Global analysis of cancer research papers reveals consistent sex imbalance

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A new study from the Lancet Commission on Women, Power and Cancer with the Institute of Cancer Policy at King's has revealed a consistent sex imbalance of global cancer researchers across a 10 year
Published in BMJ Oncology, the study found the proportion of women as first authors increased by 26% and as last authors by 12%. However, this average obscures tremendous variability between regions and countries, with some of the richest countries on the planet languishing at the bottom of the index.

"Understanding country level participation of women in cancer research is crucial for benchmarking and developing evidence-driven policy to improve equity," said Director, Institute of Cancer Policy, King's College.

The researchers looked at the total output of cancer research papers from 56 countries between 2009 and 2019. They specifically analyzed the percentage of first authors, who are the publication lead considered to have made the biggest contribution, and last authors, who are usually the supervisor of the project and in a leadership position like laboratory group leader.

Broadly, countries in the Far East, Middle East (except North Africa), Western Europe (UK, Germany), as well as North America, performed poorly. Countries such as South Korea, Saudi Arabia, Austria, Greece and Japan languished at the bottom of the table—the last of which recorded 19.1% of first authors and 5% of last authors being female in 2019. Some countries showed a stagnation or decline in the number of female last authors.

In contrast, generally, the top performing countries in terms of first and last authors were in Eastern and Southern Europe and Latin America, with countries such as Argentina, Portugal, Serbia and Romania registering at the top of the table.
While it is not possible to tease out the reasons from this study alone, the authors suggest the results are consistent with the general inadequacy of effective and sustained efforts to support women's academic advancement. They add that women still bear the majority of social and familial care giving responsibilities and are more likely to leave academia from experiencing a hostile workplace culture, as potential barriers against gender equity.

The more positive results from Eastern Europe, on the other hand, could be partly due to a complex post-Soviet phenomenon of the "feminization" of science and medicine. The authors also note that the availability of affordable childcare could be a factor within EU countries.

Overall, female authors were also more likely to publish in lower impact journals, and less likely to be cited than male authors. This is consistent with previous research in gender equity within science which has been described as the "Matilda effect"—the phenomenon that women are more likely to be under-recognized in scientific publishing.

These results show that more work is required to support gender equity and women in academia, and follows the Women, power and cancer: A Lancet report that called for greater female representation within publishing and leadership in oncology research.

"Research funding organizations need to review their gender equity policies for cancer research and countries need to create better systems for supporting women scientists and clinicians more broadly," said Professor Miriam Mutebi, President, African Organization for Research and Training In Cancer.

This will require more research to understand the factors driving representation in successful and unsuccessful countries, which the
authors hope can inform policy to improve female representation within oncology research.

**More information:** Miriam Mutebi et al, Sex and authorship in global cancer research, *BMJ Oncology* (2024). [DOI: 10.1136/bmj onc-2023-000200](https://doi.org/10.1136/bmj onc-2023-000200)

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