



Gender Equality, Norms, and Health 1

Gender inequality and restrictive gender norms: framing the challenges to health

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This is the first in a [Series](#) of five papers about gender equality, norms, and health

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Gender is not accurately captured by the traditional male and female dichotomy of sex. Instead, it is a complex social system that structures the life experience of all human beings. This paper, the first in a Series of five papers, investigates the relationships between gender inequality, restrictive gender norms, and health and wellbeing. Building upon past work, we offer a consolidated conceptual framework that shows how individuals born biologically male or female develop into gendered beings, and how sexism and patriarchy intersect with other forms of discrimination, such as racism, classism, and homophobia, to structure pathways to poor health. We discuss the ample evidence showing the far-reaching consequences of these pathways, including how gender inequality and restrictive gender norms impact health through differential exposures, health-related behaviours and access to care, as well as how gender-biased health research and health-care systems reinforce and reproduce gender inequalities, with serious implications for health. The cumulative consequences of structured disadvantage, mediated through discriminatory laws, policies, and institutions, as well as diet, stress, substance use, and environmental toxins, have triggered important discussions about the role of social injustice in the creation and maintenance of health inequities, especially along racial and socioeconomic lines. This Series paper raises the parallel question of whether discrimination based on gender likewise becomes embodied, with negative consequences for health. For decades, advocates have worked to eliminate gender discrimination in global health, with only modest success. A new plan and new political commitment are needed if these global health aspirations and the wider Sustainable Development Goals of the UN are to be achieved.

Introduction

Look at your hands, left and right. As hands, they are the same, yet their position and function in relation to the body are not neutral. Around the world, despite enormous cultural variability, the left and right hand are viewed and valued differently. For example, phrases such as left-handed compliment, right-hand man, and the word sinister (from the Latin word for left), which are not unique to English, reflect and reinforce this differential valuation.

And so it is with gender. What is considered feminine or masculine reflects a profound hierarchy, in which masculine is superior to feminine and neither can be understood separately from the gender system that shapes them. This insight is essential to understand how gender inequality and restrictive gender norms lead to inequities in health and how persistent these disparities can be.

In paper 1 of the *Lancet* Series on gender equality, norms, and health,^{1–4} we offer a conceptual model that combines several existing bodies of work into a coherent framework to explain how biology, social power, and social experience combine within a gender system to create health-related inequities. We make the case that achieving gender equality and transforming restrictive gender norms is crucial to achieving global aspirations for good health, as embodied in the Sustainable Development Goals (SDGs).

The sex–gender system

In both the scientific literature on health and in popular discourse, the terms sex and gender are often conflated.^{5,6} Sex refers to a person's biological status as male, female, or intersex. The indicators of biological sex are sex chromosomes, hormones, internal reproductive organs, and external genitalia.⁷ By contrast, gender refers to the culturally defined roles, responsibilities, attributes, and entitlements associated with being (or being seen as) a woman or man in a given setting, along with the power relations between and among women and men.⁸ This understanding of gender is rooted in feminist sociology

Key messages

- Gender inequality and restrictive gender norms are powerful but separate determinants of health and wellbeing
- Gender norms sustain a hierarchy of power and privilege that typically favours that which is considered male or masculine over that which is female or feminine, reinforcing a systemic inequality that undermines the rights of women and girls and restricts opportunity for women, men, and gender minorities to express their authentic selves
- Because of the historical legacy of gender injustice, the health-related consequences of gender inequality fall most heavily on women, especially poor women; by contrast, rigid gender norms undermine the health and wellbeing of all people, regardless of age, sex, gender, or income setting
- Although deeply entrenched, gender norms are not monolithic; they bend and transform under social pressure, macro-level forces, and the daily choices of individuals who endeavour to act (and interact) on their own beliefs and preferences, regardless of prevalent norms
- Addressing gender inequality and restrictive gender norms holds the potential to yield multiple downstream benefits for health and development and is essential for achieving the UN's Sustainable Development Goals

and differs from interpretations that conceptualise gender exclusively as a trait or identity.⁹ In the traditions of feminism and sociology, gender is a social system that defines men and women as different and distributes power, resources, and status on the basis of that difference.¹⁰ Although gender systems could be equitable, most are deeply patriarchal and ascribe greater value to men and things considered to be masculine than to women or things considered to be feminine.¹¹

Most gender systems also grant less legitimacy to gender identities or expressions that do not conform to a strict dichotomy of acceptable behaviour for men and women. Thus, masculinity in women or femininity in men, or non-conventional gender identities, such as transgender, tend to be deeply disfavoured. Individuals who deviate from prevailing gender expectations can experience discrimination and social sanctioning, which create powerful pressures to conform.

Gender norms, the often unspoken rules that govern the attributes and behaviours that are valued and considered acceptable for men, women, and gender minorities, are what holds together the gender system. Norms are embedded in institutions, defining who occupies leadership positions, whose contributions are valued, and whose needs are accommodated.¹² In this way, restrictive gender norms reproduce and undergird power hierarchies, both between and among women and men, boys and girls, and gender minorities. Yet norms are also amenable to change (panel 1).

The emergence of gender equality as a global issue

Consideration of gender inequality and its importance for health is far from new. Women's rights movements, feminist scholars, and like-minded professionals have been agitating for gender equality in the context of global health and development for decades, and in particular during the UN's Decade on Women (1975–85), with activity peaking in the late 1990s and early 2000s. The argument for action was articulated forcefully by Sen and Östlin in a pivotal report²⁰ for the WHO Commission on Social Determinants of Health in 2007. Drawing on a vast array of evidence, the report argued that pervasive inequality between men and women and restrictive gender norms translated into a range of negative health outcomes for all people, but especially for women and girls.

The creation of the Commission on Social Determinants, building on previous work including charters on health promotion and others, was itself a milestone for global health because it argued that health-related inequities are more a function of social, political, and environmental factors than access to health care per se. A person's circumstances—where they are born, work, and age—profoundly affect their prospects of living a healthy life.²¹ The Commission highlighted that gradients in health outcomes exist along multiple axes of advantage and

disadvantage. Women, on average, might have higher morbidity with respect to a particular health outcome, but subsets of men might fare worse than the average woman because they might be affected by compounding impacts of poverty, racism, and other forms of social disadvantage. Thus, one must go beyond comparing simple binaries (women vs men, rich vs poor, black vs white) and consider so-called clustered deprivations and their consequences for health.

