Supplementary Information for

COVID-19 amplifies gender disparities in research

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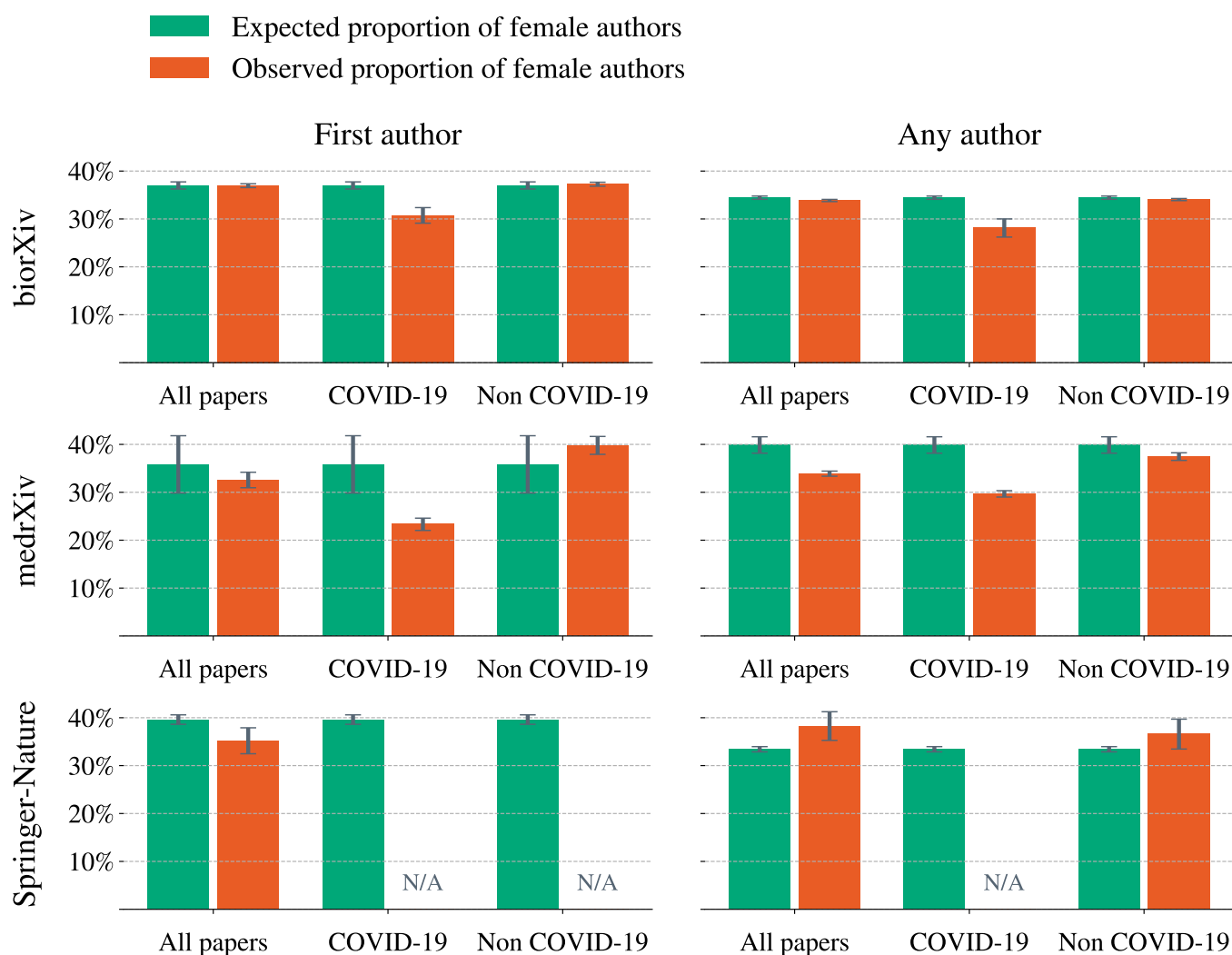
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Fig. S1. Expected and observed proportion of female authors that publish during the COVID-19 pandemic. Green bars represent the expected proportion of female authors, estimated by the OLS model from the historical data from 2019. Orange bars are the observed proportion of female authors that publish during the COVID-19 pandemic. The results are separated in rows, based on the publisher. The papers are divided by the topic in three groups: 1) all papers from the dataset, 2) the papers that deal directly with the COVID-19 and related topics, 3) the papers that are not about COVID-19 or related topics. The analysis is performed considering only the first authors and also considering all the authors regardless of the order of authorship. (N/A value in the bottom row means that there was not enough data to perform the proper analysis)

