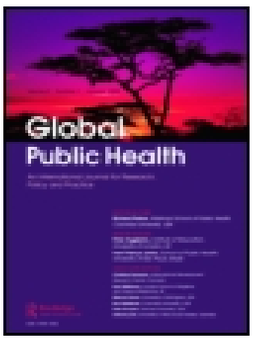

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REPORT

More than a public health crisis: A feminist political economic analysis of COVID-19

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ABSTRACT

Gender norms, roles and relations differentially affect women, men, and non-binary individuals' vulnerability to disease. Outbreak response measures also have immediate and long-term gendered effects. However, gender-based analysis of outbreaks and responses is limited by lack of data and little integration of feminist analysis within global health scholarship. Recognising these barriers, this paper applies a gender matrix methodology, grounded in feminist political economy approaches, to evaluate the gendered effects of the COVID-19 pandemic and response in four case studies: China, Hong Kong, Canada, and the UK. Through a rapid scoping of documentation of the gendered effects of the outbreak, it applies the matrix framework to analyse findings, identifying common themes across the case studies: financial discrimination, crisis in care, and unequal risks and secondary effects. Results point to transnational structural conditions which put women on the front lines of the pandemic at work and at home while denying them health, economic and personal security – effects that are exacerbated where racism and other forms of discrimination intersect with gender inequities. Given that women and people living at the intersections of multiple inequities are made additionally vulnerable by pandemic responses, intersectional feminist responses should be prioritised at the beginning of any crises.

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Gender; COVID-19; women; feminist; political economy

Introduction

Gender norms, roles, and relations differentially affect women, men, and gender minorities' vulnerability to disease. Outbreak response measures can also have immediate and long-term gendered effects (Wenham et al., 2020). Experience from past outbreaks, such as HIV/AIDS, Ebola, and Zika highlights how political economy shapes the gendered effects of health crises. During health crises, women are often more vulnerable to infection (Doyal, 1996), are 'conspicuously invisible' at the frontline and within decision-making (Harman, 2016), face multiple burdens of care and

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Table 1. Case study outbreaks and responses.

	China	Hong Kong	Canada	UK
Date of first known case	31-Dec-19	22-Jan-20	25-Jan-20	31-Jan-20
Cumulative cases as of 30 June 2020	84,620	1132	99,147	298,315
% Cases Female	48	46	57	57
Cumulative deaths as of 30 June 2020	4645	5	8,175	41,698
% Deaths Female	36	40	54	42
Public health response	Medical services and testing in affected areas rapidly scaled up; enforced quarantine and lockdown in effected areas	Extensive contract tracing and isolation of all contacts in government facilities; isolation of all known cases in hospitals.	Testing of those with severe symptoms and healthcare workers; those with mild symptoms asked to self-isolate at home for 14 days; isolation of severe cases in hospitals	Initially testing only for those hospitalised, then extended to healthcare workers, latterly extended to anyone symptomatic in the community. Anyone with symptoms required to self-isolate for 14 days at home.
Social distancing measures	Strict social distancing measures. Use of strict lockdowns within affected areas	Strict isolation measures implemented. Gatherings over 4 people banned. Venues including gyms, cinemas, and bars have closed on government orders.	Recommended social distancing including restricting contact to household units.	Lockdown announced for the whole population, other than key workers. The only exception for supermarket/pharmacy visits and for daily exercise. Strict lockdown lifted in May to allow those who need to travel to work.
Economic measures	Following near complete shutdowns in affected areas, reopening late February-early March for essential sectors, industries, regions, population groups based on risk assessments. Fiscal stimulus announced to save jobs and businesses in May.	Non-essential businesses closed. In April government launched the anti-pandemic funds to ensure workers continue to get paid.	Closure of non-essential business from the end of March to mid-May. Canadian Emergency Relief Benefit, wage subsidies and other interventions introduced	Closure of all non-essential business which cannot be done at home. Instigation of Coronavirus Job Retention Scheme (Furlough).
Social measures	Closure of universities, schools, public places, and events January-March.	Schools were suspended from early February, and entertainment and sports facilities were closed.	Closures of schools and childcare facilities from the end of March to the end of May or June (depending on the province)	Closure of schools, childcare, and universities from late March – June (then select year groups allowed to return in small groups)

risk (Davies & Bennett, 2016), suffer increased domestic abuse (Sherman, 2020), and face long-term risks to their economic livelihoods (Azcona et al., 2020). Research has further demonstrated that specific groups of women are more likely to experience these effects through intersections with racial, ethnic, age, and other identity factors (Lokot & Avakyan, 2020). Despite evidence of the disproportionate effects of health crises on women, feminist analyses have remained secondary to the emergency imperative of outbreaks, preventing critical evaluation of gendered assumptions and gaps in policy responses (Smith, 2019).

