

Supplementary Material

Attitudes towards Corona Protection Measures among German School Students – the Effects of Education and Knowledge about the Pandemic

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Table S1: Description of the overall Sample by School Type and Grade

grade	school type			Total
	secondary school (Realsschule)	high school (Gymnasium)	vocational school (Berufsschule)	
grade 7	0	11	0	11
grade 8	1	22	0	23
grade 9	10	188	0	198
grade 10	12	107	0	119
grade 11	0	98	2	100
grade 12	0	119	28	147
1st year of vocational training	0	1	0	1
2nd year of vocational training	0	1	6	7
3rd year of vocational training	0	3	12	15
Total	23	550	48	621

Table S2: Descriptive Overview of the Variables for the Regression Analysis

Variable	Exact question in the survey (translated from German)	mean	sd	min	max	N
Dependent variables 1 – approval of anti-Corona measures (1 = strongly oppose; 10 = strongly support)	All in all, how do you feel about the following measures to get the Corona pandemic under control?					
	- Contact restrictions (e.g. max. 5 persons are allowed to meet)	5.050	2.814	1	10	560
	- Wearing masks mandatorily at schools (also in the classroom)	7.328	2.786	1	10	558
	- Mandatory testing at schools	8.286	2.252	1	10	560
	- Alternating online and in classroom teaching	5.640	3.242	1	10	558
	- Vaccination mandatory	6.209	3.211	1	10	561
Dependent Variables 2 – Willingness to perform specific anti-Corona measures (1 = no, in no case; 4 = yes, in any case)	There are several ways to help shape Corona politics through your own actions. Can you imagine doing the following things?					
	- To keep me informed of current developments in Corona politics.	3.307	0.749	1	4	548
	- To test me regularly for COVID-19 infection, even during school vacations.	3.013	0.910	1	4	550
	- Get vaccinated against the COVID-19 omicron variant.	3.226	1.003	1	4	548
	- To wear a mask in school in general.	3.384	0.866	1	4	547
	- To further reduce my contacts with people.	2.478	0.955	1	4	548
Treatment group	Participants were randomly assigned to the treatment or control group	0.487	0.500	0	1	563
Gender	What is your gender?					560
	- Male	41.96%				
	- Female	55.89%				
	- Other	2.14%				
Age	How old are you?	16.138	2.245	12	26	549
Migration background (0/1)	Do you have a migration background?	0.205	0.404	0	1	560
Left = 1 / right = 11	Many use the terms "left" and "right" when referring to different political attitudes. When you think of your own political views, where do you place yourself on this left-right scale?	4.818	2.026	1	11	500
General social trust (1-7)	Speaking in general terms: Do you think that most people can be trusted or that you can't be careful enough when dealing with other people?	3.579	1.543	1	7	563
Restrict individual rights in order to guarantee safety (1-5)	There are different views on what the state should or should not do. To what extent do you agree or disagree with the following statements? In order to guarantee people's safety and well-being, the state should restrict individual rights if necessary.	3.294	1.098	1	5	558
Burden of Covid-19 pandemic (1-5)	Some people feel burdened by the Corona pandemic. How does that look for you personally? All in all, how burdened do you feel in your life by the spread of the Corona virus and the current measures to combat it?	3.395	1.098	1	5	562

