Gender Equality in Work and Covid-19 Deaths

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Abstract

On average, women comprise a smaller share of deaths from Covid-19. Variation in the share of Covid-19 deaths for women across countries and US States suggests that biological factors cannot fully account for this gender difference. I hypothesize that women's participation in the workforce is related to women's share of Covid-19 deaths. I show that the percent of the full-time workforce comprised by women is positively related to the percent of female Covid-19 deaths across countries. I also show that the percent of the full-time workforce comprised by women is positively related to the incidence of various diseases associated with a more severe impact of Covid-19 and the percent of medical doctors and nurses who are women. My results suggest that in countries where women participate more fully in the workforce, women may be more susceptible to Covid-19 due to increased exposure to the virus and a higher risk of developing comorbidities. Future research should be careful to consider social factors when examining gender differences in health outcomes.

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1. Introduction

On average, women comprise a smaller share of deaths from Covid-19 (The Gender and COVID-19 Working Group, 2020; Jin et al., 2020). So far, explanations for this gender difference center on biological or genetic differences between men and women and gender differences in behaviour (Moalem, 2020; GlobalHealth 50/50, 2020). As men appear more vulnerable to infection, some ask whether Covid-19 treatments should be different for men and whether extra care is necessary to protect them (Rabin, 2020; Hastings, 2020). At the same time, other commentators have pointed to the fact that women face a higher risk of exposure due to the fact that they constitute the majority of health care and essential workers (Gupta, 2020; Robertson, 2020). Moreover, evidence from the 1918 flu pandemic suggests that social factors may be important in explaining differences in mortality rates (Paskoff, and Sattenspiel, 2020). As Quinn and Smith (2018) recognize, the state of the literature on women's work and their health outcomes is still underdeveloped. To add to this literature and contribute to the discussion around the gendered impact of Covid-19, I examine whether gender difference in Covid-19 deaths across countries and US States are related to gender differences in work patterns.

To date, the discussion around gender differences in Covid-19 mortality has focused on average effects. The fact that the % of female deaths due to Covid-19 varies across countries has been ignored, even though the variation is considerable. In the April 22 data from Global Health 50/50, the % of female deaths due to Covid-19 ranges from 19% in Thailand to 50% in Portugal. Variation can also exist within a country. For US States with gender disaggregated data, as of April 24 the % of female deaths due to Covid-19 ranged from 39% in North Carolina to 55.6% in Alaska. Presumably, sex cannot explain the cross- or within-country variance in the share of women's deaths due to Covid-19. This raises the

question whether differences in work patterns can help explain the variation in mortality rates, particularly across country.

Work patterns are a natural candidate for study because occupational risks are associated with a substantial part of the burden of chronic diseases, some of which are linked to increased susceptibility to the coronavirus, e.g. asthma (GlobalHealth 50/50, 2020). Work may also be associated with increased exposure to the coronavirus, which is why the closing of non-essential businesses has played a key role in most countries' efforts to combat the coronavirus. Since women's participation in the workforce varies substantially across countries, women's work may help explain the variation in women's share of Covid-19 deaths across countries.

Using data on female Covid-19 outcomes from Globalhealth 50/50 and country-level data from a variety of other sources, I show that the % of female deaths due to Covid-19 is higher in countries in which women comprise a greater share of the full-time workforce. I also show that the share of women in the full-time workforce is associated with a higher incidence among women of some diseases and injuries, as well as a higher share of female medical doctors. These results lend support to the idea that women's share of Covid-19 deaths increases when they are subject to greater occupational health risks and greater exposure to the virus. While causal attribution is difficult due to the evolving nature of the phenomenon, the results highlight that caution needs to be exercised in attributing gender differences in Covid-19 deaths entirely to biological factors. Societal factors may also be important.

2. Methods

Data Sources

I obtain data on the share of Covid-19 deaths (Deathsfemale) and cases (Casesfemale) and the ratio of male to female deaths among confirmed Covid-19 cases (Genderratio) from the April 7, 15 and 22, 2020 updates of the GlobalHealth 50/50 COVID-19 sex-disaggregated data tracker. According to its protocol, GlobalHealth 50/50 COVID-19 compiles all national and international/global surveillance data relating to Covid-19 infection from the 60+ countries with the highest number of reported cases and updates its data every week. GlobalHealth 50/50 reports data for England and Wales, Scotland and Northern Ireland separately. I aggregate these to a UK level number. I also collect all available gender disaggregated data on Covid-19 fatalities and cases in US States as of April 24. As of that date, only 14 states provided gender-disaggregated data, one of which is Rhode Island which had no reported deaths due to the coronavirus on the day that it reported a breakdown by gender (March 6, 2020). Links to state-level statistics were obtained from the list in Schumaker (2020).

I obtain the latest available country-level data on the share of women in the full-time workforce (% full-time workers – female) from the OECD and the International Labor Organization (ILO). Data for US States is from the US Census. The latest data on the share of female medical doctors (% medical doctors – female) and nurses (% Nurses – female) in a country are from the World Health Organization (WHO). From the World Economic Forum I obtain country-level data on Economic Participation and Opportunity scores and Health and Safety scores for 2019. I obtain data for the incidence of disease and injury among women measured in DALY's (disability-adjusted life year) per 100,000 (population) from the 2017 Global Burden of Disease Study. GDP Per Capita comes from the World Bank (for countries)

and the US Bureau of Economic Analysis (for US states). The Appendix (Tables A1-A4) provides summary statistics and correlation matrices for the data.

Data analysis

I plot the data to analyze potential outliers in the data. Visual inspection suggests that data for countries outside the OECD is of poorer quality than for OECD countries, so I focus the analysis on OECD countries. I conduct most of the analysis using the April 22 version of the GlobalHealth 50/50 data as it has broader coverage than earlier versions of the data and data quality increases over time. However, I also analyze the April 7 and April 15 releases of GlobalHealth 50/50 data in the Appendix.

In the OECD sample, I run multivariate OLS regressions of Deathsfemale on % full-time workers – female and GDP per capita (the base regression). As a robustness check, I also run regressions of Casesfemale and Genderratio on % full-time workers – female and GDP per capita. To examine the hypothesis that work might increase women's susceptibility to Covid-19, I examine how women's incidence of disease is related to % full-time workers – female and other controls in the Appendix. I conduct the analysis for the full country-level GBD dataset with available data on control variables and for US States (Tables A5 and A6). I also examine how women's share of the health workforce varies with % full-time workers – female.

I examine potential mechanisms driving the relation between Covid-19 outcomes and % full-time workers by first adding the Health and Safety Scores and the incidence of Female Cardiovascular diseases, Female Chronic respiratory diseases and Female Substance use disorders to the base regression and then replacing % full-time workers – female with % medical doctors – female in the base regression. I focus on cardiovascular and respiratory diseases and substance abuse as there is evidence these exacerbate the impact of Covid-19.

Since the Health and Safety Score is highly correlated with GDP (correlation of -0.553, p-value 0.002), I leave GDP per capita out of the regressions with health measures. Since the variation in % Nurses - female is small, I do not include this measure in the regression analysis. I correct all standard errors for heteroskedasticity using Eicker-Huber-White standard errors. The results are in Table 1.

In Table 2, I replicate the Deathsfemale regressions in Table 1 for the full sample. I exclude Iran because of potential misreporting due to stigma (Rubin, 2020). Since the quality of labor market data is worse outside the OECD, I add a specification in which I replace % full-time workers – female with Economic Participation and Opportunity scores (column IV).

I restrict my analysis of the US data to visual inspections because the sample is so small.

3. Results

Figure 1 provides a scatterplot of Deathsfemale and Casesfemale for the full sample. Lines indicate the linear fit between Deathsfemale and Casesfemale for OECD and non-OECD countries separately. In the figure, most counties fall below the 45-degree line, which is the reason why women are viewed as being less susceptible to Covid-19. However, it is also clear that there is considerable variation in the data across countries, which would be difficult to attribute to sex differences. Figure 1 also highlights that there is a stronger relation between cases and deaths in OECD countries. Similar patterns are observable in the plot of Deathsfemale and Genderratio (Figure A1 in the Appendix). It is possible that the weaker relation outside the OECD is driven by differences in testing which is why I do not include Casesfemale and Genderratio in the multivariate analysis for the full sample.

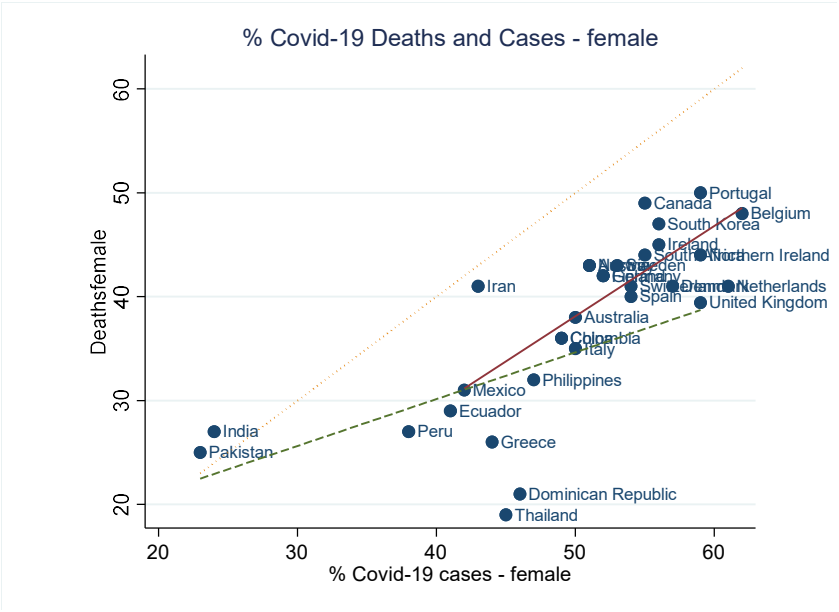

Figure 1 Female Covid-19 Deaths and Cases

Figure 1 uses the April 22 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. Deathsfemale is the % of Covid-19 deaths that are female. The solid line fits Deathsfemale and % of Covid-19 cases that are female among OECD countries. The dashed line fits Deathsfemale and the % of Covid-19 cases that are female among non-OECD countries. The dotted line indicates the 45-degree line.

