

Occupation and SARS-CoV-2 infection risk among 108 960 workers during the first pandemic wave in Germany¹

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1. Supplementary material
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e-Table 1. Eligibility criteria for inclusion in the study sample

	Included		Excluded
	N	%	N
Baseline sample (2014-2019)	204 895	100.0	-
Invited for participation in the COVID follow-up (2020)	197 834	96.6	7 061
Completion of the questionnaire (2020)	161 849	79.0	35 985
Participants not unemployed or inactive at time of the COVID-19 questionnaire	109 328	53.1	52 521
If tested for SARS-CoV-2: Test date not before 01.02.2020 or after 31.08.2020	108 960	52.9	368
Study sample	108 960	100.0	

e-Table 2. Missing values in variables of interest

Variable	Label	Missing		Complete		Total	
		N	%	N	%	N	%
Dependent variable							
a_postest	Infection with SARS-CoV-2	272	0.2	108 611	100. 99.8	108 883	100. 0
Independent variables							
timerisk	Person-time at risk	0	0.0	108 960	100. 0	108 960	100. 0
age	Age in years	0	0.0	108 960	100. 0	108 960	100. 0
gender	Sex	0	0.0	108 960	100. 0	108 960	100. 0
a_migr	Migration background	34	0.0	108 926	100. 0	108 960	100. 0
studz	Region of study centre	0	0.0	108 960	100. 0	108 960	100. 0

a_workh	Weekly working hours	7 322	6.7	101 638	93.3	108 960	100.0
selfemp	Employment relationship	2 381	2.2	106 579	97.8	108 960	100.0
a_kldb_major	Kldb 2010 major group	5 380	4.9	103 580	95.1	108 960	100.0
a_kldb_anf	Kldb 2010 skill level	5 380	4.9	103 580	95.1	108 960	100.0
a_kldb_fuehr	Kldb 2010 sup./manager responsibility	5 380	4.9	103 580	95.1	108 960	100.0
a_kldb_sek	Kldb 2010 Occupational sector	5 380	4.9	103 580	95.1	108 960	100.0
a_kldb_seg	Kldb 2010 Occupational segment	5 380	4.9	103 580	95.1	108 960	100.0
essential	Essential workers	5 380	4.9	103 580	95.1	108 960	100.0
a_isco_major	ISCO-08 major group	6 223	5.7	102 737	94.3	108 960	100.0
Auxiliary variables							
a_househ	Household composition	8	0.0	108 952	100.0	108 960	100.0
a_covtest	Test for SARS-CoV-2	272	0.2	108 688	99.8	108 960	100.0
a_homeoffice	Working from home	0	0.0	108 960	100.0	108 960	100.0
a_riskcont~t	Risk contact to an infected Person	0	0.0	108 960	100.0	108 960	100.0
a_red_whrs	Reduction in working hours	0	0.0	108 960	100.0	108 960	100.0
a_inc_whrs	Increase in working hours	0	0.0	108 960	100.0	108 960	100.0
a_newjob	Job change	0	0.0	108 960	100.0	108 960	100.0
a_shorttim~l	Receiving of short-time allowance	0	0.0	108 960	100.0	108 960	100.0
a_terminat~n	Dismissal	0	0.0	108 960	100.0	108 960	100.0
a_noworkch~s	No work changes	0	0.0	108 960	100.0	108 960	100.0

e-Table 3. Comparison of original versus imputed data

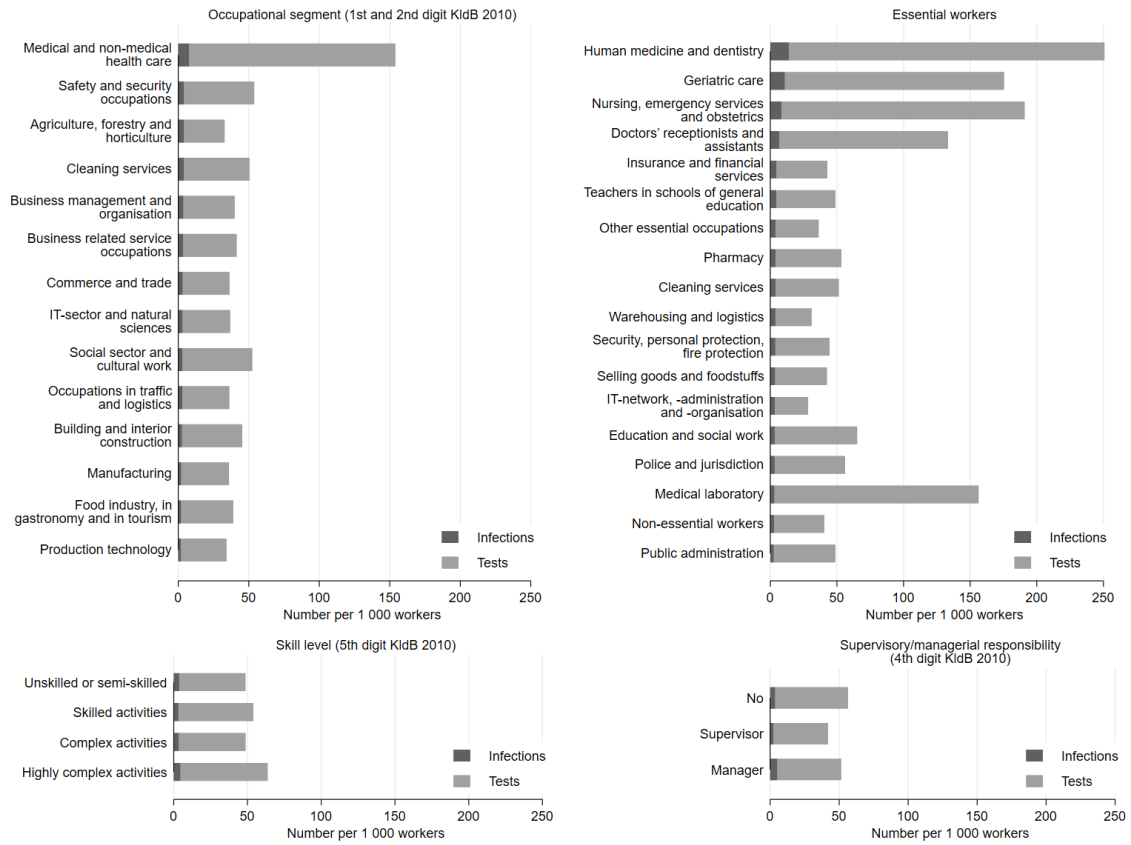
Variable	Original					Imputed				
	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max
a_migr	108 926	0.29	0.45	0	1	108 960	0.29	0.45	0	1
a_househ	108 952	2.64	1.28	1	6	108 960	2.64	1.28	1	6
a_workh	101 638	1.30	0.46	1	2	108 960	1.31	0.46	1	2
selfemp	106 579	0.14	0.34	0	1	108 960	0.13	0.34	0	1
a_kldb_major	103 580	6.01	2.25	0	9	108 960	5.99	2.26	0	9