I Have been tested positive on Covid-19	I was or have been tested positive for the Corona virus.	0.185	0.389	0	1	562
General health status (1 = very good; 5 = very bad)	How do you assess - all in all - your state of health? Would you say it is	1.989	0.926	1	5	563
Covid-19 affectedness own family/friends (0/1)	Have people in your personal circle (family/friends) been seriously ill with Corona?	0.337	0.473	0	1	563
School type	What type of school do you attend?					562
	- High school (Gymnasium)	3.56%				
	- Secondary school (Realschule)	88.61%				
	- Vocational school (Berufsschule)	7.83%				
Subjective knowledge = Self-perceived knowledge about Covid-19 pandemic (1 = not at all informed; 7 = very well informed)	How well informed do you consider yourself on the subject of the Corona pandemic?	4.998	1.279	1	7	560
Objective knowledge = Quiz points	Covid-19 pandemic quiz (see Fig. A2)	2.107	1.138	0	4	563
Fear of infection (1 = no fear at all, 5 = very big fear)	Are you afraid of getting infected with Corona? (This question was asked only of participants who indicated they had not yet been infected with Covid-19)	1.919	0.870	1	5	458
Covid-19 symptoms (1=no symptoms, 4=severe symptoms)	What symptoms did you have and how severe were they? (This question was asked only of participants who indicated they had already been infected with Covid-19)					
	- Cough	2.147	0.948	1	4	102
	- Fever	1.700	0.905	1	4	100
	- Loss of sense of taste	2.206	0.978	1	4	102
	- Loss of sense of smell	1.961	1.116	1	4	102
	- Sore throat	1.980	1.058	1	4	101
	- Headache	2.343	1.085	1	4	102
	- Nausea	1.406	0.777	1	4	101

Table S3: Regressions Explaining Approval Ratings of General anti-Covid-19 Measures

Dependent variables Approval ratings of general anti-Covid-19 measures	(M1) Contact restrictions	(M2) Wearing masks mandatorily at school	(M3) mandatory testing at school	(M4) Alternating online and in classroom teaching	(M5) Vaccination mandatory
Treatment group	0.0560 (0.27)	-0.0507 (-0.23)	0.0353 (0.19)	0.474* (1.76)	0.0372 (0.16)
Gender (reference: male)					
Female	0.104 (0.46)	0.435* (1.81)	0.538** (2.48)	-0.281 (-0.97)	-0.317 (-1.23)
Other	1.083 (1.57)	-0.247 (-0.28)	0.997** (2.05)	-0.0974 (-0.10)	-0.115 (-0.14)
Age	-0.176*** (-3.09)	0.0256 (0.41)	0.0312 (0.61)	0.0475 (0.70)	0.00773 (0.12)
Migration background	-0.555* (-1.93)	-0.374 (-1.17)	0.0371 (0.14)	-0.144 (-0.40)	-0.965*** (-3.07)
Left = 1 / right = 11	-0.169*** (-2.84)	-0.161** (-2.43)	-0.0480 (-0.85)	-0.0723 (-0.95)	-0.184*** (-2.68)
General social trust (1-7)	-0.0364 (-0.50)	0.0187 (0.24)	0.109 (1.54)	-0.0723 (-0.75)	0.0923 (1.16)
Restrict individual rights in order to guarantee safety (1-5)	0.676*** (6.48)	0.560*** (5.01)	0.443*** (4.72)	0.171 (1.26)	1.079*** (9.24)
Burden of Covid-19 pandemic (1-5)	-0.521*** (-4.81)	-0.522*** (-4.37)	-0.248*** (-2.65)	-0.531*** (-3.89)	-0.262** (-2.23)
Covid-19 infected	-0.520* (-1.85)	-0.480 (-1.41)	-0.247 (-0.95)	-0.995*** (-2.67)	-1.156*** (-3.52)
General health status (1-5)	0.299** (2.42)	0.0205 (0.15)	0.0957 (0.95)	0.243 (1.60)	0.291** (2.11)
Covid-19 affectedness own family/friends (0/1)	0.403* (1.76)	0.298 (1.29)	0.309 (1.56)	0.346 (1.20)	0.378 (1.48)
School type (reference: high school (Gymnasium))					
Secondary school (Realsschule)	-0.597 (-1.24)	-0.194 (-0.31)	-0.476 (-1.01)	-0.892 (-1.12)	0.775 (1.35)
Vocational school (Berufsschule)	0.401 (0.88)	-0.636 (-1.11)	-0.436 (-0.98)	0.135 (0.22)	0.0106 (0.02)
Constant	7.732*** (6.86)	7.413*** (6.08)	6.459*** (6.44)	6.288*** (4.48)	3.810*** (2.98)
Observations	563	563	563	563	563
Mean R ²	0.24	0.16	0.12	0.08	0.28

Annotation: the table presents mean b-coefficients from OLS-regression based on 10 MICE imputations; t-statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; the mean R² is calculated from all 10 imputations using Fishers Z-transformation for the combination of the single models (see Harel, 2009).

