

BAT is the Cameroon Focal Point of COACH and is one of the HIGHER Women mentors. DN is President and Chief Executive Officer of Mennonite Economic Development Associates. We declare no other competing interests.

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## The missing trans women of science, medicine, and global health

For #LancetWomen see <https://www.thelancet.com/lancet-women>

A groundswell of support has emerged to bring visibility to and help combat gender inequities for women in science, medicine, and global health. Academic and other institutional workplaces must promote recognition of race and gender intersectionality, equity, and inclusivity of all women, including transgender (trans) women and girls of colour.

Globally, advocacy movements for gender equality have mobilised gender-based programmes, such as UNESCO's eAtlas of Gender Inequality in Education,<sup>1</sup> policy agendas, for example, UN Sustainable Development Goal 5, and awareness campaigns like #WomenInSTEM. These efforts have addressed gender discrimination and sexism in education and workplace settings, particularly for women and girls living in high-income countries.<sup>2</sup> Rarely do gender advocacy campaigns acknowledge, support, or make visible non-binary people, including trans women and girls of colour, who struggle to complete their education and thrive in academia and in their jobs.

Globally, statistics and insights into the experiences of trans women in science, technology, engineering, and mathematics (STEM), medicine, and global health are almost non-existent and their needs are largely absent in published reports on gender equality in these fields.<sup>3</sup> For example, the *Global Health 50/50 Report 2018*<sup>4</sup> revealed

that 126 of the 140 global health organisations they surveyed failed to recognise trans people in their policies, programmes, or reporting. Only three organisations were found to address the needs of trans people in the workplace, and only one organisation reported health data of trans people.<sup>4</sup>

Insights into the marginalisation of trans women and girls can be garnered from evidence in education. In national US surveys in 2009 and 2010, trans women and girls, particularly of colour, reported high rates (87% and 78%, respectively) of gender-based violence in education, specifically based on transgender and racial or ethnic identities.<sup>5,6</sup> In a 2015 US national survey of more than 20 000 trans respondents,<sup>7</sup> three out of four trans students in elementary and secondary schools reported being assaulted, disciplined for defending themselves, or required to dress according to their sex assigned at birth. Two out of five trans girls had to leave school early or were expelled because of gender-based mistreatment. Among trans women who made it to higher education institutions, one in four trans women in college experienced assault, and two in five trans women had to leave college because of mistreatment.<sup>7</sup>

In other parts of the world, such as Japan and Malaysia, policies in school systems include punishing trans

For the Sustainable Development Goals see <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

**Panel: Institutional recommendations to support trans women and girls in science, medicine, and global health**

**Recruit trans students and researchers**

Develop and implement appropriate recruitment strategies including tailored media to invite trans students and researchers.

**Explicit non-discrimination policies with evaluation plan**

Create educational and workplace policies and evaluation strategies that explicitly affirm all gender identities and non-discrimination.

**Funding and scholarship opportunities**

Allocate funding to attract and retain transgender women and girls, including scholarship opportunities specific to STEM, medicine, and global health programmes. Support larger-scale studies of initiatives to promote educational attainment of trans students.

**Internship and mentorship programmes**

Provide gender-inclusive internship and mentorship programmes, particularly in STEM, medicine, and global health, that invite trans women and girls to develop their scientific and analytical skills and build connections and collaborations with mentors and peers.

**Data collection, monitoring, and reporting**

Routinely collect and report data that include the educational indicators of trans students. Report findings regularly to governmental and non-governmental education entities that track access and equity in schools and universities.

**Provision of gender inclusive spaces**

Create school-sponsored events and spaces for networking of trans students and trans-positive allies to cultivate a sense of community and mentoring.

**Use of gender-inclusive examples**

Allow teachers to develop curricula that use gender-inclusive materials, and encourage them to address the limitations of educational materials that adhere to gender binary assumptions.

**Promoting use of correct names and pronouns**

Allow trans students to be addressed by the names and pronouns they use.

**Update dress-code policy**

Allow trans students to wear clothes that match their gender identities.

**Training specific to anti-violence**

Train teachers and school staff how to respond and de-escalate gender-based violence, particularly around microaggressions and mistreatment experienced by trans students.