The SDG's core commitment to "leave no one behind" responds to the shortcomings of how the Millennium Development Goals tracked progress in terms of population averages (eg, national-level rates of diabetes or maternal mortality), thereby masking inequalities among social groups and within countries.²² Realising the SDGs will require concentrated attention to the concept of intersectionality: the notion that one's social position is influenced by interlocking forms of advantage and oppression, including inequalities based on class, race, ethnicity, ability, and gender, among others.²³ These factors are not simply additive, but interact in complex and uneven ways. In the USA, for example, life-course studies have shown that gender discrimination, socioeconomic status, and racial and ethnic inequalities have a multiplicative effect on the trajectories of hypertension,²⁴ self-reported health status,²⁵ and body-mass index²⁶ among poor African-American women. Achieving the SDGs will require greater efforts to research and address these intersectional synergies.

The creation of gendered health inequities

The conceptual framework for this Series (figure) depicts the complex relationship between gender and health, including how the gender system interacts with other axes of power and privilege to determine an individual's social position and thus their health throughout life. The process of deriving this framework and the contributions of earlier models are described in the appendix. Here, we outline each element of the framework, discussing key features with examples from the scientific literature.

The social production of gender

Even before birth, norms and other aspects of the gender system begin to shape the life prospects of the developing infant. Studies show that parental behaviour changes towards a baby as soon as their sex is known or assigned.²⁷ As children grow, they absorb subtle and overt messages about what is valued, who has power, and how to behave.¹² Gender socialisation begins in the family and is reinforced or contested by teachers, faith leaders, peers, and exposure to media.²⁸ By the age of ten, children have already absorbed restrictive norms about acceptable gendered conduct, which tend to be tightly policed by parents and peers.²⁹

According to a study²⁹ of children aged ten to 14 years done in 15 countries, (1) boys are consistently encouraged to be strong and independent, whereas girls are seen as vulnerable and in need of protection; (2) with the onset of

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For the UN's Sustainable Development Goals see <https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>

See Online for appendix

Panel 1: How do social norms change?

Abundant evidence¹³ confirms that social norms do change, sometimes quite rapidly. Consider how quickly the social rules of communication shifted when email, text messaging, and Facebook became available. The use of these platforms is an example of how norms can shift spontaneously in response to external events. However, norms often remain entrenched, either because they serve a useful purpose, they remain unexamined, or they serve the interests of a powerful social group. When norms limit human development or undermine health and wellbeing, it is possible to instigate a process to encourage the emergence of new norms, as has successfully been achieved by social movements and programmes to reduce violence against women, eliminate female genital mutilation, and delay the age of marriage, among others.¹⁴

As paper 3 of this Series² notes, a change in norms can be initiated either by leveraging policy and legal reform or through more community-based, programmatic efforts. Evidence¹⁵ shows that when well executed and sustained, efforts to encourage female employment, support the education of girls, and reform discriminatory inheritance and family laws can help to transform gender roles and norms. A study in India,¹⁶ for example, showed that the attitudes around female leadership shifted dramatically after a law was passed that required 30% of local village council seats to be reserved for women. Legal approaches are advantageous because of their scale, but they depend on successful execution and enforcement, which is frequently inadequate. There is also evidence that legislative efforts can backfire if they attempt to impose a new norm that is too distant from the status quo.¹⁷

A second approach to change norms is through social movements and citizen action. Throughout history, movements have successfully challenged discriminatory social norms, especially norms that frame certain groups as inferior and restrict social freedoms. The current #MeToo movement and efforts to advance the rights of LGBTQ people are cases in point.

A third approach—and the one used most commonly in global health and international development—is to work directly with communities to shift norms and behaviours through critical reflection and deliberation on values. Individuals and groups

must first learn to recognise a norm as collectively constructed and therefore open to change. Frequently, it is possible to reframe a norm, such as acceptance of corporal punishment, as antithetical to a core value, such as wanting the best for one's child. Sessions to shift norms must be problem-posing rather than didactic and provide new alternatives (eg, non-violent forms of discipline), in addition to being a setting for reflection.

Research also shows that small group processes must be supplemented by structured efforts to diffuse the norm through community engagement, immersive theatre, media, and other forms of organised dissemination of ideas. People must witness that the beliefs and behaviours of others are changing, especially when the cost of transgression from norms is high. To do so, programmes should cultivate role models, identify and exemplify those who deviate from the norms in a positive way, encourage public declarations, and engage religious and other leaders of thought who are willing to support the cause. Frequently, it is easier to promote a new positive norm than to dismantle a negative one.¹⁸

Some norms are particularly resistant to change. Gender norms, for example, are especially persistent because they trigger deeply entrenched cognitive schemas that associate different roles, mannerisms, and status with different genders. These associations are continuously reinforced on a daily basis through human interaction and engagement with media and the wider world.¹⁹ From infancy onwards, children learn these associations and become cognitively automatic, which is the foundation of stereotype and implicit bias. Deviations from the norm are sanctioned and efforts to transform existing gender relations can evoke backlash from those who benefit from the status quo.

Change is also stimulated by forces that are often unforeseen and outside of the control of even those who are in powerful positions. War, economic transitions, political upheavals, and migration present extreme challenges to individuals and communities, but are also moments of opportunity where existing norms are forced to bend or yield to new realities.

puberty, boys are expected to prove their toughness and sexual prowess, whereas girls are held responsible for attracting male attention; (3) concerns about female sexuality and reputational risk lead parents to tightly control their daughters' behaviour and freedom of movement; (4) boys who do not achieve local masculinity standards are bullied and ridiculed by their peers, whereas girls who transgress local norms of sexual propriety are shamed and severely sanctioned; and, importantly, (5) boys should never display traits or emotions associated with femininity.