Table S4: Regressions Explaining Willingness to Perform Specific anti-Covid-19 Measures

	(M6) Keeping myself informed about COVID-19	(M7) Testing COVID-19 also during school holidays	(M8) Getting vaccinated against the Omicron variant	(M9) Always wearing a mask at school	(M10) Reducing private contacts
Treatment group	0.00471 (0.07)	0.0562 (0.76)	-0.0395 (-0.53)	-0.0269 (-0.39)	-0.0368 (-0.50)
Gender (reference: male)					
Female	0.127* (1.78)	0.404*** (4.86)	0.0867 (1.04)	0.154** (2.04)	0.293*** (3.66)
Other	0.313 (1.18)	0.678*** (2.94)	0.175 (0.81)	-0.273 (-1.02)	0.916*** (4.39)
Age	0.0443** (2.43)	0.0436** (2.25)	0.0490** (2.40)	0.0353* (1.95)	
Migration background	-0.0759 (-0.96)	-0.197* (-1.89)	-0.507*** (-4.58)	-0.0382 (-0.41)	-0.144 (-1.59)
Left = 1 / right = 11	-0.0324* (-1.67)	-0.0397* (-1.86)	-0.0626*** (-2.82)	-0.0392* (-1.91)	-0.0345* (-1.66)
General social trust (1-7)	0.0278 (1.32)	0.0144 (0.57)	0.0569** (2.16)	0.0339 (1.39)	0.00584 (0.24)
Restrict individual rights in order to guarantee safety (1-5)	0.0557* (1.82)	0.110*** (2.89)	0.254*** (6.63)	0.157*** (4.66)	0.201*** (5.31)
Burden of COVID-19 pandemic (1-5)	0.00112 (0.03)	-0.0156 (-0.42)	-0.0784** (-2.11)	-0.188*** (-5.02)	-0.152*** (-4.10)
COVID-19 infected	-0.289*** (-3.09)	-0.179* (-1.67)	-0.480*** (-4.45)	-0.130 (-1.28)	-0.169* (-1.70)
General health status (1- 5)	0.00677 (0.19)	0.0555 (1.35)	0.0627 (1.48)	0.0270 (0.72)	0.112*** (2.59)
Covid-19 affectedness own family/friends (0/1)	0.0808 (1.21)	0.0594 (0.75)	0.0574 (0.70)	0.0209 (0.29)	0.0936 (1.21)
School type (reference: high school (Gymnasium))					
Secondary school (Realsschule)	-0.348* (-1.86)	-0.288 (-1.23)	0.301 (1.40)	0.130 (0.69)	-0.264* (-1.80)
Vocational school (Berufsschule)	-0.333** (-2.11)	-0.00858 (-0.05)	-0.0869 (-0.51)	-0.190 (-1.09)	0.0964 (0.73)
Constant	2.449*** (6.85)	1.824*** (4.61)	1.966*** (4.93)	2.921*** (8.23)	2.121*** (7.35)
Observations	563	563	563	563	563
Mean R2	0.10	0.13	0.28	0.16	0.19

Annotation: the table presents mean b-coefficients from OLS-regression based on 10 MICE imputations; t-statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; the mean R^2 is calculated from all 10 imputations using Fishers Z-transformation for the combination of the single models (see Harel, 2009).

