

Supplementary material for the original paper entitled “Inequality on the frontline: A multi-country study on gender differences in mental health among healthcare workers during the COVID-19 pandemic” by Diana Czepiel^{1,2†}, Clare McCormack^{3†}, Andréa Tenório Correia da Silva^{4,5}, Dominika Seblova⁶, Maria Francesca Moro⁷, Alexandra Restrepo-Henao^{7,8}, Adriana Maldonado Martínez⁷, Oyeyemi Afolabi⁹, Lubna Alnasser¹⁰, Ruben Alvarado^{11,12}, Hiroki Asaoka¹³, Olatunde Ayinde¹⁴, Arin Balalian¹⁵, Dinarte Ballester¹⁶, Josleen A. I. Barathie¹⁷, Armando Basagoitia¹⁸, Djordje Basic², María Soledad Burrone¹⁹, Mauro Giovanni Carta²⁰, Sol Durand-Arias²¹, Mehmet Eskin²², Eduardo Fernández-Jiménez^{23,24,25}, Marcela Freytes²⁶, Oye Gureje¹⁴, Anna Isahakyan²⁷, Rodrigo Jaldo²⁶, Elie G. Karam^{17,28,29}, Dorra Khattech³⁰, Jutta Lindert³¹, Gonzalo Martinez-Ales³², Franco Mascayano^{7,33}, Roberto Mediavilla^{34,35,36}, Javier Narvaez^{7,37,38}, Aimee Nasser-Karam^{17,28,29}, Daisuke Nishi³⁹, Olusegun Olaopa⁴⁰, Uta Ouali^{30,41}, Victor Puac-Polanco^{42, 43}, Dorian E. Ramírez⁴³, Jorge Ramírez¹², Eliut Rivera-Segarra⁴⁴, Bart P. F. Rutten⁴⁵, Julian Santaella-Tenorio⁴⁶, Jaime C. Sapag^{47,48,49}, Jana Šeblová^{50,51}, María Teresa Solís Soto⁵², Maria Tavares-Cavalcanti⁵³, Linda Valeri^{54,32}, Marit Sijbrandij^{2,55}, Ezra S. Susser^{7,33}, Hans W. Hoek^{56,1,7}, Els van der Ven^{2*} on behalf of the COVID-19 HEalth caRe wOrkErS (HEROES) study group

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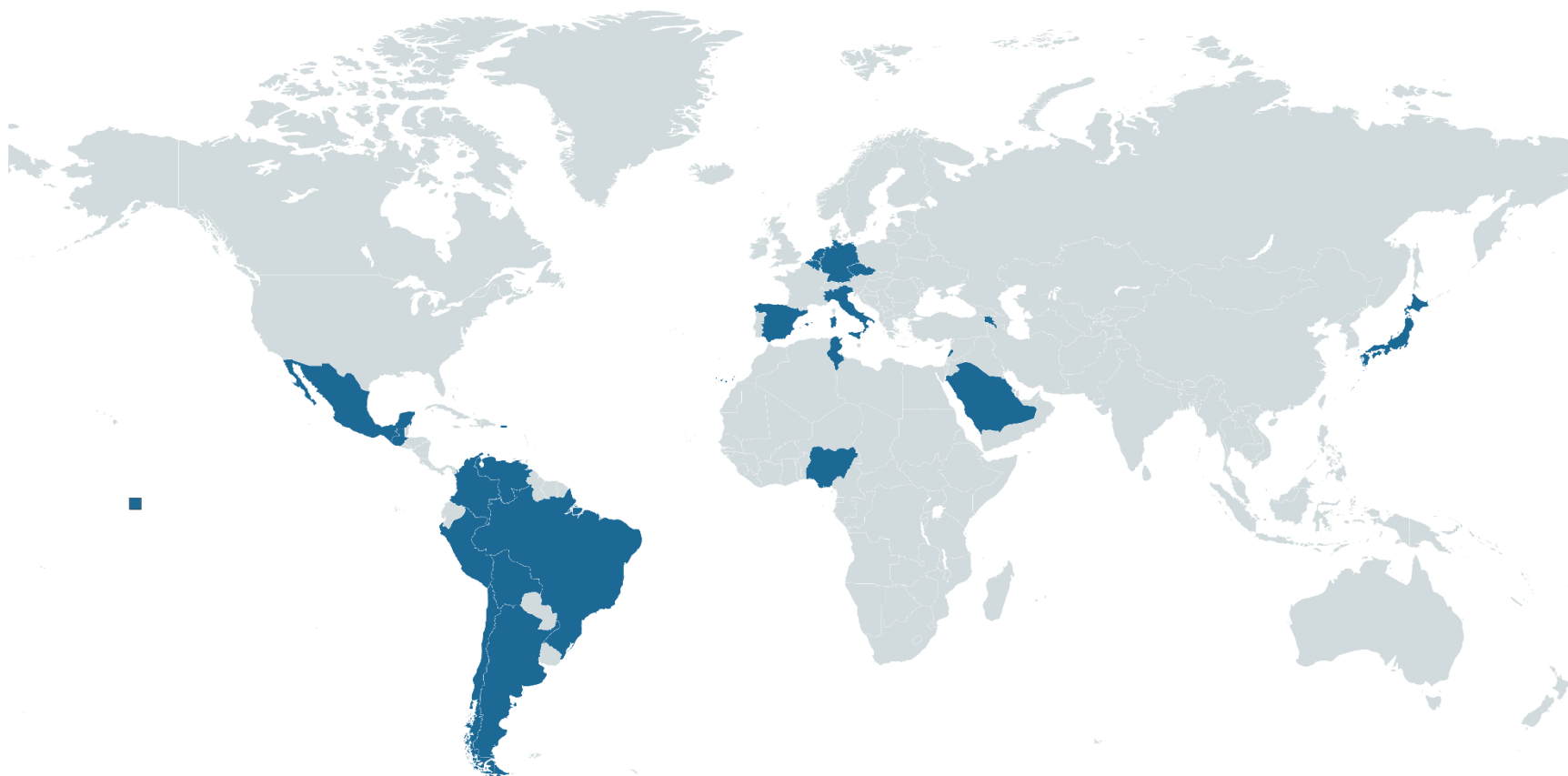
Multilevel models consisted of two levels, with 32,410 individuals (individual-level) nested within 22 countries (country-level) and were fitted using maximum likelihood. The average country sample size was 1,473 (interquartile range: 167 – 5,502). Prior to performing the multilevel analyses, individual-level continuous predictors were group-mean centered, whereas the country-level predictors were grand-mean centered. A separate multilevel model was estimated for each mental health outcome, with the country as a random effect. Predictors of mental health at the individual level (contact with COVID-19 patients, considering PPE to be sufficient, experience of discrimination, interpersonal conflict or violence, support from colleagues and gender) were added as fixed effects, along with sociodemographic and clinical correlates. Interaction terms with gender were included for all individual-level predictors. At the country-level, the GII and COVID-19 mortality rates were added as fixed effects, along with cross-level interactions with gender. At the individual level, consistent with regression models, women were more likely to report depressive symptoms (OR = 1.61, 95% CI = 1.35 - 1.93) and psychological distress (OR = 1.44, 95% CI = 1.27 - 1.65) than men. Also, associations between all predictors and both mental health outcomes remained consistent with the previous regression models. At the country-level, no significant main effects were observed, but there was a statistically significant interaction between gender inequality and gender, suggesting that women living in countries with higher gender inequality reported fewer depressive symptoms (OR = .36, 95% CI = .21 - .62) and psychological distress (OR = .45, 95% CI = .29 - .70) than men.