On entering puberty, many girls' horizons become increasingly restricted, whereas boys' opportunities and

freedoms expand, especially in developing countries.³⁰ A systematic review³¹ of 82 studies of gender attitudes in early adolescence found that in most of these studies, both girls and boys held attitudes that endorsed gender inequality. These studies and others with older adolescents and adults^{32,33} show how biological sex interacts with the gender system to create a gendered person by a process enacted and re-enacted throughout the lifetime.²⁸ We refer to this mechanism as social production of gender (figure), which determines an individual's social position through interaction with other axes of power, and it is through this intersectionality that some privileged women achieve more power than some marginalised men.

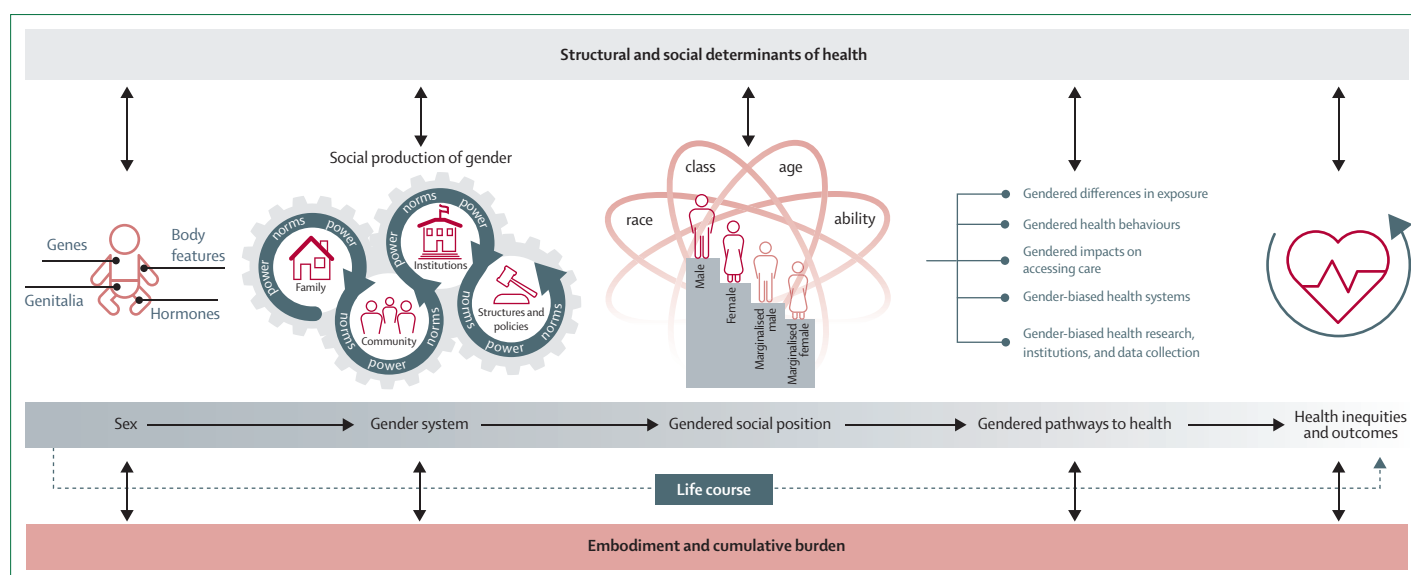


Figure: Conceptual framework of the gender system and health

Infants enter the world with a specific biological endowment—ie, male or female genes, body features, genitalia, and hormones. They are immediately immersed into the gender system, depicted as a set of interlocking cogs, representing the domains of the family, community, institutions, and structures and policies, through which power is distributed and norms are created, instilled, and enforced. The system interacts with other axes of power and privilege to shape an individual's overall social position in relation to others. Gender inequalities and restrictive gender norms translate into differential patterns of health and wellbeing for people with different social positions through multiple pathways. Some consequences for health are a function solely of sex and are not mediated through the gender system (dotted arrow). Two additional direct pathways through which social processes condition health-related outcomes across the life course include structural and social determinants of health (top bar) and embodiment and cumulative burden (bottom bar).

Direct and indirect pathways to differential health outcomes

Biological sex on its own can determine some health outcomes that are not otherwise influenced by the gender system (figure). Such factors include diseases of sex-specific organs (eg, ovarian or prostate cancer) or due to sex-linked hormones (eg, oestrogen-responsive cancers in women). There are also less obvious ways through which these differences contribute to differential health outcomes. Male individuals only have one X chromosome, making them more vulnerable to chromosomal abnormalities, whereas the female immune system tends to be more aggressive, making women and girls more responsive to vaccines, but also more vulnerable to autoimmune diseases.³⁴ Health outcomes that stem directly from biological sex result in differences, rather than inequities. The word inequity is defined as the unfair and avoidable differences arising from inequality and structured disadvantage. Although gender systems can exacerbate or mitigate the consequences of health-related differences, health inequities are primarily a function of gender inequality and other axes of stratification, rather than sex.³⁵

Structural determinants of health-related outcomes include laws, policies, market forces, and corporate interests that shape where people live and what entitlements and resources they have access to (figure). Laws and policies can either entrench gender inequalities or, if they are progressive, can improve health and wellbeing, as discussed in paper 3 of this Series.² Their

analysis shows that policy interventions, such as paid parental leave, substantially improve women's and children's health. Likewise, social determinants, such as socioeconomic status, neighbourhood, food security, and workplace conditions affect the distribution of health and wellbeing at a population level.²¹ Each of these determinants is itself gendered. Women, for example, report experiencing more food insecurity than men in nearly two-thirds of 141 countries, according to the UN Food and Agriculture Organization.²² Moreover, at 48·5% in 2018, the participation of women in the global labour force was 26·5 percentage points below that of men.³⁶ Conversely, embodiment and cumulative burden signify the way in which various social processes affect an individual on a molecular and physiological level. Referred to by various names, including "embodiment"³⁷ or "biological embedding",³⁸ the concept is essential to understanding how gender, social marginalisation, childhood adversities, and environmental exposures translate into health-related inequities over the life course.

Beyond these direct links, one's social position also affects health indirectly via the five gendered pathways to health, which we have identified (figure). The next section describes each pathway in turn and provides evidence to show how gender inequality and norms work through the pathway to generate health-related inequities and other social and economic consequences. Although we discuss the pathways separately, they frequently interact or operate in tandem.

