain. Such groups can deliberately create a citation block for publications arising from similar or competing work, usually authored by junior researchers or those from LAMIC. Researchers from LAMIC, especially at an early career stage, limited by many other barriers discussed above, face an uphill struggle to overcome such issues and publish their research reports.

Other gaps in promoting and reporting research from resource-poor settings include the lack of awareness about the importance of communicating research findings among researchers and their senior colleagues, lack of training/capacity building opportunities in science communication (especially for those who lack English language proficiency), lack of encouragement from senior colleagues (eg, supervisors, mentors, and managers) and/or institutions, and limited diversity of available dissemination and publication outlets.

Most mainstream news media prefer articles written by in-house journalists, while most academic journals have limited options other than the established academic article formats. While personal blogs offer a way to circumvent this, they generally tend not to receive wider attention, unless linked to a journal-sponsored blog (eg, PLOS Blogs). However, blogs linked to journals are too tightly controlled and almost echo the issues inherent in journal publication policies. With inherent weaknesses in language proficiency and insufficient exposure, LAMIC researchers often struggle to find space in such alternative media outlets.

Reducing the gap—potential steps. In this section, several potential steps to address the challenges discussed above are presented. First, the author proposes that mainstream news media in the global north should create targeted opportunities/spaces to allow scientists from LAMIC to write/talk about their research and, if necessary, offer a basic training package in science communication alongside. For example, Science Development Network (www.scidev.net) offers a number of practical guides on science communication, mainly for LAMIC scientists and journalists. Also proposed is that academic journals (online/print) create separate sections where LAMIC researchers are provided chance/space to communicate about their research in less formal, nonacademic article formats. Journals with dedicated blog space can easily provide this space, by ensuring minimal regulation by journal publication policy.

Second, LAMIC researchers should be provided with more guidance on OA publishing, especially on how to avoid predatory journals.[26] Awareness-raising activities should be incorporated into postgraduate training and research capacity building programs in LAMIC. Focus should be on ensuring the quality of OA publishing, including the data in OA publications, and increasing the number of high-quality OA journals. For example, a group of academics from the University of Pittsburgh, who established the Global Health Network Supercourse project, have also set up the Central Asian Journal of Global Health specifically aiming to publish LAMIC research along with a free advisory service on research design and analysis.[30]

Third, to resolve issues around "authorship" and "levels of contribution," different authorship levels can be defined. For example, those who make a significant contribution to data collection can be credited as "secondary coauthors." Such a system would recognize the often-unsung efforts of field data collection by junior LAMIC researchers and provide them with increased publishing opportunities. As the existing criteria for reporting and assessing the authorship roles are not standardized, journal editors, publishers, and reviewers are encouraged to address this by introducing a clearer, universal system of measuring authorship eligibility that takes cultural practices, power relationships in international collaborations, and skill disparities into account. A similar system is recommended to address issues around groupism, where closer attention is required of editors and reviewers to ensure equality in research reporting and citation, especially for LAMIC researchers.

Conclusion

Despite the increased level of disease burden and corresponding increase in research conducted in resource-poor settings, significant limitations and barriers to research promotion and reporting still exist. Some of these have historical roots, and others are newer and of a constantly evolving nature, linked to advances in science, technology, publishing policies, and international funding and research priorities. The representation of research from LAMIC is still low, and despite various initiatives to counter this trend, systematic weaknesses embedded in researcher capacities, collaborations, and editorial policies are hindering progress. An attitudinal shift is required

from researchers in LAMIC to strengthen their individual and organizational capacity to increase the quality and quantity of research reports, to find innovative ways of promoting research, and to counter biases within Euro-American academic publishing systems. Journal editors, reviewers, and funding agencies also have an ethical imperative to encourage and facilitate research reporting from resource-poor settings in a meaningful manner and not simply pay lip service to equality and justice of global health research.

Acknowledgments

Reviewers are acknowledged for their input to improve the manuscript content.

Author Contributions

Conceived the concepts: CS. Analyzed the data: CS. Wrote the first draft of the manuscript: CS. Agree with manuscript results and conclusions: CS. Made critical revisions: CS. Author reviewed and approved of the final manuscript.

