**Risky social mixing**

*9 August 2021*

**Executive summary**

Aim: To develop a composite measure for risky social mixing, and investigate risky social mixing over time, and factors associated with risky social mixing.

Sample: Twenty-five waves (14 September 2020 to 16 June 2021) of online national surveys, part of the CORSAIR study (methodological details are in Smith *et al* (1)). We limited the sample to people living in England, as other nations followed different restrictions. This timespan covered multiple changes in restrictions.

Risky social mixing: We developed a composite measure based on people’s latest instance of social mixing. Where people reported that they had not met friends or family from other households in the last week, we categorised people as “no risk”. We categorised those who had met people from other households as engaging in “lowest risk,” “medium risk,” or “highest risk” social mixing based on: the setting (exclusively outdoors / mostly outdoors / indoors), whether they came into contact with others (distanced / not distanced), how many households were present (including own household, two / three or more), how many people from other households were present (two or fewer / three or more; Table 2).

As highest risk social mixing as defined by our measure was illegal under some of the restrictions, we analysed data from five different timepoints separately (rule of six indoors and outdoors, September 2020; second national lockdown, November 2020; third national lockdown, January 2021; rule of six outdoors, no indoor social mixing, April-May 2021; rule of six indoors, up to 30 people outdoors, June 2021). We will analyse associations with risky social mixing after 19 July 2021 once more waves of data are available to us.

Results:

* Social mixing broadly decreases when restrictions are in place (Figure 1).
	+ This is in line with other analyses of changes in social contacts (2).
* Engaging in highest risk social mixing varied strongly over time.
* Engaging in highest risk social mixing was associated with:
	+ at all timepoints:
		- being younger
		- lower worry about COVID-19, lower perceived risk of COVID-19 (to oneself and people in the UK)
		- lower perceived severity of COVID-19
		- thinking the risks of COVID-19 were being exaggerated
		- not agreeing that one’s personal behaviour had an impact on how COVID-19 spreads
		- not agreeing that information from the Government about COVID-19 can be trusted (no association with thinking that information from the Government about COVID-19 was biased or one-sided)
	+ at some timepoints:
		- not agreeing that you would worry what others thought of you if you tested positive for COVID-19
		- not agreeing that someone can spread COVID-19 to other people even if they do not have symptoms yet

These data are shown in Table 4.

Conclusions:

* We have developed a composite measure for risky social mixing based on setting, contact, number of households and number of people from other households.
* Patterns of social mixing were strongly associated with timings of restrictions on behaviours, demonstrating good predictive validity of the measure.
* Greater perceived worry about COVID-19, perceived risk and perceived severity of COVID-19 are strongly associated with not engaging in risky social mixing.

**Main report**

Since the start of the COVID-19 outbreak, DHSC have been tracking behaviours that affect transmission. Reporting has so far focused on individual behaviours. We have detailed information on participants’ latest social contact (setting, whether they maintained distance from others, how many other households they mixed with, how many people from other households were present). As restrictions have differed between nations (e.g. different timings of national lockdowns), we have focused our analyses on participants living in England. The aims of this analysis were:

1. To develop a composite measure for risky social mixing based on most recent social mixing, taking into account setting, close contact, number of households, and number of people from other households.
2. To describe change over time in the percentage of people engaging in risky social mixing.
3. To identify who is most likely to engage in risky social mixing, and whether psychological factors are associated with risky social mixing.

Aim 1 – to develop a measure for risky social mixing based on participants’ most recent social meeting with friends or family they did not live with.

* In each survey wave, participants are asked how many times they have been out to meet friends and family they do not live with in the last week. Everyone who indicates they have been out at least once to meet up with friends or family is asked a series of follow-up questions about their most recent social meeting (setting, whether they came into close contact with others, the total number of households, and how many people from other households were present.
* We assigned each of these variables a risk level (Table 1).

Table 1. Factors to consider when computing risky social mixing variable.