In order to create the forest plots, poisson regressions were performed to obtain prevalence rate ratios and 95% confidence intervals and subsequently the meta-analysis command in STATA software was used to calculate the random-effects models. For the subgroup analyses, we categorized countries as having low (below the observed median) or high (above the median) COVID-19 mortality rates. The forest plots are listed according to the country's gender inequality in ascending order in Supplementary Figs. 2 and 3. The heterogeneity among countries was assessed by the I^2 index, with higher scores being indicative of higher heterogeneity [62]. In the random-effects model, the pooled effect size for depressive symptoms among women, as opposed to men, was 2.81 (95% CI = 2.77 - 2.86) and for psychological distress it was 3.05 (95% CI = 2.85 - 3.27), suggesting that women reported significantly higher scores on both mental health outcomes compared to men across all countries. There seemed to be a mixed pattern regarding the association between psychological distress among women and a country's gender inequality, with countries both with low and high gender inequality having effect sizes below or above the pooled effect size. Heterogeneity across countries was high for both psychological distress ($I^2 = 73.2\%$, $p < .001$) and depressive symptoms ($I^2 = 68.2\%$, $p < .001$). To examine possible

sources of heterogeneity, we also conducted subgroup analyses by COVID-19 mortality rates (Low / High) for psychological distress (see Supplementary Fig. 4). The heterogeneity was higher among countries with lower mortality rates ($I^2 = 76.3\%$, $p < .001$) than among countries with higher mortality rates ($I^2 = 70.5\%$, $p = .001$). The pooled effect size for lower mortality rates was 3.04 (95% CI: 2.73 - 3.40) and for higher mortality rates it was 3.05 (95% CI: 2.78 - 3.35).

The results of the regression models that were performed separately for physicians and nurses as sensitivity analyses can be found in Supplementary Table 6. Among nurses, men and women were equally likely to report depressive symptoms and psychological distress. Among women ($n = 6,024$), mental health outcomes were no longer significantly associated with insufficient PPE and COVID-19 mortality rates. Among men ($n = 1,108$), this was also the case for contact with COVID-19 patients and insufficient PPE and both mental health outcomes. In addition, the relation between support from colleagues and psychological distress was no longer statistically significant among men. In the subgroup of physicians, we observed a significant association between mortality rates and depressive symptoms (aOR = .58, 95% CI = .39 - .88) among women ($n = 6,039$), while this was no longer the case for the association with insufficient PPE. Among men ($n = 3,597$) the observed associations were in the same direction and of the same strength as in the main analyses.

Fig. 1



Map of countries participating in the study

Supplementary Table 1

Ad-hoc items created for the study and their response categories

Variable	Item	Response category
Parents' completed education	"What is the highest level of education completed by your mother (or principal caregiver 1)?" "What is the highest level of education completed by your father (or principal caregiver 2)?"	Incomplete primary schooling/ primary school/ secondary school/ technical-professional training/ undergraduate degree (university training)/ postgraduate studies (master's, doctorate, medical specialty, etc.)/ does not apply
Previous mental health problems	"Before the pandemic, did you have a mental health diagnosis?"	Yes/no/ I prefer not to respond
Chronic physical illness	"Before the pandemic, did you have a chronic physical illness?"	Yes/no/ I prefer not to respond
Being in contact with COVID-19 patients	"During the past week, have you been close to patients who were suspected or confirmed cases of COVID-19?"	Yes/no/ I don't know
Considering PPE to be sufficient	"Do you believe that the personal protective equipment you have access to is sufficient to avoid getting the virus?"	0 = No, it is completely insufficient to 3 = Yes, it is sufficient
Experience of discrimination ^a	"I have felt stigmatized or discriminated against as a health worker due to the COVID-19 pandemic"	0 = Strongly disagree to 3 = Strongly agree
Experience of interpersonal conflict ^a	"Since the beginning of the pandemic, have you experienced any problems with family members of patients with COVID-19?"	0 = No, no problems to 4 = Yes, many problems
Experience of violence ^a	"I have experienced violence due to being a health worker during the pandemic"	0 = Strongly disagree to 3 = Strongly agree

^a These three variables were first dichotomized (experienced: "Strongly agree", "Agree" / "Yes, one problem", "Yes, some problems", "Yes, many problems" vs. not experienced: "Strongly disagree", "Disagree" / "No, no problems"). Then, the dichotomized variables were added creating a variable that indicated the number of types of interpersonal adversity HCWs have experienced.