**Foster research on transgender health**

Encourage research to improve transgender health with trans-identified students and researchers.

students—eg, through suspension, expulsion, and specifically forced sex reassignment surgeries in Japan and canning in Malaysia—when they dress according to their gender identity without documentation for gender markers or proof of sex reassignment surgery, both of which are difficult and costly to obtain.<sup>8,9</sup> In a Canadian report of trans youths,<sup>10</sup> most respondents reported not feeling very connected to school, not feeling safe in washrooms and changing rooms, and being bullied because of their trans identity. Additionally, about half of trans youths reported correcting pronouns used by teachers, school staff, and classmates to reflect their trans identity.<sup>10</sup>

There are inadequate resources to support trans women and girls to stay in school. This inequity stifles the capacity of trans women to become part of the professional workforce and emerge as leaders in STEM, medicine, and global health. In the USA, about two in five trans women with less than a high school education turn to the underground economy for jobs.<sup>7</sup> Moreover, when trans women seek employment, most report being turned down by social services, employment agencies, and employers.<sup>7,11</sup> These marginalising gender-based

experiences, which usually begin in the education setting, negatively impact the future employment of trans women and girls.

Employment discrimination and gender wage or income gaps against trans women are global problems. In Canada, two in five trans job applicants were turned down because of their trans identity.<sup>12</sup> In the UK, one in two reported both being harassed in their job and having an employer with no gender-based anti-discrimination policies.<sup>13</sup> In the USA, where unemployment is three times higher among the trans population compared to the general population (15% vs 5%), one in three trans people were fired, denied a promotion, or had some other form of mistreatment in the workplace because of their gender identity.<sup>7</sup>

Although some STEM and global health organisations<sup>4</sup> have taken steps towards addressing this inequity by hiring trans women and instituting anti-discrimination policies based on gender identity, there has been insufficient monitoring of these trans-inclusive protections and limited success at eliminating biases to trans people.<sup>13</sup> For example, among trans women in the workforce, their average earnings fall by nearly a third after transitioning.<sup>14</sup>

We call for intersectional, equitable, and inclusive efforts to embrace trans women and girls in the gender-equality movements in science, medicine, and global health, particularly in the training and educational contexts. We propose recommendations on how to support trans women and girls in the education setting (panel). These are starting steps towards collective efforts to embrace inclusive gender equality and equity for this group.

As efforts are made to address the injustices faced by all women in science, medicine, and global health, we must recognise the particular vulnerability of trans women and girls, be intentional with our work, and ensure that we focus our conversations and actions to include women and girls who are marginalised. Most importantly, we must look for and count trans women and girls and provide them the structure, support, and resources that prepare them to become members and leaders in STEM, medicine, and global health.

\*Arjee J Restar, Don Operario

Department of Behavioral and Social Sciences, Brown University School of Public Health, Providence, RI 02903, USA  
arjee\_restar@brown.edu

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## What is *The Lancet* doing about gender and diversity?

For #LancetWomen see <https://www.thelancet.com/lancet-women>

The academic publishing system is gendered.<sup>1</sup> As such, journals and editors are part of what has been called a vicious circle for women (figure).<sup>2</sup> We recognise the centrality and role of journals in the transmission of scientific knowledge and validation of academic achievement. We also recognise the evidence that shows women to be vastly under-represented in author, reviewer, and editorial positions across scientific and medical journals.<sup>3</sup> These inequities are at odds with our values and track record of advocacy as a journal.

Many determinants that prevent women's full participation and contributions in the scientific and medical spheres lie further upstream than the journal pages—in academia, where a rigid glass ceiling persists,<sup>3</sup> and in funding, where gender bias in assessment and success rates is well documented.<sup>4,5</sup> These gaps for women

are not because they do not excel, but because the supposed meritocracy is rigged against them,<sup>6</sup> resulting in an unjustified and unacceptable masking of women's contributions.

Seeing that we can be part of the solution, not just part of the problem of gender inequities in publishing, we audited *The Lancet's* internal processes, as we said we would do when we announced our #LancetWomen project in December, 2017.<sup>7</sup> We collected data for 2017 to provide a baseline for our improvement, and to report to readers in the interest of transparency.

For editors, women represent 79% of the editorial staff across 14 journals in *The Lancet* group, including 57% of the editors in chief. For *The Lancet*, women are 84% of the editorial department, including three of the five most senior roles on the journal's management