Figure S1: Description of the Overall Sample by Age, Gender and Vaccination Status

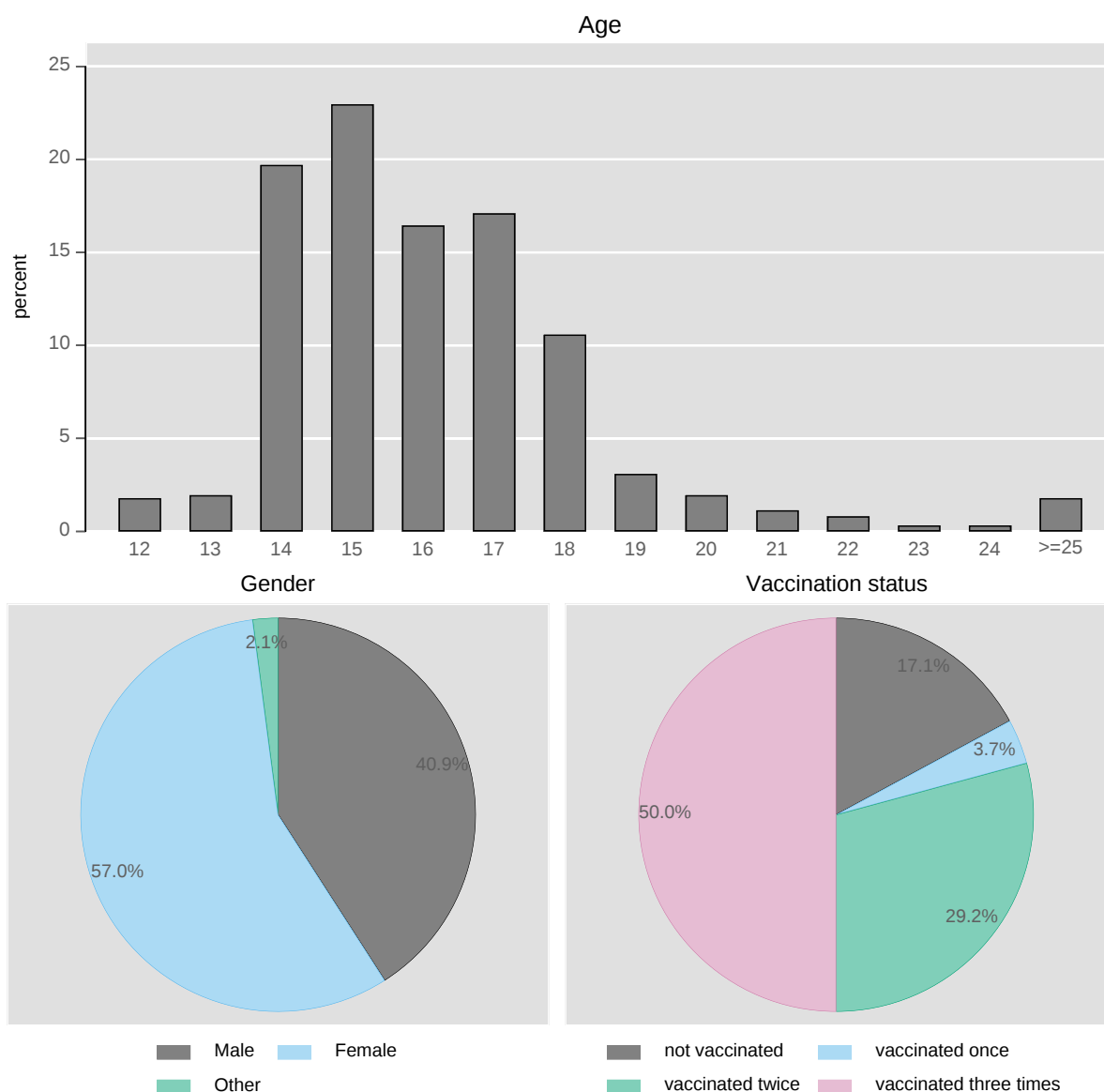


