BMJ Open Loneliness, coping, suicidal thoughts and self-harm during the COVID-19 pandemic: a repeat cross-sectional UK population survey

Ann John , ¹ Sze Chim Lee, ¹ Susan Solomon, ² David Crepaz-Keay, ² Shari McDaid, ² Alec Morton, ³ Gavin Davidson, ⁴ Tine Van Bortel , ^{5,6} Antonis A. Kousoulis²

To cite: John A. Lee SC. Solomon S, et al. Loneliness, coping, suicidal thoughts and self-harm during the COVID-19 pandemic: a repeat cross-sectional UK population survey. BMJ Open 2021;11:e048123. doi:10.1136/ bmjopen-2020-048123

Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (http://dx.doi.org/10.1136/ bmjopen-2020-048123).

Received 20 December 2020 Accepted 29 November 2021



@ Author(s) (or their employer(s)) 2021. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by

For numbered affiliations see end of article.

Correspondence to

Professor Ann John; a.john@swansea.ac.uk

ABSTRACT

Objectives There has been speculation on the impact of the COVID-19 pandemic and the associated lockdown on suicidal thoughts and self-harm and the factors associated with any change. We aimed to assess the effects and change in effects of risk factors including loneliness and coping, as well as pre-existing mental health conditions on suicidal thoughts and self-harm during the COVID-19 pandemic.

Design This study was a repeated cross-sectional online population-based survey.

Participants and measures Non-probability quota sampling was adopted on the UK adult population and four waves of data were analysed during the pandemic (17 March 2020 to 29 May 2020). Outcomes were suicidal thoughts and self-harm associated with the pandemic while loneliness, coping, pre-existing mental health conditions, employment status and demographics were covariates. We ran binomial regressions to evaluate the adjusted risks of the studied covariates as well as the changes in effects over time.

Results The proportion of individuals who felt lonely increased sharply from 9.8% to 23.9% after the UK lockdown began. Young people (aged 18-24 years), females, students, those who were unemployed and individuals with pre-existing mental health conditions were more likely to report feeling lonely and not coping well. 7.7%-10.0% and 1.9%-2.2% of respondents reported having suicidal thoughts and self-harm associated with the pandemic respectively throughout the period studied. Results from cross-tabulation and adjusted regression analyses showed young adults, coping poorly and with pre-existing mental health conditions were significantly associated with suicidal thoughts and self-harm. Loneliness was significantly associated with suicidal thoughts but not self-harm.

Conclusions The association between suicidality, loneliness and coping was evident in young people during the early stages of the pandemic. Developing effective interventions designed and coproduced to address loneliness and promote coping strategies during prolonged social isolation may promote mental health and help mitigate suicidal thoughts and self-harm associated with the pandemic.

Strengths and limitations of this study

- ⇒ This is a novel and timely study exploring the determinants (and their changes) in suicidal thoughts and self-harm in the UK general population in the ongoing COVID-19 pandemic.
- ⇒ Potential sampling bias through use of an online survey with non-probability quota sampling.
- ⇒ Repeated cross-sectional design.
- ⇒ Variables regarding self-harm and suicidal thoughts were missing at baseline.
- ⇒ Validated measures assessing mental health conditions were lacking in this study.

INTRODUCTION

Worldwide research efforts have understandably been focused on preventive and therapeutic strategies¹ against the COVID-19 pandemic.² The immediate and potential long-term impacts on mental health, suicide and self-harm have not yet been widely addressed.^{3 4} Without effective treatment or vaccines, extensive lockdown and social/ physical distancing measures were implemented worldwide to contain the pandemic. In addition to the threat of infection, public mental health and well-being were expected to deteriorate in tandem with these dramatic changes at personal (eg, restricted freedom), social (eg, due to isolation and distancing) and economic levels (eg, unemployment and financial hardship), particularly for vulnerable individuals.^{3 5} Studies from China in the very early stages of COVID-19 pandemic have found high levels of mental health problems and distress in the general population.⁶⁷

Previous epidemics where similar public health measures were taken, for example, SARS, resulted in an elevated suicide rate in elderly population (over 65 years) in Hong Kong in 2003.89 This was associated with



anxiety and worry concerning their susceptibility to the pandemic, pre-existing health conditions, lack of social support and higher reliance on the health services that were under pressure during the outbreak. However, important psychological factors such as loneliness, perceived stress level and coping were not examined.

Loneliness, the self-perceived deficiency of an individual's social relation network in quantitative or qualitative terms, 10 has been identified as an important factor associated with suicidal thoughts and behaviours. 11-17 The effect of loneliness on suicidal thoughts and behaviours is more prominent in younger (16-20 years) and older (>58 years) populations because these two age groups similarly experience periods where drastic changes in social status occur.¹³ Previously, social isolation and loneliness were linked to health protection measures similar to those taken in the COVID-19 pandemic resulting in a deterioration in children and young people's mental health.¹⁸ Similarly, individuals' perceived stress level is often associated with suicidal behaviours alongside mental disorders such as depression. ^{19–21} Perceived stress and poor coping mechanisms are associated with suicidal behaviours in both younger^{22–25} and older individuals.²⁶

A UK-wide lockdown was announced on 23 March 2020 which included instructions to the general population to stay at home, socially/physically distance and self-isolate if they had symptoms. This was accompanied by guidance regarding movements outside the home for exercise and grocery shopping. These restrictions were fully in place until 13 May 2020 when they were gradually eased. Given the potential for such measures to be implemented in any further waves of COVID-19 or other pandemics, it is important to understand the effects of these measures on mental health and well-being in order to mitigate them in the future and address them currently. A growing body of emerging research focuses on assessing mental health and well-being in response to the pandemic and measures taken to curb its spread at a population level.²⁷ Outcomes related to self-harm and suicidality have not been commonly reported in repeated surveys although they are included in some. 28 29 This study aimed to explore the risk factors for suicidal thoughts and selfharm in response to the COVID-19 pandemic in the UK population using a repeated cross-sectional online population survey representative of the adult UK population. We assessed the effects of known modifiable psychological risk factors including loneliness and coping, as well as pre-existing mental health conditions and other sociodemographic covariates.

METHODS

Study design and participants

This study, a part of a larger mixed-methods study to investigate mental impacts of COVID-19 pandemic in the UK, ³⁰ was a repeated cross-sectional online population survey using a quota survey design and a sampling frame allowing recruitment of a national sample. We examined the

public's mental health by assessing emotional responses, sources of social distress, coping, suicidal thoughts and self-harm in relation to the COVID-19 pandemic from individuals aged ≥18 years living in the UK. Data for the 'Coronavirus: Mental Health in the Pandemic' study were first collected shortly before the UK-wide lockdown was announced and repeated approximately every 3-4weeks. In this study, we report on the first four waves with wave 1, wave 2, wave 3 and wave 4 conducted on 17–18 March 2020, 2-3 April 2020, 24-26 April 2020 and 28-29 May 2020, respectively. We aimed at a sample size of ~2000 in waves 1 and 2 but this was then doubled to ~4000 in later waves to increase statistical power for subgroups. Data collection is still underway although at increased intervals and all surveys were administered online by YouGov, a social market research company that recruited participants to form a panel containing over 1 million individuals from the UK.27 Quota sampling was used and data were weighted to be representative to the UK adult population. Detailed procedures for sampling and weighting were described in the Suppl Methods (online supplemental file 1). Participants were different in each wave but taken from the same panel and representative of the UK adult population. Weighted bases, counts and percentages were reported unless otherwise specified to avoid identification of individuals in the case of small counts.

Participants signed up to YouGov to participate in surveys and they read and agreed to the terms and conditions of use and privacy policy before responding.³¹

Patient and public involvement

The survey forms part of a larger programme of work by the Mental Health Foundation (MHF) which includes focus groups of individuals (general population, risk groups, those with pre-existing mental illness) from the extensive networks of the MHF where themes identified from the survey are further discussed and questions for the next survey suggested.

Measures

Outcomes

The outcomes of this study were self-reported experience of suicidal thoughts and self-harm behaviours, which were available in wave 2, wave 3 and wave 4 (see online supplemental table 1, see also a copy of the survey in online supplemental file 2). Participants were prompted first about the sensitivity of the topic and provided an option to skip the related questions. For participants who proceeded, they were prompted 'Have you done or experienced any of the following, as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select one option on each row)' and then presented with two descriptions with one for suicidal thoughts ('experienced suicidal thoughts/feelings') and the other for self-harm ('deliberately hurt myself'). Respondents were given three options: 'yes', 'no' and 'prefer not to say' for these two questions.



Covariates

The main covariates were loneliness and coping with stress. For loneliness, participants were first prompted 'Which, if any, of the following emotions have you felt as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select all that apply)' and loneliness was one of the emotions. As a result, we analysed this binary variable reflecting whether individuals felt lonely due to the pandemic. For coping, participants were asked 'For the following question, if you have not experienced any stress related to the Coronavirus pandemic, please select the "Not applicable" option. Overall, how well do you think you are coping with stress related to the Coronavirus (COVID-19) pandemic?'. Respondents were given options of 'very well', 'fairly well', 'not very well', 'not at all well', 'don't know', 'prefer not to say' and 'not applicable I have not experienced any stress related to the Coronavirus' to answer. We combined 'very well' and 'fairly well' into 'well' category, as well as 'not very well' and 'not at all well' into a 'not well' category.

Other covariates included sex, age, marital, work and socioeconomic status and household information. Detailed descriptions of these variables were summarised in Suppl Methods (online supplemental file 1). We also included variables concerning pre-existing mental health conditions, living arrangements and urban/rural classification starting from wave 3. For waves 3 and 4, we asked the participants who were employed whether they were temporarily furloughed by their employer. We combined working and furlough status as a single categorical variable for analyses whenever appropriate (Suppl Methods in online supplemental file 1). For pre-existing mental health conditions, participants were asked 'Do you have a current pre-existing mental health condition or psychiatric diagnosis?' and participants were given options 'Yes', 'No', 'Don't know', 'Prefer not to say' and 'Refused' to respond (Suppl Methods in online supplemental file 1).

Statistical analyses

Sample weighting was incorporated in all statistical analyses to obtain UK representative estimates. The level of statistical significance was set at p=0.05 and all analyses were performed with Stata V.16.1. We reported sample characteristics and percentage of suicidal thoughts, self-harm with 95% CIs stratified by loneliness, coping and other sample characteristics for each wave of data collection where possible. For two-way and three-way cross-tabulations (figures 1–3), the significance of the association variables including wave, loneliness, coping, sex, age and working status was assessed by Wald χ^2 statistics after conducting full factorial binomial regression analyses. In these analyses, coping variables were grouped into a binary variable ('not well' vs 'well'/'no stress').