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Question text | Response options | Risk level |
| Setting (indoors / outdoors) | And still thinking about only the last occasion you met up with friends and/or family, were you indoors or outdoors?*[People in wave 44 were asked a slightly different version of this question. Therefore, we have excluded them from analyses.]* | Exclusively outdoors | Lowest (“exclusively outdoors”) |
| Mostly outdoors | Medium (“mostly outdoors”) |
| Equally split between indoors and outdoors | Highest (“indoors”) |
| Mostly indoors | Highest (“indoors”) |
| Exclusively indoors | Highest (“indoors”) |
| Close contact | Again, thinking about the last occasion you met with friends and/or family that you don’t live with, did people stay at least 2m apart? | Yes, at all times | Lowest (“distanced”) |
| Yes, most of the time | Lowest (“distanced”) |
| Yes, some of the time | Highest (“not distanced”) |
| No – not at all | Highest (“not distanced”) |
| Total number of households | The last time you met with friends and/ or family that you don’t live with, how many households (not people) did those people come from? Don’t include your own household in this number. | Scale | Question + 1 (to include own household) |
|  | Lowest (“2”) |
|  | Highest (“3+”) |
| Number of people from other households | And still thinking about the last time you met friends and/or family that you don’t live with, how many people from outside your household were there? | Scale | Lowest (“≤2”) |
|  | Highest (“≥3”) |

* We then used these risk levels to compute a “risky social mixing” variable (scores = no risk [not been out to meet friends/family in last week], lowest risk, medium risk, highest risk) (Table 2).

Table 2. Proposed risk ratings

|  |  |  |
| --- | --- | --- |
| Number of meetings in last week | 0 | 1+ |
| Setting |  | Exclusively outdoors | Mostly outdoors | Indoors |
| Close contact |  | Distanced | Not distanced | Distanced | Not distanced | Distanced | Not distanced |
| Total number of households |  | 2 | 3+ | 2 | 3+ | 2 | 3+ | 2 | 3+ | 2 | 3+ | 2 | 3+ |
| Number of people from other households |  | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 | ≤2 | ≥3 |
| RISK | No | Low | Low | Low | Low | Low | Low | Med | Med | Low | Med | Med | Med | Med | Med | High | High | Med | High | High | High | High | High | High | High |

Aim 2 – to describe change over time in the percentage of people engaging in risky social mixing.

* We charted risky social mixing over the course of the pandemic (Figure 1).



Figure 1. Risky social mixing over time.

Aim 3 – to identify who is most likely to engage in risky social mixing.

* We investigated personal and clinical characteristics associated with engaging in the highest risk social mixing.