Table 2. Search strategy per case.

Country	Time period	Sources
Canada	March 15 – June 30, 2020 Canada issues its first travel advisory searches on March 15	Google News, Canadian Newstream Database, targeted searches
China	January 22 – June 30 2020 Chinese government's confirmation of human-to-human transmission on January 22, 2020	All searches were in Mandarin. Baidu.com, sina.com, Chinese newspapers via CNKI, Chinese journals and news targeted searches, and The State Council PRC, National Bureau of Statistic, National Health Commission of PRC, National Working Committee on Children and Women under State Council, Public Health Science Data, All China Women's Association
Hong Kong	January 02 – June 30 2020 Hong Kong announced its 'serious response level' in early January	Google news, South China Morning Post, China Daily, Radio and Television Hong Kong (RTHK) news, Hong Kong Free Press, targeted searches.
United Kingdom	March 15 – June 30 2020 The UK government imposes lockdown on March 23, 2020	LexisNexis search of the following newspapers: the Telegraph, the Sun, Express Online, the Times, the Mirror, the Independent, the Guardian, and the Daily Mail

One barrier to conducting feminist analyses during outbreaks is lack of data. Most states fail to collect and report disease incidence by key social stratifiers, such as sex, gender, race, and ethnicity (Heidari et al., 2020). Economic analyses of outbreaks tend to focus on the macro-level, do not disaggregate by sex, or primarily focus on the formal economy – with little consideration of the care economy, which obscures the effects on women's income and work (Harman, 2016; Herten-Crabb & Davies, 2020). The methodological challenges of doing research during an outbreak, particularly on highly sensitive topics, such as interpersonal violence, present additional practical and ethical barriers (Peterman et al., 2020).

A second barrier is the lack of sustained integration of feminist analysis within global health, where discussions on gender are often fixated on women's reproductive health and increased representation of women is often equated with achieving gender equity. While both are important subject areas, this limited scope neglects critical analysis that goes beyond presenting women as an essentialist category and that analyzes who participates and has power in decision-making and why (Davies et al., 2019; Kuhlmann, 2009). Even global health research that documents health inequities across genders and priority populations tends to focus on demonstrating effects on specific population groups, whereas a feminist approach interrogates how peoples' relative access to and use of wealth and resources determines health outcomes. This more critical analysis challenges global health scholarship to not only document inequality but also consider more equitable alternatives.

In this paper, we use a feminist informed gender matrix methodology to evaluate the gendered effects of the COVID-19 pandemic and response in four case studies: China, Hong Kong, Canada, and UK. A gender matrix is a tool that systematically considers how an experience or event, such as the COVID-19 outbreak, interacts with gender-related issues, for example care burdens, gender-based violence (GBV) and pay inequality. Following a brief overview of contributions from the field of feminist political economy to the study of the gender effects of pandemics, we introduce the gender matrix as a framework that enables rapid, evidence-based, feminist analysis of the pandemic. We find not only common gendered effects across the four case studies but also point to transnational structural conditions which put women on the front lines of the pandemic at work and at home while denying them health, economic and personal security – effects that are exacerbated where racism and other forms of discrimination intersect.

In December 2019, a cluster of cases of what appeared to be pneumonia was reported in Wuhan, China. Over the ensuing two months what was identified as a novel coronavirus began to appear around the world, causing fever and respiratory illness, among other symptoms, and in a minority of cases, death. On 30 January 2020, the Director-General of the World Health Organization

(WHO) declared COVID-19 a Public Health Emergency of International Concern. Our case studies – Canada, China, Hong Kong, and the United Kingdom – were selected in early February 2020, when they represented two jurisdictions with generalised outbreaks (Hong Kong and China) and two jurisdictions preparing for the possibility of outbreaks (Canada and the UK). This presented an opportunity for comparison in preparedness and response policies, though in fact all cases rapidly transitioned to a full-scale response (see Table 1). The cases presented diverse contexts of gendered relations (including two western contexts and two Asian contexts), as well as stated approaches to gender-sensitive policymaking. Canada had adopted a Gender-Based Analysis Plus approach to policymaking in 2016, whereas other cases did not have explicit gendered guidance. In order to compare responses and gender effects in these varying contexts, we focus on the response during roughly the first wave, or up until 30 June 2020.