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Table S1. The expected and observed proportion of female authors dissagregated by the publisher and the order of authorship

	order	papers	Model		Observation		
			ar. mean	st. err	ar. mean	st. err	% diff
All publishers	First	All	0.376	0.007	0.354	0.005	5.800
		COVID-19	0.376	0.007	0.240	0.018	36.161
		Non COVID-19	0.376	0.007	0.373	0.004	0.849
	Any	All	0.343	0.003	0.337	0.002	1.610
		COVID-19	0.343	0.003	0.292	0.010	14.775
		Non COVID-19	0.343	0.003	0.344	0.002	-0.450
biorXiv	First	All	0.370	0.007	0.369	0.004	0.146
		COVID-19	0.370	0.007	0.291	0.021	21.331
		Non COVID-19	0.370	0.007	0.372	0.004	-0.664
	Any	All	0.344	0.003	0.339	0.002	1.706
		COVID-19	0.344	0.003	0.281	0.019	18.375
		Non COVID-19	0.344	0.003	0.341	0.002	1.137
medrXiv	First	All	0.358	0.060	0.326	0.016	9.090
		COVID-19	0.358	0.060	0.233	0.013	34.910
		Non COVID-19	0.358	0.060	0.398	0.019	-11.076
	Any	All	0.399	0.017	0.339	0.005	15.088
		COVID-19	0.399	0.017	0.297	0.007	25.656
		Non COVID-19	0.399	0.017	0.375	0.008	6.166
Springer-Nature	First	All	0.396	0.010	0.352	0.027	11.168
		COVID-19	0.396	0.010	–	–	–
		Non COVID-19	0.396	0.010	0.351	0.025	11.467
	Any	All	0.334	0.005	0.383	0.030	-14.421
		COVID-19	0.334	0.005	0.342	0.034	-2.146
		Non COVID-19	0.334	0.005	0.366	0.031	-9.391

Table S2. The expected and observed proportion of female authors across the countries and disaggregated by the publisher

All publishers

	All papers					COVID-19 papers				
	Model		Observation			Model		Observation		
	ar. mean.	st. err	ar. mean	st. err	% diff	ar. mean.	st. err	ar. mean	st. err	% diff
Australia	0.386	0.015	0.325	0.014	-15.753	0.386	0.015	0.302	0.025	-21.722
Brazil	0.487	0.022	0.411	0.019	-15.508	–	–	–	–	–
Canada	0.361	0.012	0.347	0.010	-4.036	0.361	0.012	0.298	0.019	-17.623
China	0.268	0.007	0.273	0.006	1.643	0.268	0.007	0.255	0.017	-5.122
France	0.408	0.011	0.396	0.006	-3.062	0.408	0.011	0.334	0.025	-18.135
Germany	0.330	0.007	0.325	0.006	-1.444	0.33	0.007	0.285	0.009	-13.741
India	0.311	0.015	0.297	0.012	-4.389	0.311	0.015	0.287	0.023	-7.662
Italy	0.439	0.018	0.392	0.020	-10.706	0.439	0.018	0.263	0.029	-40.023
Japan	0.156	0.007	0.180	0.010	15.301	0.156	0.007	0.18	0.024	15.316
Netherlands	0.352	0.013	0.344	0.014	-2.446	0.352	0.013	0.31	0.025	-12.097
South Korea	0.189	0.015	0.251	0.023	33.042	–	–	–	–	–
Spain	0.414	0.015	0.396	0.012	-4.405	–	–	–	–	–
Sweden	0.385	0.017	0.347	0.014	-9.848	–	–	–	–	–
Switzerland	0.339	0.018	0.344	0.016	1.345	0.339	0.018	0.358	0.044	5.69
United Kingdom	0.362	0.008	0.357	0.005	-1.591	0.362	0.008	0.296	0.015	-18.432
United States	0.341	0.005	0.339	0.003	-0.558	0.341	0.005	0.33	0.018	-3.005