Table 3. Personal and clinical characteristics associated with engaging in highest risk social mixing.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute | Level | Did not engage in highest risk social mixing n=35,001, n (%) | Engaged in highest risk social mixing n=4,399, n (%) | aOR for engaging in highest risk social mixing (95% CI) † | *p* |
| Survey wave | Wave 28 | 1,381 (80.3) | 338 (19.7) | Ref | - |
| Wave 29 | 1,382 (81.2) | 320 (18.8) | 0.92 (0.77 to 1.10) | .37 |
| Wave 30 | 1,421 (79.8) | 359 (20.2) | 1.00 (0.84 to 1.19) | 1.00 |
| Wave 32 | 1,582 (92.4) | 131 (7.6) | 0.31 (0.25 to 0.39) | <.001 |
| Wave 33 | 1,665 (93.6) | 114 (6.4) | 0.27 (0.21 to 0.34) | <.001 |
| Wave 34 | 1,625 (93.9) | 106 (6.1) | 0.25 (0.20 to 0.32) | <.001 |
| Wave 35 | 1,648 (92.6) | 131 (7.4) | 0.32 (0.26 to 0.40) | <.001 |
| Wave 36 | 1,613 (90.7) | 166 (9.3) | 0.40 (0.33 to 0.49) | <.001 |
| Wave 37 | 1,542 (91.0) | 152 (9.0) | 0.39 (0.32 to 0.48) | <.001 |
| Wave 38 | 1,554 (91.4) | 147 (8.6) | 0.38 (0.30 to 0.47) | <.001 |
| Wave 39 | 1,444 (83.2) | 292 (16.8) | 0.82 (0.68 to 0.99) | .04 |
| Wave 40 | 1,606 (92.4) | 132 (7.6) | 0.31 (0.25 to 0.39) | <.001 |
| Wave 41 | 1,641 (96.1) | 67 (3.9) | 0.15 (0.12 to 0.20) | <.001 |
| Wave 42 | 1,654 (96.6) | 58 (3.4) | 0.13 (0.10 to 0.18) | <.001 |
| Wave 43 | 1,616 (95.3) | 80 (4.7) | 0.20 (0.15 to 0.26) | <.001 |
| Wave 45 | 1,604 (93.6) | 109 (6.4) | 0.26 (0.21 to 0.33) | <.001 |
| Wave 46 | 1,610 (93.0) | 121 (7.0) | 0.28 (0.22 to 0.35) | <.001 |
| Wave 47 | 1,522 (91.4) | 144 (8.6) | 0.38 (0.31 to 0.48) | <.001 |
| Wave 48 | 1,508 (90.7) | 154 (9.3) | 0.38 (0.31 to 0.47) | <.001 |
| Wave 49 | 1,426 (87.2) | 210 (12.8) | 0.58 (0.47 to 0.70) | <.001 |
| Wave 50 | 1,412 (85.1) | 247 (14.9) | 0.67 (0.55 to 0.80) | <.001 |
| Wave 51 | 1,265 (74.5) | 432 (25.5) | 1.36 (1.14 to 1.61) | .001 |
| Wave 52 | 1,281 (76.7) | 389 (23.3) | 1.21 (1.02 to 1.43) | .03 |
| Overall | - | - | χ2(22)=1,319.9 | <.001 |
| Region | East Midlands | 3,178 (88.9) | 396 (11.1) | Ref | - |
| East of England | 4,103 (89.7) | 469 (10.3) | 0.92 (0.79 to 1.08) | .31 |
| London | 4,909 (88.3) | 652 (11.7) | 0.93 (0.80 to 1.09) | .38 |
| North East | 1,842 (88.7) | 234 (11.3) | 1.03 (0.85 to 1.25) | .77 |
| North West | 4,655 (89.7) | 533 (10.3) | 0.88 (0.75 to 1.02) | .10 |
| South East | 5,437 (89.2) | 659 (10.8) | 0.95 (0.82 to 1.11) | .53 |
| South West | 3,572 (88.4) | 469 (11.6) | 1.04 (0.89 to 1.22) | .63 |
| West Midlands | 3,582 (88.2) | 480 (11.8) | 1.01 (0.86 to 1.18) | .94 |
| Yorkshire and The Humber | 3,724 (88.0) | 507 (12.0) | 1.04 (0.89 to 1.21) | .64 |
| Overall | - | - | χ2(8)=9.7 | .28 |
| Gender | Male | 16,178 (89.0) | 1,993 (11.0) | Ref | - |
| Female | 18,720 (88.7) | 2,394 (11.3) | 0.98 (0.91 to 1.05) | .50 |
| Age (per decade) | Raw age | N=35,002, M=49.0, SD=17.1 | N=4,399, M=45.1, SD=18.0 | 0.87 (0.84 to 0.89) | <.001 |
| Age: quadratic (age-mean)2 | - | - | - | 1.0004 (1.0003 to 1.0005) | <.001 |
| Dependent child in household | None | 23,750 (89.3) | 2,851 (10.7) | Ref | - |
| Child present | 11,252 (87.9) | 1,548 (12.1) | 1.09 (1.00 to 1.19) | .04 |
| Chronic illness (self) | No | 24,303 (88.5) | 3,160 (11.5) | Ref | - |
| Yes | 9,900 (89.8) | 1,127 (10.2) | 0.94 (0.86 to 1.02) | .13 |
| Household member has chronic illness | No | 28,564 (88.7) | 3,642 (11.3) | Ref | - |
| Yes | 5,639 (89.7) | 645 (10.3) | 1.03 (0.93 to 1.14) | .55 |
| Employment status | Not working | 15,577 (89.2) | 1,886 (10.8) | Ref | - |
| Working | 18,918 (88.5) | 2,454 (11.5) | 0.96 (0.88 to 1.04) | .31 |
| Socio-economic grade‡ | ABC1 | 24,372 (89.4) | 2,904 (10.6) | Ref | - |
| C2DE | 9,839 (87.6) | 1,397 (12.4) | 1.13 (1.04 to 1.22) | .003 |