Materials and methods

While the feminist literature on health, crises and response is growing, here we draw specifically on key concepts from feminist political economy. Feminist political economy scholarship makes explicit the linkages between economic, social, and political spheres. It analyzes how power is exercised not only through coercive means, but also materials and ideas, and how these power relationships shape the institutional and ideological formations where gender identities and status are constructed (Rai & Waylen, 2013). A distinct feature of feminist political economy is analysis of the relationship between micro and macroeconomics, and how the two intersect to reproduce and shape gender inequality. At the core of which is social reproduction: the ways in which gendered forms of care and reproductive labour underpin, drive and are shaped by the global economy. Feminist political economy concentrates on both macro sites of political economic power (e.g. world trade, global finance, labour regimes) and the micro level of power relationships which are experienced by individuals on a daily basis (domestic works, the informal care economy etc). Such a focus offers important insights to understanding pandemics: the role of care and social reproduction, male bias in macro and micro decision-making, inequities in the workplace, and the relationship between political resilience and insecurity.

Feminist political economy analysis explicitly asks how masculine bias shapes governance and policymaking. Elson explains that bias is more than just personal perception, but also blindness to the policies and structures 'that operate in favour of men as a gender, and against women as a gender' (Elson, 1993, p. 238). Analysing outbreak responses for bias reveals a lack of consideration of how men, women, and non-binary genders experience health crises, a lack of commitment to collecting gender and sex-disaggregated data, and a continuation of responses that disadvantage women and non-binary people compared to men. As Davies and Bennett write, 'male bias is very much present in thinking about disease outbreaks', yet there are few studies that analyse outbreak responses for bias (2016, p. 1043).

Demonstrating the effects of such bias, feminist economics has documented how conventional economic analyses fail to recognise women's unpaid labour and the economic, social, and opportunity costs women incur while fulfilling care roles (Folbre, 2006). In contrast, feminist economists argue that efficiency must be evaluated to take into account unpaid as well as paid labour, as care work, performed primarily by women, sustains the paid economy by enabling other household members to generate income and access education (Kabeer, 2015). As a social good, care has both costs (in terms of resources required, lost opportunities, and forgone wages), as well as benefits (in terms of strong family and community ties, and high quality of service to dependents) (Hassim & Razavi, 2006). However, there is little recognition of the costs of care within global health or health economics policy and planning. Inadequate state responses to health crises increase the care burden and costs born primarily by women, usually without the provision of additional support. For example, feminist scholars have demonstrated how the responses to both HIV/AIDS in Sub-Saharan Africa and Zika in Latin America have been sustained by the unrecognised, unpaid,

and under-resourced care work provided in the home – primarily by women (Ogden et al., 2006; Wenham, et al., 2020).

Where care work is paid and formalised, it remains undervalued: Esplen writes, 'Jobs in care are highly female-dominated and are notoriously low status and badly paid. This is the result of gender ideologies which portray care work as something requiring few skills that all women and girls are able to do' (Esplen, 2009, p. 7). The literature on gender and precarious work has highlighted how national policies and globalised economies have fostered health and care sectors dependent on low paying insecure work, lacking basic labour protections. For example, Vosko (2000) demonstrates that as healthcare sectors around the world have become increasingly feminised, with a growing portion of jobs being filled by women, the wage gap between men and women has increased, with more women filling precarious positions. The relationship between precarious employment and the distribution of unpaid work in households perpetuates inequalities with many women working part-time in the health and care sectors due to a lack of accessible and affordable childcare (P. Armstrong & Armstrong, 2009). Furthermore, a growing number of those working in precarious positions in HIC health sectors lack citizenship rights or are from racial and ethnic minorities (Mcdowell et al., 2009). As 70% of the global health workforce is women, these workers are now on the frontlines of the COVID-19 response (WiGH, 2020).

Intersectional feminist approaches highlight how social and identity factors – including but not limited to ethnicity, race, religion, sexuality, and disability – shape individuals' vulnerabilities to disease outbreaks, as well as their capacity to cope during emergencies and engage with responses (Hankivsky, 2012). A recent analysis of the COVID-19 outbreak applied the concept of intersectionality to illustrate how the outbreak 'lays bare stark disparities in power' (Lokot & Avakyan, 2020). For example, evidence suggests racialized healthcare workers are at increased risk of COVID-19 infection, morbidity and mortality, and migrant women care workers face particular economic hardship in the context of COVID-19 (Lokot & Bhatia, 2020). However, the majority of data collected by countries and health institutions continues to disaggregate only by sex and binary genders, if it disaggregates by sex or gender at all, with little consideration of social and economic impacts of the response across intersecting inequities (Heidari et al., 2020).

Applying a feminist political economy lens illuminates opportunities to advance understanding of health crises by exposing the effects of bias within policy responses, inequities, and insecurities within the paid and unpaid labour that are central to responses, and how additional inequities interact to shape effects and responses. To advance understanding of such dynamics, Davies et al. (2019) suggest global health research better include a range of feminist methodologies such as ethnography, participant observation, participatory action research and storytelling. However, infectious disease outbreaks pose barriers to many of these methods, which rely on extensive fieldwork and in-person relationship building; such methods are restricted by the very nature of public health interventions to limit disease transmission. The challenge then is to develop an approach, grounded in learnings from feminist political economy, that is feasible and responsive to the urgency of a health crisis.