Supplementary Table 2

Demographic and outcome variables by complete cases and non-complete cases

	Complete cases (n = 17,170)	Non-complete cases (n = 15,240)	χ^2 / Ws^c
Gender, n (%)			19.40, $p < .001$
Women	12,593 (73.4) ^a	10,574 (74.5) ^b	
Men	4,555 (26.5) ^a	3,585 (25.2) ^b	
Other	18 (.1) ^a	40 (.3) ^b	
Completed education, n (%)			33.19, $p < .001$
(Incomplete) primary school	126 (.7) ^a	139 (1.0) ^b	
Secondary school	984 (5.7) ^a	974 (6.9) ^b	
Technical-professional training	2,548 (14.9) ^a	1,913 (13.6) ^b	
Undergraduate degree	6,091 (35.5) ^a	5,092 (36.1) ^a	
Postgraduate studies	7,402 (43.2) ^a	5,995 (42.5) ^a	
Occupation, n (%)			47.22, $p < .001$
Physicians	5,177 (30.3) ^a	3,672 (28.7) ^b	
Nurses	4,868 (28.5) ^a	3,514 (27.5) ^a	
Health technicians	3,550 (20.8) ^a	2,581 (20.2) ^a	
Ancillary HCWs	1,864 (10.9) ^a	1,545 (12.1) ^b	
Other HCWs	1,615 (9.5) ^a	1,464 (11.5) ^b	
Chronic physical illness, n (%)			12.09, $p = .253$
No	10,921 (80.1) ^a	5,535 (78.0) ^b	
Yes	2,718 (19.9) ^a	1,560 (22.0) ^b	
Previous mental health problems, n (%)			19.22, $p = .001$
No	12,392 (92.4) ^a	6,272 (90.6) ^b	
Yes	1,024 (7.6) ^a	652 (9.4) ^b	

Age, Mdn (IQR)	39 (31-48)	36 (30-46)	77304148.00, $p < .001$
Psychological distress, Mdn (IQR)	13 (9-18)	13 (9-18)	57851376.50, $p = .228$
Depressive symptoms, Mdn (IQR)	5 (2-9)	6 (2-10)	43112787.00, $p < .001$

Note. Values not sharing the same subscript (^a, ^b) are significantly different

Ancillary HCWs: e.g., non-clinical manager, administrator/secretary/admission, patient transportation, food/hospitality, cleaning staff, maintenance staff, security staff, student, statistician, analyst, IT, health information management

Other HCWs: e.g., clinical manager, psychologist, social worker, physical therapist, respiratory therapist, speech therapist, occupational therapist, first responder, midwife, dentist, dentist assistant, dietician, doctor assistant, epidemiologist/public health, pharmacist, community worker, primary attention worker, health promotion/prevention, health educator

^c Value of the Chi square or Wilcoxon rank-sum test respectively

Supplementary Table 3

Sample size, age, gender, and occupation distribution per country, per continent and for the entire sample

Country	Sample size	Age	Gender			Occupation				
			Women	Men	Other gender	Physicians	Nurses	Health technicians	Ancillary workers ^a	Other HCWs ^b
	n (%)	Mdn (IQR)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Africa										
Nigeria	459	38	262	174	1	298	75	25	36	30
	(1.4)	(32-45)	(60)	(39.8)	(0.2)	(64.2)	(16.2)	(5.4)	(7.8)	(6.5)
Tunisia	633	34	475	142	2	373	85	45	38	58
	(1.9)	(29-43)	(76.7)	(23)	(0.3)	(62.3)	(14.2)	(7.5)	(6.3)	(9.7)
Total Africa	1,092	36	737	316	3	536	156	83	52	176
	(3.4)	(30-44)	(69.8)	(29.9)	(0.3)	(53.4)	(15.6)	(8.3)	(5.2)	(17.6)
Europe										
Belgium	327	40	269	56	1	46	205	9	6	58
	(1)	(31-51)	(82.5)	(17.2)	(0.3)	(14.2)	(63.3)	(2.8)	(1.8)	(17.9)
Czech Republic	1,801	44	1,349	416	44	472	407	125	172	546
	(5.6)	(35-53)	(76.3)	(23.5)	(.02)	(27.4)	(23.6)	(7.3)	(10)	(31.7)

Germany	204	39	129	74	0	29	69	3	27	65
	(0.6)	(31-53)	(63.6)	(36.4)	(0)	(15)	(35.7)	(1.6)	(14)	(33.7)
Italy	5,502	44	3,793	1,550	5	1833	649	478	217	1,974
	(17)	(33-54)	(70.9)	(29)	(0.1)	(35.6)	(12.6)	(9.3)	(4.2)	(38.3)
Netherlands	683	40	533	135	2	186	192	19	60	175
	(2.1)	(31-51)	(79.5)	(20.2)	(0.3)	(29.4)	(30.4)	(3)	(9.5)	(27.7)
Spain	2,520	41	1,873	515	8	764	698	208	171	438
	(7.8)	(31-52)	(78.2)	(21.5)	(0.3)	(33.5)	(30.7)	(9.1)	(7.5)	(19.2)
Total Europe	11,037	43	7,946	2,746	20	3,335	2,219	832	663	3,251
	(34.1)	(32-53)	(74.2)	(25.6)	(0.2)	(32.4)	(21.5)	(8.1)	(6.4)	(31.6)
Middle East & Asia										
Armenia	570	42	465	80	0	249	136	26	32	57
	(1.8)	(31-50)	(85.3)	(14.7)	(0)	(49.8)	(27.2)	(5.2)	(6.4)	(11.4)
Japan	810	38	215	456	7	177	242	37	74	139
	(2.5)	(31-49)	(31.7)	(67.3)	(1)	(26.4)	(36.2)	(5.5)	(11.1)	(20.8)
Lebanon	768	33	530	198	2	85	207	103	127	101
	(2.4)	(27-47)	(72.6)	(27.1)	(0.3)	(13.7)	(33.2)	(16.5)	(20.4)	(16.2)
Saudi Arabia	247	35	117	122	3	77	36	17	14	69
	(0.8)	(30-43)	(48.4)	(50.4)	(1.2)	(36.1)	(16.9)	(8)	(6.6)	(32.4)
Total Middle East & Asia	2,395	37	1,327	856	12	608	613	192	235	383
	(7.4)	(29-49)	(60.5)	(39)	(0.6)	(29.9)	(30.2)	(9.5)	(11.6)	(18.9)