| Index of multiple deprivation | 1st (least) to 4th quartile (most deprived) | N=35,002, M=2.6, SD=1.1 | N=4,399, M=2.7, SD=1.1 | 0.98 (0.94 to 1.01) | .17 |
| Highest educational or professional qualification | Less than degree | 23,300 (88.7) | 2,963 (11.3) | Ref | - |
| Degree or higher  | 11,702 (89.1) | 1,436 (10.9) | 0.96 (0.89 to 1.04) | .35 |
| Ethnicity | White British | 29,118 (89.3) | 3,486 (10.7) | Ref | - |
| White other | 2,203 (85.0) | 390 (15.0) | 1.32 (1.12 to 1.56) | .001 |
| Mixed | 806 (87.2) | 118 (12.8) | 1.02 (0.81 to 1.28) | .88 |
| Asian / Asian / British | 1754 (88.6) | 226 (11.4) | 0.95 (0.80 to 1.13) | .58 |
| Black / Black British | 741 (85.3) | 128 (14.7) | 1.26 (1.00 to 1.57) | .05 |
| Arab / Other | 175 (86.2) | 28 (13.8) | 1.23 (0.77 to 1.96) | .39 |
| Prefer not to say | 205 (89.9) | 23 (10.1) | 1.01 (0.53 to 1.92) | .98 |
| Overall | - | - | χ2(6)=16.4 | .01 |
| First language | Not English | 2,973 (86.6) | 460 (13.4) | Ref | - |
| English | 32,029 (89.0) | 3,939 (11.0) | 1.05 (0.90 to 1.22) | .56 |
| Living alone | Not living alone | 28,256 (89.5) | 3,326 (10.5) | Ref | - |
| Living alone | 6,746 (86.3) | 1,073 (13.7) | 1.54 (1.38 to 1.73) | <.001 |
| Partnership status | Not partnered | 13,330 (86.7) | 2,042 (13.3) | Ref | - |
| Partnered | 21,318 (90.3) | 2,288 (9.7) | 0.89 (0.82 to 0.98) | .01 |
| Ever had COVID-19 | Think not | 29,502 (89.2) | 3,573 (10.8) | Ref | - |
| Think yes | 5,500 (86.9) | 826 (13.1) | 1.09 (0.99 to 1.20) | .09 |
| Financial hardship | Range 3 (least) to 15 (most) | N=33,861, M=7.8, SD=3.0 | N=4,268, M=7.9, SD=3.0 | 0.98 (0.96 to 0.99) | <.001 |
| Been out to work in last week | No | 24,168 (90.3) | 2,608 (9.7) | Ref | - |
| Yes | 10,834 (85.8) | 1,791 (14.2) | 1.35 (1.24 to 1.48) | <.001 |
| Worry about COVID-19 | 5-point scale (1=not at all worried to 5=extremely worried) | N=34,893, M=3.5, SD=1.1 | N=4,382, M=3.0, SD=1.2 | 0.70 (0.67 to 0.72) | <.001 |
| Perceived risk of COVID-19 to self | 5-point scale (1=no risk at all to 5=major risk) | N=34,572, M=3.2, SD=1.1 | N=4,344, M=2.7, SD=1.1 | 0.74 (0.71 to 0.76) | <.001 |
| Perceived risk of COVID-19 to people in the UK | 5-point scale (1=no risk at all to 5=major risk) | N=34,603, M=3.8, SD=1.0 | N=4,334, M=3.4, SD=1.0 | 0.73 (0.70 to 0.76) | <.001 |
| Coronavirus would be a serious illness for me | 5-point scale (1=strongly disagree to 5=strongly agree) | N=34,077, M=3.6, SD=1.1 | N=4,275, M=3.1, SD=1.2 | 0.73 (0.71 to 0.76) | <.001 |
| I would worry about what others would think of me if I tested positive for coronavirus | 5-point scale (1=strongly disagree to 5=strongly agree) | N=34,725, M=2.6, SD=1.2 | N=4,365, M=2.5, SD=1.2 | 0.89 (0.86 to 0.92) | <.001 |
| Someone could spread coronavirus to other people, even if they do not have symptoms yet | 5-point scale (1=strongly disagree to 5=strongly agree) | N=34,667, M=4.4, SD=0.8 | N=4,356, M=4.1, SD=0.9 | 0.78 (0.75 to 0.81) | <.001 |
| My personal behaviour has an impact on how coronavirus spreads | 5-point scale (1=strongly disagree to 5=strongly agree) | N=34,689, M=4.0, SD=1.0 | N=4,358, M=3.7, SD=1.1 | 0.79 (0.77 to 0.82) | <.001 |
| I think the risks of coronavirus are being exaggerated | 5-point scale (1=strongly disagree to 5=strongly agree) | N=34,667, M=2.3, SD=1.2 | N=4,355, M=2.7, SD=1.3 | 1.28 (1.24 to 1.32) | <.001 |
| Information from the Government about coronavirus can be trusted | 5-point scale (1=strongly disagree to 5=strongly agree) | N=34,331, M=3.3, SD=1.1 | N=4,324, M=3.0, SD=1.2 | 0.82 (0.79 to 0.85) | <.001 |
| Information from the Government about coronavirus is biased or one-sided | 5-point scale (1=strongly disagree to 5=strongly agree) | N=33,967, M=3.1, SD=1.1 | N=4,269, M=3.3, SD=1.1 | 1.10 (1.06 to 1.13) | <.001 |