Figure 2 provides a scatterplot of Deathsfemale and Casesfemale for US states. The figure highlights that gender differences in Covid-19 outcomes can vary even within a country. Again, this variation would be difficult to attribute sex differences.

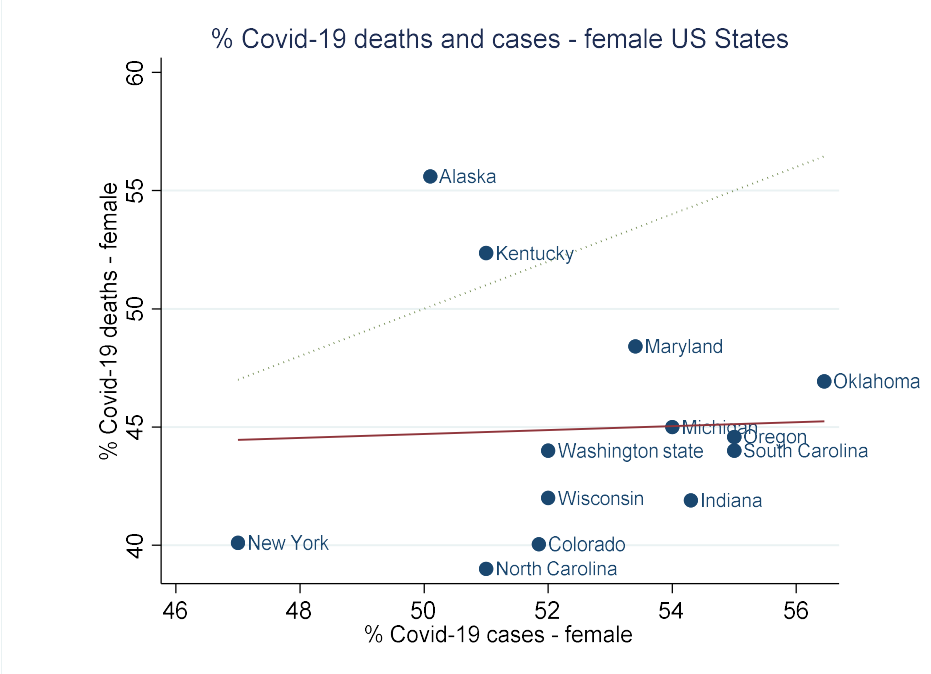

Figure 2 Female Covid-19 Deaths and Cases – US States

Figure 2 uses all available sex-disaggregated data for US States as of April 24, 2020. The solid line fits % of Covid-19 deaths that are female and % of Covid-19 cases that are female. The dotted line indicates the 45-degree line.

Figure 3 provides a scatterplot of Deathsfemale and % full-time workers – female for the OECD sample. The positive relation between the two variables is striking. As a robustness check, I plot Genderratio and % full-time workers – female in Figure 4. Consistent with Figure 3, the relation between Genderratio and % full-time workers – female is negative. The Appendix provides a similar robustness check for the full sample and Casesfemale (Figures A2 and A3).

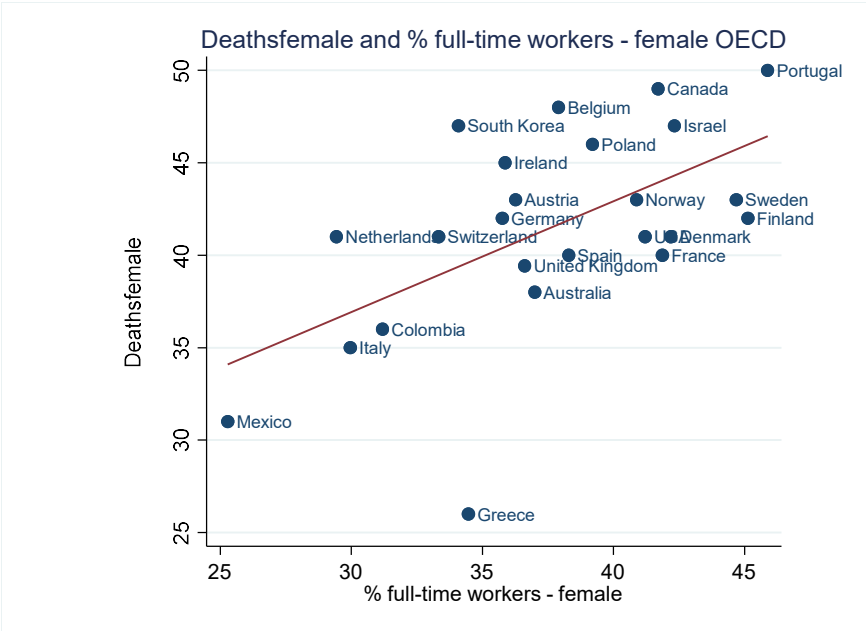

Figure 3 Female Covid-19 Deaths and Full-time Employment - OECD

Figure 3 uses the April 22, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. Deathsfemale is the percent of female deaths. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country measured in 2018.

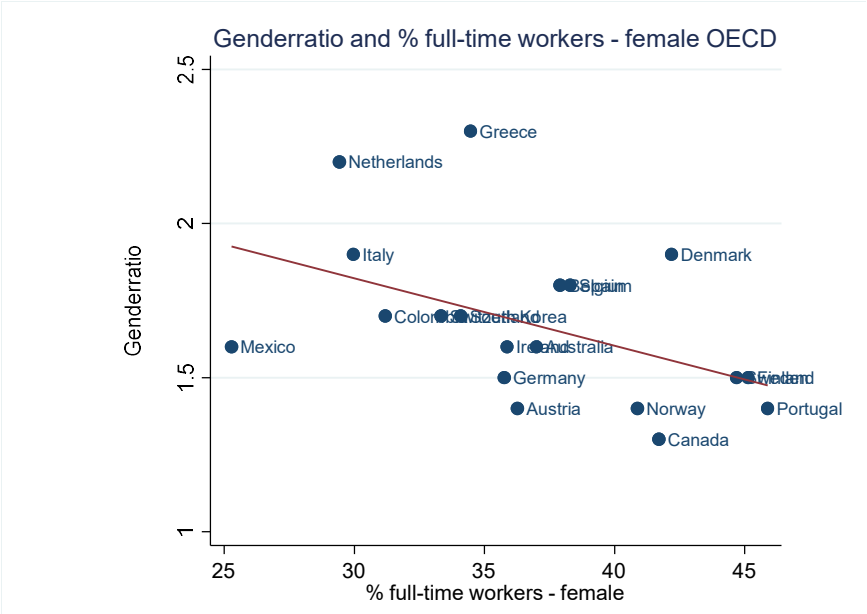

Figure 4 Gender ratio of confirmed Covid-19 deaths and Female Full-Time Employment – OECD

Figure 4 uses the April 22, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. Genderratio is the ratio of male to female deaths among confirmed cases of Covid-19. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country measured in 2018.

The results in columns I, V and IX of Table 1 show that the relations in Figures 3, 4 and A3 hold after accounting for variation in GDP. The p-values in these specifications range from 0.002 (column I) to 0.096 (column V). In countries in which women participate more equally in the workforce, gender differences in Covid-19 outcomes appear to be lower.

VARIABLES	Deathsfemale				Casesfemale				Genderratio			
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
% full-time workers - female	0.56	0.60	0.67		0.40	0.42	0.41		-0.02	-0.02	-0.03	
	(0.002)	(0.002)	(0.002)		(0.096)	(0.047)	(0.096)		(0.056)	(0.010)	(0.059)	
% medical doctors - female				0.27				0.56				-0.01
				(0.261)				(0.036)				(0.444)
Health and Safety score		141.82				-515.88				-23.61		
		(0.571)				(0.098)				(0.039)		
Female Cardiovascular diseases			-0.00099				-0.00136				0.00002	
			(0.469)				(0.169)				(0.781)	
Female Chronic respiratory diseases			-0.00133				0.00862				0.00039	
			(0.690)				(0.048)				(0.080)	
Female Substance use disorders			-0.00029				-0.00356				-0.00055	
			(0.925)				(0.634)				(0.117)	
GDP Per Capita	41.16			91.83	39.04			76.10	-0.81			-5.32
	(0.368)			(0.326)	(0.422)			(0.172)	(0.749)			(0.174)
Constant	18.73	-119.14	21.22	23.83	35.46	538.88	32.52	22.57	2.48	25.49	2.27	2.57
	(0.005)	(0.626)	(0.006)	(0.117)	(0.000)	(0.079)	(0.001)	(0.124)	(0.000)	(0.024)	(0.000)	(0.008)
Observations	24	24	23	18	24	24	23	17	19	19	18	14
Adjusted R-squared	0.286	0.272	0.251	0.0460	0.115	0.218	0.205	0.231	0.124	0.251	0.344	0.00967

Table 1 Covid-19 Outcomes for Women and Female Employment – OECD countries

Table 1 shows the results of heteroskedasticity corrected OLS regressions of Covid-19 outcomes for women on % full-time workers – female and various control variables. The sample of Covid-19 outcomes is from the April 22, 2020 update of the GlobalHealth 50/50 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for OECD countries. Deathsfemale (Casesfemale) is the percent of Covid-19 deaths (cases) that are female. Genderratio is the ratio of male to female deaths among confirmed Covid-19 cases. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country measured in 2018 (Source: OECD). % medical doctors - female is the percent of doctors in a country who are female (Source: WHO Global Health Workforce Statistics 2018 update). Health and Safety score is from the World Economic Forum's Global Gender Gap 2020 Report. Female Cardiovascular diseases, Female Chronic respiratory diseases and Female Substance use disorders are measured in DALY's (disability-adjusted life year) per 100,000 (population) and measured in 2017 (Source: Global Burden of Disease Study, 2017). GDP Per Capita is as of 2018 (Source: The World Bank). P-values are in parentheses.