Gender matrices have primarily been used within international development studies and health systems analysis to inform and evaluate interventions (Morgan et al., 2016). The gender matrix framework offers a structure for systematic analysis of the effects of any given event and/or intervention, including analysis of how gendered power relations manifest as inequalities or inequities, and the structures that determine differential health, social, and economic outcomes (Jhpiego, 2020). Recognising this potential, we developed a COVID-19 Gender Matrix, first as an organisational structure to gather and organise information on gendered effects of the response, second as a knowledge translation tool to share this information with decision-makers and other researchers in an accessible format, and third as the basis for more in-depth analysis – as is presented here.

A gender matrix consists of vertical gender domains and horizontal topic-specific domains. In determining the gender domains of the COVID-19 matrix we began with those developed for a gendered analysis of health systems, which ask *who has what* (access to resources), *who does what*

(the division of labour and everyday practices); *how values are defined* (social norms, ideologies, beliefs, and perceptions), and *who decides* (rules and decision-making) (Morgan et al., 2016). In defining and expanding these, we drew on key concepts from feminist political economy discussed above. For example, we ensured an emphasis on unpaid care work under the labour domain and added a policy domain to include analysis of bias. The horizontal topic-specific domains allow the matrix framework to be adapted to specific events and areas of interest. Here, due to our focus on the response to COVID-19, as well as on the outbreak itself, we expanded the socio-economic domain from previous matrices to include three domains: social, economic, and security impacts. Through iterative discussion and review the co-authors developed a 'codebook' to define each of the intersecting domains, drawing on key concepts and questions posed in the feminist political economy literature described above (see appendix for codebook as well as complete case study matrices).

We populated the matrix of each case study with immediately available data from the first phase of the pandemic. We searched popular media sources through established databases, as well as publications from government and non-governmental organisations. Due to the varying contexts, each search was unique (Table 2), but began with the initial keywords of COVID OR Coronavirus AND Gender OR Women. The use of the term 'women', and not 'men', recognised that androcentric media bias means the masculine experience is most often presented as the norm (Wallace & Goodyear-Grant, 2020). We used snowballing techniques to triangulate the findings and conducted targeted searches of government departments and non-governmental organisations identified as active in the response. While our initial search focused on women and gender differences, findings revealed multiple intersecting factors shaping experiences of COVID-19, which we incorporated into the analysis. Searches did not aim to be exhaustive, but rather a rapid scoping of information on gendered effects of COVID-19 to identify trends and themes within and across case studies. Such scoping methods are useful for analysing emerging evidence when it is still unclear what more specific questions can be posed and valuably addressed by a more precise analysis (Munn et al., 2018). As such, a broad search strategy was deemed an appropriate first step to gender-analysis during the initial phase of the COVID-19 response.

Documents were selected based on the following criteria: that they provided evidence or examples, as opposed to predictions or assumptions, of how specific genders or priority populations are impacted by the COVID-19 outbreak and response; and originated from an established, reputable media source, organisation or government body (based on authors' knowledge of local contexts). From these sources, data points demonstrating specific and differential gendered effects were extracted. Data points could be statistics or examples, but had to be supported by evidence deemed credible by the researcher. Evaluation of evidence was necessarily influenced by researcher positionality, shaped here by individual perspectives and the collective expertise of our interdisciplinary team, which engaged in frequent discussions regarding inclusion and exclusion. Each data point was entered into the matrix, based on the codebook, by a researcher from that case study, with coding reviewed by at least one further researcher. The matrices thus served as a common organisational framework for a wide variety of data within each case study. In this paper we present results from three domains exemplifying the gendered effects of COVID-19 which are particularly relevant for feminist political economy analysis: social, economic and security impacts.

In order to analyse this data, we combined findings from the case studies into one matrix. Using a multistep, iterative thematic analysis approach, two authors reviewed the combined data to identify common themes. These themes were then reviewed and refined through discussion among all the authors. Two further authors then coded the findings according to the agreed themes, with the coding reviewed by the team. As our analysis revealed more commonalities than differences across the case studies, we have focused on three common themes, described below.