† Adjusting for wave, region, gender, age (raw and quadratic), presence of a dependent child in the household, having a chronic illness oneself, having a household member who has chronic illness, employment status, socio-economic grade, index of multiple deprivation, highest educational or professional qualification, ethnicity, first language, living alone, partnership status, having had COVID-19 before, and financial hardship.

There was a large influence of time on engagement in highest risk social mixing. National lockdowns mean that at different time points, risky social mixing was illegal. Different people may have been likely to engage in those risky behaviours in different time slices. Therefore, we investigated personal and clinical characteristics associated with highest risk social mixing at different time points within the pandemic separately (Table 4). Time points were:

1. Rule of 6 indoors and outdoors. 14 to 30 September 2020.
	1. 19.2% (95% CI 17.9% to 20.6%, n=658/3421) of participants’ most recent social mixing was categorised as highest risk.
2. Second national lockdown. 9 to 25 November 2020.
	1. 6.7% (95% CI 6.0% to 7.4%, n=351/5223) of participants’ most recent social mixing was categorised as highest risk.
3. Third national lockdown. 11 January to 14 February 2021.
	1. 4.0% (95% CI 3.5% to 4.5%, n=205/5116) of participants’ most recent social mixing was categorised as highest risk.
4. Rule of 6 outdoors, no indoor mixing. 19 April to 5 May 2021.
	1. 11.0% (95% CI 10.0% to 12.%, n=364/3298) of participants’ most recent social mixing was categorised as highest risk.
5. Rule of 6 indoors, up to 30 people outdoors. 1 to 16 June 2021.
	1. 24.4% (95% CI 22.9% to 25.8%, n=821/3367) of participants’ most recent social mixing was categorised as highest risk.