REFERENCES

1. World Health Organization. 2015. Available at: http://www.who.int/healthinfo/global_burden_disease/projections/en/5.
2. Chetwood JD, Ladep NG, Taylor-Robinson SD. Research partnerships between high and low-income countries: are international partnerships always a good thing? *BMC Med Ethics*. 2015;16(1):36.
3. Siriwardhana C, Sumathipala A, Siribaddana S, et al. Reducing the scarcity in mental health research from low and middle income countries: a success story from Sri Lanka. *Int Rev Psychiatry*. 2011;23(1):77–83.
4. Sumathipala A, Nadkarni A, Siriwardhana C. Reflections on research and clinical collaborations between South Asia and the UK. *Br J Psychiatr Int*. 2015;12(1):8–10.
5. Salager-Meyer F. Scientific publishing in developing countries: challenges for the future. *J Engl Acad Purp*. 2008;7(2):121–132.
6. Horton R. North and South: bridging the information gap. *Lancet*. 2000;355(9222):2231–2236.
7. Horton R. Medical journals: evidence of bias against the diseases of poverty. *Lancet*. 2003;361(9359):712–713.
8. Tyrer P. Combating editorial racism in psychiatric publications. *Br J Psychiatry*. 2005;186(1):1–3.
9. Chan L, Kirsop B, Arunachalam S. Open access archiving: the fast track to building research capacity in developing countries. *Sci Dev Net*. 2005. Available at: http://www.scidev.net/ms/openaccess.
10. International Committee of Medical Journal Editors. Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals; 2014. Available at: http://www.icmje.org/icmje-recommendations.pdf. Accessed June 24, 2015.
11. Patel V, Sumathipala A. International representation in psychiatric literature: survey of six leading journals. *Br J Psychiatry*. 2001;178:406–409.
12. Helal MN, Ahmed U, Vostanis P. The representation of low- and middle-income countries in the psychiatric research literature. *Int Psychiatry*. 2011;8(4):92–94.
13. Rohra DK. Representation of less-developed countries in pharmacology journals: an online survey of corresponding authors. *BMC Med Res Methodol*. 2011;11:60.
14. Aluede EE, Phillips J, Bleyer J, Jergesen HE, Coughlin R. Representation of developing countries in orthopaedic journals: a survey of four influential orthopaedic journals. *Clin Orthop Relat Res*. 2014;470(8):2313–2318.
15. Didegah F, Thelwall M, Gazni A. An international comparison of journal publishing and citing behaviours. *J Inform*. 2012;6(4):516–531.
16. Mahawar KK, Malviya A, Kumar G. Who publishes in leading general surgical journals? The divide between the developed and developing worlds. *Asian J Surg*. 2006;29(3):140–144.
17. Langer A, Díaz-Olavarrieta C, Berdichevsky K, Villar J. Why is research from developing countries underrepresented in international health literature, and what can be done about it? *Bull World Health Organ*. 2004;82(10):802–803.
18. Keiser J, Utzinger J, Tanner M, Singer BH. Representation of authors and editors from countries with different human development indexes in the leading literature on tropical medicine: survey of current evidence. *BMJ*. 2004;328(7450):1229–1232.
19. Raja AJ, Singer PA. Transatlantic divide in publication of content relevant to developing countries. *BMJ*. 2004;329(7480):1429–1430.
20. Available at: http://scholarlyoa.com. Accessed June 24, 2015.
21. Xia J, Harmon JL, Connolly KG, et al. Who publishes in "predatory" journals? *J Assoc Inf Sci Technol*. 2015;66(7):1406–1417.
22. Available at: http://scienceblogs.com/confessions/2015/03/31/some-perspective-on-predatory-open-access-journals. Accessed August 8, 2015.
23. Clark J, Smith R. Firm action needed on predatory journals. *BMJ*. 2015;350:h210.
24. Available at: https://doaj.org/bestpractice. Accessed August 8, 2015.
25. Available at: http://www.openaccess.manchester.ac.uk/checkjournal/predatory-journals. Accessed August 8, 2015.
26. Available at: http://blogs.bmj.com/bmj/2015/01/19/jocalyn-clark-how-to-avoid-predatory-journals-a-five-point-plan. Accessed August 8, 2015.
27. Available at: http://www.nature.com/news/kenyan-doctors-win-landmark-discrimination-case-1.15594. Accessed August 8, 2015.
28. Smith E, Hunt M, Master Z. Authorship ethics in global health research partnerships between researchers from low or middle income countries and high income countries. *BMC Med Ethics*. 2014;15(1):2.
29. Groupism. *Merriam-Webster.com*; 2014. Available at: http://www.merriam-webster.com. Accessed June 24, 2014.
30. Linkov F, LaPorte R. The central Asian journal of global health: a supercourse journal. *Cent Asian J Glob Health*. 2012;1(1).