Supplementary Material

PsyCorona Collaboration

Author	University or Institution
Georgios Abakoumkin	University of Thessaly
Jamilah Hanum Abdul Khaiyom	International Islamic University Malaysia
Vjollca Ahmedi	Pristine University
Handan Akkas	Ankara Science University
Carlos A. Almenara	Universidad Peruana de Ciencias Aplicadas
Mohsin Atta	University of Sargodha
Sabahat Cigdem Bagci	Sabanci University
Sima Basel	New York University Abu Dhabi
Edona Berisha Kida	Pristine University
Allan B. I. Bernardo	De La Salle University
Nicholas R. Buttrick	University of Virginia
Phatthanakit Chobthamkit	Thammasat University
Hoon-Seok Choi	Sungkyunkwan University
Mioara Cristea	Heriot Watt University
Sára Csaba	ELTE Eötvös Loránd University, Budapest
Kaja Damnjanovic	University of Belgrade
Ivan Danyliuk	National Taras Shevchenko University of Kyiv
Arobindu Dash	Leuphana University of Luneburg
Daniela Di Santo	University "La Sapienza", Rome
Karen M. Douglas	University of Kent
Violeta Enea	Alexandru Ioan Cuza University, Iasi
Daiane Gracieli Faller	New York University Abu Dhabi
Gavan Fitzsimons	Duke University
Alexandra Gheorghiu	Alexandru Ioan Cuza University
Ángel Gómez	Universidad Nacional de Educación a Distancia
Joanna Grzymala-Moszczynska	Jagiellonian University
Ali Hamaidia	Setif 2 University
Qing Han	University of Bristol
Mai Helmy	Sultan Qaboos University; Menoufia University
Joevarian Hudiyana	Universitas Indonesia
Bertus F. Jeronimus	University of Groningen
Ding-Yu Jiang	National Chung-Cheng University
Veljko Jovanović	University of Novi Sad
Željka Kamenov	University of Zagreb
Anna Kende	ELTE Eötvös Loránd University, Budapest
Shian-Ling Keng	Yale-NUS College
Tra Thi Thanh Kieu	HCMC University of Education
Yasin Koc	University of Groningen
Kamila Kovyazina	Independent researcher, Kazakhstan
Inna Kozytska	National Taras Shevchenko University of Kyiv
Joshua Krause	University of Groningen
Arie W. Kruglanski	University of Maryland
Anton Kurapov	Taras Shevchenko National University of Kyiv
Maja Kutlaca	Durham University

Nóra Anna Lantos	ELTE Eötvös Loránd University, Budapest
Edward P. Lemay, Jr.	University of Maryland
Cokorda Bagus Jaya Lesmana	Udayana University
Winnifred R. Louis	University of Queensland
Adrian Lueders	Université Clermont-Auvergne
Najma Iqbal Malik	University of Sargodha
Anton Martinez	University of Sheffield
Kira O. McCabe	Vanderbilt University
Jasmina Mehulić	University of Zagreb
Mirra Noor Milla	Universitas Indonesia
Idris Mohammed	Usmanu Danfodiyo University Sokoto
Erica Molinario	University of Maryland
Manuel Moyano	University of Cordoba
Hayat Muhammad	University of Peshawar
Silvana Mula	University "La Sapienza", Rome
Hamdi Muluk	Universitas Indonesia
Solomiia Myroniuk	University of Groningen
Reza Najafi	Islamic Azad University, Rasht Branch
Claudia F. Nisa	New York University Abu Dhabi
Boglárka Nyúl	ELTE Eötvös Loránd University, Budapest
Paul A. O'Keefe	Yale-NUS College
Jose Javier Olivas Osuna	National Distance Education University (UNED)
Evgeny N. Osin	National Research University Higher School of Economics
Joonha Park	NUCB Business School
Gennaro Pica	University of Camerino
Antonio Pierro	University "La Sapienza", Rome
Jonas Rees	University of Bielefeld
Anne Margit Reitsema	University of Groningen
Elena Resta	University "La Sapienza", Rome
Marika Rullo	University of Siena
Michelle K. Ryan	University of Exeter, University of Groningen
Adil Samekin	International Islamic Academy of Uzbekistan
Pekka Santtila	New York University Shanghai
Edyta Sasin	New York University Abu Dhabi
Birga M. Schumpe	New York University Abu Dhabi
Heyla A. Selim	King Saud University
Michael Vicente Stanton	California State University, East Bay
Wolfgang Stroebe	University of Groningen
Robbie M. Sutton	University of Kent
Eleftheria Tseliou	University of Thessaly
Akira Utsugi	Nagoya University
Jolien Anne van Breen	Leiden University
Caspar J. Van Lissa	Utrecht University
Kees Van Veen	University of Groningen
Michelle R. vanDellen	University of Georgia
Alexandra Vázquez	Universidad Nacional de Educación a Distancia
Robin Wollast	Université Clermont-Auvergne
Victoria Wai-lan Yeung	Lingnan University
Somayeh Zand	Islamic Azad University, Rasht Branch
Iris Lav Žeželj	University of Belgrade
Bang Zheng	Imperial College London