The results in Tables A5 and A6 suggest that women's incidence of some diseases may increase with their greater workforce participation. The coefficients on % full-time workers – female in the regressions for cardiovascular and respiratory diseases in Table A5 are positive with p-values ranging from 0.041 to <0.000. Similar patterns hold for US States in Table A6. Nevertheless, including health related measures in the base regression does not reduce the magnitude of the coefficient on % full-time workers – female in Table 1.

To examine whether work may be associated with increased exposure, I plot % medical doctors – female and % Nurses – female against % full-time workers – female in Figure 5. The figure suggests that the more women work, the greater the share of front-line health professionals they comprise. Figures 6 and 7 suggests that there is a positive relation between Deathsfemale and % medical doctors – female and % Nurses – female. Figures A4 and A5 for the full sample suggests a similar relation between Deathsfemale and % medical doctors – female in the full sample, but both figures also highlight that women's participation in the healthcare sector is unlikely to fully explain variation in Deathsfemale. This is particularly evident from Figure A5 which highlights the lack of variation in % Nurses – female across countries.

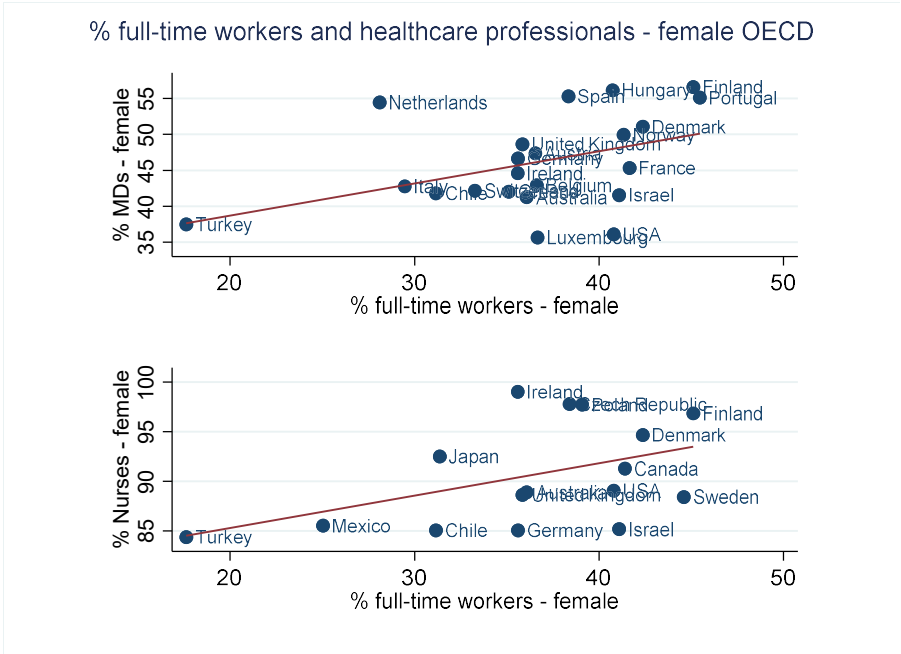

Figure 5 Healthcare Professionals and Female Full-Time Employment – OECD

% MDs – female (% Nurses – female) is the percent of medical doctors (Nurses) that are female in a country. Data is from the WHO Global Health Workforce Statistics 2018 update. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country measured in 2016.

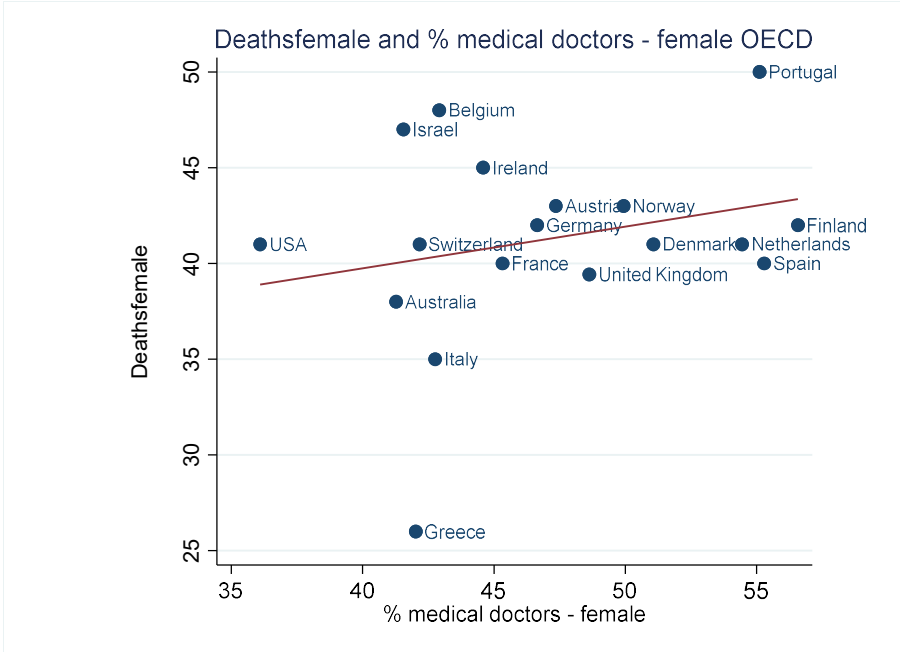

Figure 6 Female Covid-19 Deaths and Women's Share of Medical Doctors - OECD

Figure 6 uses the April 22, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. % medical doctors - female is the percent of doctors in a country who are female.

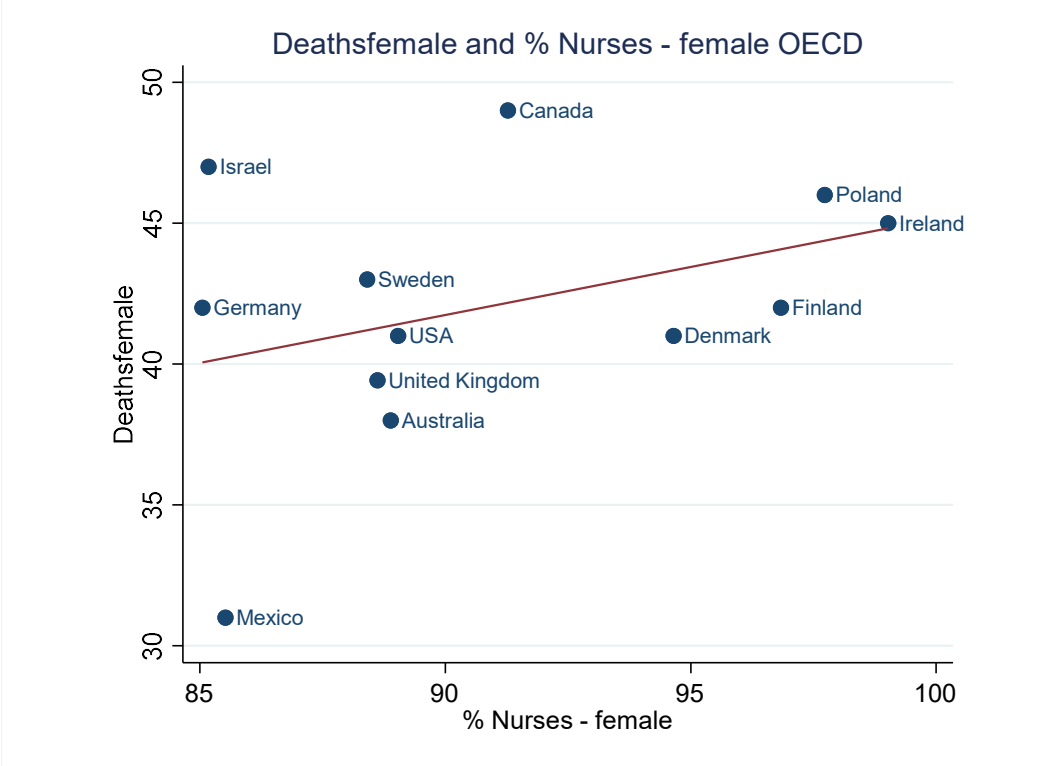

Figure 7 Female Covid-19 Deaths and Women's Share of Nurses- OECD

Figure 7 uses the April 22, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. % Nurses - female is the percent of nurses in a country who are female.