Binomial regression analyses were conducted using the 'BINREG' procedure in Stata³³ with suicidal thoughts and self-harm separately as the dependent variable. We combined the data collected in wave 3 and wave 4 only for the regression because these two waves contained

the largest number of variables of interest as well as the largest sample size. To pool data from two waves, sampling weights for each wave were reweighted using the sample population of each wave according to previously described methodology for analysing multiple independent surveys.³⁴

Both unadjusted and adjusted analyses for suicidal thoughts and self-harm were performed with the independent variables including time (wave 3 vs wave 4), loneliness, coping, sex, age, marital status, social grade, working status, pre-existing mental health conditions, household information, variables for living arrangements and urban/rural characteristics. All independent variables were included in the models as binary or categorical variables. We also included wave-by-loneliness, wave-by-coping, wave-by-sex, wave-by-age and wave-byworking status interaction terms in the adjusted model to explore change in effects of risk factors over time. Due to model convergence issues, the 'employed' category of the working status variable was not further stratified by furlough status in the regression analyses. We reported both risk ratios (RR) and risk difference (RD) with the corresponding 95% CIs and p values for independent variables. For the adjusted analysis, we also reported the Wald χ^2 statistics to examine the significance of overall effects for all independent variables and interactions. To assess the trend of the effect sizes over age, we performed the χ^2 test for linear trend to the model coefficients for the age variable in the adjusted analyses. To examine the robustness of the main analvses, we conducted a sensitivity analysis by repeating the regression on the combined data from wave 2 to wave 4, where suicidal thoughts and self-harm were available in these waves (online supplemental table 1). Details of the sensitivity analysis are described in Suppl Methods (online supplemental file 1).

RESULTS

Sample and participant characteristics

Between March 2020 and May 2020, the number of respondents for wave 1, wave 2, wave 3 and wave 4 of data collection was 2126, 2221, 4246 and 4382, respectively (table 1 for sample characteristics, see also online supplemental table 2). Missing data and inconclusive responses, including answers of 'prefer not to say', 'don't know' and 'refused to answer', were considered minimal (online supplemental table 1) and were thus excluded in cross-tabulations and regression analyses, given the assumptions of negligible effect of missing data.³⁵ The highest proportion of missing data was found for suicidal thoughts, self-harm and pre-existing mental health conditions. Cross-tabulation of these variables showed that missing data/inconclusive responses on suicidal thoughts/self-harm were more likely to be associated with missing data/inconclusive responses on having preexisting mental health conditions (online supplemental table 1A). However, missing data/inconclusive responses

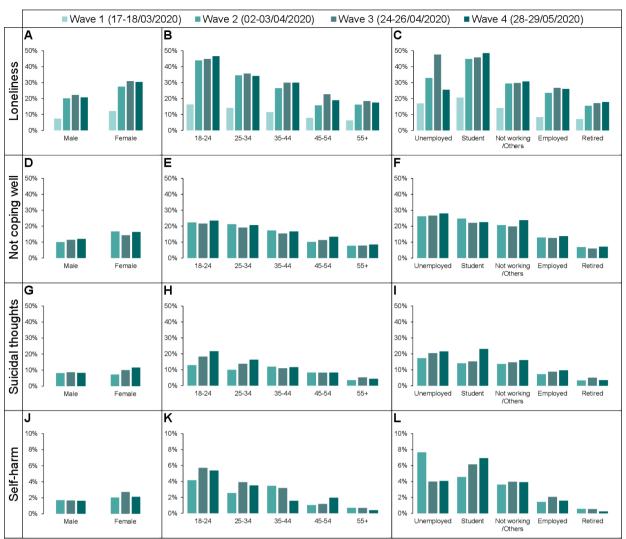


Figure 1 Distribution of loneliness (A–C), not coping well with stress (D–F), suicidal thoughts (G–I) and self-harm (J–L) in the past 2 weeks during the COVID-19 pandemic stratified by sex (B, E, H, K), age (B, E, H, K) and working status (C, F, I, L).

on having mental health conditions were more likely to have suicidal thoughts or self-harm.

Loneliness

The proportion of participants feeling lonely at wave 1, prior to the UK lockdown announcement, was 9.8% (95% CI 8.6% to 11.2%). This increased to 23.9% (95% CI 22.1% to 25.8%), 26.7% (95% CI 25.4% to 28.1%) and 25.7% (95% CI 24.3% to 27.1%) at wave 2, wave 3 and wave 4, respectively. The effect of wave was statistically significant (χ^2 =186.4, df=3, p<0.001) reflecting the dramatic rise of proportion of individuals feeling lonely between wave 1 and wave 2 (figure 1A–C). Further details of the proportion of respondents who felt lonely in the past 2 weeks for each wave stratified by sample characteristics are available in online supplemental table 3.

Respondents who were female (χ^2 =103.0, df=1, p<0.001), younger, that is, 18–24 years (χ^2 =455.5, df=4, p<0.001 for the effect of age), full-time students or unemployed (χ^2 =265.2, df=4, p<0.001 for the effect of working status) were more likely to report feeling lonely across all

waves (figure 1A–C). Respondents who had pre-existing mental health conditions/psychiatric diagnosis were more likely to report feeling lonely (wave 3: 44.0% vs 21.6%; wave 4: 40.7% vs 20.8%).

Coping with stress during the COVID-19 pandemic

For coping with stress during the pandemic in the past 2weeks, 11.8% (out of 2159; 95% CI 10.5% to 13.3%), 14.9% (out of 4132; 95% CI 13.8% to 16.0%) and 16.2% (out of 4280; 95% CI 15.1% to 17.4%) did not feel stressed due to the pandemic at wave 2, wave 3 and wave 4, respectively (online supplemental table 4–6). The proportion of respondents who responded coping 'not well' for wave 2 to wave 4 was 13.5% (95% CI 12.1% to 15.0%),12.9% (95% CI 11.9% to 14.0%) and 14.2% (95% CI 13.2% to 15.4%), respectively. These proportions did not vary significantly across waves (χ^2 =3.4, df=2, p=0.18). We found individuals who were female (χ^2 =28.8, df=1, p<0.001), younger (χ^2 =216.4, df=4, p<0.001 for the effect of age), unemployed and full-time students (χ^2 =244.0, df=4, p<0.001 for the effect of working status) were more likely to respond

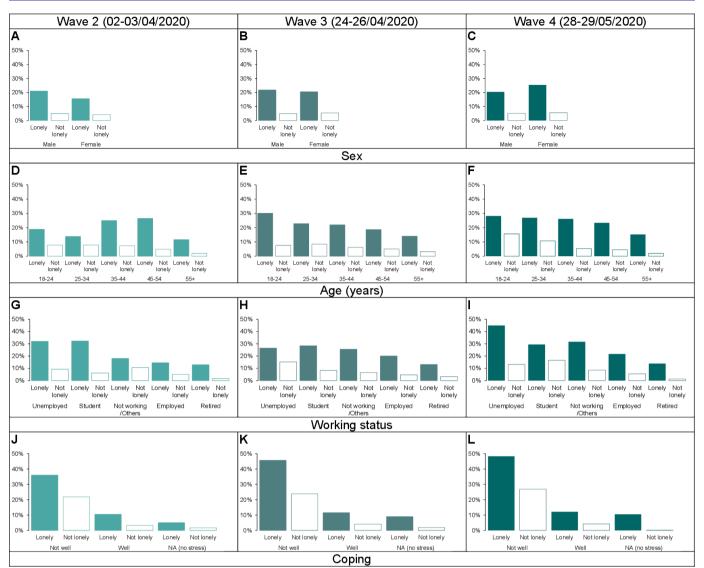


Figure 2 Association of suicidal thoughts in the past 2 weeks during the COVID-19 pandemic and loneliness stratified by sex (A–C), age (D–F), working status (G–I) and coping (J–L). NA, not applicable.

coping 'not well' (figure 1D–F). From wave 3 and wave 4, we found respectively 27.3% and 32.1% of individuals with pre-existing mental health conditions responded coping 'not well' compared with only 7.8% and 8.6% for respondents without mental health conditions (online supplemental table 5–6). We also found participants who were employed and temporarily furloughed had only slightly higher proportion of not coping well with stress (15.2% vs 11.9% and 16.2% vs 13.2% for wave 3 and wave 4, respectively, online supplemental table 7).

Suicidal thoughts and self-harm during the COVID-19 pandemic

We analysed individual responses on suicidal thoughts (online supplemental table 8) and self-harm behaviours (online supplemental table 9) in the past 2weeks due to the COVID-19 pandemic collected at wave 2 to wave 4. The proportion of participants with suicidal thoughts slightly increased from 7.7% (out of 2097; 95% CI 6.6% to 9.0%) at wave 2 to 9.4% (out of 3968; 95% CI 8.5%

to 10.3%) at wave 3 and 10.0% (out of 4135; 95% CI 9.1% to 11.1%) at wave 4. The proportion of participants who self-harmed was similar across waves at around 2% (wave 2: 1.9% out of 2111, 95% CI 1.3% to 2.6%; wave 3: 2.2% out of 3988, 95% CI 1.8% to 2.8%; wave 4: 1.9% out of 4156, 95% CI 1.5% to 2.4%; online supplemental table 9). The change in proportion of suicidal thoughts $(\chi^2=5.3, df=2, p=0.069)$ and change in proportion of self-harm (χ^2 =1.5, df=2, p=0.480) were not significantly different across waves. Effects of being female (χ^2 =8.6, df=1, p=0.034 on suicidal thoughts; χ^2 =4.8, df=1, p=0.029 on self-harm), younger age (χ^2 =228.4, df=4, p<0.001 on suicidal thoughts; χ^2 =87.6, df=4, p<0.001 on self-harm) and working status (χ²=199.0, df=4, p<0.001 on suicidal thoughts; χ^2 =80.8, df=4, p<0.001 on self-harm) were statistically evident on suicidal thoughts (figure 1G-I, online supplemental table 8) and self-harm (figure 1J-L, online supplemental table 9). Participants who were employed and those furloughed had only slightly higher

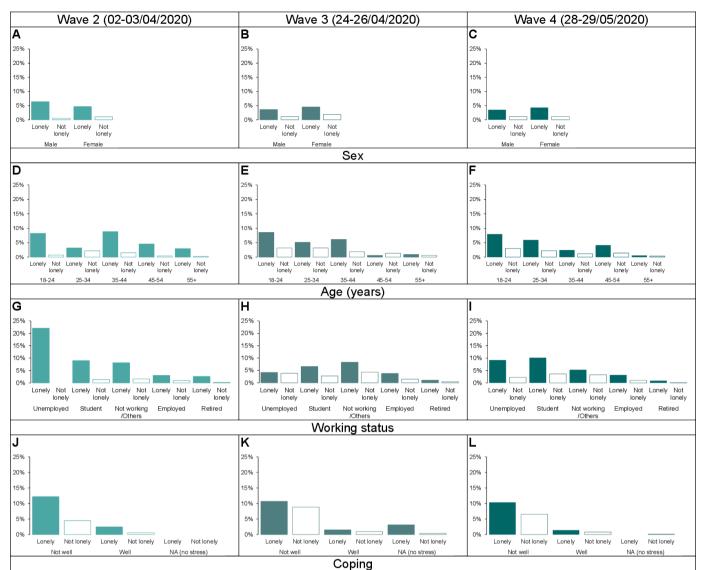


Figure 3 Association of self-harm in the past 2 weeks during the COVID-19 pandemic and loneliness stratified by sex (A–C), age (D–F), working status (G–I) and coping (J–L). NA, not applicable.

proportion of having suicidal thoughts (9.1% vs 8.7% and 11.5% vs 9.3% for wave 3 and wave 4, respectively, online supplemental table 7) and self-harm (2.1% vs 2.1% and 2.3% vs 1.4% for wave 3 and wave 4, respectively, online supplemental table 7) compared with those not being furloughed. Although we observed the proportion of having suicidal thoughts increased over time only in age groups 18–24 and 25–34 years (figure 1H), the wave-by-age interaction was not statistically significant (χ^2 =9.8, df=8, p=0.280).