Gendered pathways to health

Gender-related differences in exposures

Individuals face differential exposures to health risks and hazards by virtue of their socially ascribed gender roles and responsibilities. Despite increased female participation in the labour force overall, women and men continue to be concentrated in economic activities deemed appropriate for their bodies and their social roles.^{39,40} Thus, men are more likely to work in physically demanding jobs like mining, construction, heavy manufacturing, and defence, whereas women are more likely to work in care or service occupations.⁴¹ Even when women and men have the same job title, they usually do different tasks and receive different pay.^{40,42}

This persistent gender segregation in employment results in differential exposure to disease, disability, and injury.⁴² Men are more likely to experience work-related accidents and be harmed from exposure to chemicals, vibrations, and noise, or from acute traumatic injuries due to heavy lifting, falls, or electrocutions.^{40,43,44} Conversely, women are more likely to be exposed to certain workplace substances, such as cleaning compounds, hair dyes, and textile dust^{43,45} and to develop conditions such as asthma⁴⁵ or musculoskeletal disorders, because of highly repetitive movements and poor working postures.^{40,42,44}

Women also experience health risks by virtue of their gender-assigned domestic responsibilities. National household surveys from 61 developing countries show that women are responsible for water collection in 73·5% of households⁴⁶ and girls spend substantially more time (up to 10 h more in some African countries) than boys collecting water or firewood for domestic use.⁴⁷ Water and fuel collection demands much physical effort and exposes women and girls to risks such as infectious diseases, injuries, and threats of physical and sexual violence.⁴⁷ Moreover, carrying heavy water containers or fuel bundles, particularly on the head, has been linked with negative energy balance, chronic musculoskeletal problems, risk of acute injury, pain, and negative reproductive outcomes.⁴⁸

In low-income countries, the greatest health burden posed by women's domestic responsibilities is the use of solid fuels and polluting stoves for household energy. Household air pollution increases the risk of stroke, heart disease, chronic obstructive pulmonary disease, and lung cancer and causes 3·5–4·3 million deaths annually,⁴⁹ making household pollution one of the top causes of female death from non-communicable diseases in poor countries.⁵⁰

Women are also impacted by their engagement in the care economy. Globally, compared with men, women spend two to ten times more time caring for children, older people, and the sick.⁵¹ If the unpaid time that women spend on caring were monetised, it would almost equal the value of women's contribution to the paid health-care workforce, with each globally accounting for more than US\$1·5 trillion annually.⁵²

Besides a tremendous opportunity cost, people who care for family members, especially those affected by chronic medical conditions, often experience negative effects on their own health.^{53,54} For example, in 2017 in the USA, more than 16 million people provided 18·4 billion h of unpaid care for people with dementia⁵⁵ and nearly two-thirds of these caregivers were women.⁵⁶ Caregivers of patients with dementia tend to experience higher levels of stress and mental problems than other types of caregivers,⁵⁶ with at least a third experiencing symptoms of depression.^{54,57} Similarly, women and girls are responsible for two-thirds of HIV-related care in sub-Saharan Africa and experience heavy physical and mental health burdens, social isolation, and stigma.⁵⁸

Gendered health behaviours: hazardous masculinities and toxic femininities

Some notions of masculinity might cause men to behave in ways that harm their own health, even as they reinforce their superior social status.^{59,60} The links between a broad range of masculine behaviours and negative health outcomes have been established by diverse research across settings and age groups, in areas such as not seeking medical care, reckless driving, substance use, aggression, and poor body image.⁶¹ Many societies define manhood in ways that fuel and sustain violence, and the World Report on Violence and Health⁶² highlights male violence as a major factor in morbidity and mortality for both men and women.⁶² Most notions of masculinity encourage sexual dominance, skill, and experience, which can lead to sexual risk-taking, including seeking multiple partners, not using condoms, having sex while intoxicated, and avoiding the discussion of contraception.^{61,63–65} Unequal power between men and women further impedes cooperation, discussion about household matters (including health), and contributes to coerced sex, the spread of sexually transmitted infections, and unintended pregnancy (panel 2).^{61,64,84}

Globally, nearly three-quarters of all deaths from road traffic crashes occur in adolescent boys and men.⁸⁵ Men spend more time on the road,⁸⁵ are more prone to speeding,⁸⁶ and are more likely to drive under the influence of alcohol or other drugs.⁸⁷ From Brazil to Norway, from motorcycle riders to snowmobilers, men are substantially more likely than women to experience, and to die in, vehicular crashes.^{88,89}

By contrast, feminine norms can have conflicting effects: they can promote ill health, exposing women to a range of hazards, including sexually transmitted infections, violence, and eating disorders,⁵⁹ but by virtue of limiting freedom of movement, smoking, drinking, and sexual expression in some settings, they might also have protective effects.⁶²

Female appearance is strongly emphasised in a patriarchal system (panel 3). Women's use of toxic beauty products has been framed as an environmental justice issue, with women disproportionately exposing

Panel 2: Gender and the sexual double standard: purity, honour, and control

The sexual double standard is a moral code that permits sexual freedom for men and demands sexual restraint from women, with the ultimate objective of controlling women's sexuality and offspring.⁶⁶ It is characterised by three themes: (1) purity and irreproachable chastity for women, (2) mandatory heterosexual performance for men, and (3) stigma for LGBTQ as a consequence of cis-gender and heteronormative expectations.⁶⁷ The sexual double standard influences health, exposing men to a broad range of health risks and limiting women's freedom of movement, educational attainment, work opportunities, and contact with peers.⁶⁸ These effects extend across the life course and reach far beyond sexual and reproductive health.