a_kldb_anf	103 580	2.83	0.91	1	4	108 960	2.83	0.91	1	4
a_kldb_fuehr	103 580	1.13	0.46	1	3	108 960	1.13	0.46	1	3
a_kldb_sek	103 580	2.52	1.08	1	5	108 960	2.51	1.09	1	5
a_kldb_seg	103 580	7.53	2.94	1	14	108 960	7.49	2.96	1	14
essential	103 580	5.20	9.84	1	99	108 960	5.17	9.83	1	99
a_isco_major	102 737	3.39	1.88	0	9	108 960	3.38	1.88	0	9
a_covtest	108 688	0.06	0.23	0	1	108 960	0.06	0.23	0	1
a_postest	108 688	0.00	0.06	0	1	108 960	0.00	0.06	0	1

e-Table 4. Incidence rates (IR) of SARS-CoV-2 infections per 1 000 workers (01.02-31.08.2020) by occupational major group (ISCO)

ISCO major groups (1st digit ISCO)	Number (N)		Person-days (\bar{x})	Unadjusted		Model 1		Model 2	
	Total	Cases		IR	95% CI	IR	95% CI	IR	95% CI
Technicians and associate professionals	27	127	109.0	4.7	3.9–5.5	4.5	3.7–5.3	4.8	3.9–5.7
Managers	7 752	39	109.4	5.0	3.5–6.6	4.3	2.9–5.7	3.7	2.2–5.3
Armed forces occupations	326	1	110.7	3.0	-2.9–9.0	3.3	-3.3–10.0	3.4	-3.3–10.1
Professionals	35	141	108.3	4.0	3.3–4.6	3.6	3.0–4.2	3.3	2.6–4.0
Skilled agricultural, forestry and fishery workers	886	3	112.4	3.3	-0.4–7.0	3.1	-0.4–6.5	3.2	-0.4–6.9
Clerical support workers	13	40	109.0	2.9	2.0–3.8	2.8	1.9–3.7	2.9	2.0–3.8
Services and sales workers	10	30	111.1	2.8	1.8–3.8	2.7	1.7–3.7	2.8	1.7–3.9
Elementary occupations	1 932	7	112.7	3.5	0.9–6.1	3.3	0.8–5.8	2.6	0.0–5.2
Craft and related trades workers	7 252	12	112.5	1.6	0.7–2.5	1.5	0.6–2.4	1.6	0.7–2.6
Plant and machine operators and assemblers	3 207	4	112.8	1.2	0.0–2.4	1.1	0.0–2.3	1.1	-0.0–2.3
<i>Wald chi2 test for significance</i>				<i>p < 0.001</i>		<i>p = 0.001</i>		<i>p = 0.001</i>	

IR=Incidence rate. \bar{x} =Mean. CI=Confidence interval. IRs based on Poisson regression analysis. Person-days at risk were specified as an exposure variable to control for different lengths in observation times. Estimates of Model 1 were adjusted for age group (in five-year increments), sex, migration background, study centre, weekly working hours, and self-employment. Estimates of Model 2 were additionally adjusted for occupational skill level (5th digit of the KldB 2010), and supervisory/managerial responsibility (4th digit of the KldB 2010). N=108 960 employed individuals.



e-Figure 1. Cumulative number of SARS-CoV-2 tests and infections by occupational segment, essential occupation, skill level and supervisory/managerial responsibility.

N=108,960 employed individuals. Cumulative numbers per 1000 workers in each category of occupational grouping.