biorXiv and medrXiv

	All papers					COVID-19 papers				
	Model		Observation			Model		Observation		
	ar. mean.	st. err	ar. mean	st. err	% diff	ar. mean.	st. err	ar. mean	st. err	% diff
Australia	0.372	0.019	0.322	0.014	-13.493	0.372	0.019	0.302	0.025	-18.749
Brazil	0.405	0.030	0.409	0.020	1.009	–	–	–	–	–
Canada	0.350	0.017	0.346	0.010	-1.191	0.35	0.017	0.301	0.019	-14.056
China	0.272	0.013	0.273	0.007	0.602	0.272	0.013	0.254	0.018	-6.542
France	0.421	0.015	0.396	0.006	-6.010	0.421	0.015	0.318	0.033	-24.439
Germany	0.344	0.010	0.325	0.006	-5.431	0.344	0.01	0.275	0.01	-19.997
India	0.322	0.019	0.298	0.012	-7.618	0.322	0.019	0.287	0.023	-10.94
Italy	0.417	0.028	0.391	0.020	-6.299	0.417	0.028	0.256	0.03	-38.722
Japan	0.163	0.018	0.185	0.010	13.707	0.163	0.018	0.18	0.024	10.73
Netherlands	0.345	0.017	0.343	0.014	-0.635	0.345	0.017	0.322	0.025	-6.52
South Korea	0.328	0.036	0.287	0.040	-12.492	–	–	–	–	–
Spain	0.409	0.019	0.394	0.011	-3.596	–	–	–	–	–
Sweden	0.341	0.024	0.350	0.015	2.404	–	–	–	–	–
Switzerland	0.338	0.020	0.343	0.016	1.394	0.338	0.02	0.358	0.044	6.09
United Kingdom	0.364	0.010	0.356	0.005	-2.175	0.364	0.01	0.293	0.015	-19.579
United States	0.341	0.006	0.337	0.003	-1.046	0.341	0.006	0.328	0.016	-3.954

Springer-Nature

	All papers					COVID-19 papers				
	Model		Observation			Model		Observation		
	ar. mean.	st. err	ar. mean	st. err	% diff	ar. mean.	st. err	ar. mean	st. err	% diff
Australia	0.421	0.023	0.494	0.023	17.549	–	–	–	–	–
Brazil	0.588	0.028	0.482	0.021	-17.928	–	–	–	–	–
Canada	0.461	0.026	0.391	0.017	-15.159	–	–	–	–	–
China	0.263	0.008	0.206	0.019	-21.693	–	–	–	–	–
France	0.371	0.021	0.353	0.016	-5.067	–	–	–	–	–
Germany	0.312	0.017	0.320	0.010	2.559	–	–	–	–	–
India	0.271	0.024	0.261	0.003	-3.785	–	–	–	–	–
Italy	0.476	0.021	0.407	0.004	-14.489	–	–	–	–	–
Japan	0.139	0.009	0.200	0.009	44.449	–	–	–	–	–
Netherlands	0.489	0.025	0.486	0.024	-0.675	–	–	–	–	–
South Korea	0.153	0.013	0.138	0.001	-9.875	–	–	–	–	–
Spain	0.432	0.019	0.374	0.038	-13.380	–	–	–	–	–
Sweden	0.441	0.023	0.466	0.095	5.736	–	–	–	–	–
Switzerland	0.360	0.027	0.250	0.000	-30.531	–	–	–	–	–
United Kingdom	0.359	0.015	0.349	0.058	-2.797	–	–	–	–	–
United States	0.343	0.010	0.380	0.028	10.879	–	–	–	–	–

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