Figure S2: Results of the COVID-19 Quiz

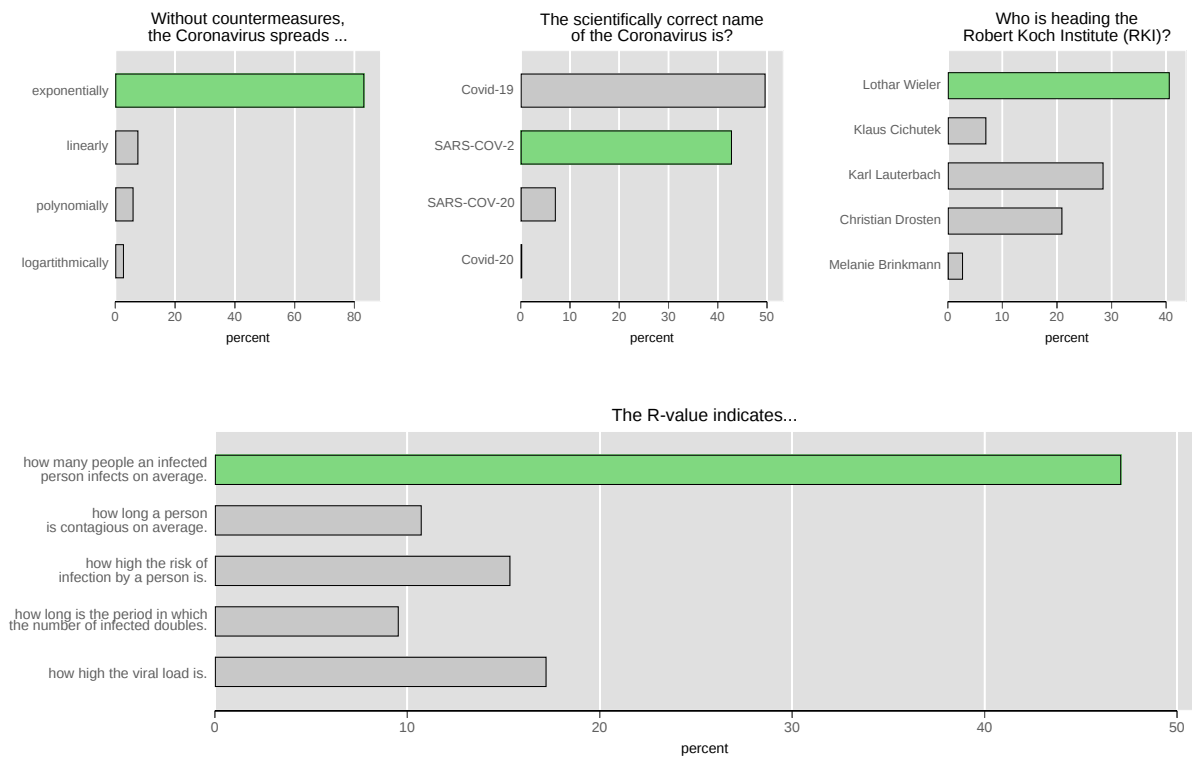


Figure S3: COVID-19 