Table 4. Personal and clinical characteristics associated with engaging in highest risk social mixing at different time points in the pandemic.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Rule of 6 indoors and outdoors | Second national lockdown | Third national lockdown | Rule of 6 outdoors, no indoor mixing | Rule of 6 indoors, up to 30 people outdoors |
| Attribute | Level | aOR for engaging in highest risk social mixing (95% CI) † | *p* | aOR for engaging in highest risk social mixing (95% CI) † | *p* | aOR for engaging in highest risk social mixing (95% CI) † | *p* | aOR for engaging in highest risk social mixing (95% CI) † | *p* | aOR for engaging in highest risk social mixing (95% CI) † | *p* |
| Survey wave in timepoint | Wave 1 | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Wave 2 | 0.93 (0.77 to 1.11) | .40 | 0.85 (0.64 to 1.12) | .25 | 0.82 (0.55 to 1.21) | .32 | 1.57 (1.24 to 1.99) | <.001 | 0.87 (0.73 to 1.02) | .09 |
| Wave 3 | - | - | 0.81 (0.61 to 1.08) | .16 | 1.25 (0.88 to 1.79) | .22 | - | - | - | - |
| Overall | - | - | χ2(2)=2.3 | .32 | χ2(2)=5.0 | .08 | - | - | - | - |
| Region | East Midlands | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| East of England | 0.93 (0.62 to 1.40) | .74 | 1.50 (0.91 to 2.47) | .11 | 0.98 (0.48 to 2.02) | .96 | 1.20 (0.71 to 2.02) | .50 | 1.09 (0.76 to 1.57) | .64 |
| London | 0.90 (0.61 to 1.34) | .61 | 1.02 (0.62 to 1.70) | .93 | 1.07 (0.55 to 2.07) | .84 | 1.11 (0.66 to 1.85) | .70 | 0.99 (0.69 to 1.44) | .97 |
| North East | 0.91 (0.55 to 1.49) | .70 | 0.79 (0.39 to 1.60) | .52 | 1.11 (0.47 to 2.63) | .81 | 1.28 (0.68 to 2.40) | .45 | 1.64 (1.07 to 2.52) | .02 |
| North West | 0.59 (0.39 to 0.89) | .01 | 0.85 (0.49 to 1.45) | .54 | 1.34 (0.69 to 2.61) | .39 | 0.80 (0.47 to 1.38) | .43 | 0.89 (0.62 to 1.29) | .55 |
| South East | 0.87 (0.60 to 1.28) | .49 | 1.14 (0.69 to 1.88) | .60 | 1.00 (0.51 to 1.97) | 1.00 | 1.62 (1.00 to 2.64) | .05 | 0.89 (0.63 to 1.26) | .51 |
| South West | 1.22 (0.82 to 1.82) | .32 | 1.03 (0.59 to 1.79) | .92 | 0.65 (0.28 to 1.47) | .30 | 1.26 (0.74 to 2.16) | .40 | 1.06 (0.73 to 1.54) | .74 |
| West Midlands | 0.89 (0.60 to 1.33) | .57 | 1.29 (0.77 to 2.16) | .33 | 1.38 (0.70 to 2.74) | .35 | 1.03 (0.60 to 1.77) | .91 | 1.22 (0.84 to 1.76) | .30 |
| Yorkshire and The Humber | 0.94 (0.63 to 1.40) | .76 | 1.15 (0.68 to 1.95) | .60 | 1.43 (0.73 to 2.79) | .30 | 1.28 (0.76 to 2.17) | .36 | 1.18 (0.82 to 1.71) | .37 |
| Overall | χ2(8)=14.1 | .08 | χ2(8)=8.6 | .38 | χ2(8)=6.6 | .58 | χ2(8)=10.8 | .21 | χ2(8)=13.7 | .09 |
| Gender | Male | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Female | 1.09 (0.90 to 1.31) | .38 | 0.80 (0.63 to 1.01) | .06 | 0.58 (0.42 to 0.79) | .001 | 0.85 (0.67 to 1.07) | .17 | 1.11 (0.93 to 1.31) | .24 |
| Age (per decade) | Raw age | 0.89 (0.83 to 0.95) | .001 | 0.88 (0.80 to 0.96) | .004 | 0.84 (0.75 to 0.94) | .003 | 0.86 (0.79 to 0.94) | .001 | 0.92 (0.86 to 0.98) | .01 |
| Age: quadratic (age-mean)2 | - | 1.0004 (1.0000 to 1.0007) | .03 | 1.0004 (0.9999 to 1.0008) | .09 | 1.0005 (0.9999 to 1.0010) | .09 | 1.0008 (1.0003 to 1.0012) | <.001 | 1.0002 (0.9999 to 1.0005) | .29 |
| Dependent child in household | None | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Child present | 1.08 (0.87 to 1.35) | .49 | 1.16 (0.87 to 1.55) | .30 | 1.21 (0.83 to 1.77) | .31 | 1.16 (0.88 to 1.55) | .30 | 1.02 (0.83 to 1.26) | .85 |
| Chronic illness (self) | No | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Yes | 0.8 (0.65 to 1.00) | .05 | 0.78 (0.58 to 1.04) | .09 | 1.33 (0.94 to 1.89) | .11 | 0.88 (0.66 to 1.16) | .37 | 1.04 (0.86 to 1.26) | .70 |
| Household member has chronic illness | No | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Yes | 0.86 (0.66 to 1.12) | .27 | 1.12 (0.81 to 1.56) | .50 | 0.96 (0.61 to 1.53) | .87 | 0.81 (0.56 to 1.16) | .24 | 0.98 (0.77 to 1.25) | .89 |
| Employment status | Not working | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Working | 0.96 (0.77 to 1.19) | .70 | 0.76 (0.58 to 1.00) | .05 | 1.21 (0.83 to 1.76) | .32 | 0.90 (0.68 to 1.19) | .45 | 0.90 (0.74 to 1.10) | .31 |
| Socio-economic grade‡ | ABC1 | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| C2DE | 1.16 (0.94 to 1.43) | .16 | 1.02 (0.78 to 1.33) | .90 | 1.17 (0.83 to 1.65) | .38 | 1.22 (0.94 to 1.58) | .14 | 0.92 (0.75 to 1.12) | .39 |
| Index of multiple deprivation | 1st (least) to 4th quartile (most deprived) | 1.04 (0.95 to 1.13) | .43 | 1.06 (0.95 to 1.19) | .30 | 1.07 (0.92 to 1.24) | .37 | 1.14 (1.02 to 1.29) | .02 | 0.95 (0.88 to 1.03) | .20 |
| Highest educational or professional qualification | Less than degree | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Degree or higher  | 0.98 (0.79 to 1.20) | .83 | 0.81 (0.62 to 1.05) | .11 | 1.10 (0.79 to 1.54) | .57 | 0.95 (0.73 to 1.24) | .70 | 0.99 (0.82 to 1.20) | .92 |