Suicidal thoughts and self-harm by loneliness and coping

Respondents who felt lonely were more likely to have suicidal thoughts (17.7% out of 2097 for wave 2, 21.0% out of 3968 for wave 3 and 23.5% out of 4135 for wave 4) and to have harmed themselves (5.4% out of 2111 for wave 2, 4.1% out of 3988 for wave 3 and 4.0% out of 4156 for wave 4) than the general population (online supplemental tables 8 and 9). Compared with respondents who

did not feel stressed during the pandemic, we found higher proportions of suicidal thoughts and self-harm for respondents who responded coping 'not well' (online supplemental tables 8 and 9). We also performed three-way cross-tabulations on suicidal thoughts (figure 2) and self-harm (figure 3) by loneliness, coping, sex, age and working status to elucidate the effects from these factors across waves. Individuals with the highest risks of suicidal thoughts and self-harm in response to the pandemic were those feeling lonely (χ^2 =379.9, df=1, p<0.001 on suicidal thoughts; $\chi^2=11.0$, df=1, p<0.001 on self-harm) and responded coping 'not well' (χ^2 =511.8, df=1, p<0.001 on suicidal thoughts; $\chi^2=162.0$, df=1, p<0.001 on selfharm). Both younger age (χ^2 =119.0, df=4, p<0.001 on suicidal thoughts; χ^2 =53.2, df=4, p<0.001 on self-harm) and working status (χ^2 =111.9, df=4, p<0.001 on suicidal thoughts; χ^2 =62.5, df=1, p<0.001 on self-harm) were also significant risk factors. We did not observe significant

Table 1 Sample characteristics	eristics											
	Wave	1 (17-18 N	Wave 1 (17-18 March 2020)	Wave	Wave 2 (2-3 April 2020)	il 2020)	Wave 3	Wave 3 (24-26 April 2020)	ril 2020)	Wave 4	Wave 4 (28-29 May 2020)	y 2020)
	E	n=2126 (2126.0)*	26.0)*	=u	n=2221 (2221.0)*	1.0)*	=u	=4246 (4246.0)*	*(0:	=u	=4382 (4382.0)*	*(0
	Counts*	*%	12 %56	Counts*	*%	12 %56	Counts*	*%	12 %56	Counts*	*%	12 %56
Sex												
Male	1031.1	48.5	46.3 to 50.7	1077.2	48.5	46.4 to 50.6	2059.3	48.5	47.0 to 50.0	2125.3	48.5	46.9 to 50.1
Female	1094.9	51.5	49.3 to 53.7	1143.8	51.5	49.4 to 53.6	2186.7	51.5	50.0 to 53.0	2256.7	51.5	49.9 to 53.1
Age (years)												
18–24	236.0	11.1	9.6 to 12.7	246.5	11.1	9.7 to 12.6	471.3	11.1	10.1 to 12.2	486.4	11.1	9.9 to 12.4
25–34	355.0	16.7	15.1 to 18.4	360.4	16.2	14.7 to 17.9	682.4	16.1	15.0 to 17.2	694.6	15.9	14.7 to 17.1
35-44	345.7	16.3	14.7 to 17.9	379.3	17.1	15.5 to 18.8	700.2	16.5	15.4 to 17.7	738.6	16.9	15.7 to 18.0
45–54	368.1	17.3	15.8 to 19.0	353.9	15.9	14.5 to 17.5	701.0	16.5	15.4 to 17.7	761.9	17.4	16.3 to 18.6
55+	821.3	38.6	36.6 to 40.7	880.8	39.7	37.6 to 41.7	1691.1	39.8	38.4 to 41.3	1700.5	38.8	37.3 to 40.3
Social grade												
ABC1	1211.8	57.0	54.8 to 59.2	1266.0	57.0	54.9 to 59.1	2420.2	57.0	55.5 to 58.5	2497.7	57.0	55.4 to 58.6
C2DE	914.2	43.0	40.8 to 45.2	955.0	43.0	40.9 to 45.1	1825.8	43.0	41.5 to 44.5	1884.3	43.0	41.4 to 44.6
Marital status												
Married/civil partnership	955.1	44.9	42.8 to 47.1	1006.4	45.3	43.2 to 47.4	1855.9	43.7	42.2 to 45.2	1995.2	45.5	44.0 to 47.1
Living as married	302.1	14.2	12.8 to 15.8	298.3	13.4	12.1 to 14.9	576.6	13.6	12.6 to 14.7	605.3	13.8	12.8 to 14.9
Separated/divorced	180.3	8.5	7.4 to 9.7	204.3	9.2	8.1 to 10.5	375.0	8.8	8.0 to 9.7	366.8	8.4	7.6 to 9.2
Widowed	82.8	4.0	3.3 to 4.9	74.0	3.3	2.7 to 4.1	146.8	3.5	3.0 to 4.0	137.2	3.1	2.7 to 3.7
Never married	589.5	27.7	25.8 to 29.8	621.0	28.0	26.0 to 30.0	1272.3	30.0	28.6 to 31.4	1244.4	28.4	26.9 to 29.9
Not known	13.2	9.0	0.4 to 1.1	16.9	0.8	0.5 to 1.3	19.4	0.5	0.3 to 0.7	33.0	9.0	0.5 to 1.1
Working status												
Employed†	1189.0	55.9	53.8 to 58.1	1265.1	57.0	54.9 to 59.0	2247.3	52.9	51.4 to 54.4	2378.3	54.3	52.7 to 55.8
Unemployed	79.5	3.7	3.0 to 4.7	86.7	3.9	3.1 to 4.9	198.0	4.7	4.0 to 5.4	181.9	4.2	3.5 to 4.9
Not working/others	207.9	9.8	8.5 to 11.2	214.8	9.7	8.5 to 11.0	491.4	11.6	10.6 to 12.6	521.0	11.9	10.9 to 12.9
Full-time student	148.2	7.0	5.8 to 8.3	135.6	6.1	5.1 to 7.3	245.7	5.8	5.1 to 6.6	218.4	2.0	4.2 to 5.9
Retired	501.4	23.6	21.8 to 25.4	518.9	23.4	21.7 to 25.1	1063.7	25.1	23.8 to 26.4	1082.5	24.7	23.5 to 26.0
Mental health condition/psychiatric diagnosis	iatric diagno	sis										
No	ı	I	I	I	1	I	3091.2	72.8	71.4 to 74.1	3180.5	72.6	71.1 to 74.0
Yes	ı	I	I	I	ı	I	856.9	20.2	19.0 to 21.4	933.6	21.3	20.0 to 22.6
Prefer not to say/not known	I	I	I	I	I	I	297.8	7.0	6.3 to 7.9	267.9	6.1	5.4 to 6.9
Being parent/guardian	1220.9	57.4	55.2 to 59.6	1240.9	55.9	53.7 to 58.0	2307.7	54.4	52.8 to 55.9	2402.9	54.8	53.3 to 56.4
Number of children in household	pl											
0	1458.3	68.6	66.5 to 70.6	1579.2	71.1	69.1 to 73.0	3111.3	73.3	71.9 to 74.6	3152.9	72.0	70.5 to 73.4
												Continued

BMJ Open: first published as 10.1136/bmjopen-2020-048123 on 30 December 2021. Downloaded from http://bmjopen.bmj.com/ on April 24, 2024 by guest. Protected by copyright.

	١
6	ľ
	4

Table 1 Continued												
	Wave	Wave 1 (17-18 March 2020)	larch 2020)	Wave	Wave 2 (2-3 April 2020)	ii 2020)	Wave 3	Wave 3 (24-26 April 2020)	il 2020)	Wave 4	Wave 4 (28-29 May 2020)	ay 2020)
		n=2126 (2126.0)*	26.0)*	=	n=2221 (2221.0)*	1.0)*	h=d	n=4246 (4246.0)*	*(0	i u	n=4382 (4382.0)*	*(0:3
	Counts*	*%	95% CI	Counts*	*%	95% CI	Counts*	*%	95% CI	Counts*	*%	95% CI
-	298.3	14.0	12.6 to 15.6	278.2	12.5	11.2 to 14.0	472.8	11.1	10.2 to 12.1	550.2	12.6	11.5 to 13.7
2	248.4	11.7	10.3 to 13.2	213.3	9.6	8.4 to 10.9	421.8	6.6	9.1 to 10.9	415.3	9.5	8.6 to 10.4
3+	87.2	4.1	3.3 to 5.1	88.3	4.0	3.2 to 4.9	151.4	3.6	3.0 to 4.2	181.7	4.1	3.5 to 4.8
Refused to answer	33.8	1.6	1.1 to 2.2	62.1	2.8	2.2 to 3.6	88.7	2.1	1.7 to 2.6	82.0	1.9	1.5 to 2.4
Living arrangements‡												
Alone	ı	ı	I	ı	ı	I	850.6	20.0	18.8 to 21.3	758.3	17.3	16.2 to 18.5
Spouse/partner	1	ı	I	I	ı	ı	2380.5	56.1	54.5 to 57.6	2576.5	58.8	57.2 to 60.4
Relative(s)	I	ı	I	ı	ı	I	1444.2	34.0	32.6 to 35.5	1610.8	36.8	35.2 to 38.3
Friend(s)/housemate(s)	I	ı	ı	ı	ı	ı	184.9	4.4	3.7 to 5.1	129.0	2.9	2.5 to 3.5
Weighted bases. Tholudes working full-time and part-time. +Bown % An ord add in to 100% because categories are non-mittally avolusive.	part-time.	ogivo ogivo	sulove vilentine-no	dvi								
ליטטו אין מש מחווסר מעם ישטון +	עם הסממים המו	באסוופי מוסי	IOII-IIIdidany coolac	olve.								

effect of sex, wave nor wave-related interactions on suicidal thoughts/self-harm from all three-way cross-tabulations.