Infections, Symptoms and Fear of Infection

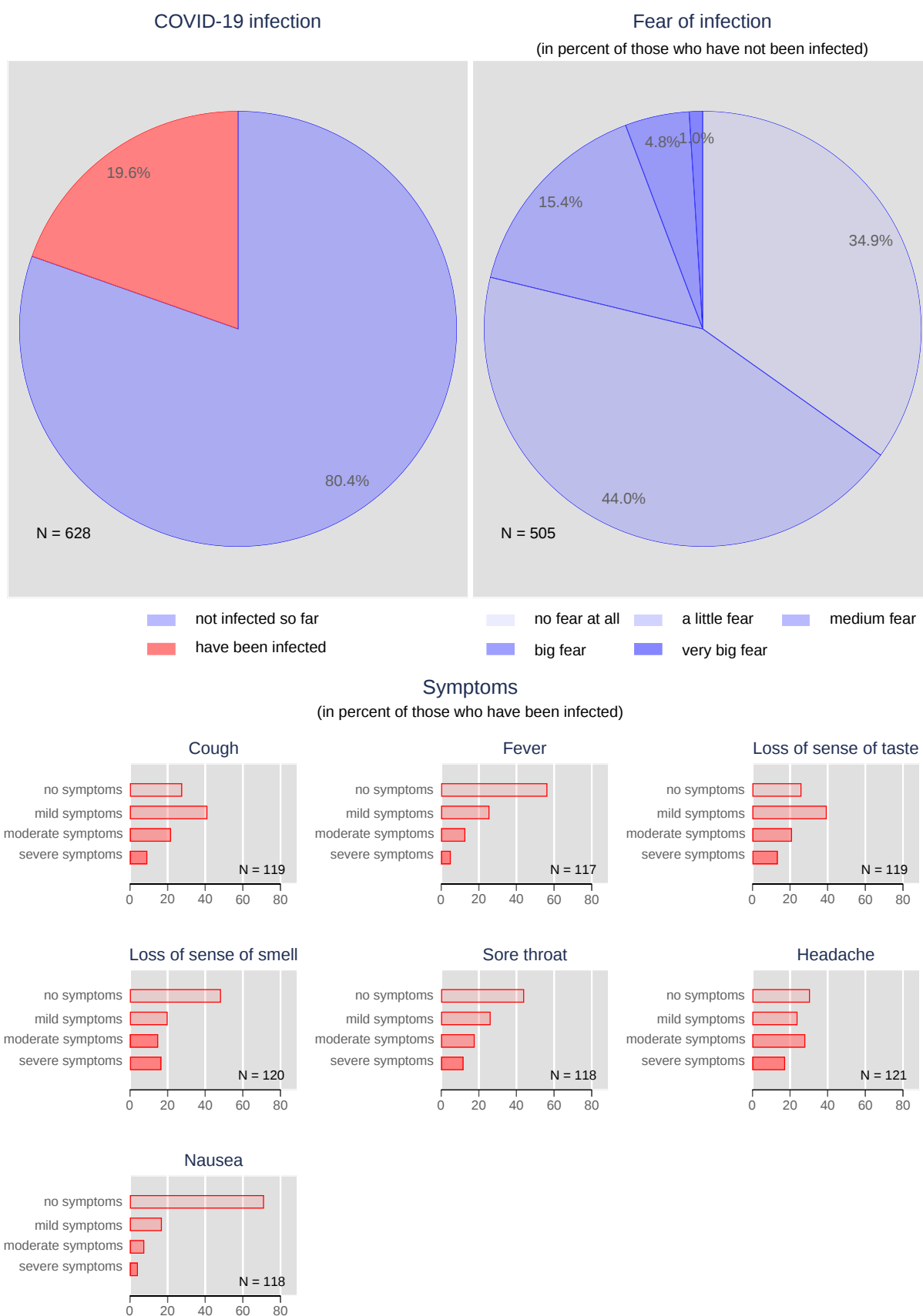
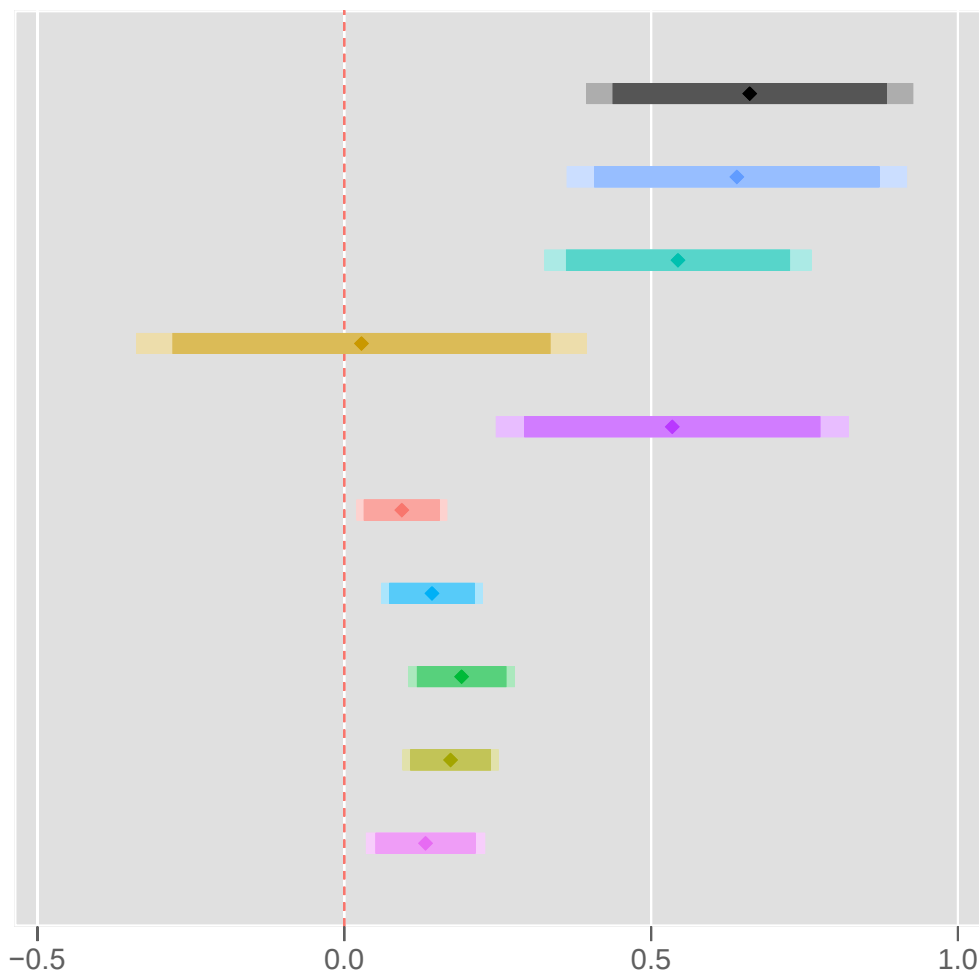


