



Gendered geography: an analysis of authors in *The Lancet Global Health*

Academic career advancement is largely driven by peer-reviewed research, with the number of publications and author rank representing important measures of distinction and productivity.¹ There is, however, a persistent gender gap in academic publishing; although authorship by women has risen substantially since the 1960s and the raw publication count is becoming increasingly equal between women and men, men still dominate the coveted first and last author positions, along with single authored papers,² and women are still in the minority as authors. An analysis of author gender in *The Lancet* journals, for example, found that only a third of all authors were women.³ In the field of global health, authors from low-income and middle-income countries (LMICs) are known to be underrepresented,⁴ but the role of gender and its interaction with geography among publications within the field remains poorly understood.

We did an automated bibliometric analysis by extracting the full name, author rank, and country affiliation for the authors of articles published in *The Lancet Global Health* (excluding corrections and editorials) from its launch (June 1, 2013) to Dec 1, 2018. Full names were used to approximate the author genders using NamSor, an automated gender-matching software program. Country affiliations were extracted from the author affiliations and matched to the 2018 World Bank income classification system for countries. If authors reported institutional affiliations in more than one country, for country association calculations we counted authors in each of their reported countries. Author rank was determined on the basis of the order in which the authors were listed in the manuscript.

In total, 1323 articles were published in *The Lancet Global Health* between June 1, 2013, and Dec 1, 2018. Overall, 5878 different authors contributed to publications, among whom only 2020 (34.4%) were women. In general, the proportion of unique authors who were women increased slightly each year, with women making up 524 (36.4%) of 1441 authors in 2018, compared with 291 (31.3%) of 929 in 2014. In examining the gender distribution of authors by rank, women were found to be underrepresented in both the first and last author positions, representing 288 (37.5%) and 228 (29.7%) of 768 authors in these ranks, respectively. Among single-author articles, less than 30% (73 of 251) were authored by a woman.

Upon further disaggregating these data by geographical location, greater disparities emerged, with the highest gender gap existing among authors from low-income countries (LICs), where only 160 (25.4%) of 629 authors were women, compared with 547 (29.7%) of 1842 authors from middle-income countries (MICs), and 1438 (37.5%) of 3833 authors from high-income countries (HICs; appendix). Gender-specific analyses show that women and men from HICs publish significantly more than women and men from MICs and LICs, revealing geographical disparities in publishing. Across all women authors

(n=2145), 1438 (67.0%) were from HICs, 547 (25.5%) were from MICs, and 160 (7.5%) were from LICs. Across all men authors (n=4159), 2395 (57.6%) were from HICs, 1295 (31.1%) were from MICs, and 469 (11.3%) were from LICs. We also calculated gendered publication rates for each country with at least five authors and found that even within the HIC versus LMIC paradigm there were some important outliers. Ireland, Singapore, and Norway, which are all HICs, are among the 20 countries with the lowest proportion of women authors, whereas Honduras, Peru, Gambia, and the Philippines, which are all LMICs, are among the 20 countries with the highest proportion of women authors (figure).

Gendered differences in academic publishing are influenced by inequitable systems that continue to disadvantage women and LMIC authors within the field of global health. Women are less likely to obtain funding grants, for example, limiting their ability to both conduct and publish research.¹ Research systems influenced by historical and systemic biases become institutionalised within research structures, organisations, and processes to limit career progression within academia.⁵ We find evidence that these patriarchal, racialised, and colonial systems and processes affect who gets funding, who conceptualises and leads research, and who ultimately publishes these findings.

See Online for appendix

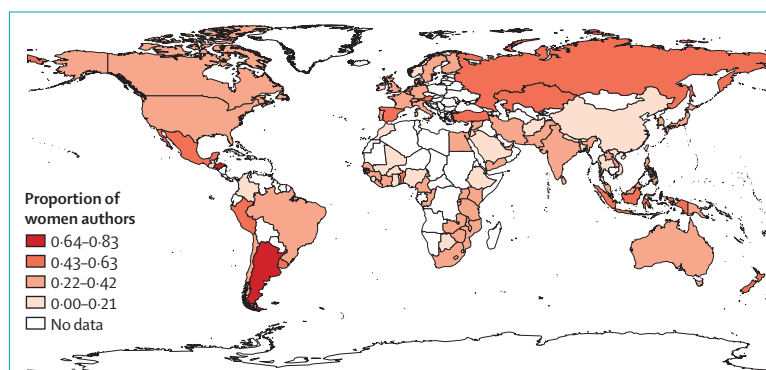


Figure: Proportion of women authors by country, 2013–18
Only countries with at least five unique authors are included. Data are grouped in equal intervals.

Although the proportion of women authors in *The Lancet Global Health* is low, a previous analysis found that, among the *Lancet* journals, it has one of the highest proportions of women authors, as well as women first authors, and a smaller gender gap in last author position.³ This previous analysis, however, did not disaggregate the data by country. Further gender-disaggregated analysis is needed to examine where LMIC authors rank in author order, which will contribute to further understanding of the nature of country collaborations across HICs and LMICs.⁶

Our findings are subject to a number of limitations. First, although the NamSor software takes into consideration the linguistic and cultural origins of names in its determination of gender, some level of measurement error exists with the use of the software, in particular with regards to gender-neutral names. However, we do not believe this introduced bias to our results in favour of one gender over another. Additionally, in analysing author gender composition by country, we counted authors in each country they were affiliated with, which might lead to an overestimation of female authors in LMICs if the majority of cross-affiliated authors were based in HICs.

Global health as a discipline is committed to addressing health inequities worldwide. It is paramount that we highlight the inequitable systems and structures that privilege men and HIC authors.⁷ HIC authors must balance their need to publish with using their own power and privilege to increase opportunities for authorship (including first and last authorship) for LMIC academics, particularly women.⁶ These inequities must be addressed if we are to increase diversity within global health publishing and ensure women and LMIC (particularly women LMIC) authors have an equal chance of career advancement.

We declare no competing interests.

Copyright © 2019 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-ND 4.0 license.

*Rosemary Morgan, Jamie Lundine, Bridget Irwin, Karen A Grépin
 rosemary.morgan@jhu.edu

Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD 21205, USA (RM); University of Ottawa, Ottawa, ON, Canada (JL); and Department of Health Sciences, Wilfrid Laurier University, Waterloo, ON, Canada (BI, KAG)

- 1 Lundine J, Bourgeault IL, Clark J, Heidari S, Balabanova D. The gendered system of academic publishing. *Lancet* 2018; **391**: 1754–56.
- 2 West JD, Jacquet J, King MM, Correll SJ, Bergstrom CT. The role of gender in scholarly authorship. *PLoS One* 2013; **8**: e66212.
- 3 González-Alvarez J. Author gender in *The Lancet* journals. *Lancet* 2018; **391**: 2601.
- 4 Iyer AR. Authorship trends in *The Lancet Global Health*. *Lancet Glob Health* 2018; **6**: e142.
- 5 Morgan R, Hawkins K, Lundine J. The foundation and consequences of gender bias in grant peer review processes. *CMAJ* 2018; **190**: e487–88.
- 6 Chaccour J. Authorship trends in *The Lancet Global Health*: only the tip of the iceberg? *Lancet Glob Health* 2018; **6**: e497.
- 7 Clark J, Horton R. What is *The Lancet* doing about gender and diversity? *Lancet* 2019; **393**: 508–10.