Results

Financial discrimination

Across the case studies, there were numerous reports of the uneven financial burden and effects born by women. First, not only were women more likely to be directly affected financially by the pandemic, but they were also more likely to have been pushed into extreme poverty and to become less financially secure as governments around the world implemented widespread social distancing, school closures and work from home policies. Before the outbreak, women on average earned less than men in all case studies. For example, in China, women were paid 17% less than men (Phoenix Network Qingdao Comprehensive, 2020) and in Hong Kong, women earned on average HK$4,300 less a month than their male counterparts (Census & Statistics Department, 2019). This made women more economically insecure at the outset of the outbreak, insecurity that was exacerbated by the economic shutdown that disproportionately affected industries dominated by women workers. For example, in Canada, women made up 60% of job losses in the hardest-hit sectors (Carrigg, 2020). In China, the labour participation rate amongst women dropped from 73% to 65% among women, reversing years of progress (Meng, 2020). In the UK, women were a third more likely than men to work in a sector that was shut down during the government-mandated lockdown policies (Xu & Joyce, 2020). Certain groups of women were at increased financial risk; in the UK, black, Asian and minority ethnic households were almost twice as likely as white households to report job and income loss (Woodcock, 2020). Many women faced heightened levels of financial insecurity. In Vancouver, Canada fewer women managed to pay rent than men in March 2020 (City of Vancouver, 2020). In Hong Kong, foreign domestic workers, facing increased demands for remittances from families back home, reported having to borrow more from their employers (Milhaud, 2020). In the UK, there were reports of hundreds of thousands of single mothers at risk of not being able to feed their children (Oppenheim, 2020a).

Second, women, due to the nature of their work and family responsibilities, were less likely to benefit from government-sponsored financial bailouts, further compounding the financial discrimination they faced. Unlike other frontline health workers, midwives in the Canadian province of Ontario, almost all of whom are women, were ineligible for pandemic pay (Beattie, 2020). Many new mothers who lost their jobs in Canada were unable to access the emergency relief programme as they had not worked the requisite number of hours during the previous year while on parental leave (Press, 2020). In the UK, a COVID-19 related increase in one of the government's social protection schemes (Universal Credit) was reported to have negatively impacted single mothers due to a 'benefits cap', which caused them to lose other benefits or be unable to benefit from this scheme (Duncan, 2020). Sex workers, the majority of whom are women, in the UK reported difficulties accessing the Universal Credit scheme due to a lack of internet and phones (Topping, 2020b).

The barriers to government supports were greater for migrant women. In Hong Kong, foreign domestic workers, who are not eligible to obtain permanent residency, were also ineligible to receive government cash payouts, even as large numbers lost their jobs when their employers left the city (Carvalho, 2020b). Similar discriminatory practices against domestic migrant workers were also seen in China (Liwen & Jianrong, 2020). In Canada, newcomers lost access to employment services due to government shutdowns (Smyth, 2020). In the UK, the Minimum Income Requirement for maintaining migrant visa status was a continued stress for low-paid migrant workers whose jobs were at risk due to COVID-19 lockdowns and non-British spouses were reported at risk due to job losses which impeded their ability to earn enough to be eligible for spousal visa applications (Joint Council for the Welfare of Immigrants, 2020).

Third, women in all four case studies are more likely to face longer-term consequences from the pandemic due to being less likely to return to work and more likely to have suffered career breaks. In China, directives were given for some sectors to return to work before others, including most sectors dominated by men, such as logistics and other industries (Xinhau News, 2020). In Canada,

re-employment rates increased twice as fast among men than women in May 2020 (Statistics Canada, 2020). In the UK, it was found that women's academic output plummeted during the pandemic, which may make women less likely to obtain job promotions in future (Fazackerley, 2020).

Crisis in care

COVID-19 exacerbated the unequal division of care work in the home across the case studies. This burden relates to women's time allocated to domestic chores, reorienting effort and time to home-schooling, and the mental load of ensuring the family's additional health and well-being demands on account of the pandemic (e.g. increased anxiety, isolation, and quarantine management). Across the four case studies, women were doing at least double the care work of their male partners prior to the outbreak: women did 60% of chores and 2.6 times more unpaid work than men in China (McKinsey Global Institute, 2015); women were expected to take on two to three times more domestic labour than men in Canada (Statistics Canada, 2018); women were spending nearly double the time doing unpaid care work than men in Hong Kong (Equal Opportunities Commission, 2018). While in some cases, men took on greater care responsibilities in response to COVID-19 related needs, women continued to shoulder the majority of burden in Canada and the UK (Adams-Prassl et al., 2020).

Linked to financial discrimination, increased domestic burden, and childcare responsibilities impact on women's paid employment. In China, women with children had the lowest return to work rate and women's labour participation dropped from 73% to 65% during the first six months of the pandemic (Meng, 2020). These dynamics were structured by policy choices. China's 'return to work' policy emphasised 'stay at home' duties of childcare on women (All China Women's Foundation, 2020). School closures and uncertainty, combined with their common position as the lower-paid parent, led to women considering leaving paid employment in Canada and the UK. One study in the UK reported 78% of working mothers were struggling with childcare and paid work, and 57% of working mothers believed school closures had negatively affected their careers (Oppenheim, 2020b). The necessary time and financial demands of unpaid care work combined with the impact of the outbreak on women's paid work, to exacerbate the risk of poverty for women in countries such as the UK (Bulman, 2020).

