

# For COVID-19 vaccination programmes to be effective history shows gender equality in science is necessary

*Drawing on the history of public health and anti-vaccination movements in 19<sup>th</sup> and 20<sup>th</sup> century Britain, Susan McPherson outlines how the sidelining of academics along gender lines during the COVID-19 pandemic has negatively impacted efforts to develop and communicate scientific expertise and build public trust in the effectiveness of potential COVID-19 vaccines.*

In March 2020, 35 women scientists from the US and UK wrote to [Times Higher Education](#) raising concerns over bias in the way scientific experts were being consulted about the COVID-19 pandemic:

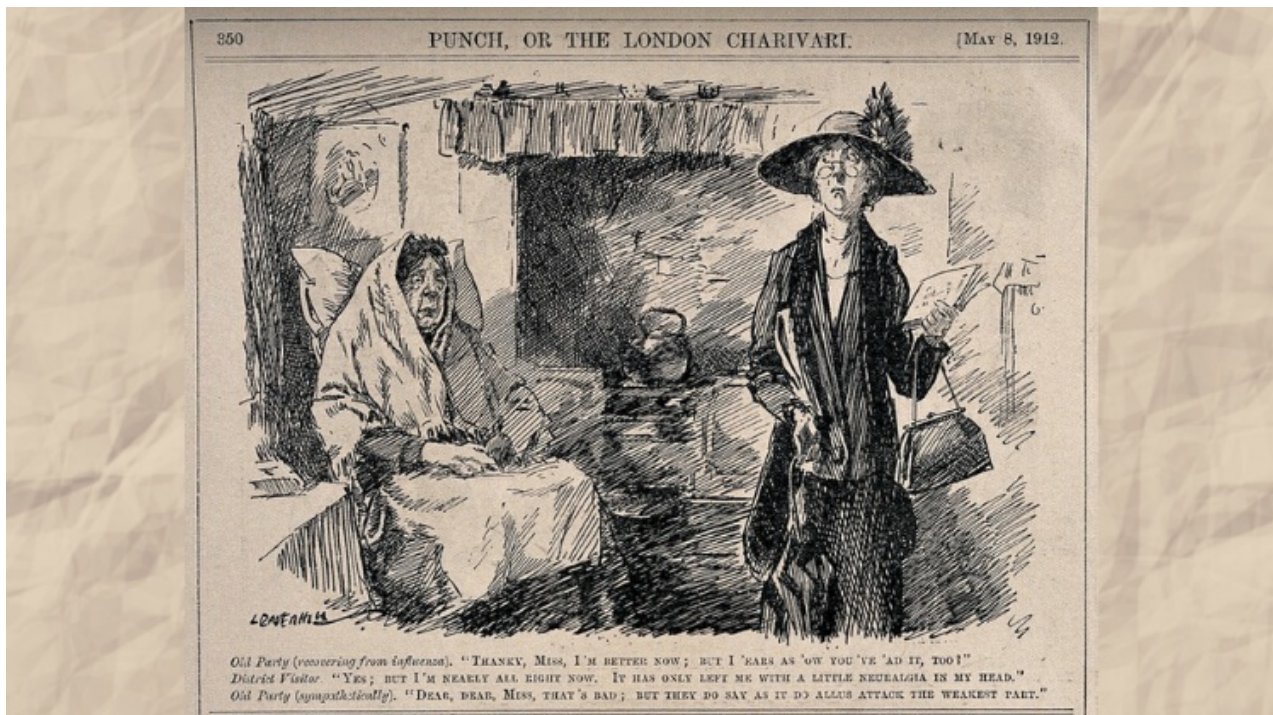
“Even within our own institutions, unqualified men’s voices are being amplified over expert women because they have been identified through informal male networks, or have blustered their way into social media and TV interviews and are therefore perceived as *high profile*”

While significant gender gaps (along with other structural inequalities) have long existed in academia as a whole prior to COVID-19, the pandemic has only exacerbated these inequalities, particularly in STEM disciplines. For researchers with dependents in disciplines such as biochemistry and clinical science, the impact of the [‘maternal wall’](#) and consequent reductions in research time has been marked. In the UK women have also been underrepresented in prominent public facing roles, both in the scientific advisory body, [SAGE](#), and in the [media](#).

As vaccines are found to be increasingly effective and the prospect of an end to the social and economic rupture caused by the pandemic is in sight, attention has shifted to the socially complex question of [vaccine hesitancy](#). Here, rather than simply being an unequal representation of ‘the science’, gender inequalities can have profound impacts. In this respect, the legacy of one of the most significant periods of [public resistance](#) to vaccination in the UK, which occurred in response to compulsory smallpox vaccination during the 19<sup>th</sup> century, is instructive of how gender narratives can feed into pro and anti-vaccination movements with implications for public health more widely.