Latin America

Argentina	1,037	40	815	203	3	232	138	35	177	398
	(3.2)	(34-48)	(79.8)	(19.9)	(0.3)	(23.7)	(14.1)	(3.6)	(18)	(40.6)
Bolivia	167	35	111	50	2	55	32	18	17	27
	(0.5)	(28-44)	(68.1)	(30.7)	(1.2)	(36.9)	(21.5)	(12.1)	(11.4)	(18.1)
Brazil	3,246	36	2,613	553	4	288	459	528	591	1,176
	(10)	(30-43)	(82.4)	(17.5)	(0.1)	(9.5)	(15.1)	(17.3)	(19.4)	(38.7)
Chile	2,495	34	1,797	655	3	963	246	242	228	721
	(7.7)	(30-43)	(73.2)	(26.7)	(0.1)	(40.1)	(10.3)	(10.1)	(9.5)	(30)
Colombia	901	39	659	237	0	185	98	22	160	432
	(2.8)	(31-49)	(73.6)	(26.4)	(0)	(20.6)	(10.9)	(2.5)	(17.8)	(48.2)
Guatemala	1,813	33	1,172	601	4	644	251	159	267	397
	(5.6)	(28-43)	(66)	(33.8)	(0.2)	(37.5)	(14.6)	(9.3)	(15.5)	(23.1)
Mexico	3,253	37	2,222	939	1	1123	752	98	314	744
	(10)	(30-44)	(70.2)	(29.7)	(0.1)	(37)	(24.8)	(3.2)	(10.4)	(24.6)
Peru	3,670	33	2,742	761	5	717	931	664	209	777
	(11.3)	(28-40)	(78.2)	(21.7)	(0.1)	(21.7)	(28.2)	(20.1)	(6.4)	(23.6)
Puerto Rico	266	39	193	70	0	35	54	10	50	100
	(0.8)	(31-48)	(73.4)	(26.6)	(0)	(14.1)	(21.7)	(4)	(20.1)	(40.1)
Venezuela	1,038	41	833	153	1	153	581	19	75	86
	(3.2)	(34-49)	(84.4)	(15.5)	(0.1)	(16.7)	(63.6)	(2.1)	(8.2)	(9.4)

Total Latin America	17,886 (55.2)	36 (30-43)	13,157 (75.6)	4,222 (24.3)	23 (0.1)	4,370 (26.2)	3,551 (21.3)	1,796 (10.8)	2,090 (12.6)	4,846 (29.1)
Entire sample	32,410 (100)	38 (30-48)	23,167 (73.9)	8,140 (25.9)	58 (0.2)	8,849 (29.5)	6,539 (21.8)	2,903 (9.7)	3,040 (10.1)	8,656 (28.9)

Note. All percentages are valid percentages. The total number per gender and occupation differs due to missing data differing throughout survey sections

^a Non-clinical manager, administrator/secretary/admission, patient transportation, food/hospitality, cleaning staff, maintenance staff, security staff, student, statistician, analyst, IT, health information management

^b Clinical manager, psychologist, social worker, physical therapist, respiratory therapist, speech therapist, occupational therapist, first responder, midwife, dentist, dentist assistant, dietician, doctor assistant, epidemiologist/public health, pharmacist, community worker, primary attention worker, health promotion/prevention, health educator

Supplementary Table 4

GII and average COVID-19 mortality rate per country

Country	GII	COVID-19 mortality rate ^a
Argentina	.287	.52
Armenia	.216	.33
Belgium	.048	.03
Bolivia	.418	.43
Brazil	.39	.28
Chile	.187	.50
Colombia	.424	.74
Czech Republic	.12	.47
Germany	.073	.11
Guatemala	.481	.13
Italy	.056	.12
Japan	.083	.002
Lebanon	.432	.25
Mexico	.309	.40
Netherlands	.025	.04
Nigeria	.68	.003
Peru	.38	.53
Puerto Rico	-	.18
Saudi Arabia	.247	.11
Spain	.057	.19
Tunisia	.259	.41
Venezuela	.492	.02

Note. *GII*: Gender Inequality Index

^a Average mortality rates during the recruitment period in each country calculated based on data by the Johns Hopkins Coronavirus Resource Center

Supplementary Table 5

Odds ratios and 95% confidence intervals [OR (95% CI)] for psychological distress for the entire sample and stratified by gender