In cultures where female sexual purity is highly valued, women are not authorised to know and talk about sex, and are expected to be sexually passive, deferential to male partners, and to eschew the use of condoms.^{66,69} The sexual pleasure of girls and women is neglected and the purpose of sexual acts largely focuses on men's pleasure.⁷⁰ Concerns about virginity and sexual purity promote child marriage, as families seek to marry girls at a young age to avoid risks to family honour should they socialise with boys, become pregnant, or get raped.⁷¹

The need to regulate what is considered proper female sexual behaviour and punish any suggestion of infidelity or violation of feminine gender roles rationalises gender-based violence.⁷² Women and their chastity embody family honour, placing them at risk for honour killings in Pakistan⁶⁸ and elsewhere. A sign of women's structural subordination in these contexts is the fact that they are unable to run away, as there is no one they can turn to. In South Africa, lesbians and bisexual women face the risk of being raped by men, which would supposedly "correct" their sexual orientation.⁷³

Norms regarding purity, honour, and control of women coexist with complementary norms for men: their health is affected by comparatively unfettered access to sex and pressures to take sexual risks and have multiple partners, pushing them to be hypermasculine, and exposing them to HIV and other sexually transmitted infections.^{61,74} The sexual double standard means that in many cultures boys and men are not held accountable for their sexual behaviour and sexual violence, making rape within marriage invisible, and promoting narratives about women as deserving or wanting to be raped.^{75,76} At the same time, by distancing boys and men from the domain of sexual and reproductive health, society and health-care systems further excuse them from responsibility and reinforce the notion that reproductive health is a concern only for women.⁷⁷

This one-sided responsibility was deeply reflected in the global response to the Zika epidemic that ravaged parts of Latin America in 2015–17. Prevention efforts have treated women as solely responsible for preventing pregnancies, even though their access to basic sex education, contraception, and safe abortion is restricted and their vulnerability to sexual coercion has been widely documented.⁷⁸ No action was taken to include men in the dialogue on prevention, even as the sexual transmission of the Zika virus was recognised.⁷⁹

Heteronormativity is also a fundamental aspect of the sexual double standard, and a large and important gap in the literature reflects heteronormativity and cis-heteronormativity.^{80,81} For both men and women, this standard can demand splitting oneself between a public performance of heterosexuality and a private homosexual life.⁸² Between heteronormativity and the downplaying of female sexuality in general, lesbian and bisexual women are neglected in the field of health care, and a focus on intersectionality can contribute to correcting this injustice.⁸³

themselves to skin-lightening creams that contain mercury, vaginal douches containing phthalates, and talcum powder.¹¹⁴ Others might be exposed to the risks of facial plastic surgery, which has risen in prevalence globally over the past 30 years,¹¹² often taking place in adolescence.¹¹²

Body dissatisfaction is often associated with low self-esteem, especially in girls.¹¹⁵ In Fiji, for example, eating disorders in adolescent girls rose dramatically at a time of the introduction of television, with self-induced vomiting to control weight rising from 0% in 1995 to 11·3% in 1998.¹¹⁶ Gender norms also affect participation in physical activity and obesity in women and girls.^{117,118} High-school girls in Managua, Nicaragua, reported far less physical activity than boys, and a worrisome minority of boys and girls expressed the view that athletic girls were lesbians and that women and girls should care for the house rather than exercise.¹¹⁹

Ironically, as gender norms for women and girls become less restrictive, they might lead, at least initially,

to poorer health outcomes. For example, permissive norms for girls might lead to increased tobacco use or binge drinking (panel 4). By contrast, progress toward gender equality and the relaxation of restrictive masculine norms will probably enhance men's health.

Gender impacts on accessing health care

A third pathway through which gender norms affect lifelong health is through access to care. If so-called real men have to demonstrate strength in times of sickness,⁵⁹ so-called good women are expected to care for and prioritise the needs of family members at the expense of their own health.^{51,58} Gender norms also influence what are considered to be women's or men's domains, a practice that excludes men from engaging with maternal and child health-care in many settings.⁷⁷

Gender norms regarding acceptable health-related behaviours combine with the ability of individuals to seek care on the basis of material resources, time

Panel 3: Gender norms and body manipulation

Over the past 20 years, the world has seen a “seismic shift in what is considered possible and desirable to change” in our bodies, particularly in the Global North.⁹⁰ The manipulation of the body is a key means to making oneself socially acceptable. Although women overall are more likely to change their bodies to conform to normative expectations, men are also susceptible to these pressures.⁹¹

Cultural messages about the inadequacy of natural bodies have created a massive market for body-altering procedures. Globalised marketing, television and print media,^{92,93} and social media are causal risk factors for poor body image, especially for young people.⁹⁴ Media exposure has been related to eating disorders in young girls in Poland⁹⁵ and to depression and anxiety in gay and bisexual men in the USA.⁹⁶ Favoured cosmetic surgeries involve altering the appearance of the genitals, the face, and secondary sex characteristics, such as breasts and hair.

The literature tends to focus on the desire to be perceived as normal by one’s peers⁹⁷ and to experience harmony between one’s own image and the surrounding world. However, body manipulation is most appropriately framed as a social issue. In patriarchal societies, the female body in particular becomes the entity where traditions and culture are enforced.⁹⁸ Indeed, the more blatantly sexist and patriarchal the attitudes of women or men are, the more likely societies are to endorse cosmetic surgery.⁹⁹

The surgical manipulation of genitalia strongly reflects the influence of gender norms on behaviours that uphold value-based expectations about the body, although the genitalia are rarely seen by others. Labial surgery has increased sharply in rich countries, partly as a result of the spread of pornography.⁹⁰ In the USA, women who were black, older, or better educated were more likely to be satisfied with the appearance of their genitals than other women.¹⁰⁰ Genital alterations in men tend to focus on penis enlargement and sexual performance.¹⁰¹

The surgical affirmation or recreation of virginity is another area of surgical intervention. Hymens are important to

demonstrating virginity in settings around the world where this trait is valued, for example in Turkey.¹⁰² Vulnerable girls in immigrant families in Sweden might also be at risk if their families question their virginity, and medical professionals are receiving increased requests to repair girls’ hymens.¹⁰³

Women’s and men’s preoccupation with weight and muscularity tend to mirror each other: women generally aim to be more slender and smaller, with one analysis identifying “thinness as social capital” in Chile.¹⁰⁴ Men, by contrast, tend to be more concerned with muscularity, and men who belong to racial and ethnic minorities, especially those who have internalised heterosexist views, appear especially vulnerable to poor body image.¹⁰⁵ Anorexia can have lasting harmful effects on a person’s reproductive capacity,¹⁰⁶ as can steroids used for bodybuilding.¹⁰⁷