While the gender differences in increased care burden are more apparent in two-parent men and women headed families, there are notable trends in single-parent households, the majority of which are headed by mothers. Single mothers faced impossible choices in the UK: told to return to work while schools were closed or to take unpaid leave to care for their child (Oppenheim, 2020a). In Canada, organisations providing support to single parents, experienced increased demand, particularly for lunch and breakfast programmes, and food hampers (Breen, 2020). In the UK, 44% of essential worker parents either had no partner or were partnered with another essential worker (Farquharson et al., 2020). While schools were open for essential worker's children in the UK, this was only effective for children of school age and did not account for the care and parenting work done outside of school hours.

Caregivers for people with special needs faced the greatest burdens with additional service cuts and disruption to provision. Parents of vulnerable or disabled children in the UK had limited access to respite care (Hill, 2020). In Hong Kong, such caregivers were reported to be 'at breaking point' on account of cuts to services (Sun, 2020b). Lack of supportive policies negatively impacted the health and wellbeing of people requiring care, particularly older adults and those living with disabilities. In the UK, those living in care homes were left without testing kits and care services when care workers fell sick or were otherwise unable to work (Ward, 2020). In Hong Kong, older adults often had to face COVID-19 alone, with limited access to masks and no physical ability to source them (news.gov.hk, 2020). In Canada, residents in some affected care homes were left without enough food or staff to care for them (Bilefsky, 2020). People with disabilities living in care homes in Hong Kong faced similar struggles with both older adults and disabled people

finding it difficult to self-quarantine (Sun, 2020a). Those living at home in the UK with additional care needs also found they were unable to self-isolate given the need for carers and, for those who could, isolation was both physically and mentally taxing (Vogehmann, 2020). The adult care budget was increased in the UK, but in such a way that prioritised formal care organisations over informal care networks leaving older BIPOC at disproportionate risk and care needs (PSA Commission on Care, 2020). Disabled people were also expected to be disproportionately impacted as the rest of the UK made plans to come out of a hard lockdown while they continued to shield (Ryan, 2020).

Unequal risks and secondary effects

In all four case studies, the high representation of women in the healthcare sector placed these workers at increased risk, compared to the general population. In Ontario, Canada, where one in 10 infections was among healthcare workers and 81% of healthcare workers were women (Pelley, 2020). In Wuhan, China, infections rose faster in women dominated health workforces, such as nursing, compared to other sectors (Zheng et al., 2020). Increased risk was associated with inadequate protective responses. In Hong Kong, nurses and other healthcare workers threatened to strike unless provided with better protective equipment (Cheng, 2020). In the UK, personal protective equipment (PPE) equipment designed for men did not fit women healthcare workers effectively (Topping, 2020a). Care aides in Canada on temporary visas lacked the power to complain or leave unsafe employment if they did not have access to PPE, due to fear of losing their residency status (Luk, 2020).

Other women dominated professions also faced increased risk of infection. Low-income workers, such as domestic helpers and beauticians in Hong Kong, were identified as at risk due to the nature of their profession and lack of access to and affordability of protective supplies (Mengyan, 2020). Sex workers (the majority of whom are women) were identified in Canada and Hong Kong as having increased risk due to the nature of their work, lack of access to PPE and exclusion from government support programmes (Carvalho, 2020a; Grossman, 2020).

Across all four case studies, single headed-households, older adults, and homeless populations were reported as facing the risk of direct exposure, as well as secondary health effects, due to the intersection of income and gender inequities. The risk of infection was assessed as higher for people living in poverty in the UK, due to cramped living conditions that provided little opportunity for isolation from infected cases. Shelters were reported to be high-risk venues for infection in Canada and the UK (Pleace & Bertherton, 2020). The same populations were at heightened risk of food insecurity during lockdown. Reports from the UK noted that single-headed households (the majority of which are women) and older adults (again, the majority of whom are women), faced a higher risk of malnourishment and food insecurity (Busby, 2020). In Canada, women's shelters and food banks faced food shortages (Giesbrecht, 2020). In Wuhan, China, older adults faced challenges accessing food (Cachero, 2020).

A further secondary health effect, with common gendered trends across the case studies, was the increase in mental health burdens among women compared to men. While such survey results could be emblematic of the gendered stereotypes that determine who reports and admits to mental illness, it is notable that in all four cases, women were reported to be suffering more than men. In Canada, 56% of Canadian women reported that they had felt anxious or nervous since the pandemic started compared to 38% of men (Leger, 2020). Reports from Hong Kong noted the rise of mental health issues, with women more susceptible to stress than men (Master, 2020). Poor mental health was attributed to women's role as front line workers and care providers, and due to their particular health needs. In the UK, women reporting underlying mental health issues increased from 11% to 27% during the outbreak; with pregnant women particularly reporting increased anxiety (Petter, 2020). In China, women nurses experienced high rates of mental stress and anxiety due to their risk of exposure to infection (Mo et al., 2020).