Entire sample				
	Unadjusted OR (95% CI)		Adjusted OR (95% CI)	
Gender (reference category = men)	1.20** (1.14-1.26)		1.15** (1.09-1.22)	
	Women		Men	
	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Work-related factors				
Contact with COVID-19 patients	1.50** (1.41-1.59)	1.34** (1.25-1.44)	1.59** (1.44-1.76)	1.41** (1.25-1.59)
Insufficient PPE	1.13** (1.10-1.16)	1.10** (1.07-1.14)	1.16** (1.11-1.21)	1.14** (1.08-1.21)
Interpersonal factors				
Interpersonal adversity	1.46** (1.42-1.50)	1.38** (1.33-1.43)	1.41** (1.34-1.48)	1.29** (1.22-1.37)
Unsupportive colleagues	1.39** (1.34-1.44)	1.33** (1.28-1.39)	1.26** (1.19-1.33)	1.19** (1.11-1.27)
Country-level factors				
Gender inequality	.73** (.62-.86)	.18** (.14-.22)	.83 (.63-1.08)	.20** (.14-.29)
COVID-19 mortality rates	2.20** (1.92-2.54)	1.94** (1.63-2.31)	1.44* (1.14-1.81)	1.04 (.78-1.06)

Note. Adjusted OR = Odds ratio adjusted for age, mother's education, father's education, occupation, chronic physical illness and previous mental health problems and for all other predictors in Supplementary Table 5

* $p < .05$, ** $p < .001$

Supplementary Table 6

Odds ratios and 95% confidence intervals [OR (95% CI)] for depressive symptoms and psychological distress among physicians and nurses stratified by gender

Depressive symptoms								
Gender (reference category = men)	Physicians				Nurses			
	Unadjusted OR (95% CI)		Adjusted OR (95% CI)		Unadjusted OR (95% CI)		Adjusted OR (95% CI)	
	1.77**		1.59**		1.05		1.10	
	(1.59-1.97)		(1.41-1.80)		(.89-1.23)		(.92-1.32)	
	Physicians				Nurses			
	Women		Men		Women		Men	
	(n = 6039)		(n = 3597)		(n = 6024)		(n = 1108)	
	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Work-related factors								
Contact with COVID-19 patients	1.64**	1.44**	1.90**	1.41*	1.69**	1.64**	1.69*	1.21
	(1.43-1.89)	(1.22-1.69)	(1.53-2.37)	(1.09-1.82)	(1.45-1.97)	(1.38-1.94)	(1.17-2.45)	(.79-1.84)
Insufficient PPE	1.18**	1.06	1.26**	1.12*	1.04	1.07	1.09	1.05
	(1.11-1.25)	(.98-1.14)	(1.15-1.37)	(1.01-1.26)	(.98-1.10)	(.99-1.15)	(.95-1.26)	(.88-1.24)
Interpersonal factors								
Interpersonal adversity	1.54**	1.44**	1.86**	1.56**	1.50**	1.46**	1.74**	1.66**

	(1.44-1.63)	(1.34-1.55)	(1.70-2.03)	(1.41-1.74)	(1.41-1.60)	(1.36-1.58)	(1.50-2.02)	(1.39-2.00)
Unsupportive colleagues	1.49**	1.41**	1.54**	1.43**	1.37**	1.36**	1.60**	1.50**
	(1.38-1.60)	(1.34-1.55)	(1.39-1.71)	(1.26-1.61)	(1.27-1.48)	(1.24-1.48)	(1.34-1.91)	(1.21-1.86)
Country-level factors								
Gender inequality	1.66*	.38**	2.40*	.50*	.40**	.09**	1.31	.16*
	(1.13-2.42)	(.23-.64)	(1.43-4.02)	(.25-.99)	(.28-.58)	(.05-.15)	(.55-3.14)	(.05-.55)
COVID-19 mortality rates	1.13	.58*	1.71*	.81	1.45*	1.01	2.63*	1.19
	(.80-1.57)	(.39-.88)	(1.08-2.71)	(.46-1.42)	(1.06-2.00)	(.68-1.51)	(1.20-5.77)	(.42-3.35)
	Psychological distress							
	Physicians				Nurses			
	Unadjusted OR (95% CI)		Adjusted OR (95% CI)		Unadjusted OR (95% CI)		Adjusted OR (95% CI)	
Gender (reference category = men)	1.41**		1.28**		1.03		1.08	
	(1.29-1.53)		(1.16-1.41)		(.90-1.18)		(.91-1.26)	
	Physicians				Nurses			
	Women		Men		Women		Men	
	(n = 6039)		(n = 3597)		(n = 6024)		(n = 1108)	
	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Work-related factors								

Contact with COVID-19 patients	1.56** (1.39-1.75)	1.37** (1.20-1.57)	1.84** (1.57-2.15)	1.65** (1.38-1.98)	1.44** (1.27-1.63)	1.45** (1.27-1.66)	1.17 (.88-1.56)	1.09 (.79-1.50)
Insufficient PPE	1.23** (1.17-1.30)	1.19** (1.11-1.27)	1.18** (1.10-1.27)	1.18** (1.08-1.28)	1.02 (.97-1.08)	1.05 (.98-1.11)	1.05 (.93-1.18)	1.05 (.91-1.21)
Interpersonal factors								
Interpersonal adversity	1.49** (1.41-1.58)	1.36** (1.27-1.45)	1.46** (1.35-1.56)	1.29** (1.18-1.40)	1.34** (1.27-1.42)	1.34** (1.25-1.43)	1.31** (1.15-1.48)	1.33** (1.14-1.55)
Unsupportive colleagues	1.43** (1.34-1.53)	1.37** (1.26-1.47)	1.29** (1.19-1.40)	1.21** (1.10-1.33)	1.24** (1.16-1.32)	1.26** (1.16-1.36)	1.19* (1.02-1.38)	1.18 (.99-1.42)
Country-level factors								
Gender inequality	1.49* (1.07-2.09)	.29** (.19-.46)	1.29 (.85-1.89)	.25** (.15-.43)	.34** (.25-.47)	.13** (.08-.19)	.46* (.22-.95)	.14** (.05-.37)
COVID-19 mortality rates	1.89** (1.42-2.53)	1.40 (.98-1.98)	1.64* (1.56-2.32)	1.12 (.74-1.70)	1.15 (.88-1.51)	.96 (.70-1.33)	.91 (.47-1.77)	.71 (.31-1.64)