Around the world women are altering their breasts: enlarging them with implants in the USA (where the practice is associated with elevated suicide rates),¹⁰⁸ flattening them in Cameroon,¹⁰⁹ changing the size of the areolae in the Netherlands,¹¹⁰ and reducing their size in Brazil (where beach culture can make adolescent girls desire breast reduction surgery from an early age).⁹⁷ Research in France and Italy showed how oncological reconstructive surgery of the breast can be shaped by normative ideas about what female (and male) breasts should look like, creating opportunities for surgeries to fix these supposed problems.¹¹¹ Proponents of aesthetic surgeries of all kinds tend to overstate the medical needs for surgery and understate the associated risks.¹¹²

If standards of femininity and masculinity were not as rigid and manipulated through media and advertising, people would not feel they needed to alter their bodies to make themselves acceptable. The politics of body manipulation, especially genital alteration, demand a common language and standards so that key social values regarding gender equality, child protection, bodily integrity, and autonomy can be integrated into medical guidelines and procedures.¹¹³

availability, and the power or permission to act.^{22,143,144} In a sample of 65 developing countries, for example, cost was repeatedly identified as a factor that hampered women’s ability to access care.²² When women lack financial autonomy, they must rely on men to meet their transport and treatment costs.^{143,145} In low-income settings, women might resort to informal health-care providers and low-cost medicines, whereas men spend a greater share of resources on their own health needs.^{143,144} Men, mothers-in-law, or older family members are often gatekeepers for women’s access to health care, and a husband’s consent for the provision of treatment is often required by health providers and is even enshrined in some laws.¹⁴⁶ By contrast, women’s increased decision-making autonomy and access to economic resources is positively

associated with their use of health-care services in many sub-Saharan African countries.¹⁴⁷ Similarly, in Pakistan, a 1% increase in women’s decision-making power was correlated with a nearly 10% increase in their use of maternal health services.¹⁴⁸

Shame, stigma, and fear of retribution can further limit women’s use of health services. Where women’s sexuality is controlled and sanctioned only after marriage, unmarried women, HIV-positive women, and sex workers¹⁴⁹ frequently avoid seeking care to escape judgment by health providers.^{20,149,150} Similarly, men who have sex with men might be fearful to seek information or treatment for HIV and other sexually transmitted infections, especially in settings where homosexuality is criminalised.¹⁵¹

Panel 4: Impact of corporate manipulation of gender norms on drinking and smoking

Alcohol consumption is responsible for 3 million deaths globally, almost 5·3% of all deaths and 5·1% of disability-adjusted life-years.¹²⁰ The negative consequences of drinking include drunk driving, having unplanned or unsafe sex, getting injured, arguing or engaging in physical fights, and other lapses of judgment.¹²¹ Alcohol use contributes to the spread of communicable diseases, including HIV and tuberculosis,^{122,123} and non-communicable diseases, including cancer and cirrhosis.¹²⁴ Women's bodies process alcohol differently than men's, making them more vulnerable to breast cancer, prescription drug interactions, and cirrhosis.¹²⁵

Smoking tobacco accounts for 6·4 million deaths globally, making it the second biggest risk factor for early death and disability in 2015.¹²⁶ More than half of these deaths took place in China, India, USA, and Russia. Between 1990 and 2010, tobacco was the top risk factor for disability-adjusted life-years in men and rose from 5th to 4th place for women.¹²⁷ US companies have marketed tobacco and alcohol specifically to the LGBTQ community in bars,¹²⁸ for example by associating the freedom to marry a person of the same sex with the freedom to smoke,¹²⁹ thus contributing to a significantly higher level of smoking in LGBTQ people than heterosexuals (38·5% vs 25·3%).¹³⁰

As public image, drinking, and smoking are subject to norms and are vulnerable to marketing manipulation, corporations have taken advantage of this vulnerability to expand into new markets and to maintain consumption in existing consumers. Large corporations manipulate and play on gender norms to promote sales of alcohol and tobacco, tapping into people's desire for popularity, attractiveness, femininity or manliness, and modernity. Alcohol advertising directed toward women, for example, promotes drinking as a means to manage their emotions.¹³¹ The industry's success in reaching women in high-income countries highlights body image, weight control, and social image and works through special events, social media, fashion blogs, hiring actresses as spokespeople to glamourise drinking, and so on.¹³² Marketing in the USA has

normalised women's use of alcohol to cope with daily stress as they balance work and family life¹²⁴ and has emphasised the attractiveness of women who drink.¹³³ In Nigeria, the gendering of alcohol marketing has encouraged female university students to eschew beer as unladylike and instead to drink sweetened drinks with higher alcohol content, making it harder for them to play the sexual gatekeeper role that social norms assign to them.¹³⁴

A systematic review¹³⁵ shows increased drinking in younger women globally and convergence in the amounts that women and men drink. The rate of alcohol-related deaths for white women has doubled in the USA since 1999, accounting for 8% of deaths in women aged 35–54 years in 2015.¹³⁶ Women have also experienced a more rapid increase in binge-drinking than men.¹³⁷ Further, although Africa has lower levels of drinking than the USA overall, the amounts drunk are much higher in those who do partake.¹²⁰

An analysis¹³¹ of advertising in US magazines aimed at men or women found that alcohol ads directed at men highlighted the association of drinking with masculinity and its elements: excitement, male socialising, sexual conquest, and risk taking. However, restrictions on marketing messages in Europe have reduced especially risky forms of drinking.¹³⁸ The alcohol industry has thus plunged into emerging markets where regulations are less strict than in established ones and where young people and women have historically abstained from alcohol.¹³⁹ The industry continues to work in higher-income countries to reach new consumers, maintain current users, and increase the intensity of drinking with new products and marketing. It is also vigorously working to promote drinking to younger ages and underage drinking of specific brands of alcohol is strongly associated with exposure to brand-specific advertising,¹⁴⁰ as is binge-drinking in young people generally.¹⁴¹ Of great concern is the marketing directed at underage drinkers via social media sites, with the presence of specific alcohol brands being especially influential on Facebook and YouTube.¹⁴²

