

Appendix Table A1. Questions and qualifying responses for adverse childhood experiences (ACEs), COVID-19 and health variables

	Question (response options)	Qualifying response
ACEs	All ACE questions were preceded by the statement “While you were growing up, before the age of 18...”	
<i>Physical abuse</i>	How often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? This does not include gentle smacking for punishment. (<i>never; once; more than once; prefer not to say</i>)	Once or more than once
<i>Verbal abuse</i>	How often did a parent or adult in your home ever swear at you, insult you, or put you down? (<i>never; once; more than once; prefer not to say</i>)	More than once
<i>Sexual abuse</i>	Did an adult or someone at least five years older than you sexually abuse you by touching you or making you undertake any sexual activity with them? (<i>yes; no; prefer not to say</i>)	Yes
<i>Parental separation</i>	Were your parents ever separated or divorced? (<i>yes; no; prefer not to say</i>)	Yes
<i>Domestic violence</i>	How often did your parents or adults in your home ever slap, hit, kick, punch, or beat each other up? (<i>never; once; more than once; prefer not to say</i>)	Once or more than once
<i>Mental illness</i>	Did you live with anyone who was depressed, mentally ill or suicidal? (<i>yes; no; prefer not to say</i>)	Yes
<i>Alcohol abuse</i>	Did you live with anyone who was a problem drinker or alcoholic? (<i>yes; no; prefer not to say</i>)	Yes
<i>Drug abuse</i>	Did you live with anyone who used illegal street drugs or abused prescription medications? (<i>yes; no; prefer not to say</i>)	Yes
<i>Incarceration</i>	Did you live with anyone who served time or was sentenced to serve time in a prison or young offenders' institution? (<i>yes; no; prefer not to say</i>)	Yes
COVID-19		
<i>Low trust in NHS COVID-19 information</i>	On a scale of 0 to 10 where 0 is not at all and 10 is completely, how much would you trust information about Coronavirus from the NHS? (<i>0-10</i>)	0 to 5
<i>Unfairly restricted a lot by government</i>	During the coronavirus pandemic do you feel you have been unfairly controlled by – the national restrictions imposed by the government? (<i>no; yes, a little; yes, a lot</i>)	Yes – a lot
<i>Mandatory face coverings should go</i>	Do you think that wearing face coverings in shops should continue to be a legal requirement? (<i>no; yes</i>)	No
<i>Social distancing should end</i>	Social distancing is currently set at 2 metres. Do you think social distancing should remain in place or be removed? (<i>remain in place; be removed</i>)	Be removed
<i>Break restrictions at least occasionally</i>	During lockdown or local restrictions have you....? (<i>always followed the advice; bent or broken the rules occasionally; largely ignored the rules</i>)	Occasionally bent or broken or ignored
<i>Vaccine hesitancy</i>	If you were offered a coronavirus vaccination, would you want to be vaccinated (<i>Yes; already been vaccinated; no; unsure</i>)?	No or unsure
<i>Had COVID-19</i>	Do you think you have had coronavirus? (or currently have it) (<i>yes; no; don't know</i>)	Yes
Health		
<i>Chronic disease</i>	Have you ever been told by a doctor or nurse that you have the following conditions, and if so, how old were you when you were first diagnosed? cancer, type 2 diabetes, heart disease (coronary heart disease, heart attack or stroke), or respiratory disease (chronic bronchitis, emphysema, chronic obstructive pulmonary disease, asthma) (<i>no; yes; prefer not to say</i>)	Yes to one or more

Appendix Table A2. Proportion within adverse childhood experience (ACE) count categories by participant characteristics

		n	0 ACEs	1 ACE	2-3 ACEs	4+ ACEs	X ²	P
All		2285	51.86	21.40	16.46	10.28		
Age (years)	18-29	174	32.76	25.29	24.14	17.82		
	30-39	239	35.98	23.43	22.18	18.41		
	40-49	371	50.67	18.06	19.14	12.13		
	50-59	543	50.83	21.55	17.31	10.31		
	60-69	447	53.69	22.15	15.44	8.72		
	70+	511	66.14	20.74	9.20	3.91	125.204	<0.001
Deprivation quintile	Least 1	495	53.33	24.04	14.34	8.28		
	2	509	56.19	21.22	13.36	9.23		
	3	490	53.27	22.65	16.53	7.55		
	4	437	49.43	20.59	17.62	12.36		
	Most 5	354	44.63	17.23	22.32	15.82	41.746	<0.001
Sex	Male	806	52.48	21.46	17.49	8.56		
	Female	1479	51.52	21.37	15.89	11.22	4.509	0.212
Ethnicity	White	2254	52.04	21.43	16.37	10.16		
	Other	31	38.71	19.35	22.58	19.35	4.340	0.227
Had COVID-19 [§]	No	1837	53.57	21.18	15.79	9.47		
	Yes	448	44.87	22.32	19.20	13.62	14.036	0.003
Chronic disease [¶]	No	1488	52.22	21.44	16.60	9.74		
	Yes	797	51.19	21.33	16.19	11.29	1.371	0.712

[§]Having had COVID-19 was self-reported, see methods. [¶]Chronic diseases included cancer, type II diabetes, heart disease and respiratory diseases, see methods for details. Full wording of all questions is provided in Appendix Table A1.

Appendix Table A3. Modelled estimates of means and confidence intervals for having broken COVID-19 restrictions at least occasionally (%) and vaccine hesitancy (%) by age and adverse childhood experience (ACE) count

Age (years)	ACE count	Break restrictions at least occasionally			Vaccine hesitancy		
		95% CIs			95% CIs		
		EMM	Lower	Upper	EMM	Lower	Upper
18-29	0	34.95	24.15	47.55	16.52	9.32	27.58
	1	41.94	29.77	55.17	20.39	11.53	33.46
	2-3	44.31	31.79	57.59	23.63	13.77	37.49
	4+	51.95	38.34	65.27	38.06	24.08	54.35
30-39	0	26.05	17.39	37.08	13.95	7.83	23.62
	1	32.13	21.85	44.49	17.34	9.68	29.11
	2-3	34.28	23.50	46.97	20.22	11.60	32.85
	4+	41.48	29.13	54.99	33.48	20.75	49.18
40-49	0	20.92	13.99	30.09	9.24	5.16	16.00
	1	26.24	17.61	37.18	11.64	6.28	20.57
	2-3	28.15	19.07	39.46	13.73	7.61	23.52
	4+	34.74	23.86	47.50	24.01	14.09	37.84
50-59	0	19.10	12.82	27.49	7.48	4.19	12.99
	1	24.10	16.24	34.21	9.47	5.14	16.79
	2-3	25.91	17.53	36.52	11.22	6.20	19.45
	4+	32.21	22.01	44.45	20.06	11.58	32.46
60-69	0	17.01	11.17	25.04	5.43	2.85	10.12
	1	21.60	14.21	31.41	6.92	3.51	13.20
	2-3	23.28	15.35	33.68	8.24	4.22	15.48
	4+	29.19	19.41	41.37	15.14	8.03	26.73
70+	0	10.67	6.72	16.53	3.42	1.66	6.93
	1	13.84	8.64	21.42	4.38	2.03	9.20
	2-3	15.03	9.33	23.33	5.25	2.43	10.96
	4+	19.38	12.02	29.73	9.91	4.68	19.77

CIs = Confidence Intervals; EMM = Estimated Marginal Mean.