Note. Adjusted OR = Odds ratio adjusted for age, mother's education, father's education, occupation, chronic physical illness and previous mental health problems and for all other predictors in Supplementary Table 6

* $p < .05$, ** $p < .001$

Supplementary Table 7

Multilevel models for depressive symptoms and psychological distress

Variables	Depressive symptoms		Psychological distress	
	OR	CI	OR	CI
Intercept	.07**	.05 - .09	.33**	.22 - .50
Individual level				
Age	.99**	.98 - .99	.99**	.98 - .99
Mother's education (ref. cat. = postgraduate studies)				
Incomplete primary school	.88	.74 - 1.05	.91	.78 - 1.06
Primary school	.92	.79 - 1.07	.93	.82 - 1.06
Secondary school	.89	.77 - 1.02	.88*	.78 - .98
Technical- professional training	.93	.81 - 1.07	.93	.82 - 1.05
Undergraduate studies	1.09	.95 - 1.25	.96	.85 - 1.08
N/A	.77	.58 - 1.03	.73	.58 - .94
Father's education (ref. cat. = postgraduate studies)				
Incomplete primary school	.98	.82 - 1.16	.94	.81 - 1.09
Primary school	.98	.85 - 1.13	.91	.81 - 1.03
Secondary school	.99	.87 - 1.13	.90	.81 - 1.01
Technical- professional training	.98	.86 - 1.11	.94	.84 - 1.05
Undergraduate studies	.91	.80 - 1.03	1.02	.92 - 1.14
N/A	1.13	.91 - 1.41	.92	.76 - 1.12
Current occupation (ref. cat. = other HCWs ^{a)})				

Physicians	1.01	.92 - 1.11	1.28**	1.18 - 1.38
Nurses	1.09	.99 - 1.20	.99	.92 - 1.08
Health technicians	.99	.87 - 1.12	.85*	.76 -.95
Ancillary HCWs ^b	1.11	.98 - 1.26	1.00	.90 - 1.12
Chronic physical illness (ref. cat. = none)	1.37**	1.27 - 1.48	1.33**	1.24 - 1.42
Previous mental health problems (ref. cat. = none)	2.77**	2.50 - 3.06	2.35**	2.12 - 2.60
Contact with COVID-19 patients (ref. cat. = no contact)	1.36*	1.42 - 1.63	1.19*	1.04 - 1.36
Insufficient PPE	1.25**	1.14 - 1.36	1.27**	1.18 - 1.36
Experienced interpersonal adversity (ref. cat. = none)				
1	1.86**	1.56 - 2.22	1.65**	1.45 - 1.89
2	2.81**	2.26 - 3.50	2.63**	2.23 - 3.12
3	4.09**	3.12 - 5.37	2.98**	2.40 - 3.69
Unsupportive colleagues	1.53**	1.40 - 1.68	1.52**	1.41 - 1.65
Gender; women (ref. cat. = men)	1.61**	1.35 - 1.93	1.44**	1.27 - 1.65
Contact with COVID-19 patients * gender; women	1.05	.87 - 1.26	1.03	.88 - 1.19
Insufficient PPE * gender; women	.94	.87 - 1.03	.94	.87 - 1.01
1 type of interpersonal adversity * gender; women	.84	.69 - 1.01	.96	.82 - 1.12
2 types of interpersonal adversity * gender; women	.87	.69 - 1.09	.89	.73 - 1.07
3 types of interpersonal adversity * gender; women	.83	.63 - 1.11	1.06	.82 - 1.36
Unsupportive colleagues * gender; women	.94	.86 - 1.04	.95	.87 - 1.03
Country level				

Gender inequality	1.21	.41 - 3.57	.49	.06 - 4.04
COVID-19 mortality rates	2.19	.88 - 5.44	3.32	.54 - 20.34
Gender inequality * gender; women	.36**	.21 -.62	.45**	.29 -.70
COVID-19 mortality rates * gender; women	1.30	.83 - 2.03	1.01	.69 - 1.47

