

Table S1. Adjusted associations between COVID-19 related public health restrictions and mental health

	<i>n</i>	Depression		Anxiety		Loneliness		Stress		Social Network		Positive Mental health	
		b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value
Public Health Restrictions													
Social distancing	550	REF		REF		REF		REF		REF		REF	
Stay at home	1462	0.320 (0.297)	0.282	0.491 (0.285)	0.085	-0.019 (0.067)	0.778	0.169 (0.111)	0.127	0.220 (0.105)	0.035	-0.058 (0.162)	0.718
Self-isolation	1040	1.427 (0.424)	<0.001	1.640 (0.440)	<0.001	0.082 (0.090)	0.364	0.250 (0.146)	0.086	0.084 (0.142)	0.557	-0.171 (0.226)	0.451

Adjusted for age, sex, race, smoking, physical activity, sitting time, screen time, relationship status, employment, and chronic illnesses. Education was excluded due to multicollinearity. b = adjusted unstandardized beta; SE = standard error.

Statistical significance set at $p < 0.00833$

Table S2. Adjusted associations between changes in behavior from before to after COVID-19 related public health restrictions including covariates with mental health outcomes

	<i>n</i>	Depression		Anxiety		Loneliness		Stress		Social Network		Positive Mental Health	
		b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value	b (SE)	<i>p</i> -value
Physical Activity													
Maintained high	798	REF		REF		REF		REF		REF		REF	
Increased	152	-0.505 (0.645)	0.434	0.066 (0.677)	0.923	0.001 (0.136)	0.996	-0.133 (0.244)	0.585	0.305 (0.222)	0.169	0.189 (0.345)	0.585
Decreased	563	1.960 (0.417)	<0.001	0.596 (0.411)	0.148	0.340 (0.096)	<0.001	0.522 (0.155)	<0.001	-0.269 (0.149)	0.072	-1.010 (0.230)	<0.001
Maintained low	1539	0.629 (0.318)	0.048	0.248 (0.320)	0.439	0.078 (0.075)	0.302	0.377 (0.124)	0.002	-0.389 (0.119)	0.001	-0.629 (0.182)	<0.001
Sitting Time													
Maintained low	1041	REF		REF		REF		REF		REF		REF	
Decreased	85	0.587 (0.972)	0.546	1.497 (0.944)	0.113	-0.067 (0.197)	0.728	-0.015 (0.329)	0.964	0.074 (0.273)	0.786	-0.122 (0.505)	0.809
Increased	582	0.918 (0.441)	0.037	0.946 (0.445)	0.034	0.195 (0.097)	0.045	0.253 (0.154)	0.102	-0.163 (0.149)	0.275	-0.673 (0.234)	0.005

Maintained high	1344	-0.199 (0.348)	0.566	-0.064 (0.344)	0.852	0.046 (0.078)	0.554	-0.068 (0.131)	0.604	-0.040 (0.126)	0.750	-0.036 (0.192)	0.853
Screen Time													
Maintained low	1512	REF		REF		REF		REF		REF		REF	
Decreased	45	-0.623 (1.095)	0.569	0.345 (1.203)	0.774	-0.495 (0.198)	0.013	-0.261 (0.468)	0.577	0.762 (0.393)	0.052	0.412 (0.641)	0.520
Increased	562	1.924 (0.441)	<0.001	1.341 (0.454)	0.003	0.340 (0.095)	<0.001	0.590 (0.154)	<0.001	-0.069 (0.145)	0.632	-0.920 (0.239)	<0.001
Maintained high	933	0.375 (0.392)	0.339	0.474 (0.375)	0.206	0.146 (0.085)	0.087	0.126 (0.137)	0.361	-0.156 (0.133)	0.243	-0.451 (0.202)	0.026
Public Health Restrictions													
Social distancing	550	REF		REF		REF		REF		REF		REF	
Stay at home	1462	0.320 (0.297)	0.282	0.491 (0.285)	0.085	-0.019 (0.067)	0.778	0.169 (0.111)	0.127	0.220 (0.105)	0.035	-0.058 (0.162)	0.718
Self-isolation	1040	1.427 (0.424)	<0.001	1.640 (0.440)	<0.001	0.082 (0.090)	0.364	0.250 (0.146)	0.086	0.084 (0.142)	0.557	-0.171 (0.226)	0.451
Age													
18–24	508	REF		REF		REF		REF		REF		REF	
25–34	470	-2.940 (0.712)	<0.001	-2.067 (0.715)	0.004	-0.158 (0.134)	0.238	-0.487 (0.216)	0.024	-0.400 (0.200)	0.045	0.892 (0.333)	0.007
35–44	419	-3.506 (0.754)	<0.001	-3.184 (0.731)	<0.001	-0.289 (0.146)	0.048	-0.642 (0.241)	0.008	-0.524 (0.220)	0.017	1.230 (0.367)	0.001
45–54	376	-5.132 (0.762)	<0.001	-4.211 (0.727)	<0.001	-0.466 (0.148)	0.002	-1.204 (0.244)	<0.001	-0.448 (0.229)	0.051	2.032 (0.374)	<0.001
55–64	474	-7.497 (0.731)	<0.001	-5.997 (0.694)	<0.001	-0.518 (0.149)	0.001	-1.793 (0.240)	<0.001	-0.465 (0.225)	0.039	3.386 (0.365)	<0.001
65–74	522	-8.571 (0.790)	<0.001	-6.299 (0.757)	<0.001	-0.604 (0.165)	<0.001	-2.374 (0.278)	<0.001	-0.386 (0.259)	0.136	4.444 (0.428)	<0.001
75+	283	-8.701 (0.822)	<0.001	-6.093 (0.795)	<0.001	-0.885 (0.189)	<0.001	-2.159 (0.315)	<0.001	-0.688 (0.291)	0.018	4.966 (0.489)	<0.001
Sex													
Male	1151	REF		REF		REF		REF		REF		REF	
Female	1897	1.658 (0.284)	<0.001	3.323 (0.259)	<0.001	0.218 (0.065)	0.001	0.622 (0.106)	<0.001	0.627 (0.104)	<0.001	-0.947 (0.163)	<0.001
Transgender	4	-0.825 (2.053)	0.688	4.484 (4.451)	0.314	-0.028 (0.325)	0.932	0.401 (1.043)	0.700	1.363 (0.810)	0.093	-0.244 (1.176)	0.836
Race													
White	2848	REF		REF		REF		REF		REF		REF	
Other	204	0.307 (0.652)	0.638	-0.178 (0.627)	0.776	0.115 (0.131)	0.380	-0.275 (0.200)	0.169	-0.329 (0.201)	0.102	0.073 (0.318)	0.819