Columns IV, VIII and XII of Table 1 display the same signs on the coefficients for % medical doctors – female as for % full-time workers – female. The results in column VIII are particularly consistent with the idea that women are more likely to become ill the more they work in front-line health positions (coefficient on % medical doctors – female of 0.56 with a p-value of 0.036).

The results in Table 2 are broadly consistent with those in Table 1. As with % full-time workers – female, the coefficient on the Participation and Opportunity Score is positive (p-value 0.009). But there are also some notable differences. In the full sample, the incidence of Female Chronic respiratory diseases in column III is positively associated with Deathsfemale (p-value of 0.047) and the coefficient on % full-time workers – female is smaller in column III (coefficient of 0.39, p-value 0.068) than in column II (coefficient of

0.60, p-value 0.017), which suggests that some of the positive relation between % full-time workers – female and Deathsfemale may be due to increased health problems associated with women's greater participation in the workforce. In the full sample, Deathsfemale is also more significantly related to % medical doctors – female (coefficient of 0.41, p-value 0.90) which is consistent with the idea that the more women work, the more they may be exposed to the coronavirus. It is plausible that greater variation in some of the explanatory variables across countries and the increase in sample size explains the differences in results in Tables 1 and 2.

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	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
% full-time workers - female	0.56	0.60	0.67		0.40	0.42	0.41		-0.02	-0.02	-0.03	
	(0.002)	(0.002)	(0.002)		(0.096)	(0.047)	(0.096)		(0.056)	(0.010)	(0.059)	
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Figures A6 and A7 show that the positive relation between Deathsfemale and % full-time workers – female plotted in Figure 3 also appears to exist in the April 7 and April 15 data from GlobalHealth 50/50. It is noticeable that countries move closer together with each update. Presumably, this is because countries start reaching a similar stage in the spread of the coronavirus and the data becomes more accurate. Table A7 replicates Table 1 in the earlier data sets. While the results are less statistically significant, they are broadly consistent with the results in Table 1.

Figure A8 shows the plot of Deathsfemale and % full-time workers – female for US states. The slope of the fitted line between the two variables is slightly positive. But there are also notable outliers (Alaska and Kentucky). As better data becomes available, further research needs to be conducted to explain the cross-state pattern in Deathsfemale in the US.

4. Discussion

I highlight the fact that there is considerable variation in Covid-19 outcomes for women using data across countries and US States. Since the argument that biological sex differences vary considerably across countries and US States is presumably indefensible, this variation challenges the idea that the only reason women fare better than men in the coronavirus crisis is because of innate biological or behavioural differences. I hypothesize that women's participation in the workforce can help explain this variation because work may be associated with a higher incidence of pre-existing conditions and greater exposure to the coronavirus. My results are broadly consistent with this hypothesis. Even though the evolving nature of the pandemic and the data makes the identification of a causal channel problematic, the striking nature of the simple relations I document here should serve as a starting point for additional research into social dimensions related to Covid-19 outcomes.

The results suggest that the more equal societies are, the more gender equal treatment and policies to combat Covid19 should be. At the same time, it should be recognized that although women may suffer less from Covid-19 in more gender unequal countries, they experience worse quality of lives than men along other dimensions. Thus, lower mortality rates for women in these countries should not be used as an excuse to discriminate further.

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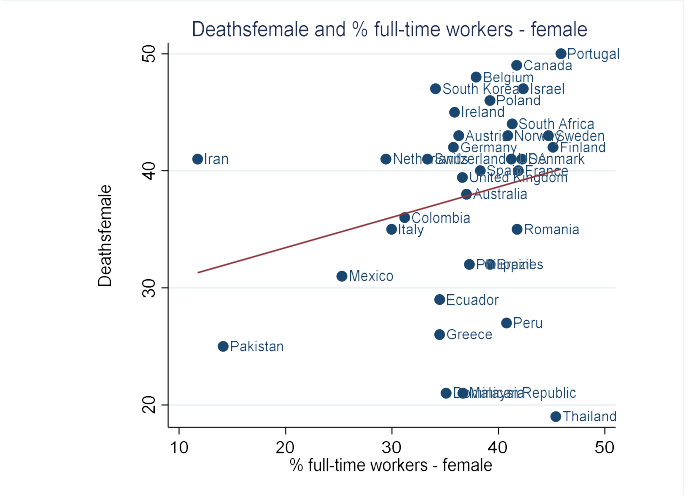

Figure A2 Female Covid-19 Deaths and Full-time Employment

Figure A2 uses the April 22 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676). Deathsfemale is the % of Covid-19 deaths that are female. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country, measured in 2018. The line fits Deathsfemale and % full-time workers – female.

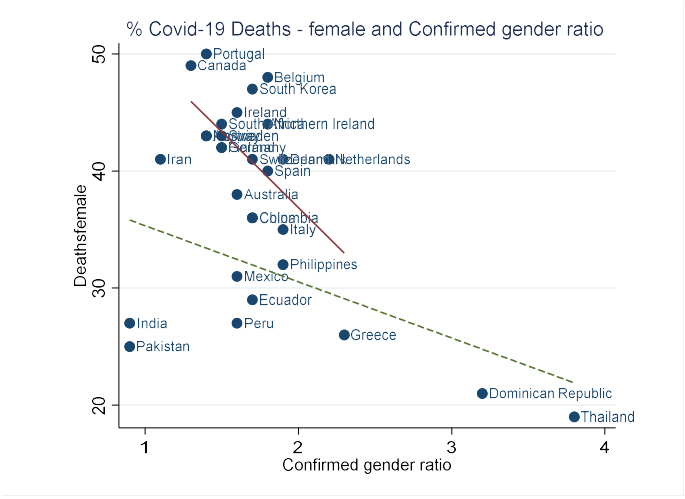

Figure A1 Female Covid-19 Deaths and Confirmed Gender Ratio

Figure A1 uses the April 22 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. Deathsfemale is the % of Covid-19 deaths that are female. The Confirmed gender ratio is the ratio of male to female deaths among confirmed cases of Covid-19. The solid line fits Deathsfemale and the Confirmed gender ratio among OECD countries. The dashed line fits Deathsfemale and the Confirmed gender ratio among non-OECD countries.

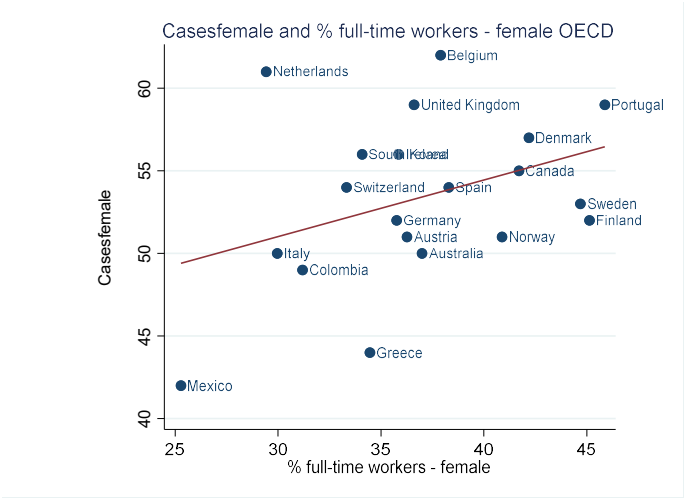

Figure A3 Female Covid-19 Cases and Full-time Employment - OECD

Figure A3 uses the April 22, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. Casesfemale is the percent of Covid-19 cases that are female. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country, measured in 2018.

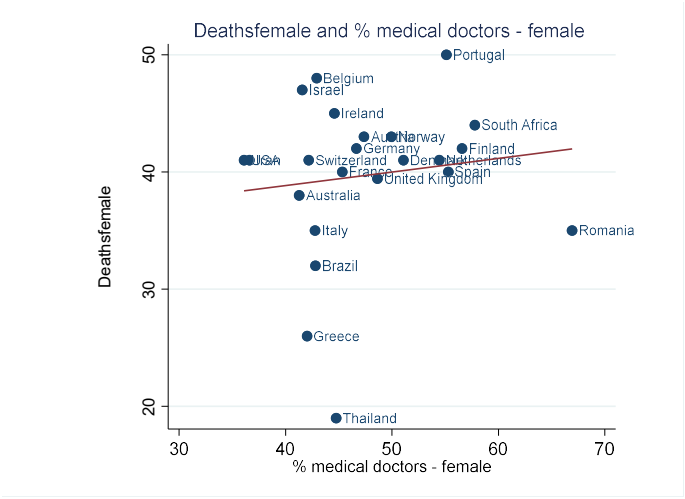

Figure A4 Female Covid-19 Deaths and Women's Share of Medical Doctors

Figure A4 uses the April 22, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. % medical doctors - female is the percent of doctors in a country who are female.

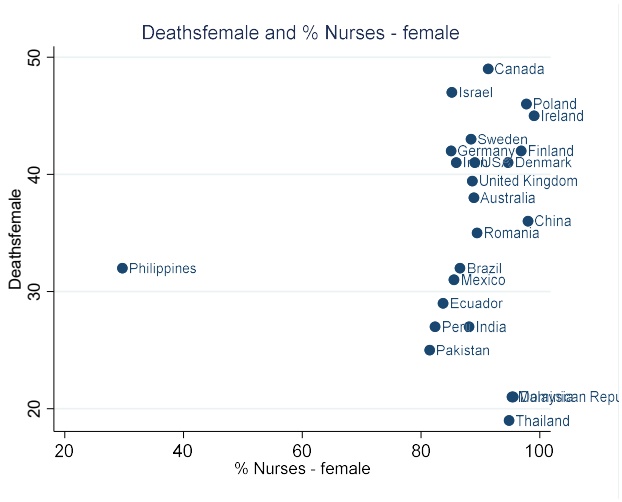

Figure A5 Female Covid-19 Deaths and Women's Share of Nurses

Figure A5 uses the April 22, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676). % Nurses - female is the percent of nurses in a country who are female.