| Andreas Zick | University of Bielefeld |
| Claudia Zúñiga | Universidad de Chile |

Ethics Information

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Data source and participants

This study was performed using data collected by the PsyCorona survey. Subsequent descriptions of this data source are largely identical to previous descriptions [1,2] PsyCorona is an ad hoc, multinational collaborative study in response to the COVID-19 pandemic. PsyCorona seeks to study the psychological factors that predict how people respond to the coronavirus and to associated public health measures. The ultimate goal is to provide actionable knowledge that can serve to enhance pandemic response. The present use of PsyCorona data was undertaken in parallel to many alternate considerations of the available data. Therefore, subsequent description of our participant sample, as well as procedures for recruiting participants are largely identical to other descriptions of the PsyCorona, excepting small changes due to unique features of the present undertaking.

Worldwide 62,142 respondents completed the PsyCorona survey between March 19 and May 25, 2020. The survey was distributed online through a combination of convenience

sampling, snowball sampling and paid procedures. Members of the research team, in their respective countries, distributed the survey via different means: social media campaigns, academic networks, and press releases, among others. Upon completing the survey and being debriefed, a final screen invited respondents to distribute the survey link to their networks. Paid procedures supplemented the data collection. Qualtrics Panels were used to incentivize approximately 1000 additional respondents in 23 countries: Argentina, Australia, Brazil, Canada, France, Germany, Greece, Indonesia, Italy, Japan, Netherlands, Philippines, Romania, Russia, Saudi Arabia, Serbia, South Africa, South Korea, Spain, Turkey, Ukraine, United Kingdom, and the United States. The paid samples were representative of the country's population in terms of age and gender in nineteen countries, and by gender in four countries (due to insufficient access to the 55+ age group in Greece, Indonesia, Saudi Arabia, and Ukraine). In China, the panel service WJX supplemented the Chinese sample (n = 1000, representative by age and geography, but higher average education). In the United States, Amazon's MTurk supplemented the United States sample (n = 5500). The present analysis used wave 6 of the Psycorona survey, which was administer in all countries on May 9th, 2020. Due to requirements of multilevel modeling, countries with less than 5 wave 6 participants were eliminated from the present consideration. This resulted in a final effective sample size of 6424 participants across 46 countries. Table S1 provides summarizes overall sociodemographic characteristics of participants. Table S2 provides within-country samples sizes.

Translation process

The survey was written in English and translated into 30 languages by bilingual speakers who were members of the research team. For more information on the PsyCorona Scale Translation Procedure, consult supplementary materials.

Covariates/Control variables

Participants reported *gender* (0 = male, 1 = female), and indicated *age* in categories from "18 to 24", then in decade groups (i.e., "25 – 34", "35 – 44", etc.) through "85 +". Participants reported highest level of *education* categorically from (1) primary education through (7) PhD Degree. Age and education were included as continuous covariates our model. To assess experiences with having the coronavirus, participants responded to the item "Do you personally know anyone who currently has coronavirus?" separately for themselves, family members, a close friend, someone I know, and someone else. The sum of affirmative responses was taken as an indicator of *Coronavirus Experience* (Table S1).

Data Analysis

Stepwise multilevel models fit with the nlme package in R v3.6.2 were used to examine substantive hypotheses separately for each outcome [3]. Multilevel models are appropriate in that they account for within-country dependence in outcomes (i.e., intraclass correlations: ICC), and allow for between-country variation (random effects) in parameters representing person-level/within-country effects (fixed effects). At the first model step, we included fixed effects for person-level JWB main effects and covariates, and random effects for the model intercept and the JWB slopes. Given between country variation, JWB constructs, education and age were group-mean centered for the regression. At the second model step, we introduced country-level main effects and associated cross-level interactions with each JWB predictor. We used likelihood ratio tests (i.e., difference between -2 * log likelihoods of nested models; distributed as χ^2) to

examine whether model fit improved upon addition of country-level predictors and interactions at step 2. Consistent with recommendations [4], we group mean centered individual-level variables. Likewise, country-level predictors were grand mean centered and rescaled (divided by 10) for the regression. Although available literature supports that small level 2 sample sizes have negligible effects on multilevel modeling estimates [5], we nonetheless opted to conservatively estimate multilevel relationships by excluding countries with fewer than n=5 observations. Significant interactions were probed with methods described by Preacher, Curran & Bauer using related online resources [6,7]. A hierarchical representation of the final model, wherein i indexes person-level variation and j indexes country-level variation, is described below:

Within-Country (Level 1):

$$Y_{ij} = \beta_{0j} + \beta_{1j}*\text{JWB-Self}_{ij} + \beta_{2j}*\text{JWB-Other}_{ij} + \beta_{3j}*\text{Age}_{ij} + \beta_{4j}*\text{Education}_{ij} + \beta_{5j}*\text{Female}_{ij} + \beta_{6j}*\text{Coronavirus Experience}_{ij} + r_{ij}$$

Between-Country (Level 2):

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*\text{Power Distance}_j + \gamma_{02}*\text{Individualism}_j + \gamma_{03}*\text{Masculinity}_j + \gamma_{04}*\text{Uncertainty Avoidance}_j + \gamma_{05}*\text{Long Term Orientation}_j + \gamma_{06}*\text{Indulgence}_j + r_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}*\text{Power Distance}_j + \gamma_{12}*\text{Individualism}_j + \gamma_{13}*\text{Masculinity}_j + \gamma_{14}*\text{Uncertainty Avoidance}_j + \gamma_{15}*\text{Long Term Orientation}_j + \gamma_{16}*\text{Indulgence}_j + r_{1j}$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}*\text{Power Distance}_j + \gamma_{22}*\text{Individualism}_j + \gamma_{23}*\text{Masculinity}_j + \gamma_{24}*\text{Uncertainty Avoidance}_j + \gamma_{25}*\text{Long Term Orientation}_j + \gamma_{26}*\text{Indulgence}_j + r_{2j}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

$$\beta_{5j} = \gamma_{50}$$

$$\beta_{6j} = \gamma_{60}$$

Table S1

Total Sample Sociodemographics (N = 6424)

	N	Percent
Age Group		
18-24	720	11.2
25-34	1118	17.4
35-44	1131	17.6
45-54	1181	18.4
55-64	1190	18.5
65-75	940	14.6
75-85	135	2.1
85+	9	0.1
Gender		
Male	2234	34.8
Female	4190	65.2
Education		
Primary education	54	0.8
General secondary education	771	12.0
Vocational education	755	11.8
Higher education	1292	20.1
Bachelors degree	1775	27.6
Masters degree	1320	20.5
PhD degree	457	7.1
Coronavirus Exposure		
None	4965	77.3
Self	1238	19.3
Family Member	158	2.5
Close Friend	46	0.7
Someone I Know	15	0.2
Someone Else	2	0.0

Table S2
Country-level Sample Sizes and Mean Cultural Dimensions (N = 46)