Factors associated with suicidal thoughts and self-harm during the COVID-19 pandemic

We built binomial regression models to quantify the effect size (RR and RD) of loneliness, coping and other covariates on suicidal thoughts (table 2, online supplemental table 10) and self-harm (table 2, online supplemental table 11) for data collected at wave 3 and wave 4 only. In the unadjusted analyses for suicidal thoughts, RRs and RDs were all significantly greater than 1 and 0 respectively for loneliness, coping 'not well', young age, unemployment and being full-time students compared with the respective references. Similar patterns were observed for self-harm although the RD between unemployed and employed categories was marginally nonsignificant (RD=0.022, 95% CI -0.001 to 0.045, p=0.055). The effect of having pre-existing mental health conditions was also strong and statistically significant for both suicidal thoughts (RR=4.9, 95% CI 4.2 to 5.7, p<0.001; RD=0.191, 95% CI 0.169 to 0.214, p<0.001, online supplemental table 10) and self-harm (RR=6.9, 95% CI 4.8 to 10.0, p<0.001; RD=0.047, 95% CI 0.036 to 0.059, p<0.001, online supplemental table 11).

The effect sizes of the variables on suicidal thoughts and self-harm were reduced in the adjusted models (table 2, online supplemental tables 10 and 11). For suicidal thoughts, effect sizes of loneliness and coping 'not well' with stress remained statistically significant. The effect sizes were the largest in the younger age group (18-24, 25-34 and 35-44 years) and remained significant in the adjusted analysis but decreased monotonically with older age groups (for RR: χ^2 for testing linear trend=8.8, df=1, p=0.003; for RD: χ^2 for testing linear trend=8.5, df=1, p=0.004). Effect of working status was no longer a significant risk factor in the adjusted model. For selfharm, only coping 'not well' and age remained strong and robust risk factors in the adjusted model, with the effect sizes of age decreased for older age groups (table 2 and online supplemental table 11; for RR: χ^2 for testing linear trend=15.3, df=1, p<0.001; for RD: χ^2 for testing linear trend=9.5, df=1, p=0.002). Loneliness and working status were no longer significant effects. Not surprisingly, having pre-existing mental health conditions remained a statistically robust factor in the adjusted analysis for both suicidal thoughts (RR=2.2, 95% CI 1.9 to 2.7, p<0.001; RD=0.077, 95% CI 0.059 to 0.094, p<0.001, table 2 and online supplemental table 10) and self-harm (RR=2.8, 95% CI 1.9 to 4.2, p<0.001; RD=0.020, 95% CI 0.012 to 0.028, p<0.001, table 2 and online supplemental table 11). Between wave 2 and wave 4, we did not find statistical evidence supporting for change in the risk of having suicidal thoughts/self-harm, nor change in the timerelated interactions with loneliness, coping, sex, age or working status.

Results from the sensitivity analysis which combined data from wave 2 to wave 4 and contained only a subset

Summary of risk ratios (RR) and risk differences (RD) (with 95% CIs) of time (wave), Ioneliness, coping, age and working status on suicide thoughts and self-harm in unadjusted and adjusted binomial regression models based on data from wave 3 and wave 4 Table 2

		5												
					Unadjr	Unadjusted mode	_				Adjust	Adjusted model*		
				Risk Ratio (RR)	(RR)		Risk Difference (RD)	ance (RD)		Risk Ratio (RR)	3R)	œ	Risk Difference (RD)	ice (RD)
Outcome	Variable	Category	RR	P value	12 %56	RD	P value	12 %56	RB	P value	12 %56	RD	P value	12 %56
Suicidal thoughts	Wave†	Wave 4	Ξ.	0.350	0.9 to 1.2	0.007	0.350	-0.007 to 0.020	0.9	0.510	0.7 to 1.2	0.008	0.210	-0.004 to 0.020
	Loneliness‡	Yes	4.3	<0.001	3.7 to 5.0	0.171	<0.001	0.150 to 0.200	1.8	<0.001	1.5 to 2.1	0.053	<0.001	0.036 to 0.069
	Coping§	NA (no stress)	0.3	<0.001	0.2 to 0.4	-0.044	<0.001	-0.054 to -0.034	0.3	<0.001	0.2 to 0.6	-0.041	<0.001	-0.055 to -0.027
		Not well	6.3	<0.001	5.5 to 7.2	0.321	<0.001	0.289 to 0.353	3.4	<0.001	2.8 to 4.0	0.150	<0.001	0.124 to 0.176
	Sex¶	Female	1.3	0.001	1.1 to 1.5	0.024	0.001	0.010 to 0.038	1.0	0.470	0.9 to 1.2	0.005	0.420	-0.007 to 0.017
	Age (years)**	18–24	4.2	<0.001	3.4 to 5.3	0.153	<0.001	0.120 to 0.186	1.7	0.005	1.2 to 2.4	0.048	0.005	0.014 to 0.081
		25–34	3.2	<0.001	2.6 to 3.9	0.103	<0.001	0.081 to 0.126	1.5	0.023	1.1 to 2.1	0.034	0.019	0.006 to 0.062
		35-44	2.4	<0.001	1.9 to 3.0	0.065	<0.001	0.046 to 0.085	4.1	0.049	1.0 to 1.9	0.026	0.043	0.001 to 0.051
		45–54	1.7	<0.001	1.4 to 2.2	0.034	<0.001	0.018 to 0.050	1.2	0.240	0.9 to 1.6	0.014	0.240	-0.009 to 0.037
	Working status††	Unemployed	2.3	<0.001	1.8 to 2.9	0.117	<0.001	0.068 to 0.167	1.1	0.150	1.0 to 1.4	0.014	0.140	-0.005 to 0.033
		Not working/ others	1.7	<0.001	1.4 to 2.0	0.062	<0.001	0.035 to 0.088	Ξ:	0.490	0.9 to 1.3	0.005	0.520	-0.011 to 0.021
		Full-time student	2.1	<0.001	1.6 to 2.6	0.097	<0.001	0.054 to 0.141	1.1	0.610	0.8 to 1.3	0.007	0.530	-0.016 to 0.030
		Retired	0.5	<0.001	0.4 to 0.6	-0.050	<0.001	-0.063 to -0.038	1.0	0.770	0.8 to 1.4	900.0	0.720	-0.025 to 0.036
	Mental health condition/psychiatric diagnosis‡‡	Yes	4.9	<0.001	4.2 to 5.7	0.191	<0.001	0.169 to 0.214	2.2	<0.001	1.9 to 2.7	0.077	<0.001	0.059 to 0.094
		Prefer not to say/ not known	4.1	<0.001	3.2 to 5.3	0.154	<0.001	0.110 to 0.198	2.5	<0.001	1.9 to 3.1	0.089	<0.001	0.058 to 0.121
Self-harm	Wave†	Wave 4	6.0	0.340	0.6 to 1.2	-0.003	0.330	-0.010 to 0.003	9.0	0.150	0.3 to 1.2	-0.001	092'0	-0.008 to 0.006
	Loneliness‡	Yes	3.1	<0.001	2.2 to 4.3	0.028	<0.001	0.018 to 0.037	1.2	0.360	0.8 to 1.7	0.003	0.370	-0.004 to 0.011
	Coping§	NA (no stress)	0.3	0.043	0.1 to 1.0	-0.007	0.003	-0.011 to -0.002	0.4	0.160	0.1 to 1.4	-0.005	0.120	-0.012 to 0.001
		Not well	9.1	<0.001	6.5 to 12.8	0.082	<0.001	0.063 to 0.102	4.6	<0.001	3.1 to 6.8	0.040	<0.001	0.027 to 0.053
	Sex¶	Female	1.5	0.030	1.0 to 2.1	0.008	0.023	0.001 to 0.014	1.1	0.520	0.8 to 1.6	0.003	0.510	-0.005 to 0.010
	Age (years)**	18–24	10.4	<0.001	5.9 to 18.2	10.400	<0.001	5.900 to 18.200	2.2	<0.001	2.3 to 14.2	0.034	0.004	0.011 to 0.057
		25–34	6.9	<0.001	4.0 to 12.1	006.9	<0.001	4 .000 to 12.100	4.0	0.001	1.8 to 9.0	0.022	0.001	0.009 to 0.035
		35-44	4.4	<0.001	2.4 to 7.9	4.400	<0.001	2.400 to 7.900	2.8	0.007	1.3 to 5.9	0.014	0.004	0.005 to 0.024
		45–54	3.0	0.001	1.6 to 5.6	3.000	0.001	1.600 to 5.600	2.0	0.068	1.0 to 4.1	0.007	0.057	0.000 to 0.015
	Working status††	Unemployed	2.2	0.010	1.2 to 4.0	0.022	0.055	-0.001 to 0.045	1.1	0.780	0.6 to 2.2	0.002	0.780	-0.011 to 0.015
		Not working/ others	2.2	<0.001	1.4 to 3.3	0.021	0.003	0.007 to 0.035	1.5	0.100	0.9 to 2.5	0.009	0.140	-0.003 to 0.021
		Full-time student	3.6	<0.001	2.3 to 5.7	0.047	<0.001	0.021 to 0.073	1.7	0.072	1.0 to 2.9	0.013	0.110	-0.003 to 0.028
		Retired	0.2	<0.001	0.1 to 0.4	-0.014	<0.001	-0.019 to -0.009	0.7	0.390	0.3 to 1.6	-0.005	0.370	-0.016 to 0.006
														Continued

BMJ Open: first published as 10.1136/bmjopen-2020-048123 on 30 December 2021. Downloaded from http://bmjopen.bmj.com/ on April 24, 2024 by guest. Protected by copyright.

	1
0	
_	_

Table 2	Table 2 Continued													
					Unadjus	Unadjusted model	_				Adjuste	Adjusted model*		
				Risk Ratio (RR)	RR)	Œ.	Risk Difference (RD)	ce (RD)		Risk Ratio (RR)	E G	Œ	Risk Difference (RD)	e (RD)
Outcome	Variable	Category	RB	RR P value	12 %56	RD	RD P value	12 %56	RR	RR P value	95% CI		RD P value	95% CI
	Mental health condition/psychiatric diagnosis‡‡	Yes		6.9 <0.001	4.8 to 10.0 0.047 <0.001	0.047	<0.001	0.036 to 0.059	2.8	2.8 <0.001	1.9 to 4.2 0.020	0.020		<0.001 0.012 to 0.028
		Prefer not to say/ not known	6.8	<0.001	4.0 to 11.8	0.047	0.047 <0.001	0.022 to 0.072	3.8	3.8 <0.001	2.1 to 6.8	0.030	0.004	0.004 0.009 to 0.051

working status, mental health condition/psychiatric diagnosis, being parent/guardian, number of children in household, living arrangements, urban/rural residence, marital status,

Theference: Wave 3.
#Reference: Not lonely.
Sheference: Coping well.
#Reference: 55+.
#Theference: Employed.

of independent variables from the main analysis were generally consistent with the main analysis with minor exceptions (online supplemental tables 12 and 13). For the adjusted analysis on suicidal thoughts (online supplemental table 12), the statistically robust effects of loneliness, coping and younger age were consistent with the respective model of the main analysis (online supplemental table 10). However, the effect of working status became significant in the adjusted model of the sensitivity analysis, particularly for the unemployed and not working/others groups. In keeping with the main analysis, we found no significant effect of wave nor effects of wave-related interactions except the wave-by-sex interaction. This reflected the differential trends of the risk of having suicidal thoughts between sexes from wave 2 (male: 8.2%, 95% CI 6.5% to 10.2%; female: 7.3%, 95% CI 5.9% to 9.0%) to wave 3 (male: 8.7%, 95% CI 7.4% to 10.1%; female: 10.0%, 95% CI 8.8% to 11.4%, online supplemental table 8). For self-harm, we found significant effects of coping and younger age but not working status in the adjusted model of the sensitivity analysis (online supplemental table 13), concurring with the respective main analysis (online supplemental table 11). However, the effect of loneliness was statistically significant in the adjusted model of the sensitivity analysis but not in the respective model of the main analysis. Neither the effect of wave nor the effects of wave-related interactions reached the level of statistical significance.