There is a parallel here with the current tendency to debunk any critique of vaccination, masks or lockdown with labels like “anti-vaxx”, “anti-mask”

In practical terms, resistance to vaccination in the 19<sup>th</sup> century ended with a relaxation of compulsory vaccination laws. However, a cultural distrust of medical science continued in various forms. Many prominent individuals in Victorian and Edwardian society harbored a dislike of medical intervention and belonged to a burgeoning number of organisations opposed to orthodox medicine, including anti-vaccinationism, anti-vivisectionism, vegetarianism and teetotalism. Members of these organisations were labelled by the medical establishment as ‘cranks’ or ‘faddists’, which as Joy Dixon describes, served as [“a manoeuvre that defines certain practices and beliefs as trivial, and a certain political praxis as peripheral rather than central.”](#) There is a parallel here with the current tendency to debunk any critique of vaccination, masks or lockdown with labels like “anti-vaxx”, “anti-mask”, which similarly write off such views as simple ignorance or conspiracy.



Many of these early twentieth century movements had an affinity with feminism, a relatively large female membership and notable women leaders. The Theosophical Society, for example, which emphasized spiritual healing and natural diets, was led by Annie Besant, a well-known suffrage campaigner. Nancy Astor followed Christian natural healing, as did Lady Redesdale (mother of the Mitford sisters) and Christabel Pankhurst. Leading suffragettes also had roles in [anti-vivisection and anti-vaccination societies](#).

Women had reason to object to the growing power of a male-dominated medical establishment. In an analysis of [feminism and state medicine in late nineteenth-century England](#), historian Anne Scott noted that male obstetricians took the place of "unregulated" female midwives, regulating pregnancy and childbirth through a male gaze. Medical theories on the nature of women were also put forward to account for irrational tendencies and their lean towards 'crank' movements:

*"Tilt the [womb] a little forward [in the pelvis] – introvert it, and immediately the patient forsakes her home, embraces some strange and ultra ism – Mormonism, Mesmerism, Fourierism, Socialism, oftener Spiritualism. She becomes possessed of the idea that she has some startling mission in the world."*

As the women's suffrage campaign intensified, the relationship between women and the medical establishment further deteriorated. Sir Almroth Wright, a leading bacteriologist, published a [lengthy diatribe](#) in 1912 explaining that women suffragists were "strangers to joy...sexually embittered"; women whose "nature has undergone atrophy" including "immodest" medical women deluded that they deserve equal pay; women "poisoned by her misplaced self-esteem"; or younger women believing they can be "married on their own terms" and that "to obey a man would be to commit the unpardonable sin". All these women were, he stated, plainly mentally disordered, their arguments fatuous, immoral and dishonest.

The exclusion of women from science and medicine in this period no doubt enabled the survival and creation of medical practices and attitudes which were harmful and prejudicial towards women; it also ultimately held back public health and its development by failing to recognise the legitimate criticisms of women.

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Responses to the current reversal of progress on gender equality in STEM suggest promotion and employee reward systems should take account of disadvantages accrued by women during the pandemic. But, reversal of equality is about far more than women's individual rights. Nor merely a bureaucratic concern for Human Resources departments worried about compliance with employment law. This managerial and individualist lens ignores the much more fundamental problem with excluding women from scientific practices, public engagement, funding streams and journals: that it harms science and medicine.

Gender equality in STEM enables a range of different ways of framing, understanding and interpreting findings. A scientific community dominated by older white middle-class men produces theories and practices produced from within a narrow field of experience, detached from the experiences of people from other demographic groups. For instance, if priority for vaccine uptake is older people in care homes, then we should consider that there [are 3 times as many women than men in care homes](#), and that the majority of both the informal and formal carers supporting them are also female. Women will have relevant experiences which could inform better strategies to encourage uptake in these settings. Gender equality in vaccine research, dissemination and public engagement strategies in short, could help such programmes to avoid being imbued with paternalistic and sexist bias that will fail to engage and persuade intended vaccine recipients.

Twenty first century medical and public health research risks repeating past failures. Whilst we might not see a return to tilted womb theories, exclusion of diverse voices and thinking lays the groundwork for new kinds of scientific sexism and anti-science movements to flourish as they have done historically. To maintain the trust of the majority of the public, research equality and equitable research communication is essential, not for the personal advancement of individuals, but for the benefit of science and the public as a whole.

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*Note: This article gives the views of the author, and not the position of the Impact of Social Science blog, nor of the London School of Economics. Please review our [Comments Policy](#) if you have any concerns on posting a comment below.*

*Image Credit: A convalescing old lady asking her health visitor if she has recovered from her bout of flu. Wood engraving by L. Raven-Hill, 1912. via [Wellcome Collection](#). (CC BY 4.0)*

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