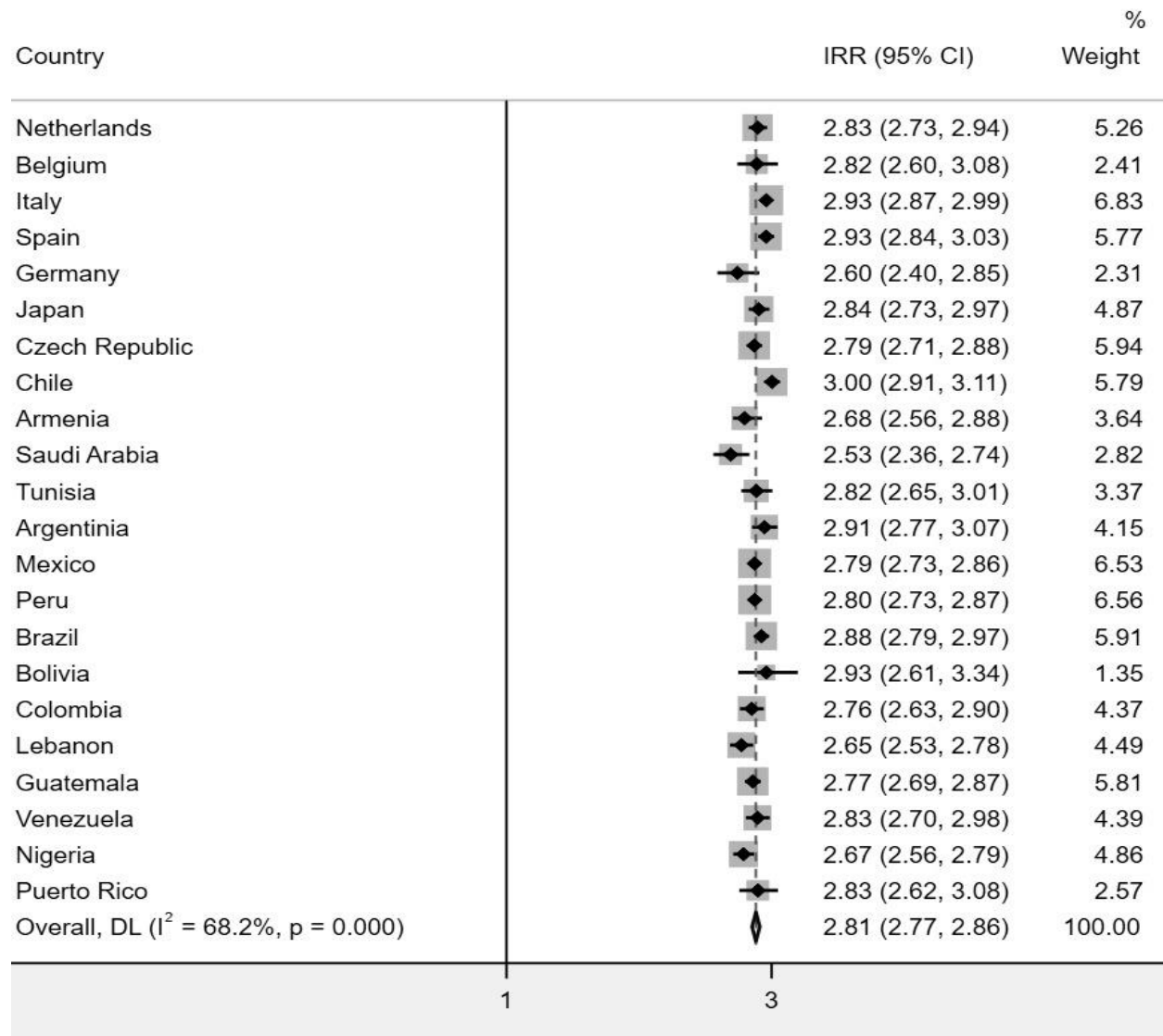
Note. Ref. cat. = reference category, PPE = personal protective equipment, N/A = not applicable (HCWs who could not answer the question about their mother's or father's education level because it was not applicable to them)

^a Other HCWs: e.g., clinical manager, psychologist, social worker, physical therapist, respiratory therapist, speech therapist, occupational therapist, first responder, midwife, dentist, dentist assistant, dietician, doctor assistant, epidemiologist/public health, pharmacist, community worker, primary attention worker, health promotion/prevention, health educator

^b Ancillary HCWs: e.g., non-clinical manager, administrator/secretary/admission, patient transportation, food/hospitality, cleaning staff, maintenance staff, security staff, student, statistician, analyst, IT, health information management