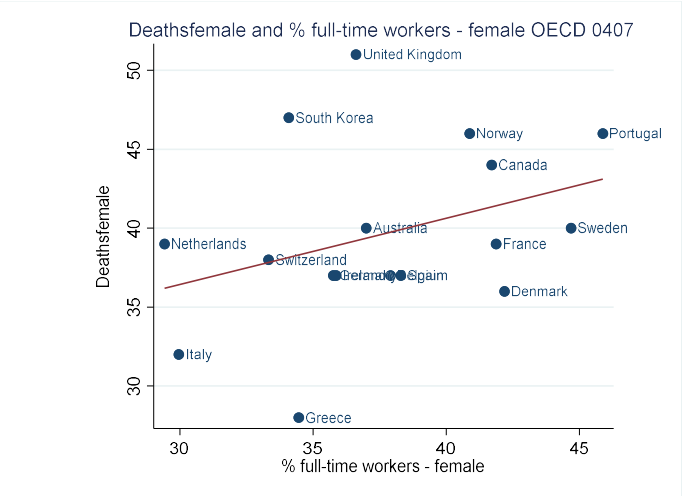

Figure A6 Female Covid-19 Deaths as of April 7, 2020 and Full-time Employment - OECD

Figure A6 uses the April 7, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. Deathsfemale is the percent of Covid-19 deaths that are female. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country, measured in 2018.

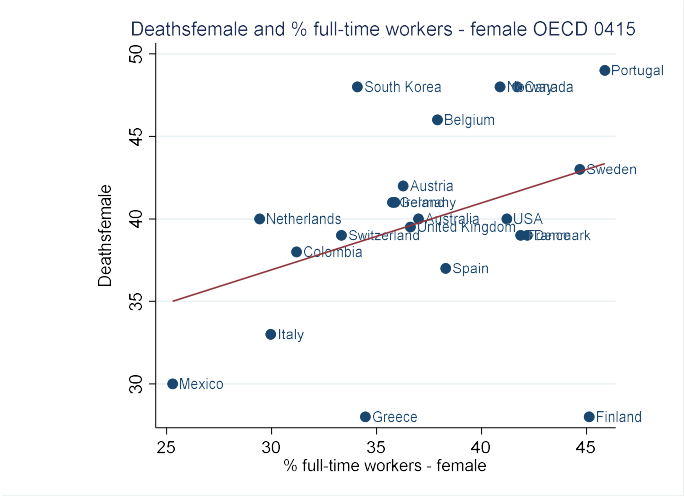

Figure A7 Female Covid-19 Deaths as of April 15, 2020 and Full-time Employment - OECD

Figure A7 uses the April 15, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. Deathsfemale is the percent of Covid-19 deaths that are female. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country measured in 2018.

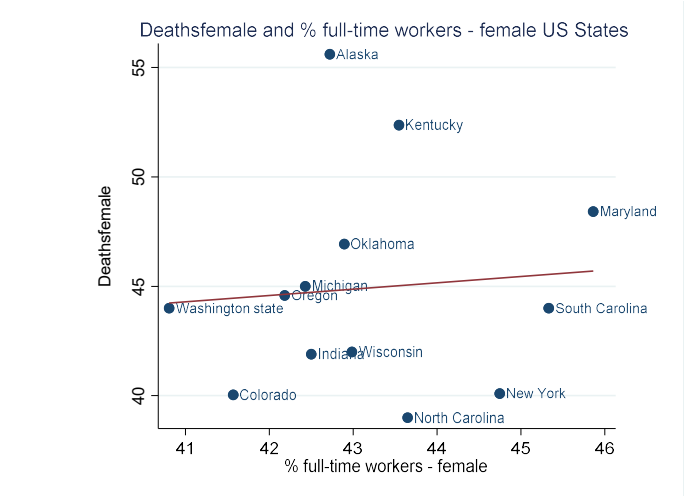

Figure A8 Female Covid-19 Deaths and Full-time Employment – US States

Figure A8 uses all available sex-disaggregated data for US States as of April 24, 2020. Deathsfemale is the % of Covid-19 deaths that are female. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country, measured in 2019. The line fits Deathsfemale and % full-time workers – female.

Variable	Obs	Mean	Std. Dev.	Min	Max
Panel A: Countries with Deaths, Cases or Gender in April 22 Globalhealth 5050 data					
Deathsfemale	41	37.986	8.249	19.000	50.000
Genderratio	30	1.730	0.577	0.900	3.800
Casesfemale	41	47.537	10.759	11.000	62.000
% full-time workers - female (2018)	42	36.447	7.020	11.729	45.877
% full-time workers - female (2017)	42	35.936	7.515	12.579	45.673
Participation and Opportunity Score	48	0.667	0.113	0.327	0.798
% medical doctors - female	28	47.518	8.216	35.654	66.911
% Nurses - female	32	84.821	17.464	19.461	99.021
Health and Safety Score	48	0.972	0.010	0.926	0.980
Female Cardiovascular diseases	49	3923.080	2240.587	1488.049	13754.730
Female Chronic respiratory diseases	49	1140.769	422.519	467.892	2455.460
Female Substance use disorders	49	351.334	235.287	123.014	1503.543
GDP Per Capita (2017) (millions)	48	28602.320	25325.610	1464.993	17361.300
GDP Per Capita (2018) (trillions)	47	0.031	0.027	0.001	0.117
OECD	51	0.549	0.503	0.000	1.000
Panel B: OECD Countries with Deaths, Cases or Gender in April 22 GlobalHealth 50/50 data					
Deathsfemale	24	41.434	5.579	26.000	50.000
Genderratio	19	1.674	0.266	1.300	2.300
Casesfemale	24	52.000	5.942	40.000	62.000
% full-time workers - female (2016)	28	0.368	0.052	0.250	0.455
% full-time workers - female (2017)	28	0.370	0.051	0.249	0.453
% full-time workers - female (2018)	28	37.259	5.100	25.285	45.877
% medical doctors - female	20	46.059	6.158	35.654	56.571
% Nurses - female	15	91.037	5.074	85.055	99.021
Health and Safety Score	28	0.974	0.004	0.968	0.980
Female Cardiovascular diseases	27	3531.781	1207.991	1715.370	6506.650
Female Chronic respiratory diseases	27	1174.323	329.247	700.024	1841.371
Female Substance use disorders	27	355.749	264.172	123.014	1503.543
GDP Per Capita (2017) (millions)	28	42388.580	23034.710	6375.932	17361.300
GDP Per Capita (2018) (trillions)	28	0.045	0.025	0.007	0.117
Panel C: US States					
Deathsfemale	13	44.917	4.892	39.000	55.600
Casesfemale	13	1.242	0.225	0.799	1.564
% full-time workers - female (2019)	13	52.547	2.514	47.000	56.450
% full-time workers - female (2017)	13	43.170	1.449	40.804	45.860
South	13	43.044	1.429	40.863	45.516
Female Cardiovascular diseases	13	0.385	0.506	0.000	1.000
Female Chronic respiratory diseases	13	4084.656	919.376	2643.168	5405.458
Female Substance use disorders	13	1953.516	426.563	1411.228	2837.120
GDP Per Capita (2017) (millions)	13	1715.970	478.178	883.968	2750.504

Table A1 Summary statistics for full sample, OECD sub-sample and US state sample

Table A1 provides summary statistics for the data. The sample in panel A consists of all available data for countries with at least one of Deathsfemale, Casesfemale or Genderratio reported in the April 22, 2020 update of the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker

(http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676). The sample in Panel B consists of OECD subsample of the data in Panel A. The sample in Panel C consists of all available data for US States with gender disaggregated data on Covid-19 fatalities and cases as of April 24. Links to state-level statistics were obtained via https://abcnews.go.com/Health/coronavirus-map-tracking-spread-us-world/story?id=69415591. Deathsfemale (Casesfemale) is the percent of Covid-19 deaths (cases) that are female. Genderratio is the ratio of male to female deaths among confirmed Covid-19 cases. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country (Sources: OECD, the International Labor Organization (for non-OECD countries) and the US Census (for US states)). In the OECD data % full-time workers – female is calculated as follows: Female Working Age Population Female Employment Rate (1-Female Incidence of Part-time Employment)/(Total Working Age Population Total Employment Rate (1-Total Incidence of Part-time Employment). For countries not in the OECD, % full-time workers – female is calculated as Female employment(100-incidence of female part-time employment)/Total employment(100-incidence of part-time employment). Not all countries report data on part-time employment, thus % full-time workers – female is missing for them. For US States, % full-time workers – female=Number of Female workers (16-64) who worked full-time/ Total number of workers (16-64) who worked full-time. % medical doctors - female (% Nurses – female) is the percent of medical doctors (Nurses) in a country who are female (Source: WHO Global Health Workforce Statistics 2018 update). The Participation and Opportunity Score and the Health and Safety score is from the World Economic Forum's Global Gender Gap 2020 Report. Female Cardiovascular diseases, Female Chronic respiratory diseases and Female Substance use disorders are measured in DALY's (disability-adjusted life year) per 100,000 (population) and measured in 2017 (Source: Global Burden of Disease Study, 2017). GDP Per Capita comes from The World Bank (for countries) and the US Bureau of Economic Analysis https://apps.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1 (for US states).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) Deathsfemale	1.000														
(2) Genderratio	-0.466	1.000													
	(0.009)														
(3) Casesfemale	0.746	0.192	1.000												
	(0.000)	(0.309)													
(4) % full-time workers - female	0.232	0.290	0.325	1.000											
	(0.179)	(0.142)	(0.057)												
(5) % full-time workers - female (2017)	0.170	0.173	0.448	0.996	1.000										
	(0.337)	(0.398)	(0.007)	(0.000)											
(6) Participation and Opportunity Score	0.317	0.399	0.488	0.828	0.836	1.000									
	(0.052)	(0.032)	(0.001)	(0.000)	(0.000)										
(7) % medical doctors - female	0.200	-0.083	0.393	0.387	0.236	0.187	1.000								
	(0.348)	(0.752)	(0.071)	(0.056)	(0.226)	(0.339)									
(8) % Nurses - female	0.124	0.105	0.041	0.166	0.282	0.123	-0.123	1.000							
	(0.565)	(0.689)	(0.843)	(0.398)	(0.154)	(0.504)	(0.662)								
(9) Health and Safety Score	0.137	0.330	0.335	0.464	0.428	0.446	0.249	-0.119	1.000						
	(0.414)	(0.081)	(0.035)	(0.002)	(0.005)	(0.001)	(0.201)	(0.516)							
(10) Female Cardiovascular diseases	0.121	-0.018	0.233	0.102	0.227	0.130	0.519	0.038	0.068	1.000					
	(0.462)	(0.925)	(0.147)	(0.524)	(0.153)	(0.384)	(0.006)	(0.835)	(0.647)						
(11) Female Chronic respiratory diseases	0.217	-0.276	0.241	0.233	0.255	-0.024	-0.020	0.024	-0.366	0.125	1.000				
	(0.185)	(0.147)	(0.134)	(0.143)	(0.107)	(0.871)	(0.922)	(0.896)	(0.011)	(0.393)					
(12) Female Substance use disorders	0.336	-0.301	0.372	0.148	0.163	0.217	-0.072	0.104	0.106	0.336	0.320	1.000			
	(0.036)	(0.112)	(0.018)	(0.357)	(0.308)	(0.143)	(0.722)	(0.570)	(0.479)	(0.018)	(0.025)				
(13) GDP Per Capita (2017) (millions)	0.534	-0.121	0.302	0.280	0.264	0.453	-0.342	0.298	0.010	-0.267	0.194	0.169	1.000		
	(0.001)	(0.532)	(0.058)	(0.073)	(0.091)	(0.001)	(0.075)	(0.098)	(0.949)	(0.070)	(0.192)	(0.255)			
(14) GDP Per Capita (2018) trillions)	0.554	-0.163	0.298	0.228	0.218	0.439	-0.412	0.328	-0.006	-0.266	0.179	0.166	0.999	1.000	
	(0.000)	(0.408)	(0.066)	(0.152)	(0.170)	(0.002)	(0.033)	(0.072)	(0.967)	(0.074)	(0.235)	(0.269)	(0.000)		

(15) OECD	0.503	-0.130	0.499	0.166	0.204	0.322	-0.286	0.340	0.181	-0.195	0.089	0.021	0.651	0.644	1.000
	(0.001)	(0.492)	(0.001)	(0.295)	(0.195)	(0.026)	(0.140)	(0.057)	(0.218)	(0.178)	(0.544)	(0.886)	(0.000)	(0.000)	

Table A2 Correlation matrix – Full sample

The sample consists of all available data for countries with at least one of Deathsfemale, Casesfemale or Genderratio reported in the April 22, 2020 update of the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676). Data is described in Table A1. OECD is a dummy variable that is equal to 1 if the country is in the OECD and 0 otherwise. P-values are in parentheses.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Deathsfemale	1.000													
(2) Genderratio	-0.572	1.000												
	(0.011)													
(3) Casesfemale	0.757	-0.003	1.000											
	(0.000)	(0.990)												
(4) % full-time workers - female (2016)	0.528	-0.469	0.392	1.000										
	(0.008)	(0.043)	(0.058)											
(5) % full-time workers - female (2017)	0.548	-0.466	0.405	0.998	1.000									
	(0.006)	(0.044)	(0.050)	(0.000)										
(6) % full-time workers - female (2018)	0.571	-0.466	0.407	0.992	0.997	1.000								
	(0.004)	(0.044)	(0.048)	(0.000)	(0.000)									
(7) % medical doctors - female	0.243	-0.167	0.473	0.291	0.279	0.239	1.000							
	(0.331)	(0.568)	(0.055)	(0.213)	(0.233)	(0.310)								
(8) % Nurses - female	0.362	0.220	0.400	0.345	0.340	0.317	0.518	1.000						
	(0.247)	(0.601)	(0.197)	(0.209)	(0.215)	(0.250)	(0.154)							
(9) Health and Safety Score	0.091	-0.312	-0.389	-0.065	-0.079	-0.077	0.106	0.223	1.000					
	(0.673)	(0.194)	(0.060)	(0.742)	(0.691)	(0.697)	(0.658)	(0.425)						
(10) Female Cardiovascular diseases	-0.115	0.162	-0.028	0.225	0.212	0.198	0.103	0.469	0.193	1.000				
	(0.601)	(0.522)	(0.899)	(0.258)	(0.288)	(0.323)	(0.676)	(0.077)	(0.334)					
(11) Female Chronic respiratory diseases	-0.025	0.204	0.486	0.265	0.278	0.261	0.024	0.020	-0.406	0.315	1.000			
	(0.910)	(0.416)	(0.019)	(0.182)	(0.161)	(0.189)	(0.922)	(0.942)	(0.036)	(0.109)				
(12) Female Substance use disorders	0.088	-0.485	0.183	0.249	0.262	0.253	-0.369	-0.001	0.033	0.034	0.475	1.000		
	(0.688)	(0.041)	(0.403)	(0.210)	(0.187)	(0.202)	(0.120)	(0.997)	(0.869)	(0.865)	(0.012)			
(13) GDP Per Capita (2017) (millions)	0.296	-0.215	0.274	0.239	0.271	0.279	-0.331	0.161	-0.560	-0.191	0.351	0.289	1.000	
	(0.160)	(0.376)	(0.194)	(0.221)	(0.164)	(0.150)	(0.153)	(0.566)	(0.002)	(0.339)	(0.073)	(0.143)		
(14) GDP Per Capita (2018) (trillions)	0.297	-0.207	0.281	0.234	0.266	0.275	-0.314	0.211	-0.553	-0.182	0.347	0.276	0.998	1.000
	(0.159)	(0.396)	(0.184)	(0.231)	(0.171)	(0.157)	(0.178)	(0.451)	(0.002)	(0.364)	(0.076)	(0.164)	(0.000)	

Table A3 Correlation matrix – OECD sub sample

The sample consists of all available data for OECD countries with at least one of Deathsfemale, Casesfemale or Genderratio reported in the April 22, 2020 update of the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676). Data is described in Table A1. P-values are in parentheses.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Deathsfemale	1.000									
(2) Genderratio	0.583	1.000								
	(0.029)									
(3) Casesfemale	-0.776	-0.745	1.000							
	(0.001)	(0.002)								
(4) % full-time workers - female (2018)	-0.021	-0.085	-0.010	1.000						
	(0.943)	(0.771)	(0.974)							
(5) % full-time workers - female (2017)	-0.261	-0.178	0.215	0.936	1.000					
	(0.367)	(0.542)	(0.459)	(0.000)						
(6) South	0.266	0.065	-0.032	0.590	0.594	1.000				
	(0.358)	(0.826)	(0.914)	(0.026)	(0.025)					
(7) Female Cardiovascular diseases	0.091	0.015	0.157	0.335	0.464	0.607	1.000			
	(0.757)	(0.959)	(0.591)	(0.242)	(0.094)	(0.021)				
(8) Female Chronic respiratory diseases	0.131	-0.036	0.134	0.100	0.229	0.481	0.906	1.000		
	(0.656)	(0.904)	(0.648)	(0.735)	(0.432)	(0.082)	(0.000)			
(9) Female Substance use disorders	0.170	-0.337	0.157	-0.309	-0.282	0.205	0.406	0.653	1.000	
	(0.561)	(0.239)	(0.591)	(0.282)	(0.328)	(0.481)	(0.150)	(0.011)		
(10) GDP Per Capita (2017) (billions)	0.123	0.060	-0.420	-0.111	-0.278	-0.464	-0.718	-0.721	-0.448	1.000
	(0.674)	(0.839)	(0.135)	(0.705)	(0.336)	(0.095)	(0.004)	(0.004)	(0.109)	

Table A4 Correlation matrix – US States

The sample consists of all available data for US States with at least one of Deathsfemale, Casesfemale or Genderratio as of April 24, 2020. Data is described in Table A1. P-values are in parentheses.