DISCUSSION Main findings

This study is one of the few examining the mental health and well-being of the UK population with baseline data from a week before lockdown was announced (wave 1) and for the next 10 weeks (wave 2 to wave 4). We documented a sharp increase in loneliness among the UK population between wave 1 (9.8%) and wave 2 (23.9%) of data collection (late March 2020) when lockdown measures were implemented, particularly in young people. The proportion of the population coping 'not well' across waves remained stable at around 13.5%. Suicidal thoughts and self-harm similarly remained stable between wave 2 and wave 4 at 7.7%-10.0% and 1.9%-2.2%, respectively. We found that feeling lonely, coping 'not well' with stress, as well as younger age groups and those with pre-existing mental health conditions were associated with the highest risk of having suicidal thoughts and self-harm. For individuals aged between 18 and 24 years, risk of suicidal thoughts and self-harm were ~15%-20% and 5%, respectively, and no statistically significant increase was found over time. Around 25% and 5% of individuals with pre-existing mental health conditions had suicidal thoughts and harmed themselves, respectively. Rates of suicidal thoughts and self-harm were slightly higher for individuals from the lower socioeconomic category (8.0%-11.0% and 2.1%-2.3%, respectively) compared with those from the higher category but social grade was

Loneliness and coping remained significantly associated with suicidal thoughts whereas coping with stress but not loneliness was an important factor for self-harm when we adjusted our analyses for other covariates at a personal, household and area level. Having pre-existing mental health conditions or psychiatric diagnosis was a strong and statistically robust risk factor for both outcomes. For sociodemographic factors, we found that effect sizes remained the largest and statistically significant for the youngest (18-24 years) and monotonically decreased with older age groups for both suicidal thoughts and selfharm. In contrast, the effect of employment status was not statistically evident. Our results did not identify significant temporal changes in the risk of having suicidal thoughts/ self-harm and the effects of the interested risk factors on the outcomes remained constant between wave 3 and wave 4. Our sensitivity analysis was in agreement with the main analysis with minor exceptions. We believed that those disagreements stem from the omission of important risk factors (eg, pre-existing mental health conditions) due to data unavailability at wave 2 in the sensitivity analysis, resulting in overestimation of other effects and interactions. Interestingly, loneliness was a statistically robust risk factor for self-harm only in the sensitivity but not in the main analysis where more covariates, including preexisting mental health conditions, were included in the adjusted model. This difference and our other results are consistent with the findings of a recent review on the impact of loneliness and social isolation measures related to disease containment which showed high correlation of loneliness and mental health symptoms in children and young people. 18

Due to differences in sampling methodologies and measures used, direct comparison of prevalences found in our study with other studies is not robust. Our measures on suicidal thoughts/self-harm were asked in relation to them being a consequence of the pandemic. Thus, the respective prevalences are lower than those from similar UK population-based survey (eg, Iob and colleagues²⁸) since instances not related to the pandemic might not be captured. Nonetheless, our prevalence of having mental health conditions (~20%) is in keeping with other UK studies (\sim 17%–26% $^{28\,29\,36-38}$). After the UK lockdown from early April 2020 (wave 2 onwards), we did not observe any further significant increase in the proportion of participants with suicidal thoughts, self-harm, loneliness and coping not well. This is consistent with the constant or even decreasing trends of various mental health outcomes for the general population shortly after lockdown.^{29 37 38} Notably, our increasing, although non-significant trend of suicidal thoughts from early April to the end of May 2020 qualitatively tallies with the increase of suicidal ideation over the same period in a similar study.²⁹

Results from our unadjusted analyses are similar to others suggesting suicidal thoughts and self-harm are higher among women, younger ages, people experiencing socioeconomic disadvantage and those with pre-existing mental conditions. 28 29 These factors are strongly associated with other adverse mental health outcomes during the pandemic as reported elsewhere. 37-41 Comparison of effect sizes from multivariable analyses across studies is more challenging because of the differences in the use and definitions of outcomes and covariates. Nonetheless, pre-existing mental health conditions and lack of coping are strongly associated with suicidal thoughts/self-harm. Young people with pre-existing mental health issues and not coping well were unsurprisingly more likely to experience adverse outcomes, the effect size of loneliness reduced (especially in relation to self-harm) when all measured psychosocial, demographical and environmental factors were adjusted for.

It has been suggested that young adults are more susceptible to stressors because of their ongoing transitions across multiple aspects of life. 13 42-44 These transitions involve personal (becoming financially independent), interpersonal (building of romantic relationships), educational (graduating from schools), professional (entering the labour market) and environmental (beginning living away from family) changes which are unprecedented and uncertain. 13 45 Distress could be exacerbated by the additional uncertainty, hopelessness and worries associated with the COVID-19 pandemic and lockdown. 45 The pandemic-associated economic decline may disproportionally impact young adults as they are already more likely to be at the margin of the labour market. 46 47 Social isolation through stay at home orders likely impeded interactions with friends, colleagues or romantic partners thereby weakening existing social supports and promoting loneliness.¹³

Strength and limitations

This study is a novel and timely investigation that explores the determinants of suicidal thoughts and self-harm in the UK general population in the ongoing COVID-19 pandemic. Timeliness, including the need for prelockdown data, necessitated quota over probability sampling. We made use of an online population survey, the only feasible method of recruitment during lockdown that contained questions on suicidal thoughts, self-harm, loneliness coping with stress alongside a broad range of other factors. Since data were collected from panellists recruited from all UK nations with quota sampling and weighting, our results are representative for the UK adult general population. The survey is repeated approximately every 3-4weeks, began prelockdown from mid-March 2020 so that change in outcomes and other factors due to the evolving nature of the outbreak (eg, increase in loneliness after lockdown) were captured. We included suicidal thoughts and self-harm behaviours as outcomes and examined their determinants. We adjusted for a number of covariates that cover psychosocial (loneliness and coping), demographic and environmental aspects. We believe that similar population-based repeat surveys are not commonly reported.

A major limitation is the use of non-probability quota sampling through online recruitment. 48 However, while an opt-in online panel is cost-effective for recruiting a sizeable number of diverse individuals within a short time frame, ⁴⁹ we could not determine the response rate for the survey. Doubts have also been cast on the representativeness of non-probability internet-based samples as the outcome of interest may differ from that of the target population even when quotas and weighting were applied. 49 Digital poverty (particularly for older population) and the digital divide may hamper representativeness and data validity. It is worth noting that full-time students were over-represented (~7%) in our sample when compared with available statistics (~4%, from ~2 million students studied in higher education institutions out of \sim 52 million UK adult population in $2019/2020^{50.51}$). In order to increase statistical power for subgroup analyses, sample sizes in waves 3 and 4 were approximately doubled compared with those in waves 1 and 2. Therefore, our prevalences should not be regarded as precise and conventional estimates. Nonetheless, online surveys are a viable method to recruit participants within a short period at multiple instances and to circumvent the impossibility of using other recruitment and sampling strategies that require actual fieldwork (eg, face-to-face interview) due to the pandemic outbreak.

This study adopted a repeated cross-sectional approach where sample population were different at each wave. Caution is needed to interpret changes over time and between-subject variability across waves needed to be considered. The same limitation applies to establishing causation from data across time points. However, our results are still comparable across waves and representative of the adult UK population.

Questions on suicidal thoughts and self-harm were asked as a result of the pandemic. Thus, interpretation of the prevalences requires caution as the actual prevalence of these outcomes may be underestimated due to under-reporting of instances not related to the pandemic. As a public mental health survey, we did not include validated measures for screening of mental disorders and psychiatric conditions such as depression and anxiety as adopted by others.⁵² Not all individuals with mental health conditions experienced the same level of stress during the pandemic in the same way (eg, those with social phobia, differences in symptom severity and chronicity⁵³). Thus, our findings of a strong association between pre-existing mental health conditions and having suicidal thoughts/self-harm may vary across those with specific mental health issues. Not all participants provided conclusive answers on having pre-existing mental health conditions and we found similar relative risks of having suicidal thoughts/self-harm between participants having mental health conditions and those with missing/inconclusive responses. Given such similarity, we may surmise that those who made inconclusive responses were likely to have mental health conditions. However, we cannot reliably exclude other factors that may have contributed

to the elevated risks. In any case, we demonstrated that having pre-existing mental health conditions/psychiatric diagnosis was a robust factor associated with suicidal thoughts and self-harm.

Other limitations include the usual caveats of using self-reported data in surveys. We did not collect data on suicidal thoughts, self-harm outcomes and coping with stress at wave 1, thus baseline levels of these outcomes before the lockdown could not be assessed. Similarly, not all variables (eg, pre-existing mental health conditions) were available for analysis until wave 3 and wave 4. This could limit our ability to assess time trends and interactions between risk factors and time. If these variables were available at wave 1, we might be able to reveal temporal trends that may have been observed shortly before and after the lockdown (as was found for loneliness and in other studies that compare prepandemic and postpandemic/lockdown mental health outcomes 39 40 54). We also considered our data as preliminary given the early stage of our study with limited number of waves of data collection and the rapidly changing situation of the ongoing pandemic and the associated policy response. Our socioeconomic variable assessing social grade was dichotomous and as such crude in the assessment of the impact of socioeconomic adversity which may account for our findings and working status provided a more robust assessment. We did not collect data on participants' occupations, thus we were unable to analyse outcomes for specific occupation, for example, healthcare or key workers. Due to model convergence issues, we could not include furlough status into the regression models and thus comparisons of outcomes between individuals who were or were not furloughed during the pandemic remained descriptive.

Implications for policy and practice

The importance of loneliness for mental health and well-being has recently been recognised in policy. Our findings on loneliness, coping, young age and pre-existing mental health conditions being risk factors for suicidal thoughts and self-harm during the COVID-19 pandemic can better inform policies and intervention strategies for both vulnerable individuals and the general population. While a rise in suicide as a consequence of the pandemic is not inevitable, the rise in loneliness in young people and the association with suicidal thoughts and self-harm are of concern particularly given the findings of a recent report from the National Child Mortality Database which identifies a potential increase (although not significant) in suicides in under 18 year-olds in the early period of time after lockdown. The suicides in the early period of time after lockdown.