Gender-biased health-care systems

Within health-care systems, unconscious gender biases, heuristics based on gender stereotypes,¹⁵² and blatant sexism all affect patient care, resulting in differential health outcomes for men, women, and gender minorities. Because women are stereotyped as fragile and overemotional, women's health-related complaints are very often interpreted as exaggerated and women's physical symptoms are attributed to psychosomatic rather than physical causes.¹⁵³

Even in high-income countries, women frequently receive inferior care to men: they are screened for disease less often and receive less aggressive treatment and substandard follow-up, as exemplified by cardiovascular care.^{152,154,155} Despite efforts to address such disparities,¹⁵⁵ women in the USA, especially African American women,

continue to die of heart disease at higher rates than similarly positioned men, with gender bias documented along the entire spectrum of cardiovascular care.¹⁵⁵

Patriarchal ideas about women and women's complaints (eg, women must be stoic during childbirth despite the pain) also manifest in prevalent mistreatment, negligence, and abuse by medical staff during labour and delivery. Fear of mistreatment is widely cited in low-income settings as a reason why women avoid facility births, undermining a key strategy for reducing maternal and neonatal mortality.¹⁵⁰

These gender biases can be further compounded when providers confront patients who are poor, of a marginalised ethnic or racial group, or represent a sexual or gender minority.¹⁵⁶ A US study of 6450 transgender adults found that 28% had experienced harassment in health-care

settings, 19% were refused care, and 2% had experienced violence in their doctors' offices.¹⁵⁷

The health system itself is highly gendered, a reality discussed more deeply in paper 4 of this Series.³ Typically female-coded professions (eg, nurses and midwives) are accorded inferior stature than typically male-coded professions (eg, physicians and surgeons), and even within the same profession women receive lower compensation than men.¹⁵⁸ Across health care, barriers to female promotion and retention, including widespread experiences of harassment and assault by colleagues and patients,¹⁵⁹ contribute to the under-representation of women in the higher echelons of their professions.^{160,161} These issues are not exclusive to poor countries. During the past 3 years, it was uncovered that Japan's premiere medical school has for decades rigged its entrance exam to limit female admissions¹⁶² and female doctors in the USA and the UK earn 20% to 40% less than their male counterparts.^{163,164} Finally, women are often at increased risk of out-of-pocket health expenditures, enhancing their vulnerability to impoverishment.¹⁶⁵

Gender-biased health research, institutions, and data collection

The last gendered pathway to inequities in health involves biases in research. People's cultures and normative contexts shape their perceptions and behaviours, impacting the way in which research is funded, conducted, and applied. This paradigm can influence patterns of research investment and undermine justice, equity, and scientific objectivity. Unspoken assumptions about associations between gender and disease create critical gaps in knowledge, including inadequate research on such topics as reproductive health in men^{77,166} or tuberculosis in women.^{166,167}

These biases also manifest in how specific test variables or populations are chosen, defined, and measured. For example, many health researchers have concluded that women are less likely than men to encounter occupational hazards, but few consider how traditional definitions of work might bias the estimates of women's exposure to such hazards.¹⁶⁸ If the term occupation is defined exclusively as paid work, statistics will exclude hazards connected with domestic work, such as household air pollution, unsanitary water, or the pathogenic and psychological burden of caring for sick family members. If research relies on gendered assumptions about who works, a farmer's wife might not be counted as occupationally exposed to hazards, despite her involvement in farming, and definitions of occupational hazards might not include gendered exposures such as sexual harassment. These issues are not confined to the domain of occupational health: wherever the definition, detection, or documentation of disease is gender-biased, the ability to understand the health issue and implement appropriate solutions will be limited.

The impact of gender discrimination on research is perhaps most easily observed in clinical research, where

women have been excluded or under-represented for much of the modern medical era.^{166,169,170} Although often justified as safeguarding women and children from research-related risks, the practices of generalising findings from men to non-pregnant women and ignoring the health concerns of pregnant women have directly harmed the populations they purported to protect.^{170,171}

Although it is important to recognise current efforts to improve the balance of sex and gender representation in clinical trials, challenges persist,¹⁶⁹ particularly in phases of drug development most focused on dosage and safety.^{171,172} A 2016 systematic review¹⁶⁹ randomly sampled trials published in high-impact journals on conditions unspecific for sex and estimated that only 39% of trials included approximately equal numbers of men and women. Of concern, a systematic review¹⁷² of preclinical research noted that single-sex studies including only male animals dominate most biological fields, even in cases where the studied disease predominantly affects women. Even flibanserin (Addyi, manufactured by Sprout Pharmaceuticals, USA), a drug intended to enhance female libido and referred to as the female Viagra, was tested almost entirely on male animals during its preclinical development.¹⁷¹ Considering these patterns of approaches to drug development, it is unsurprising that women still have more frequent and more severe drug reactions than men.¹⁷⁰

Additionally, only a handful of clinical trials report outcomes by sex and even fewer formally test for sex or gender effects on safety and efficacy.^{169,172,173} Combined analyses can obscure the true effects of the drug on both men and women. For example, the sex-specific effects of naltrexone, a drug used for treating opioid dependence, work in opposing directions, decreasing substance use and dependence in men, but increasing use and dependence in women.¹⁷⁴ A combined analysis would either show no effect, masking the true benefit for men, or an attenuated effect, masking the true risk to women.

Finally, although more women are entering science, technology, engineering, mathematics, and medicine fields, they are still less likely than men to author publications, accrue citations, submit papers for publication, be invited to give talks, secure grant funding, or hold leadership positions.^{175,176} These disparities are larger and more persistent in more stereotypically male academic areas¹⁷⁶ and experimental studies provide evidence that these disparities are due to bias against women rather than differences in ability.^{177–179} Implicit societal views about gendered roles and capabilities thus harm women in science, deprive future generations of role models, and artificially limit progress and innovation.¹⁸⁰

Capturing the biological impact of gender discrimination on health

Although the term gender was first introduced to differentiate social processes from biological ones, it has become clear that a stark differentiation is not possible.