	N	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation	Indulgence
Algeria	6	83.00	18.00	20.00	60.00	15.00	83.00
Argentina	149	49.00	46.00	56.00	86.00	20.00	62.00
Australia	157	38.00	90.00	61.00	51.00	21.00	71.00
Austria	10	11.00	55.00	79.00	70.00	60.00	63.00
Bangladesh	7	80.00	20.00	55.00	60.00	47.00	20.00
Belgium	8	65.00	75.00	54.00	94.00	82.00	57.00
Brazil	148	69.00	38.00	49.00	76.00	44.00	59.00
Canada	210	39.00	80.00	52.00	48.00	36.00	68.00
Chile	52	63.00	23.00	28.00	86.00	31.00	68.00
Croatia	76	73.00	33.00	40.00	80.00	58.00	33.00
Czech Republic	6	57.00	58.00	57.00	74.00	70.00	29.00
France	263	68.00	71.00	43.00	86.00	63.00	48.00
Germany	282	35.00	67.00	66.00	65.00	83.00	40.00
Greece	419	60.00	35.00	57.00	100.00	45.00	50.00
Hong Kong S.A.R.	10	68.00	25.00	57.00	29.00	61.00	17.00
Hungary	84	46.00	80.00	88.00	82.00	58.00	31.00
India	6	77.00	48.00	56.00	40.00	51.00	26.00
Indonesia	111	78.00	14.00	46.00	48.00	62.00	38.00
Ireland	6	28.00	70.00	68.00	35.00	24.00	65.00
Italy	342	50.00	76.00	70.00	75.00	61.00	30.00
Japan	62	54.00	46.00	95.00	92.00	88.00	42.00
Kazakhstan	20	88.00	20.00	50.00	88.00	85.00	22.00
Luxembourg	7	40.00	60.00	50.00	70.00	64.00	56.00
Malaysia	79	100.00	26.00	50.00	36.00	41.00	57.00
Mexico	6	81.00	30.00	69.00	82.00	24.00	97.00
Netherlands	523	38.00	80.00	14.00	53.00	67.00	68.00
Pakistan	6	55.00	14.00	50.00	70.00	50.00	0.00
Philippines	73	94.00	32.00	64.00	44.00	27.00	42.00
Poland	91	68.00	60.00	64.00	93.00	38.00	29.00
Republic of Serbia	288	86.00	25.00	43.00	92.00	52.00	28.00
Romania	217	90.00	30.00	42.00	90.00	52.00	20.00
Russia	106	93.00	39.00	36.00	95.00	81.00	20.00
Saudi Arabia	70	95.00	25.00	60.00	80.00	36.00	52.00
Singapore	36	74.00	20.00	48.00	8.00	72.00	46.00
South Africa	155	49.00	65.00	63.00	49.00	34.00	63.00
South Korea	17	60.00	18.00	39.00	85.00	100.00	29.00
Spain	661	57.00	51.00	42.00	86.00	48.00	44.00
Sweden	9	31.00	71.00	5.00	29.00	53.00	78.00
Switzerland	12	34.00	68.00	70.00	58.00	74.00	66.00
Taiwan	14	58.00	17.00	45.00	69.00	93.00	49.00
Thailand	10	64.00	20.00	34.00	64.00	32.00	45.00
Turkey	106	66.00	37.00	45.00	85.00	46.00	49.00
Ukraine	151	92.00	25.00	27.00	95.00	86.00	14.00
United Kingdom	377	35.00	89.00	66.00	35.00	51.00	69.00
United States	954	40.00	91.00	62.00	46.00	26.00	68.00
Vietnam	22	70.00	20.00	40.00	30.00	57.00	35.00

Table S3

Means, Standard Deviations and Correlations for Individual and Country-level Measures.

Individual-Level

		Mean	SD	1.	2.	3.
1.	Mandatory Vaccination	0.99	2.01	--		
2.	Mandatory Quarantine	1.83	1.44	.50**	--	
3.	JWB-Self	0.45	0.86	.07**	.06**	--
4.	JWB-Other	-0.20	0.88	.04**	0.01	.48**

Country-Level

		Mean	SD	1.	2.	3.	4.	5.
1.	Power Distance	61.93	21.14	--				
2.	Individualism	45.67	24.26	-.69**	--			
3.	Masculinity	51.63	17.43	-.26	.31*	--		
4.	Uncertainty Avoidance	66.72	22.86	.22	-.13	.05	--	
5.	Long-Term Orientation	53.67	21.41	.01	-.10	-.02	.22	--
6.	Indulgence	46.65	20.72	-.40**	.40**	-.03	-.25	-.47**

Notes: JWB = Just World Beliefs. *p < .05, **p < .01, ***p < .001.

References

1. Jin S, Balliet D, Romano A, et al. Intergenerational conflicts of interest and prosocial behavior during the COVID-19 pandemic. *Personality and Individual Differences.* 2021;171:110535.
2. Han Q, Zheng B, Agostini M, et al. Associations of risk perception of COVID-19 with emotion and mental health during the pandemic. *Journal of affective disorders.* 2021.
3. Pinheiro J, Bates D, DebRoy S, Sarkar D, Team RC. Linear and nonlinear mixed effects models. *R package version.* 2007;3(57):1-89.
4. Raudenbush SW, Bryk AS. *Hierarchical Linear Models: Applications and Data Analysis Methods* (2nd ed.). 2002. Thousand Oak, CA: SAGE Publications
5. Theall KP, Scribner R, Broyles S, Yu Q, Chotalia J, Simonsen, N, . . . Carlin, BP. Impact of small group size on neighbourhood influences in multilevel models. *Journal of epidemiology and community health.* 2011: 65, 688-695.
6. Preacher KJ, Curran PJ, Bauer DJ. Probing interactions in multiple linear regression, latent curve analyses, and hierarchical linear modeling. November, 2006;14:2005. Accessed February 2, 2021. http://www.quantpsy.org/interact/index.htm
7. Preacher KJ, Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of educational and behavioral statistics.* 2006;31:437-448.