In view of our findings, we argue that any lockdown measures should be accompanied by universal interventions aimed at the general population that could: (1) protect mental health against loneliness and isolation; and (2) enhance coping and resilience under stress. The robust association between loneliness and suicidality in young people in our study could partially explain the deterioration of mental health subsequent to the pandemic

containment measures which appears to have disproportionately affected young adults. $^{18\,40}$ Hence, efforts should be made to repurpose existing psychological strategies for promoting mental health and behavioural change in young people that are suitable for social isolation/ quarantine settings.^{3 18} Recent reviews suggested benefits of using digital interventions, for example, computerised cognitive behavioural therapy for young people when conventional therapies are limited or delayed.⁵⁸ ⁵⁹ However, further research evidence is required to evaluate the effectiveness of these digital interventions particularly for individuals lacking adequate digital resources, as well as to examine potential privacy issues. 3 5 18 Selective interventions may include exploring more effective ways of signposting, delivering mental health services and assisting individuals in crisis particularly for vulnerable groups, ^{3 5} as well as locally driven peer support programmes.

Our study suggests that coping poorly, young age, preexisting mental health conditions and loneliness are associated with suicidal thoughts while the same risk factors except loneliness are associated with self-harm behaviours during the early phases of the COVID-19 pandemic in the UK. While global attention is still dominated by the COVID-19 as the pandemic evolves, the associated impact on mental health, suicide and self-harm should not be overlooked and may be prolonged.^{4 5} Efforts to foster collaborative research between academics, government and service monitoring of trends in mental health and suicidal behaviours/self-harm and informing interventions should be prioritised in order to mitigate potential harms to mental health and support rapid translation in this evolving pandemic. Policy decisions about this and any future waves or pandemics should take into account the risks of loneliness.

Author affiliations

¹Health Data Research UK, Swansea University Medical School, Swansea University, Singleton Park, Swansea, UK

²Mental Health Foundation, Colechurch House, 1 London Bridge Walk, London, UK ³Department of Management Science, Strathclyde Business School, University of Strathclyde, 199 Cathedral Street, Glasgow, UK

⁴School of Social Sciences, Education and Social Work, Queen's University Belfast, Belfast, UK

⁵Cambridge Public Health, Department of Psychiatry, Cambridge School of Clinical Medicine, University of Cambridge, Cambridge, UK

⁶Leicester School of Allied Health Sciences, Faculty of Health and Life Sciences, De Montfort University, Leicester, UK

Twitter Ann John @ProfAnnJohn, Tine Van Bortel @TineVanBortel and Antonis A. Kousoulis @AKousoulis

Acknowledgements Professor Mike Gravenor and Professor Alan Watkins provided statistical advice. Lucy Thorpe, Catherine Seymour, Richard Grange and Rachel Baird (Mental Health Foundation) provided conceptual and operational support for the main study.

Contributors AJ, AAK and TVB conceived the study. AJ, SCL, SS, DC-K, SM, ADM, GD, TVB and AAK designed the study. SS oversaw data collection. AJ supervised the study. SCL conducted the analysis. SCL and AJ wrote the initial draft. AJ, SCL, SS, DC-K, SM, ADM, GD, TVB and AAK commented on the interpretation of findings and the manuscript. AJ is the guarantor of this study who accepts full responsibility

for the finished work and/or the conduct of the study, had access to the data, and controlled the decision to publish.

Funding The study is funded by MQ Transforming Mental Health (MQBF/3 ADP), the National Institute for Health Research Applied Research Collaboration (NIHR ARC EoE/U.SY.SYBJ.GAAB) and the Mental Health Foundation UK (MHF/G105979), with further in-kind or human resource contributions from the University of Cambridge, Swansea University, Strathclyde University and Queens University Belfast, UK. The Waterloo Foundation and the Manolo Blahnik International have also provided smaller funding contributions for the study.

Competing interests None declared.

Patient consent for publication Not required.

Ethics approval Ethics approval for this study has been granted by the Cambridge Psychology Research Ethics Committee of the University of Cambridge, UK (No PRE 2020.050).

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. The data that support the findings of this study are available from the Mental Health Foundation, contactable through the corresponding author upon reasonable request once the study is completed.

Supplemental material This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: http://creativecommons.org/licenses/by-nc/4.0/.

ORCID IDS

Ann John http://orcid.org/0000-0002-5657-6995 Tine Van Bortel http://orcid.org/0000-0003-0467-6393

REFERENCES

- 1 Lythgoe MP, Middleton P. Ongoing clinical trials for the management of the COVID-19 pandemic. *Trends Pharmacol Sci* 2020;41:363–82.
- 2 WHO. Who announces COVID-19 outbreak a pandemic, 2020. Available: https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/who-announces-covid-19-outbreak-a-pandemic [Accessed 17 Jul 2020].
- 3 Holmes EA, O'Connor RC, Perry VH, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. Lancet Psychiatry 2020;7:547–60.
- 4 Torales J, O'Higgins M, Castaldelli-Maia JM, et al. The outbreak of COVID-19 coronavirus and its impact on global mental health. Int J Soc Psychiatry 2020;66:317–20.
- 5 Gunnell D, Appleby L, Arensman E, et al. Suicide risk and prevention during the COVID-19 pandemic. Lancet Psychiatry 2020;7:468–71.
- 5 Tian F, Li H, Tian S, et al. Psychological symptoms of ordinary Chinese citizens based on SCL-90 during the level I emergency response to COVID-19. Psychiatry Res 2020;288:112992.
- 7 Wang C, Pan R, Wan X, et al. A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. Brain Behav Immun 2020;87:40–8.
- 8 Chan SMS, Chiu FKH, Lam CWL, et al. Elderly suicide and the 2003 SARS epidemic in Hong Kong. Int J Geriatr Psychiatry 2006;21:113–8.
- 9 Cheung YT, Chau PH, Yip PSF, . A revisit on older adults suicides and severe acute respiratory syndrome (SARS) epidemic in Hong Kong. *Int J Geriatr Psychiatry* 2008;23:1231–8.
- 10 Perlman D, Peplau L. Toward a social psychology of loneliness. *Pers Relatsh* 1981;3:31–56.
- 11 Calati R, Ferrari C, Brittner M, et al. Suicidal thoughts and behaviors and social isolation: a narrative review of the literature. J Affect Disord 2019;245:653–67.



- Hedley D, Uljarević M, Wilmot M, et al. Understanding depression and thoughts of self-harm in autism: a potential mechanism involving loneliness. Res Autism Spectr Disord 2018;46:1–7.
- 13 McClelland H, Evans JJ, Nowland R, et al. Loneliness as a predictor of suicidal ideation and behaviour: a systematic review and metaanalysis of prospective studies. J Affect Disord 2020;274:880–96.
- 14 Mushtaq R, Shoib S, Shah T. Relationship between loneliness, Psychiatric disorders and physical health? A review on the psychological aspects of loneliness. J Clin Diagnostic Res 2014;8.
- Stickley A, Koyanagi A. Loneliness, common mental disorders and suicidal behavior: findings from a general population survey. J Affect Disord 2016;197:81-7.
- 16 Stravynski A, Boyer R. Loneliness in relation to suicide ideation and parasuicide: a population-wide study. Suicide Life Threat Behav 2001:31:32–40.
- 17 Teo AR, Marsh HE, Forsberg CW, et al. Loneliness is closely associated with depression outcomes and suicidal ideation among military veterans in primary care. J Affect Disord 2018;230:42–9.
- 18 Loades ME, Chatburn E, Higson-Sweeney N, et al. Rapid systematic review: the impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. J Am Acad Child Adolesc Psychiatry 2020;59:1218-1239.e3.
- 19 Elliott JL, Frude N, Stress FN. Stress, coping styles, and hopelessness in self-poisoners. *Crisis* 2001;22:20–6.
- 20 Mitchell AM, Crane PA, Kim Y. Perceived stress in survivors of suicide: psychometric properties of the perceived stress scale. Res Nurs Health 2008;31:576–85.
- 21 Zweig RA, Hinrichsen GA. Factors associated with suicide attempts by depressed older adults: a prospective study. Am J Psychiatry 1993;150:1687–92.
- 22 Ellis JB, Lamis DA, Characteristics A. Adaptive characteristics and suicidal behavior: a gender comparison of young adults. *Death Stud* 2007;31:845–54.
- 23 Garlow SJ, Rosenberg J, Moore JD, et al. Depression, desperation, and suicidal ideation in college students: results from the American foundation for suicide prevention College screening project at Emory University. *Depress Anxiety* 2008;25:482–8.
- 24 Heikkinen M, Aro H, Lönnqvist J. Life events and social support in suicide. Suicide Life Threat Behav 1993;23:343–58.
- 25 Linda WP, Marroquín B, Miranda R. Active and passive problem solving as moderators of the relation between negative life event stress and suicidal ideation among suicide attempters and nonattempters. Arch Suicide Res 2012;16:183–97.
- 26 Bickford D, Morin RT, Woodworth C, et al. The relationship of frailty and disability with suicidal ideation in late life depression. Aging Ment Health 2021;25:1–6.
- 27 COVID-19 research Tracker, 2021. Available: https://www.closer.ac. uk/covid19-longitudinal-research-hub/covid19-research-evidence/# [Accessed 10 Jun 2021].
- 28 Iob E, Steptoe A, Fancourt D. Abuse, self-harm and suicidal ideation in the UK during the COVID-19 pandemic. Br J Psychiatry 2020;217:1–4.
- 29 O'Connor RC, Wetherall K, Cleare S, et al. Mental health and well-being during the COVID-19 pandemic: longitudinal analyses of adults in the UK COVID-19 Mental Health & Wellbeing study. Br J Psychiatry 2021;218:326–33.
- 30 Van Bortel T, John A, Solomon S, et al. Mental health in the pandemic: a repeated cross-sectional mixed-method study protocol to investigate the mental health impacts of the coronavirus pandemic in the UK. BMJ Open 2021;11:e046422.
- 31 YouGov. YouGov's client privacy and cookies notice, 2017. Available: https://yougov.co.uk/about/client-privacy-and-cookies-notice/ [Accessed 10 Jun 2021].
- 32 StataCorp. Stata statistical software: release 16. College Station, TX: StataCorp LLC, 2019.
- 33 Cummings P. Methods for estimating adjusted risk ratios. Stata J 2009;9:175–96.
- 34 Korn EL, Graubard Bl. Analyses Using Multiple Surveys. In: Analysis of health surveys. Hoboken, NJ: John Wiley & Sons, 1999.
- 35 Dong Y, Peng C-YJ. Principled missing data methods for researchers. *Springerplus* 2013;2:222.
- 36 Bebbington PE, McManus S. Revisiting the one in four: the prevalence of psychiatric disorder in the population of England 2000-2014. Br J Psychiatry 2020;216:55–7.