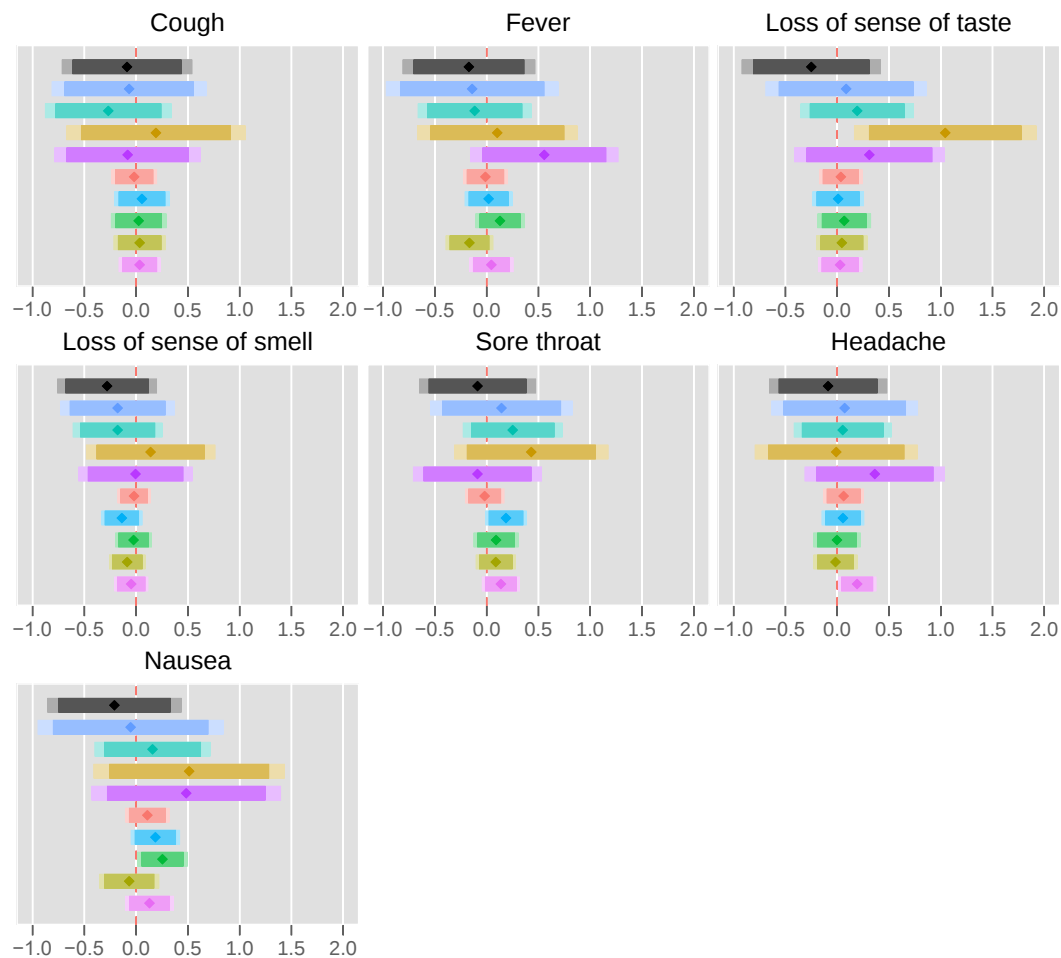
Figure S4: Effect of Fear of Covid-19 Infection Among those not Infected