	VARIABLES	% full-time workers - female	P-value	Participation and Opportunity Score	P-value	GDP per capita	P-value	Health and Safety score	P-value	Constant	P-value	Obs.	Adj. R-squared
1	Cardiovascular diseases	121.99	(0.000)			-32,133.39	(0.001)			661.71	(0.366)	89	0.186
2		123.12	(0.000)					24,177.57	(0.419)	-23,537.02	(0.422)	86	0.123
3				4,329.16	(0.002)			9,451.39	(0.612)	-7,973.43	(0.660)	150	0.0364
4	Chronic respiratory diseases	8.57	(0.020)			3,528.79	(0.039)			675.63	(0.000)	89	0.0669
5		7.75	(0.041)					-1,063.64	(0.815)	1,813.00	(0.680)	86	0.0104
6				475.49	(0.050)			-8,780.84	(0.088)	9,257.11	(0.065)	150	0.0209
7	Diabetes and kidney diseases	-0.77	(0.899)			-9,433.54	(0.000)			1,701.32	(0.000)	89	0.0584
8		-2.83	(0.666)					11,676.67	(0.274)	-9,777.00	(0.341)	86	-0.00792
9				-193.31	(0.665)			13,593.23	(0.058)	-11,615.08	(0.088)	150	0.00673
10	Digestive diseases	10.49	(0.001)			-3,569.80	(0.007)			532.38	(0.000)	89	0.138
11		9.99	(0.006)					8,765.23	(0.042)	-8,049.29	(0.054)	86	0.110
12				569.09	(0.012)			5,374.11	(0.099)	-4,748.80	(0.141)	150	0.0646
13	Enteric infections	0.34	(0.950)			-11,778.79	(0.013)			624.46	(0.043)	89	0.0389
14		2.42	(0.661)					755.69	(0.854)	-521.93	(0.896)	86	-0.0215
15				9.90	(0.990)			-14,852.32	(0.264)	15,412.62	(0.229)	150	-0.00659
16	HIV/AIDS and sexually transmitted infections	23.46	(0.033)			-12,954.05	(0.016)			-180.53	(0.340)	89	0.0300
17		22.89	(0.037)					26,086.41	(0.161)	-25,814.64	(0.158)	86	0.0107
18				1,522.12	(0.147)			54,455.13	(0.014)	-52,716.77	(0.013)	150	0.0261
19	Maternal and neonatal disorders	-5.97	(0.597)			-27,836.81	(0.000)			2,026.83	(0.000)	89	0.211
20		-2.52	(0.862)					5,374.97	(0.653)	-3,960.65	(0.734)	86	-0.0224
21				-1,499.71	(0.333)			-22,972.29	(0.325)	25,617.35	(0.257)	150	0.00315
22	Mental disorders	-6.55	(0.074)			11,818.04	(0.000)			1,848.96	(0.000)	89	0.482
23		-6.79	(0.082)					-2,898.84	(0.628)	4,928.79	(0.396)	86	0.00681
24				-88.49	(0.691)			-1,071.53	(0.695)	2,841.98	(0.282)	150	-0.0116

25	Musculoskeletal disorders	10.36	(0.191)			25,736.62	(0.000)			1,563.40	(0.000)	89	0.443
26		8.59	(0.303)					-6,448.37	(0.599)	8,448.42	(0.477)	86	-0.0126
27				1,244.36	(0.007)			-5,465.83	(0.332)	6,556.66	(0.224)	150	0.0178
28	Neglected tropical diseases and malaria	7.56	(0.269)			-11,358.23	(0.044)			250.50	(0.465)	89	0.0193
29		10.17	(0.112)					2,539.10	(0.703)	-2,658.16	(0.684)	86	4.48e-05
30				1,781.83	(0.105)			-28,011.36	(0.157)	26,971.15	(0.156)	150	0.00712
31	Neoplasms	63.54	(0.000)			22,349.58	(0.000)			469.00	(0.140)	89	0.353
32		62.56	(0.000)					13,819.03	(0.308)	-12,467.42	(0.343)	86	0.190
33				4,188.35	(0.000)			8,211.43	(0.381)	-7,930.18	(0.385)	150	0.179
34	Neurological disorders	16.35	(0.009)			16,413.94	(0.000)			1,198.18	(0.000)	89	0.366
35		15.92	(0.013)					-84.03	(0.992)	1,641.57	(0.840)	86	0.0268
36				1,271.53	(0.000)			2,760.40	(0.449)	-1,656.01	(0.637)	150	0.0620
37	Nutritional deficiencies	0.18	(0.954)			-8,562.90	(0.000)			560.81	(0.000)	89	0.206
38		0.80	(0.834)					1,296.30	(0.722)	-921.81	(0.794)	86	-0.0226
39				-378.81	(0.521)			-8,794.66	(0.270)	9,605.45	(0.213)	150	-0.00170
40	Other infectious diseases	2.06	(0.525)			-7,458.04	(0.006)			335.51	(0.042)	89	0.0550
41		3.50	(0.327)					40.17	(0.990)	36.64	(0.990)	86	-0.0135
42				167.39	(0.746)			-10,999.24	(0.214)	11,194.13	(0.187)	150	-0.00308
43	Other non-communicable diseases	-4.94	(0.173)			-7,807.93	(0.000)			1,800.52	(0.000)	89	0.207
44		-4.29	(0.376)					-930.03	(0.841)	2,509.16	(0.578)	86	-0.0109
45				-339.94	(0.454)			-6,017.50	(0.347)	7,831.11	(0.204)	150	-0.00282
46	Respiratory infections and tuberculosis	15.16	(0.053)			-17,340.64	(0.000)			672.41	(0.024)	89	0.126
47		16.65	(0.067)					-2,673.85	(0.804)	2,800.41	(0.789)	86	0.0117
48				1,210.73	(0.263)			-10,280.17	(0.526)	10,877.03	(0.484)	150	-0.00635
49	Self-harm and interpersonal violence	-11.91	(0.333)			-3,346.29	(0.024)			910.32	(0.076)	89	0.0781
50		-12.63	(0.362)					9,971.77	(0.007)	-8,835.03	(0.009)	86	0.0749
51				-2,604.61	(0.091)			16,591.28	(0.110)	-13,957.08	(0.127)	150	0.152
52	Sense organ diseases	10.04	(0.000)			-2,279.39	(0.014)			581.54	(0.000)	89	0.152
53		9.23	(0.000)					5,854.12	(0.059)	-5,125.45	(0.088)	86	0.125
54				395.57	(0.005)			2,756.90	(0.262)	-2,107.96	(0.376)	150	0.0471

55	Skin and subcutaneous diseases	2.68	(0.021)			4,716.10	(0.000)			454.07	(0.000)	89	0.547
56		2.72	(0.044)					-269.92	(0.899)	808.81	(0.694)	86	0.00372
57				349.85	(0.000)			213.97	(0.833)	204.09	(0.834)	150	0.125
58	Substance use disorders	2.89	(0.216)			2,105.21	(0.108)			185.65	(0.019)	89	0.0392
59		2.97	(0.238)					1,755.93	(0.247)	-1,482.15	(0.328)	86	-0.00508
60				182.68	(0.123)			1,570.20	(0.072)	-1,335.32	(0.122)	150	0.0117
61	Transport injuries	-1.10	(0.680)			-2,203.41	(0.002)			514.08	(0.000)	89	0.0720
62		-1.89	(0.513)					1,727.46	(0.454)	-1,182.04	(0.599)	86	-0.00750
63				-307.09	(0.117)			-390.20	(0.842)	1,064.04	(0.571)	150	0.0205
64	Unintentional injuries	22.69	(0.000)			2,213.55	(0.160)			216.96	(0.138)	89	0.173
65		22.78	(0.000)					5,266.62	(0.324)	-4,870.16	(0.349)	86	0.159
66				1,004.19	(0.000)			232.03	(0.952)	177.12	(0.962)	150	0.0704

Table A5 Cause of death or injury and % full-time workers – female

Table A5 shows results of heteroskedasticity corrected OLS regressions of Causes of death or injury for women measured in DALYs (disability-adjusted life year) per 100,000 (population) on % full-time workers – female and control variables. Causes of death or injury is as of 2017 (source: the Global Burden of Disease Study, 2017). % full-time workers – female is the percent of full-time workers who are female and is measured as of 2017 (source: OECD and the International Labor Organization, ILO). GDP per capita is as of 2017 (Source: The World Bank). Participation and Opportunity Score and Health and Safety Score are from the World Economic Forum's Global Gender Gap 2020 report. P-values are in parentheses.