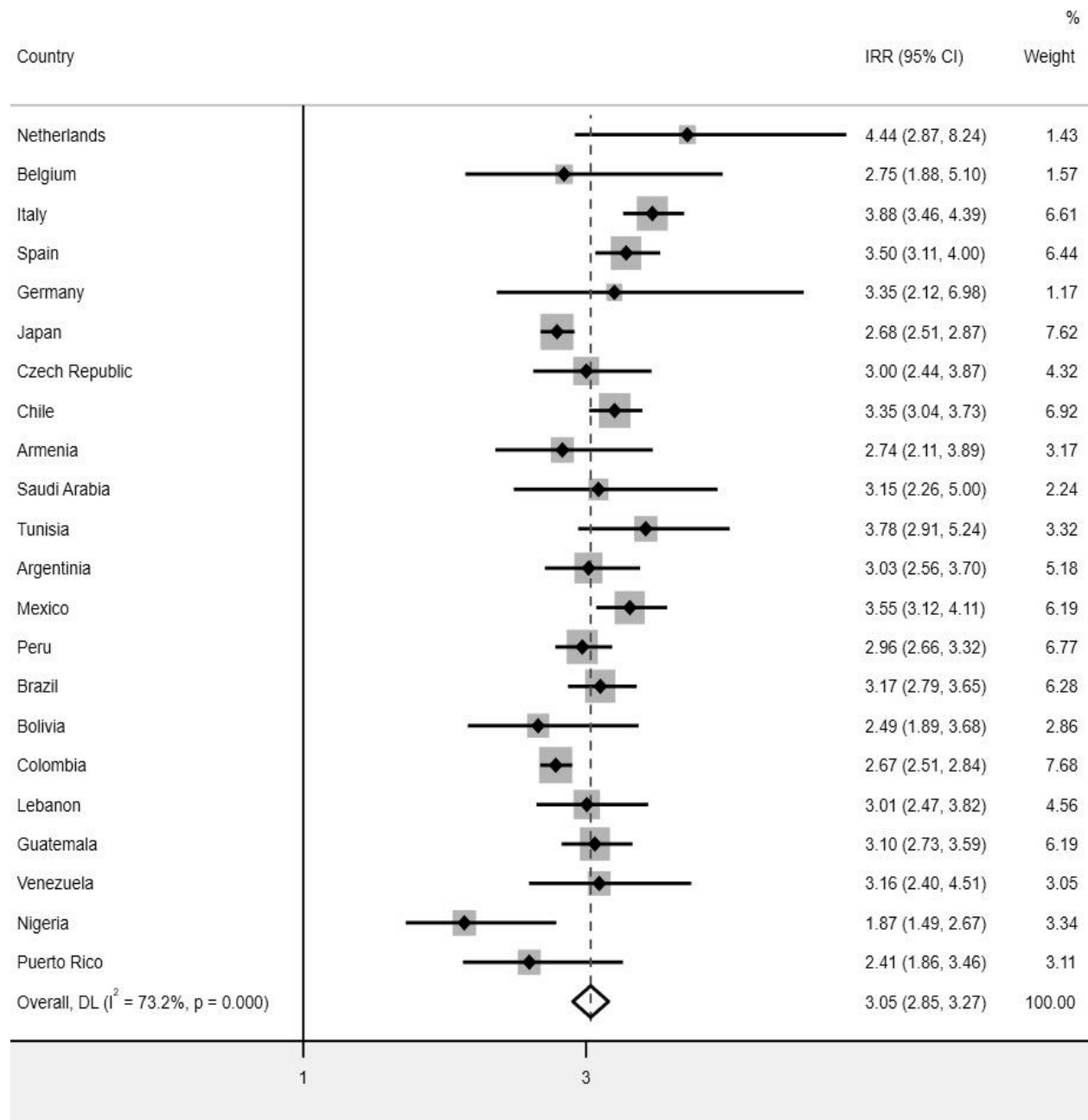
* $p < .05$, ** $p < .001$

Fig. 2



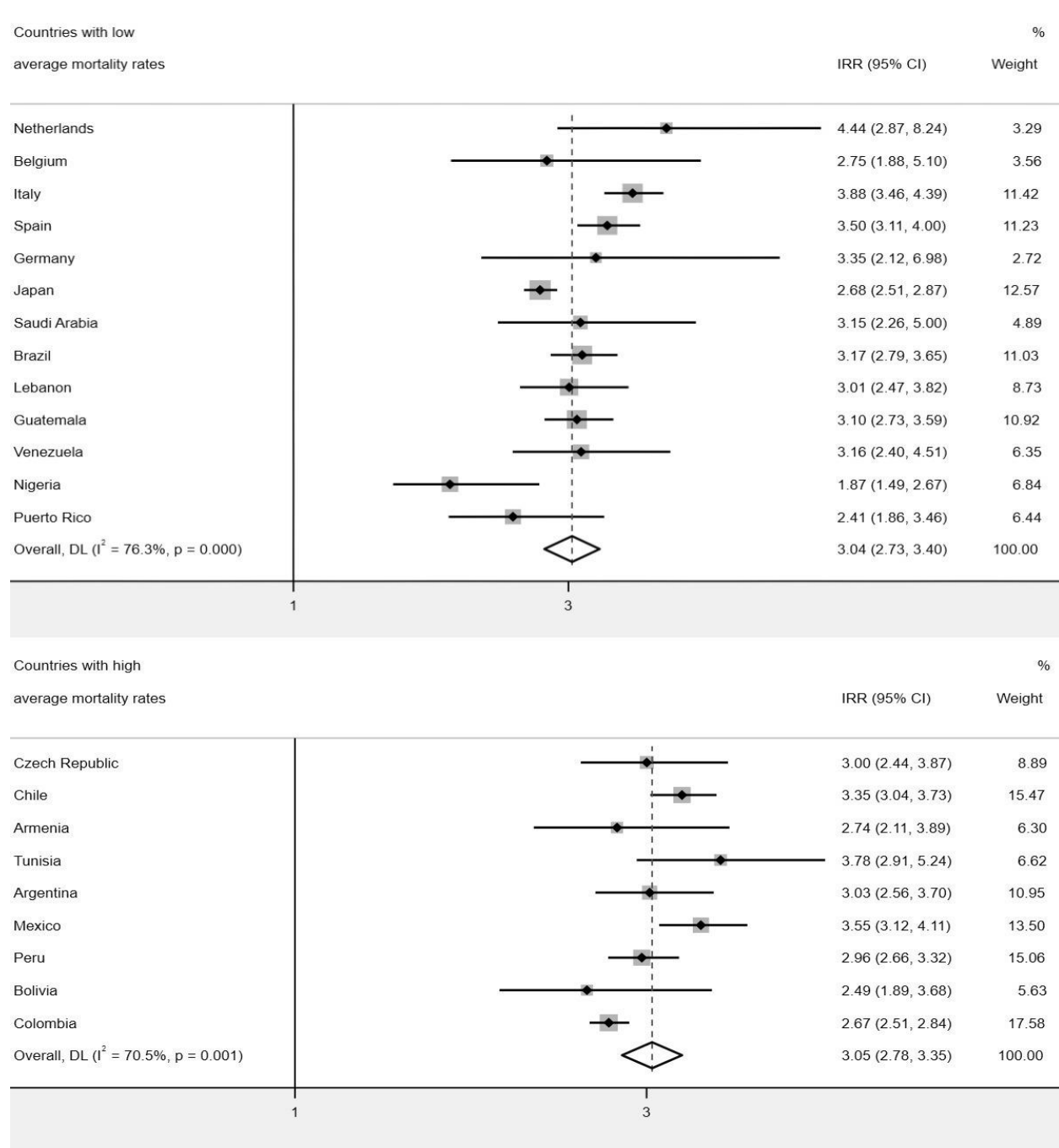
Depressive symptoms for women as compared to men, listed according to the Gender Inequality Index of countries in ascending order. The dashed vertical line represents the pooled effect, whereas the solid vertical line represents no difference in depressive symptoms between men and women

Fig. 3



Psychological distress symptoms for women as compared to men, listed according to the Gender Inequality Index in ascending order. The dashed vertical line represents the pooled effect, whereas the solid vertical line represents no difference in psychological distress between men and women

Fig. 4



Subgroup analyses for psychological distress for women as compared to men by average COVID-19 mortality rates, listed per subgroup according to the Gender Inequality Index of countries in ascending order. The dashed vertical line represents the pooled effect, whereas the solid vertical line represents no difference in psychological distress between men and women

Supplementary Table 8

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