| Ethnicity | White British | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| White other | 1.15 (0.74 to 1.81) | .53 | 1.71 (1.06 to 2.78) | .03 | 1.09 (0.56 to 2.12) | .80 | 1.43 (0.87 to 2.35) | .15 | 1.04 (0.68 to 1.60) | .85 |
| Black and minority ethnicity | 0.82 (0.57 to 1.20) | .31 | 1.60 (1.09 to 2.35) | .02 | 1.34 (0.82 to 2.21) | .24 | 1.18 (0.80 to 1.73) | .40 | 0.82 (0.61 to 1.12) | .22 |
| Overall | χ2(2)=1.9 | .39 | χ2(2)=8.0 | .02 | χ2(2)=1.4 | .50 | χ2(2)=2.2 | .33 | χ2(2)=1.8 | .41 |
| First language | Not English | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| English | 1.23 (0.79 to 1.91) | .36 | 1.23 (0.77 to 1.96) | .38 | 0.76 (0.43 to 1.33) | .33 | 1.18 (0.74 to 1.89) | .48 | 1.09 (0.75 to 1.60) | .66 |
| Living alone | Not living alone | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Living alone | 1.16 (0.86 to 1.57) | .34 | 1.59 (1.10 to 2.30) | .01 | 1.96 (1.27 to 3.01) | .002 | 1.61 (1.11 to 2.33) | .01 | 1.14 (0.86 to 1.50) | .36 |
| Partnership status | Not partnered | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Partnered | 0.83 (0.65 to 1.05) | .12 | 0.82 (0.60 to 1.12) | .21 | 0.49 (0.33 to 0.72) | <.001 | 0.87 (0.64 to 1.17) | .36 | 1.12 (0.89 to 1.40) | .33 |
| Ever had COVID-19 | Think not | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Think yes | 1.08 (0.84 to 1.40) | .55 | 0.95 (0.68 to 1.33) | .75 | 1.50 (1.05 to 2.16) | .03 | 1.20 (0.90 to 1.60) | .22 | 1.06 (0.84 to 1.32) | .64 |
| Financial hardship | Range 3 (least) to 15 (most) | 0.94 (0.91 to 0.98) | .001 | 1.01 (0.97 to 1.06) | .54 | 0.98 (0.93 to 1.04) | .52 | 0.99 (0.95 to 1.03) | .66 | 0.95 (0.92 to 0.98) | .001 |
| Been out to work in last week | No | Ref | - | Ref | - | Ref | - | Ref | - | Ref | - |
| Yes | 1.34 (1.06 to 1.68) | .01 | 1.14 (0.86 to 1.52) | .37 | 1.76 (1.23 to 2.53) | .002 | 1.74 (1.30 to 2.34) | <.001 | 1.23 (1.00 to 1.51) | .06 |
| Worry about COVID-19 | 5-point scale (1=not at all worried to 5=extremely worried) | 0.75 (0.69 to 0.82) | <.001 | 0.65 (0.58 to 0.72) | <.001 | 0.65 (0.57 to 0.75) | <.001 | 0.67 (0.60 to 0.75) | <.001 | 0.71 (0.65 to 0.77) | <.001 |
| Perceived risk of COVID-19 to self | 5-point scale (1=no risk at all to 5=major risk) | 0.78 (0.71 to 0.85) | <.001 | 0.65 (0.58 to 0.73) | <.001 | 0.74 (0.64 to 0.85) | <.001 | 0.72 (0.64 to 0.81) | <.001 | 0.68 (0.62 to 0.74) | <.001 |
| Perceived risk of COVID-19 to people in the UK | 5-point scale (1=no risk at all to 5=major risk) | 0.81 (0.74 to 0.89) | <.001 | 0.62 (0.55 to 0.70) | <.001 | 0.60 (0.52 to 0.70) | <.001 | 0.71 (0.63 to 0.80) | <.001 | 0.78 (0.71 to 0.85) | <.001 |
| Coronavirus would be a serious illness for me | 5-point scale (1=strongly disagree to 5=strongly agree) | 0.75 (0.69 to 0.82) | <.001 | 0.61 (0.54 to 0.68) | <.001 | 0.71 (0.61 to 0.82) | <.001 | 0.65 (0.58 to 0.73) | <.001 | 0.73 (0.67 to 0.79) | <.001 |
| I would worry about what others would think of me if I tested positive for coronavirus | 5-point scale (1=strongly disagree to 5=strongly agree) | 0.87 (0.81 to 0.95) | .001 | 0.85 (0.76 to 0.94) | .002 | 0.90 (0.79 to 1.03) | .12 | 0.91 (0.82 to 1.00) | .06 | 0.88 (0.82 to 0.95) | .001 |
| Someone could spread coronavirus to other people, even if they do not have symptoms yet | 5-point scale (1=strongly disagree to 5=strongly agree) | 0.92 (0.82 to 1.03) | .13 | 0.72 (0.63 to 0.82) | <.001 | 0.68 (0.57 to 0.80) | <.001 | 0.75 (0.66 to 0.86) | <.001 | 0.86 (0.78 to 0.95) | .004 |
| My personal behaviour has an impact on how coronavirus spreads | 5-point scale (1=strongly disagree to 5=strongly agree) | 0.83 (0.76 to 0.91) | <.001 | 0.74 (0.67 to 0.82) | <.001 | 0.74 (0.64 to 0.85) | <.001 | 0.70 (0.63 to 0.78) | <.001 | 0.88 (0.81 to 0.95) | .001 |
| I think the risks of coronavirus are being exaggerated | 5-point scale (1=strongly disagree to 5=strongly agree) | 1.19 (1.10 to 1.28) | <.001 | 1.47 (1.33 to 1.62) | <.001 | 1.42 (1.25 to 1.61) | <.001 | 1.37 (1.24 to 1.51) | <.001 | 1.18 (1.09 to 1.27) | <.001 |
| Information from the Government about coronavirus can be trusted | 5-point scale (1=strongly disagree to 5=strongly agree) | 0.84 (0.77 to 0.90) | <.001 | 0.79 (0.71 to 0.88) | <.001 | 0.84 (0.74 to 0.96) | .009 | 0.79 (0.71 to 0.87) | <.001 | 0.85 (0.79 to 0.92) | <.001 |
| Information from the Government about coronavirus is biased or one-sided | 5-point scale (1=strongly disagree to 5=strongly agree) | 1.03 (0.95 to 1.12) | .51 | 1.05 (0.94 to 1.18) | .37 | 1.17 (1.02 to 1.35) | .03 | 1.08 (0.97 to 1.20) | .17 | 1.07 (0.99 to 1.15) | .10 |