While all the surveys reported only by binary genders, evidence also emerged of particular threats to mental health and wellness for non-binary individuals. Reforms to the Gender Recognition Act in the UK, that would allow trans people to have their gender officially recognised, were delayed (Green, 2020). In Canada, LGBTQ spaces were forced to close due to COVID-19 lockdowns and gender affirming surgeries delayed, both of which were linked to mental health risks (Donato, 2020). In the UK and Canada, Lesbian, Gay, Bisexual, Trans and Queer (LGBTQ) people were at heightened risk of isolation, particularly where they have been forced to return to homophobic childhood homes and/or are socially distanced from the chosen family who they may not live with (LGBT Foundation, 2020).

Gender-based violence (GBV) was a further indirect health, and security effect of the response to COVID-19 across all four cases. In China, police reports in Hubei province documented a tripling of GBV incidents during the initial outbreak (UN Women, 2020). In Hong Kong, GBV was reported to have 'upsurged', with reports of violence against women and children rising as victims and abusers were forced to spend increased time together (Whitehead, 2020). In Canada, calls to the Vancouver GBV crisis line spiked 300% during the early COVID-19 pandemic (Daya & Azpiri, 2020). It was also reported, in Canada, that fear of the virus was keeping people away from shelters, even though 10% of women (and 6% of men) were concerned about violence in their home (Scheel, 2020). In the UK, domestic violence support services reported a caseload increase (Townsend, 2020).

Black, Indigenous and people of colour (BIPOC) faced further security risks related to racism and discrimination. In Canada, care workers (a high percentage of whom are BIPOC women) were targeted by both racism and exploitation (Moist, 2020). Increased racism and hate crimes were reported by Muslims and people of East Asian ethnicity in the UK (Mercer, 2020), and over 50% of ethnically Chinese Canadians experienced COVID-related racism (Shore, 2020). In Hong Kong, more than 100 restaurants refused to serve customers from mainland China (Ting, 2020). BIPOC suffered disproportionately by use of force to enforce social distancing in Canada (Bain et al., 2020), and Black people were fined more than White people under COVID-19 laws in the UK (Vassell, 2020).

Discussion

The COVID-19 Gender Matrix was designed to provide a rapid snapshot to inform a feminist political economy analysis of the COVID-19 outbreak and response in four case studies. As such, it has many limitations. As already noted, searches aimed to scope as opposed to systematically review evidence on gender effects and are therefore not comprehensive. Furthermore, findings reflect only what is reported in the media, government, or civil society organisations large enough to conduct studies and disseminate results. Many gendered effects – particularly on those often ignored such as non-binary and trans people – are therefore unaccounted for. We also recognise that much of the data collected, particularly from media sources, is anecdotal and may represent bias on part of both the sources and researcher, which we have tried to mitigate through an iterative team process.

With these limitations in mind, we contend the validity of this scoping exercise lies in its utility as a rapid analysis tool offering global health scholars and policy makers synthesised evidence of the gendered effects of the pandemic, contribute to filling current data gaps and posing a novel approach to feminist analysis of global health crises. These four cases present examples of how the gender matrix approach can sketch the intersectional consequences (both intended and unintended) of policy responses, illuminate policy gaps and point towards opportunities for gender transformation. When analysed together, the four cases provide a stark outline of a transnational gendered experience.

While the specific data, as well as scale of the outbreak and response, differ across the case studies, it is notable that they point to the same key themes, outlining the globalised structures

that shape differential experiences of the COVID-19 outbreak and response. Policies across the case studies reflect a bias that continues to exploit gender norms and ignore inequities. Whether it is restarting industries dominated by men first (China), failing to ensure comprehensive childcare for essential workers, the majority of whom are women (UK), excluding non-citizens from relief support (Hong Kong and Canada), or only addressing GBV after the fact (all), our analysis illuminates a common trend across the case studies concerning whose interests are prioritised and whose are neglected. The relationships between these transnational themes and context specific drivers and experiences, requires further in-depth case study specific research.

Our findings regarding the effects on care work are consistent with many assumptions and evidence drawn from previous health emergencies such as HIV/AIDS, Ebola, and Zika regarding women's time and burden, as well as provide new evidence on the relationship between domestic care roles on women's employment and poverty. In particular, care work is not just about the unpaid domestic burden in the home. Women also perform key essential work in society, such as educating children and caring for elders, and during crises, governments have actively ensured this work will continue, whilst shutting everything else. The resulting care burden has real and immediate impacts on women's paid employment and wellbeing.