Research now shows that the question is not whether genes or the environment have the deciding role in shaping health trajectories, but how genes and environment interact to produce different health outcomes throughout life. Life experience itself—including trauma, childhood adversity, and discrimination—can be imprinted in the body through changes in neural architecture, gene expression, cellular ageing, inflammatory processes, and changes to the body's response to stress. It is through these mechanisms that adversity and disadvantage “get under the skin” and produce inequities in health across the life course.³⁸

Even before birth, epigenetic markers are switched on in response to environmental stimuli that define which genes will be expressed and to what extent. This process, in turn, affects the fetal immune system, as well as an individual's future capacity to manage stress.^{181,182} Stress that occurs prenatally or early in life, when the brain is undergoing rapid development, can affect memory, learning, communication, emotional regulation, and executive function. Together, these factors can affect a child's educational success, future behaviour, adult earning potential, and long-term health.¹⁸³

There is now compelling evidence that chronic stress, especially in childhood, sets in motion a chain of events that translate into heightened risk of mental and physical health problems in later life, including cardiovascular disease, autoimmune disorders, depression, post-traumatic stress disorder, and premature mortality.¹⁸⁴ Both individual-level stressors, such as trauma,¹⁸⁵ and group-level experiences, such as concentrated poverty¹⁸⁶ and racial discrimination,¹⁸⁷ can exert lasting influences by altering gene expression or directly impacting on other physiological systems. The consequences of adversity can be transmitted to offspring through epigenetic changes. If heritable, the impacts of deprivation can potentially accumulate across generations.¹⁸⁸

Most investigations into the creation and maintenance of health inequities to date has been on the role of socioeconomic gradients, relative deprivation and racial discrimination, and the chronic stress they engender. In the USA, a black mother with a PhD is more likely to have a miscarriage or stillbirth, and her child is more likely to die in infancy, than a white woman without secondary education.¹⁸⁹ Research suggests that racial discrimination accounts for the differences in health outcomes for black and white people that persist when known risk factors are controlled.^{190,191} Studies have linked both structural racism, which affects the distribution of resources and opportunities in the USA, and racially-based slights and indignities (eg, being followed by security guards when in a store) to changes in cellular ageing and the biological embedding of chronic stress.¹⁹² Both types of discrimination exact a measurable toll on long-term health.¹⁹³

If racial oppression can have such impacts, what about the potential biological embedding of sexism or gender oppression? Can the trauma of being raped or experiencing other sexual abuse, for example, create

similar states of hypervigilance and chronic stress? Could gender discrimination partially account for the documented disparities in depression and anxiety between women and men?

Regrettably, there has been little exploration of how gender oppression might “get under the skin” to affect the health of women and gender minorities. However, a 2017 prospective US study of twins showed that perceived inequality and discrimination (including gender discrimination) is a robust predictor of physiological “wear and tear”, as measured by 24 biomarkers within seven physiological systems.¹⁹⁴ A variety of studies link this measure known as allostatic load to future lifelong health outcomes and all-cause mortality.^{193,195,196} A study of mother-newborn dyads in the eastern Democratic Republic of the Congo documented that war-related stress was a strong predictor of both newborn birthweight and epigenetic changes in mother and infant. Of all war-related stressors, individual experience of rape had the most profound impact, accounting for 31% of variance in birthweight.¹⁹⁷ This finding is highly important; given the global prevalence of rape in women and girls,¹⁹⁸ the possibility that rape and other forms of sexual violence might affect gene expression has broad implications for health.

This line of research is still speculative, but a revolution is happening in the science of toxic stress, epigenetics, and in research into the absorption and biological expression by the body of social discriminatory experiences. Engaging with these paradigms could provide important new avenues for exposing the embodied effect of gender inequity, restrictive gender norms, and the long-term costs of social orders that stratify individuals by gender, class, race, and other hierarchies of power and privilege.

Conclusion: shifting the burden of proof

The world is at a crucial stage in the fight for gender equality and social justice. The task of redressing centuries of discrimination against women and girls must be prioritised by governments, policy makers, and global health institutions. A growing movement of men who support gender equality has also highlighted the negative effects of restrictive norms on men's health and ability to lead authentic emotional lives.⁶¹ Particularly in high-income countries, the emancipatory demands of transgender and other gender-diverse individuals are gaining attention. These are all forms of resistance to restrictive gender systems; together, they convey the implicit understanding that gender inequality cannot be addressed without transforming gender norms. In this Series, we bolster these arguments with new evidence¹⁻³ and lay out our agenda for change.⁴

However, the larger question persists of why so little progress has been made to date. Numerous institutions, including the World Bank,⁵¹ the World Economic Forum,¹⁹⁹ and the McKinsey Global Institute²⁰⁰ have made the business case for gender equality; dozens of other institutions have advanced rights-based arguments for

For the *Lancet* issue on women in science, medicine, and global health see <https://www.thelancet.com/issue/S0140673619X00069>

action, such as *The Lancet's* theme issue on advancing women in science, medicine, and global health. Despite compelling evidence, response beyond rhetoric is weak. As the authors of the first Global Health 50/50 Report note in an accompanying article:²⁰¹ “although gender is one of the most significant social determinants of health outcomes, the global health community is largely gender-blind”.

The pervasiveness and normality of existing gender relations can make it difficult to see how norms, biases, and structural inequalities pervade health institutions, distort provider-client interactions, and foster tunnel vision in researchers. Additionally, governments and other actors often avoid implementing interventions perceived as questioning culture. However, these answers are too simplistic. Given the available evidence, the lack of adequate progress suggests wilful indifference. The barriers to achieving gender equality are political, not technical. It is time for the burden of proof to shift from those fighting to be recognised to those who benefit from the current order.

Contributors

LH, MEG, NO, MS, and CH designed the analysis, helped to collect and organise the evidence, and drafted the manuscript. LH, MEG, NO, MS, CH, MN, and DZ developed the conceptual framework, with input from a wider group of international stakeholders. All authors saw successive drafts of the paper and provided input. LH, MEG, and NO prepared the final version of the Series paper, which all authors approved. All authors approved the final text. LH and MEG had final responsibility for the decision to submit for publication.

Steering Committee of The Lancet Series on Gender Equality, Norms, and Health

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Declaration of interests

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