

AUTHORSHIP GENDER GAP BEFORE AND DURING THE PANDEMIC

The authorship gender gap has been observed in most scientific disciplines, including medicine. For example, the proportion of female first authorship was only 37% in 2014 in six high-impact general medical journals,¹ and 34% in 2006–2008 in five US primary care medical journals.² The situation appeared, however, to improve in recent years with some disciplines such as pediatrics and primary care demonstrating a reversal in the male/female ratio of first authorship.^{3,4} The under-representation of women as last authors in biomedical research instead remains, and may be symptomatic of their minority presence among senior faculty members.

The aforementioned imbalance appears to apply to the growing field of COVID-19 research as well. Anderson *et al* demonstrated that female first and last authorship for COVID-19-related publications was respectively 23% and 16% lower than the average female authorship representation in 2019.⁵ The number of women who authored preprints submitted to arXiv (an online archive for preprints of scientific papers) rose only by 2.7% between 2019 and 2020, compared to a 6.4% rise for men.⁶ Women represent only a quarter of COVID-19 experts in the media and a quarter of the members of national task forces.⁷ The situation is likely to worsen in the near future as most of the published studies and recently submitted preprints were planned long before the onset of the pandemic.

Although primary care has not received the media attention that intensive care has, primary care physicians have experienced immense increases in workload and changes to workplace practices, even in countries where the pandemic has been well controlled, leaving them little time to pursue research. Both men and women have been affected by COVID-19; however, it is likely that the impact on female primary care physicians is, and will be, more significant. A

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qualitative study among female primary care physicians to assess professional resilience showed that women tended to internalise gendered cultural expectations when facing competing demands.⁸ Gendered and cultural norms frequently lead to the performance of more domestic tasks by women compared to men, regardless of employment status.⁹ In a situation of heightened engagement in patient care with a concomitant increased care burden at home, these gender norms might partly explain the negative impact on female academic productivity. Competing demands from private life and the workplace, lack of flexibility, and loss of control have been clearly exacerbated during the pandemic. However, these factors are known to specifically increase the risk of withdrawal from the workforce for women⁸ and might have contributed to the under-representation of women in research and leadership positions during the pandemic.

In this editorial, we solely highlight the impact of gender on academic productivity, but it is important to acknowledge other determinants that interact with gender, such as race, physical and mental ability, and socioeconomic resources, among many others.

Racialised disparities in publication patterns have been previously reported,¹⁰ and may have been accentuated by the COVID-19 pandemic. The burden of the pandemic and the ongoing political struggles in many areas of the world might, for example, disproportionately affect scholars of colour, and here again, possibly women more than men.

SOLUTIONS TO COMBAT GENDER INEQUALITIES

Academic organisations should reflect on the focus that COVID-19 has put on gender inequality. It is necessary to forcefully combat stereotypes, whether conscious or unconscious, and to make academic institutions aware of the gender gap. Organisational interventions should not only aim at increasing the number of women overall, but facilitate their access to leadership positions. Cultural and societal changes are needed to decrease the domestic burden on women, as well as workplace interventions to support both partners in tending to care activities. Measures to allow a better work-life balance should address everyone in the workforce regardless of their gender. The employer should explicitly encourage the involvement of male physicians and academics in domestic work and family care. Junior academics should be encouraged to embrace an inclusive and equitable culture, and organisations need to identify and promote appropriate role models to achieve this goal. Universities and funders should support female researchers in primary care by creating or developing gender-sensitive scholarship programmes. Academic institutions can encourage networking for and between women using peer support systems. Mentoring programmes can support women, but leadership should be explicitly sensitised towards sponsoring these qualified scholars. Organisations should be accommodating of the non-work-related needs of their employees, for example, by creating nurseries within universities, guaranteeing teleworking options, and assisting employees with diverse care duties.

CONCLUSION

In summary, COVID-19 has amplified the persistent gender inequality in academic medicine. A contribution of all qualified individuals to the improvement of scientific

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knowledge is essential to promote its excellence. Research has demonstrated that women more frequently integrate gender and sex variables into their research,¹¹ potentially improving its relevance for all. Promotion of a more diverse workforce will improve our understanding of the clinical and epidemiological characteristics of diseases and, ultimately, the diagnosis and treatment of all patients.

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