	VARIABLES	% full-time workers - female	P-value	South	P-value	GDP per capita	P-value	Constant	P-value	Adjusted R-squared
1	Cardiovascular diseases	267.58	(0.000)			-2.10	(0.001)	-6,292.44	(0.001)	0.404
2		227.74	(0.000)	417.10	(0.100)	-1.80	(0.008)	-4,849.34	(0.016)	0.431
3	Chronic respiratory diseases	86.35	(0.000)			-1.36	(0.000)	-1,062.64	(0.221)	0.386
4		84.47	(0.002)	19.66	(0.875)	-1.35	(0.000)	-994.62	(0.323)	0.374
5	Diabetes and kidney diseases	88.89	(0.000)			-0.80	(0.000)	-1,776.75	(0.007)	0.416
6		77.52	(0.000)	119.09	(0.119)	-0.71	(0.003)	-1,364.72	(0.051)	0.432
7	Digestive diseases	21.84	(0.000)			-0.22	(0.015)	176.47	(0.479)	0.191
8		21.80	(0.002)	0.40	(0.991)	-0.22	(0.025)	177.85	(0.514)	0.174
9	Enteric infections	4.62	(0.000)			-0.03	(0.001)	-32.79	(0.457)	0.196
10		4.72	(0.001)	-0.99	(0.869)	-0.03	(0.005)	-36.20	(0.465)	0.179
11	HIV/AIDS and sexually transmitted infections	18.96	(0.000)			0.23	(0.000)	-858.80	(0.000)	0.705
12		15.23	(0.004)	39.07	(0.010)	0.26	(0.000)	-723.62	(0.001)	0.743
13	Maternal and neonatal disorders	22.02	(0.001)			0.19	(0.001)	-483.78	(0.074)	0.495
14		16.00	(0.027)	62.96	(0.003)	0.24	(0.000)	-265.94	(0.351)	0.570
15	Mental disorders	-8.44	(0.467)			-0.04	(0.580)	2,919.22	(0.000)	-0.00172
16		-10.24	(0.409)	18.79	(0.529)	-0.03	(0.730)	2,984.22	(0.000)	-0.0172
17	Musculoskeletal disorders	22.59	(0.386)			-0.82	(0.000)	2,948.95	(0.007)	0.225
18		20.94	(0.510)	17.28	(0.875)	-0.81	(0.001)	3,008.75	(0.019)	0.209
19	Neglected tropical diseases and malaria	-1.51	(0.245)			0.00	(0.736)	79.39	(0.146)	-0.00759
20		-1.44	(0.324)	-0.81	(0.885)	0.00	(0.813)	76.57	(0.200)	-0.0286
21	Neoplasms	177.90	(0.000)			-1.32	(0.000)	-2,627.78	(0.061)	0.357
22		189.35	(0.000)	-119.82	(0.491)	-1.41	(0.000)	-3,042.35	(0.058)	0.350
23	Neurological disorders	39.27	(0.014)			-0.27	(0.020)	1,045.48	(0.100)	0.139
24		47.25	(0.015)	-83.53	(0.159)	-0.33	(0.027)	756.49	(0.301)	0.154
25	Nutritional deficiencies	-0.66	(0.746)			-0.07	(0.003)	180.62	(0.041)	0.253
26		-2.42	(0.245)	18.46	(0.037)	-0.06	(0.018)	244.47	(0.006)	0.320
27	Other infectious diseases	2.89	(0.002)			-0.00	(0.988)	-46.97	(0.216)	0.244

28		2.24	(0.023)	6.80	(0.051)	0.00	(0.681)	-23.46	(0.557)	0.299
29	Other non-communicable diseases	30.10	(0.000)			-0.16	(0.164)	158.16	(0.643)	0.162
30		20.16	(0.019)	104.00	(0.014)	-0.08	(0.494)	517.98	(0.134)	0.255
31	Respiratory infections and tuberculosis	28.80	(0.000)			-0.22	(0.003)	-592.55	(0.037)	0.288
32		22.60	(0.007)	64.88	(0.068)	-0.17	(0.031)	-368.06	(0.242)	0.336
33	Self-harm and interpersonal violence	0.77	(0.940)			-0.04	(0.755)	499.38	(0.265)	-0.0370
34		-6.19	(0.558)	72.79	(0.029)	0.01	(0.905)	751.23	(0.099)	0.0216
35	Sense organ diseases	14.19	(0.007)			-0.13	(0.001)	139.48	(0.499)	0.232
36		18.75	(0.002)	-47.83	(0.012)	-0.16	(0.001)	-25.99	(0.908)	0.321
37	Skin and subcutaneous diseases	11.46	(0.073)			0.14	(0.057)	349.73	(0.178)	0.135
38		8.94	(0.194)	26.43	(0.324)	0.16	(0.035)	441.16	(0.114)	0.130
39	Substance use disorders	30.54	(0.271)			-0.48	(0.223)	552.66	(0.644)	0.00544
40		20.13	(0.488)	108.98	(0.515)	-0.40	(0.332)	929.72	(0.447)	-0.00574
41	Transport injuries	11.23	(0.236)			-0.35	(0.007)	322.27	(0.413)	0.174
42		5.23	(0.656)	62.79	(0.166)	-0.30	(0.031)	539.53	(0.254)	0.190
43	Unintentional injuries	19.15	(0.007)			-0.24	(0.002)	384.11	(0.182)	0.212
44		21.35	(0.004)	-23.07	(0.418)	-0.25	(0.002)	304.30	(0.301)	0.204

Table A6 Cause of death or injury and % full-time workers – female (US States)

Table A6 shows results of Heteroskedasticity corrected OLS regressions of Causes of death or injury for women measured in DALYs (disability-adjusted life year) per 100,000 (population) on % full-time workers – female and control variables for US States. Causes of death or injury is as of 2017 (source: The Global Burden of Disease Study, 2017). % full-time workers – female is the percent of full-time workers who are female and is measured as of 2017 (source: US Census). GDP per capita is as of 2017 (source: US Bureau of Economic Analysis https://apps.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1). P-values are heteroskedasticity robust. P-values are in parentheses.

VARIABLES	Deathsfemale				Casesfemale				Genderratio			
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
						April 15, 2020						
% full-time workers - female	0.33	0.42	0.51241		0.34	0.39	0.44190		-0.00	-0.00	-0.00277	
	(0.275)	(0.175)	(0.080)		(0.118)	(0.057)	(0.082)		(0.897)	(0.851)	(0.907)	
% medical doctors - female				0.12				0.35				0.02
				(0.725)				(0.097)				(0.343)
Health and Safety score		37.11				-144.04				1.89		
		(0.930)				(0.640)				(0.937)		
Female Cardiovascular diseases			-0.00315				-0.00143				0.00011	
			(0.074)				(0.183)				(0.394)	
Female Chronic respiratory diseases			0.00459				0.00338				-0.00031	
			(0.401)				(0.388)				(0.629)	
Female Substance use disorders			-0.00292				-0.00151				-0.00004	
			(0.403)				(0.831)				(0.956)	
GDP Per Capita	63.19			102.86	44.71			51.65	-1.05			-2.09
	(0.265)			(0.268)	(0.286)			(0.318)	(0.741)			(0.730)
Constant	24.71	-11.70	26.97569	28.63	37.24	177.72	36.86282	32.98	1.84	-0.00	1.76927	0.70
	(0.019)	(0.977)	(0.015)	(0.103)	(0.000)	(0.555)	(0.000)	(0.007)	(0.017)	(1.000)	(0.013)	(0.573)
	0.33	0.42	0.51241		0.34	0.39	0.44190		-0.00	-0.00	-0.00277	
Observations	22	22	21	22	23	23	22	23	19	19	18	19
Adjusted R-squared	0.0867	0.0400	0.153	-0.0499	0.128	0.107	0.119	-0.00554	-0.116	-0.120	-0.169	-0.124
						April 7, 2020						
% full-time workers - female	0.42	0.31	0.33024		0.24	0.23	0.33542		-0.02	-0.02	-0.02462	
	(0.102)	(0.175)	(0.270)		(0.255)	(0.320)	(0.118)		(0.051)	(0.090)	(0.079)	
% medical doctors - female				0.55				0.25				-0.01
				(0.062)				(0.139)				(0.448)
Health and Safety score		573.19				72.88				-5.92		
		(0.110)				(0.852)				(0.589)		

Female Cardiovascular diseases			-0.00306				-0.00131				0.00002	
			(0.063)				(0.190)				(0.797)	
Female Chronic respiratory diseases			0.00358				0.00067				0.00028	
			(0.553)				(0.885)				(0.448)	
Female Substance use disorders			0.00338				-0.00296				-0.00032	
			(0.638)				(0.679)				(0.246)	
GDP Per Capita	30.23			84.87	9.14			30.36	-1.99			-2.99
	(0.691)			(0.194)	(0.819)			(0.428)	(0.591)			(0.509)
Constant	22.25	-528.93	32.05558	8.39	41.55	-28.77	43.08625	37.53	2.71	8.32	2.32241	2.44
	(0.090)	(0.125)	(0.027)	(0.543)	(0.000)	(0.939)	(0.001)	(0.000)	(0.000)	(0.428)	(0.001)	(0.010)
Observations	17	17	16	17	20	20	19	20	15	15	14	15
Adjusted R-squared	0.00794	0.0980	0.163	0.149	-0.0308	-0.0280	-0.0318	-0.0701	0.0978	0.0756	0.0277	0.188

Table A7 Covid-19 outcomes and Female Employment – OECD countries using April 7 and 15 data

Panel A of Table A7 uses the April 15, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. Panel B of Table A7 uses the April 7, 2020 update of data from the GlobalHealth 5050 COVID-19 sex-disaggregated data tracker (http://globalhealth5050.org/covid19/#1586263312717-c89130f0-8676) for countries in the OECD. Deathsfemale is the percent of Covid-19 deaths that are female. Casesfemale is the percent of Covid-19 cases that are female. Genderrratio is the ratio of male to female deaths among confirmed cases of Covid-19. % full-time workers – female is the number of women working full-time divided by the total number of people working full-time in a country measured in 2018 (Source: OECD). % medical doctors - female is the percent of doctors in a country who are female (Source: (Source: WHO Global Health Workforce Statistics 2018 update). Health and Safety score is from the World Economic Forum's Global Gender Gap 2020 Report. Female Cardiovascular diseases, Female Chronic respiratory diseases and Female Substance use disorders are measured in DALY's (disability-adjusted life year) per 100,000 (population) and measured in 2017 (Source: Global Burden of Disease Study, 2017). GDP Per Capita is as of 2018 (Source: The World Bank). P-values are in parentheses.