Body Mass Index (per 1-unit increase)	3052	0.104 (0.028)	<0.001	0.059 (0.026)	0.023	0.008 (0.006)	0.152	-0.003 (0.009)	0.765	-0.024 (0.009)	0.007	0.006 (0.014)	0.690
Smoker													
Yes	80	REF		REF		REF		REF		REF		REF	
No	2972	-2.616 (1.021)	0.010	-2.908 (1.002)	0.004	-0.104 (0.187)	0.579	-0.353 (0.326)	0.279	0.258 (0.306)	0.399	0.959 (0.453)	0.034
Marital Status													
Married	2070	REF		REF		REF		REF		REF		REF	
Widowed	93	-0.655 (0.513)	0.202	-1.211 (0.497)	0.015	0.952 (0.194)	<0.001	-0.321 (0.257)	0.212	-0.505 (0.300)	0.093	-0.979 (0.394)	0.013
Separated/divorced	178	0.898 (0.551)	0.103	0.090 (0.493)	0.855	1.054 (0.153)	<0.001	-0.128 (0.216)	0.553	-0.577 (0.215)	0.007	-0.251 (0.289)	0.384
Never married	711	0.419 (0.481)	0.384	-0.184 (0.478)	0.700	0.966 (0.101)	<0.001	0.104 (0.159)	0.515	-0.641 (0.148)	<0.001	-0.621 (0.235)	0.008
Employment Status													
Employed	1767	REF		REF		REF		REF		REF		REF	
Retired	785	-0.326 (0.386)	0.399	-0.261 (0.354)	0.461	-0.032 (0.107)	0.765	-0.212 (0.182)	0.242	-0.393 (0.179)	0.028	-0.091 (0.270)	0.737
Other	403	1.729 (0.621)	0.005	1.800 (0.625)	0.004	0.060 (0.116)	0.606	0.78 (0.183)	<0.001	-0.005 (0.172)	0.979	-0.698 (0.287)	0.015
Unemployed	97	2.409 (1.005)	0.017	0.705 (1.030)	0.494	0.326 (0.191)	0.089	1.551 (0.289)	<0.001	-0.973 (0.283)	0.001	-1.477 (0.453)	0.001
Chronic Illnesses													
0	2163	REF		REF		REF		REF		REF		REF	
1	263	1.669 (0.537)	0.002	1.811 (0.529)	0.001	0.161 (0.110)	0.141	0.669 (0.185)	<0.001	-0.239 (0.171)	0.161	-0.900 (0.270)	0.001
2+	626	2.859 (0.362)	<0.001	3.177 (0.339)	<0.001	0.378 (0.081)	<0.001	0.719 (0.131)	<0.001	-0.204 (0.121)	0.091	-1.160 (0.198)	<0.001

b = adjusted unstandardized beta; SE = standard error.

Table S3. Tests of interactions between public health restrictions and physical activity change, sitting time change, and screen time change derived from linear regressions

Interaction Term	Depression		Anxiety		Loneliness		Stress		Social Network		Positive Mental Health	
	F _(6, 3022)	p-value	F _(6, 3022)	p-value	F _(6, 3022)	p-value	F _(6, 3022)	p-value	F _(6, 3022)	p-value	F _(6, 3022)	p-value
Public health restrictions X												
Physical activity change	0.54	0.775	0.21	0.973	0.64	0.702	0.35	0.911	0.95	0.459	0.25	0.960
Sitting time change	1.00	0.422	0.39	0.888	2.01	0.061	1.51	0.170	1.49	0.179	1.02	0.407
Screen time change	1.39	0.215	1.47	0.183	2.17	0.043	3.30	0.003	0.35	0.911	2.64	0.015

Statistical significance set at $p < 0.00278$