Linked to this, relationships between themes demonstrate how precarious, feminised work generates interlinking economic and health insecurities. Those put most at risk financially by the outbreak responses are also then most at risk of infection and secondary health effects, such as those associated with violence. High rates of anxiety and stress among women are reactions to their risk as frontline workers and care providers, and to the impossible choices they face regarding childcare, education, and their economic and personal security.

Gender is not the only factor that influences a person or group's experience of COVID-19 and government policy responses. In the context of COVID-19, wealth becomes the best protection against the downstream effects of government policies to reduce transmission, such as lockdown and school closures. It is often those people who live at the intersection of many inequalities – such as BIPOC women, older adults, and people living with a disability – who are disproportionately negatively impacted by both an infectious disease outbreak, economic crises, and ill-considered/generic/one-size-fits-all government policy responses. Given that people living at these intersections are made additionally vulnerable, they should therefore be at the forefront of policy-makers' minds at the beginning of any crises, rather than an afterthought.

Not only is COVID-19 a global health crisis, it is also a global gender equity crisis transcending differences in scale, response, and political-economic systems. However, COVID-19 did not cause gender inequities. All case studies already had entrenched economic inequities and gendered divisions of labour (both formal and informal) which intersected with inequalities related to age, disability, race, and citizenship status. The pandemic response has simply exposed and exacerbated these. Data suggests these impacts will not be short-term and may reverse past gains. This trend can be reversed by policy and response efforts grounded in intersectional feminist approaches. There are efforts within the case studies presented here to promote such a response. The All-China Women's Federation has advocated for specific measures such as clear provision (care packages, lockdown facilitation) and an Amendment to the Women's Rights Act (All China Women's Foundation, 2020). In Canada, the YWCA has produced guidance on a feminist economic recovery (Sultana & Ravanera, 2020). Like the themes this analysis has identified, these movements are transnational in scope and, if headed, provide the anecdote to the effects documented here.

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Appendix: COVID-19 Gender Matrix Code Table.

Country	Access to Resources: financial, physical, health, information	Labour /Roles: care economy, healthcare workforce, etc.	Norms /Beliefs: expectations, priorities, public discourses, etc.	Power & Decision-Making: incidents of (dis)empowerment/ racism/ violence	Policies/ Laws: do they consider equity; improve or exacerbate it
Risk/Vulnerability: who is most at risk or vulnerable to infection and why	How access to resources affect risk	How formal and informal gender roles increase risk of infection	Evidence of gendered understandings of vulnerability and risk	Who has ability to protect themselves, move freely to avoid infection, etc. and who does not	Policies/laws that might increase vulnerability/ risk of specific genders or groups
Illness & Treatment: how people experience infection and COVID related care/treatment	How access to resources effect experience of illness/treatment:	Who cares for ill; what other roles are those who are ill expected to fulfil	Stigma associated with infection; gendered difference in following public health guidance	Who makes decisions about treatment and care	Policies and laws that might affect health outcomes of specific genders/groups
Health Systems/Services: changes in health services provide, example of how health work force is impacted	Access to COVID related and other health services;	Impacts on healthcare workers; how do gendered roles affected ability to self-isolate, seek care/ treatment, etc.	Prioritization of health services; attitudes towards different genders and social groups by health workforce	Who can access health systems without fear; who makes treatment decisions; who makes decisions within health systems	Policies/laws that affect both COVID related care and other health system functions, such as SRH
Social Impacts: impacts on education, family, specific social groups	How closure of social programmes and creation of response programmes affect genders differently; access to supplies etc.	Impacts on informal care in the home/family; who fills care roles and at what social cost	Evidence of sexist, racist, etc. attitudes and their impacts of different social groups	Who is deciding social priorities; how is autonomy affected by quarantine/ isolation	Policies/laws that determine access to education or social supports and that address discrimination
Economic Impacts: on income, employment, specific industries/ sectors	Who has access to employment, income support, internet to work from home, etc. and who doesn't	Economic impacts of taking on care roles; different economic impacts on male and female dominated industries	Expectations around who gives up paid employment, what industries are most crucial, etc.	Who is deciding how resources will be used at various levels; who has financial influence and who doesn't and why; incidents of economic discrimination/disempowerment	Policies/laws that determine access to economic supports
Security Impacts: on personal and group security and safety including GBV, racism, etc.	Links between access to resources like housing, income support and insecurity	Incidents of violence, racism etc. towards care provides, healthcare workers; gendered composition of security forces involved in response	Who is viewed as a threat to security (gender, race, etc) and who is viewed as victims of insecurity during crisis	Who is making decisions regarding security; is the security force being used in the response and to what gendered effect	Policies/laws related to protecting specific populations, addressing violence, hate etc.

Note: For complete gender matrices for each of the case studies see – https://www.genderandcovid-19.org/matrix/