† Adjusting for wave, region, gender, age (raw and quadratic), presence of a dependent child in the household, having a chronic illness oneself, having a household member who has chronic illness, employment status, socio-economic grade, index of multiple deprivation, highest educational or professional qualification, ethnicity, first language, living alone, partnership status, having had COVID-19 before, and financial hardship.

References:

1. Smith LE, Potts HWW, Amlôt R, Fear NT, Michie S, Rubin GJ. Adherence to the test, trace, and isolate system in the UK: results from 37 nationally representative surveys. BMJ 2021;372:n608.

2. Gimma A, Munday JD, Wong KL, Coletti P, van Zandvoort K, Prem K, et al. CoMix: Changes in social contacts as measured by the contact survey during the COVID-19 pandemic in England between March 2020 and March 2021. medRxiv 2021:2021.05.28.21257973.

Datasets used:

* Department of Health and Social Care weekly tracker
	+ Tracking DHSC marketing, coronavirus attitudes, beliefs, knowledge, reported behaviour, satisfaction with Government response, credibility of Government.
	+ Data collected weekly (Monday to Wednesday) since late January.
	+ N~2000 per wave. Wave 28 to 52 data used (14 September 2020 to 16 June 2021).
	+ Market research company commissioned: BMG Research.

*Please note that this work has been conducted rapidly and has not been peer reviewed or subject to normal quality control measures.*

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