- Model / dependent variable
- ◆ M1: Contact restrictions
 - ◆ M2: Wearing masks mandatorily at school
 - ◆ M3: Mandatory testing at school
 - ◆ M4: Alternating online and in classroom teaching
 - ◆ M5: Vaccination mandatory
 - ◆ M6: Keeping myself informed about COVID-19
 - ◆ M7: Testing COVID-19 also during school holidays
 - ◆ M8: Getting vaccinated against the Omicron variant
 - ◆ M9: Wearing always a mask at school
 - ◆ M10: Reducing private contacts

Annotation: depicted are b-coefficients + 90% and 95% confidence intervals from OLS-regressions (based on 10 MICE-imputations with robust standard errors) replicating the models M1-M10 from tables A3 and A4 for the subsample of those participants who had not been infected with Covid-19 (N = 458). In addition to M1-M10 these models include a measure of the fear of a Covid-19 infection (1 = no fear at all, 5 = very big fear). The graphs only include these fear effects. The effects of all other variables in the models are not presented in order to facilitate interpretation. Reading example: an increase in fear by one unit is associated, ceteris paribus, with a 0.66 units higher approval of contact restrictions.

Figure S5: Effect of Symptoms of Covid-19 Infection Among those Infected



Model / dependent variable

- ◆ M1: Contact restrictions
- ◆ M2: Wearing masks mandatorily at school
- ◆ M3: Mandatory testing at school
- ◆ M4: Alternating online and in classroom teaching
- ◆ M5: Vaccination mandatory
- ◆ M6: Keeping myself informed about COVID-19
- ◆ M7: Testing COVID-19 also during school holidays
- ◆ M8: Getting vaccinated against the Omicron variant
- ◆ M9: Wearing always a mask at school
- ◆ M10: Reducing private contacts

Annotation: depicted are b-coefficients + 90% and 95% confidence intervals from OLS-regressions (based on 10 MICE-imputations with robust standard errors) replicating the models M1-M10 from tables A3 and A4 for the subsample of those participants who had been infected with Covid-19 (N = 104). In addition to M1-M10 these models include a measure of the severity of certain Covid-19 symptoms (1 = no symptoms, 4 = severe symptoms). The graphs only include these symptom effects. The effects of all other variables in the models are not presented in order to facilitate interpretation. Reading example: an increase in the severity of fever symptoms by one unit is associated, ceteris paribus, with a 0.5 units higher approval of mandatory vaccination.