- 37 Fancourt D, Steptoe A, Bu F. Trajectories of anxiety and depressive symptoms during enforced isolation due to COVID-19 in England: a longitudinal observational study. *Lancet Psychiatry* 2021;8:141–9.
- 38 Iob E, Frank P, Steptoe A, et al. Levels of severity of depressive symptoms among at-risk groups in the UK during the COVID-19 pandemic. JAMA Netw Open 2020;3:e2026064.
- 39 Kwong ASF, Pearson RM, Adams MJ, et al. Mental health before and during the COVID-19 pandemic in two longitudinal UK population cohorts. Br J Psychiatry 2021;218:334–43.
- 40 Pierce M, Hope H, Ford T, et al. Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population. *Lancet Psychiatry* 2020;7:883-892.
- 41 Pierce M, McManus S, Hope H, et al. Mental health responses to the COVID-19 pandemic: a latent class trajectory analysis using longitudinal UK data. Lancet Psychiatry 2021;8:610-619.
- 42 Arnett JJ. Emerging adulthood. A theory of development from the late teens through the twenties. Am Psychol 2000;55:469-80.
- 43 Duffy ME, Twenge JM, Joiner TE. Trends in mood and anxiety symptoms and suicide-related outcomes among U.S. undergraduates, 2007–2018: evidence from two national surveys. J Adolesc Heal 2019;65:590–8.
- 44 Shanahan MJ. Pathways to adulthood in changing societies: variability and mechanisms in life course perspective. *Annu Rev Sociol* 2000;26:667–92.
- 45 Shanahan L, Steinhoff A, Bechtiger L, et al. Emotional distress in young adults during the COVID-19 pandemic: evidence of risk and resilience from a longitudinal cohort study. Psychol Med 2020:1–10.
- 46 Bell DNF, Blanchflower DG. Us and UK labour markets before and during the COVID-19 crash. Natl Inst Econ Rev 2020;252:R52-69.
- 47 Cortes GM, Forsythe E. The heterogeneous labor market impacts of the Covid-19 pandemic. SSRN Electron J 2020.
- 48 Pierce M, McManus S, Jessop C, et al. Says who? the significance of sampling in mental health surveys during COVID-19. *Lancet Psychiatry* 2020;7:567–8.
- 49 Hays RD, Liu H, Kapteyn A. Use of Internet panels to conduct surveys. Behav Res Methods 2015;47:685–90.
- 50 HESA. Higher education student statistics: UK, 2019/20, 2021. Available: https://www.hesa.ac.uk/news/27-01-2021/sb258-higher-education-student-statistics [Accessed 10 Jun 2021].
- 51 ONS. ONS Mid-Year Population Estimates Custom Age Tables, 2020. Available: https://data.gov.uk/dataset/b1f548a4-694c-438b-9551-af7a121e3395/ons-mid-year-population-estimates-customage-tables [Accessed 10 Jun 2021].
- Katikireddi SV, Niedzwiedz CL, Popham F. Trends in population mental health before and after the 2008 recession: a repeat crosssectional analysis of the 1991-2010 health surveys of England. BMJ Open 2012;2:e001790.
- 53 Pan K-Y, Kok AAL, Eikelenboom M, et al. The mental health impact of the COVID-19 pandemic on people with and without depressive, anxiety, or obsessive-compulsive disorders: a longitudinal study of three Dutch case-control cohorts. Lancet Psychiatry 2021;8:121–9.
- 54 Daly M, Sutin AR, Robinson E. Longitudinal changes in mental health and the COVID-19 pandemic: evidence from the UK household longitudinal study. *Psychol Med* 2020:1–10.
- 55 HM Government. A connected Society: a strategy for tackling loneliness – laying the foundations for change, 2018. Available: https://assets.publishing.service.gov.uk/government/uploads/ system/uploads/attachment_data/file/750909/6.4882_DCMS_ Loneliness_Strategy_web_Update.pdf
- 56 Jo Cox Commission on Loneliness. Combatting loneliness one conversation at a time: a call to action, 2017. Available: https:// www.ageuk.org.uk/globalassets/age-uk/documents/reports-andpublications/reports-and-briefings/active-communities/rb_dec17_ jocox_commission_finalreport.pdf
- 57 Odd D, Sleap V, Appleby L. Child suicide rates during the COVID-19 pandemic in England: real-time surveillance. Bristol, 2020. Available: https://www.ncmd.info/wp-content/uploads/2020/07/REF253-2020-NCMD-Summary-Report-on-Child-Suicide-July-2020.pdf
- 58 Grist R, Croker A, Denne M, et al. Technology delivered interventions for depression and anxiety in children and adolescents: a systematic review and meta-analysis. Clin Child Fam Psychol Rev 2019;22:147–71.
- 59 Pennant ME, Loucas CE, Whittington C, et al. Computerised therapies for anxiety and depression in children and young people: a systematic review and meta-analysis. Behav Res Ther 2015;67:1–18.

Suppl. Methods

Sampling of Participants and Weighting

E-mails were sent to panellists selected at random from the base sample. The e-mail invited them to take part in a survey and provided a generic survey link. Once a panel member clicked on the link, they were sent to the survey that they were most suited for, according to the sample definition and quotas (non-probability sampling). Invitations to surveys did not expire and respondents could be sent to any available survey. In our study, quotas were based age, sex, education level, social grade and the UK's four nation population profile. The profile was derived from ONS census data and the National Readership Survey [1].

Sociodemographic Variables

Demographic variables contained categorical variables of sex (male and female), age (18-34, 35-44, 45-54 and ≥ 55 years) and marital status (married/civil partnership, living as married, separated/divorced, widowed, never married; and not known). Socio-economic variables consisted of a variable of social grade, dichotomised into ABC1 and C2DE categories generally representing individuals with higher and lower socio-economic status respectively [1]. We also categorised participants working status as employed (included both full-time and part-time), unemployed, not working/others, full-time student and retired. We included two household-level categorical variables that 1) dichotomised whether a participant was a parent/guardian and 2) documented the number of children in the household (0, 1, 2, 3+, refused to answer).

Additional Variables Available from Wave 3

Starting from wave 3 (Suppl. Table 1), participants who were employed were further categorised into two sub-groups as being or not being furloughed. This resulted in a combined single categorical variable of working and furlough status with the categories of employed (not furloughed), employed (furloughed), unemployed, not working/others, full-time student and retired) for wave 3 and 4 only .We identified individuals with any pre-existing mental health conditions or psychiatric diagnosis at the time of the survey. They were asked 'Do you have a current pre-existing mental health condition or psychiatric diagnosis?' and participants could respond 'Yes', 'No', 'Don't know', Prefer not to say' and 'Refused'. A set of non-mutually exclusive binary variables were introduced to assess living arrangements: living alone, with spouse/partner, with friend(s)/housemate(s), with parent(s), with sibling(s), with child(ren) ≥ 18 years, with child(ren) < 18 years, with other adult family members and with grandchild(ren). We recoded these living arrangements variables into four binary

variables as 1) living alone (as original), 2) living with spouse/partner (as original), 3) living with relative(s) by combining living with parent(s), sibling(s), child(ren) ≥ 18 years, child(ren) < 18 years, other adult family members and grandchild(ren) and 4) living with friend(s)/housemate(s). We also included a categorical variable from wave 3 to assess whether a participant lived in urban, town/fringe, or urban areas (Suppl. Table 1).

Sensitivity Analysis

We carried out a sensitivity analysis to test the robustness of our results by conducting regression modelling on the combined data from wave 2, wave 3 and wave 4 where both suicidal thoughts and self-harm outcomes were available (Suppl. Table 1). However, we could not include variables for pre-existing mental health conditions, living arrangements and area characteristics in the sensitivity analysis due to data unavailability. The same modelling specifications as in the main analysis was adopted in the sensitivity analysis with time variable including wave 2, wave 3 and wave 4. Due to zero counts of self-harm in the coping subgroup found at wave 2 (Fig, 3G and Suppl. Table 7), we omitted the wave-by-coping interaction term in the regression for self-harm in the sensitivity analysis.

References

National Readership Survey. Social Grade. 2020.http://www.nrs.co.uk/nrs-print/lifestyle-and-classification-data/social-grade/ (accessed 15 Jul 2020).

Suppl. Table 1. Summary of list of variables available for data analysis for each wave of data collection and item non-response rate.

		Wave 1	1 (17-18/03/2) (2,126.0		26	Wave	2 (02-03/04/2 (2,221.0		221	Wave	3 (24-26/04/2) (4,246.0		246	Wave 4	(28-29/05/20 (4,382.0		182
		_	Item no	n-response	b		Item no	n-response	b		Item no	n-response	b	_	Item no	n-response	_b
		1	Unweighted \	Weighted W	eighted		Unweighted \	Neighted W	/eighted		Unweighted \	Neighted W	/eighted	ι	Jnweighted \	Weighted W	/eighted
		vailable?	counts	counts	%	Available?	counts	counts	%	Available?	counts	counts	%	Available?	counts	counts	%
Outcomes	Suicidal thoughts	No	-	-	-	Yes	116	124.5	5.6	Yes	277	287.6	6.8	Yes	234	247.2	5.6
	Self-harm	No	-	-	-	Yes	104	109.9	4.9	Yes	249	257.6	6.1	Yes	214	225.8	5.2
Main covariates	Loneliness	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0
	Coping	No	-	-	-	Yes	57	62.0	2.8	Yes	111	114.1	2.7	Yes	92	101.9	2.3
Individual-level	Sex	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0
demographics	Age	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0
	Marital status	Yes	14	13.2	0.6	Yes	15	16.9	0.8	Yes	17	19.4	0.5	Yes	30	33.0	8.0
Socioeconomic	Social grade	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0
status (SES)	Working Status	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0
	Mental health condition/Psychiatric diagnosis	No	-	-	-	No	-	-	-	Yes	290	297.8	7.0	Yes	251	267.9	6.1
Household-level	Being parent/guardian	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0	Yes	0	0.0	0.0
factors	Number of children in household	Yes	35	33.8	1.6	Yes	59	62.1	2.8	Yes	84	88.7	2.1	Yes	73	82.0	1.9
	Living arrangements	No	-	-	-	No	-	-	-	Yes	0	0.0	0.0	Yes	0	0.0	0.0
Area factors	Urban/Rural area	No	-	-	-	No	-	-	-	Yes	128	112.6	2.7	Yes	116	116.3	2.7

a Weighted based

^b Item non-response included skipped answers, 'prefer not to say', 'don't know', 'refuse to answer' and 'none of these' responses

Suppl. Table 1A. Cross-tabulation between pre-existing mental health condition/psychiatric diagnosis and outcomes of the study with item non-response categories.

		.				Cate	gory of	outcome			
		Category of -/Mental health condition		No	1		Yes	3	Item	non-re	esponsea
Wave	Outcome	Psychiatric diagnosis	Counts ^b	% ^b	95% CI	Counts ^b	% ^b	95% CI	Counts ^b	% ^b	95% CI
Wave 3	Suicidal thoughts										
		No	2,792.3	77.8 (76.4 , 79.2)	153.7	41.5 (36.4 , 46.7)	145.3	50.5 (44.5 , 56.5)
		Yes	631.2	17.6 (16.4 , 18.9)	183.4	49.5 (44.2 , 54.7)	42.4	14.7 (10.9 , 19.6)
		Item non-response ^a	164.3	4.6 (3.9 , 5.3)	33.6	9.1 (6.4 , 12.7)	99.9	34.7 (29.2 , 40.7)
	Self-harm										
		No	2,930.2	75.1 (73.7 , 76.5)	30.5	34.5 (24.7 , 45.8)	130.6	50.7 (44.4 , 57.0)
		Yes	774.7	19.9 (18.6 , 21.2)	47.1	53.4 (42.3 , 64.2)	35.1	13.6 (9.8 , 18.6)
		Item non-response ^a	195.2	5.0 (4.4 , 5.8)	10.7	12.1 (6.3 , 22.0)	91.9	35.7 (29.8 , 42.0)
Wave 4	Suicidal thoughts										
		No	2,897.4	77.9 (76.4 , 79.3)	139.7	33.7 (28.9 , 38.9)	143.4	58.0 (51.0 , 64.7)
		Yes	665.2	17.9 (16.6 , 19.2)	226.2	54.6 (49.3 , 59.8)	42.1	17.0 (12.5 , 22.8)
		Item non-response ^a	158.1	4.2 (3.6 , 5.0)	48.2	11.6 (8.6 , 15.6)	61.6	24.9 (19.2 , 31.7)
	Self-harm										
		No	3,028.0	74.3 (72.8 , 75.7)	17.9	22.8 (14.6 , 33.8)	134.6	59.6 (52.2 , 66.5)
		Yes	851.7	20.9 (19.6 , 22.3)	48.4	61.7 (49.5 , 72.6)	33.6	14.9 (10.2 , 21.2)
		Item non-response ^a	198.1	4.9 (4.2 , 5.6)	12.1	15.4 (8.3 , 27.0)	57.7	25.6 (19.6 , 32.5)

^a Item non-response included skipped answers, 'prefer not to say', 'don't know', 'refuse to answer', and 'none of these' responses

^b Weighted based, column percentages

Suppl. Table 2. Sample characteristics with unweighted based.

		Wave 1 (17	'-18/03/2020)	Wave 2 (02	2-03/04/2020)	Wave 3 (24	-26/04/2020)	Wave 4 (28	3-29/05/2020)
	_	n = 2	2,126ª	n	2,221ª	n = 4	1,246 ^a	n =	4,382a
		Counts ^a % ^a	95% CI	Counts ^a % ^a	95% CI	Counts ^a % ^a	95% CI	Counts ^a % ^a	95% CI
Gender	Male	998 46.9	(44.8 , 49.1)	1,017 45.8	(43.7 , 47.9)	1,990 46.9	(45.4 , 48.4)	2,000 45.6	(44.2 , 47.1)
	Female	1,128 53.1	(50.9,55.2)	1,204 54.2	(52.1,56.3)	2,256 53.1	(51.6,54.6)	2,382 54.4	(52.9,55.8)
Age (years)	18-24	195 9.2	(8.0 , 10.5)	215 9.7	(8.5, 11.0)	423 10.0	(9.1 , 10.9)	338 7.7	(7.0, 8.5)
	25-34	347 16.3	(14.8 , 18.0)	355 16.0	(14.5, 17.6)	678 16.0	(14.9 , 17.1)	671 15.3	(14.3, 16.4)
	35-44	352 16.6	(15.0 , 18.2)	368 16.6	(15.1, 18.2)	706 16.6	(15.5 , 17.8)	742 16.9	(15.9, 18.1)
	45-54	376 17.7	(16.1 , 19.4)	350 15.8	(14.3, 17.3)	707 16.7	(15.6 , 17.8)	780 17.8	(16.7, 19.0)
	55+	856 40.3	(38.2, 42.4)	933 42.0	(40.0, 44.1)	1,732 40.8	(39.3, 42.3)	1,851 42.2	(40.8, 43.7)
Social grade	ABC1	1,275 60.0	(57.9,62.0)	1,318 59.3	(57.3,61.4)	2,468 58.1	(56.6,59.6)	2,675 61.1	(59.6, 62.5)
	C2DE	851 40.0	(38.0, 42.1)	903 40.7	(38.6, 42.7)	1,778 41.9	(40.4,43.4)	1,707 39.0	(37.5, 40.4)
Marital status	Married/ Civil Partnership	985 46.3	(44.2,48.5)	1,036 46.7	(44.6, 48.7)	1,895 44.6	(43.1,46.1)	2,123 48.5	(47.0,49.9)
	Living as married	304 14.3	(12.9, 15.9)	298 13.4	(12.1, 14.9)	576 13.6	(12.6, 14.6)	585 13.4	(12.4, 14.4)
	Separated/ Divorced	186 8.8	(7.6 , 10.0)	208 9.4	(8.2 , 10.6)	381 9.0	(8.2, 9.9)	390 8.9	(8.1, 9.8)
	Widowed	92 4.3	(3.5 , 5.3)	80 3.6	(2.9 , 4.5)	156 3.7	(3.1 , 4.3)	153 3.5	(3.0 , 4.1)
	Never Married	545 25.6	(23.8, 27.5)	584 26.3	(24.5 , 28.2)	1,221 28.8	(27.4 , 30.1)	1,101 25.1	(23.9, 26.4)
	Not known	14 0.7	(0.4 , 1.1)	15 0.7	(0.4 , 1.1)	17 0.4	(0.3 , 0.6)	30 0.7	(0.5 , 1.0)
Working Status	Employed ^b	1,192 56.1	(53.9,58.2)	1,246 56.1	(54.0, 58.2)	2,219 52.3	(50.8,53.8)	2,343 53.5	(52.0,54.9)
-	Unemployed	73 3.4	(2.7 , 4.3)	77 3.5	(2.8 , 4.3)	189 4.5	(3.9 , 5.1)	159 3.6	(3.1 , 4.2)
	Not working/Others	200 9.4	(8.2 , 10.7)	211 9.5	(8.3, 10.8)	485 11.4	(10.5 , 12.4)	506 11.6	(10.6, 12.5)
	Full time student	127 6.0	(5.0, 7.1)	123 5.5	(4.7, 6.6)	225 5.3	(4.7, 6.0)	159 3.6	(3.1 , 4.2)
	Retired	534 25.1	(23.3 , 27.0)	564 25.4	(23.6, 27.2)	1,128 26.6	(25.3 , 27.9)	1,215 27.7	(26.4 , 29.1)
Mental health condition/	No		(- , -)		(- , -)	3,093 72.9	(71.5 , 74.2)	3,223 73.6	(72.2,74.8)
Psychiatric diagnosis	Yes		(- , -)		(- , -)	863 20.3	(19.1 , 21.6)	908 20.7	(19.5, 21.9)
	Prefer not to say/not known		(- , -)		(- , -)	290 6.8	(6.1, 7.6)	251 5.7	(5.1,6.5)
Being parent/guardian		1,251 58.8	(56.7,60.9)	1,266 57.0	(54.9,59.0)	2,343 55.2	(53.7,56.7)	2,531 57.8	(56.3,59.2)
Number of children	0	1,476 69.4	(67.4 , 71.3)	1,604 72.2	(70.3, 74.0)	3,123 73.6	(72.2 , 74.9)	3,192 72.8	(71.5, 74.1)
in household	1	291 13.7	(12.3 , 15.2)	267 12.0	(10.7 , 13.4)	468 11.0	(10.1 , 12.0)	525 12.0	(11.1, 13.0)
	2	243 11.4	(10.1 , 12.9)	209 9.4	(8.3 , 10.7)	422 9.9	(9.1 , 10.9)	422 9.6	(8.8 , 10.5)
	3+	81 3.8	(3.1 , 4.7)	82 3.7	(3.0 , 4.6)	149 3.5	(3.0 , 4.1)	170 3.9	(3.3 , 4.5)
	Refused to answer	35 1.7	(1.2 , 2.3)	59 2.7	(2.1 , 3.4)	84 2.0	(1.6 , 2.4)	73 1.7	(1.3, 2.1)
Living arrangements ^c	Alone		(- , -)		(- , -)	859 20.2	(19.0 , 21.5)	781 17.8	(16.7, 19.0)
	Spouse/partner		(- , -)		(- , -)	2,418 57.0	(55.5,58.4)	2,685 61.3	(59.8,62.7)
	Relative(s)		(- , -)		(- , -)	1,415 33.3	(31.9 , 34.8)	781 17.8	(33.2, 36.1)
	Friend(s)/housemate(s)		(- , -)		(- , -)	173 4.1	(3.5 , 4.7)	123 2.8	(2.4 , 3.3)
Urban/Rural area	Urban		(- , -)		(- , -)	3,181 74.9	(73.6 , 76.2)	3,271 74.7	(73.3, 75.9)
	Town/Fringe		(- , -)		(- , -)	414 9.8	(8.9 , 10.7)	439 10.0	(9.2 , 10.9)
	Rural		(- , -)		(- , -)	523 12.3	(11.4 , 13.3)	556 12.7	(11.7, 13.7)
	Not known		(- , -)		(- , -)	128 3.0	(2.5 , 3.6)	116 2.7	(2.2 , 3.2)

^a Unweighted based

b Includes working full-time and part-time Row % do not add up to 100% because categories are non-mutually exclusive

Suppl. Table 3. Loneliness stratified by sample characteristics.

		Wave	1 (17-18/	(03/2020)	Wav	e 2 (02-03	3/04/2020)		Wave	3 (24-26	/04/2020)		Wave	4 (28-29	/05/2020)
	_	n = 2	2,126 (2,	126.0) ^a	n :	2,221 (2	,221.0)a		n = 4	4,246 (4,	246.0) ^a		n =	4,382 (4,	382.0) ^a
		Counts ^a	% ^a	95% CI	Counts ^a	%ª	95% CI		Counts ^a	% ^a	95% CI		Counts ^a	% ^a	95% CI
Total		208.5	9.8 (8.6 , 11.2	531.0	23.9 (22.1 , 25.8)	1,134.9	26.7 (25.4 , 28.1)	1,125.4	25.7 (24.3 , 27.1
Sex	Male	75.6	7.3 (5.8 , 9.3	216.7	20.1 (17.6 , 22.9)	458.4	22.3 (20.4 , 24.2)	439.8	20.7 (18.7 , 22.8
	Female	132.9	12.1 (10.3 , 14.2	314.2	27.5 (25.0 , 30.1)	676.5	30.9 (29.1 , 32.9)	685.6	30.4 (28.5 , 32.3
Age (years)	18-24	38.5	16.3 (11.6 , 22.4	108.3	43.9 (37.2 , 50.9)	211.4	44.9 (40.0 , 49.8)	226.6	46.6 (40.7 , 52.6
	25-34	50.0	14.1 (10.8 , 18.2	124.5	34.6 (29.7 , 39.7)	243.3	35.7 (32.1 , 39.4)	237.3	34.2 (30.5 , 38.0
	35-44	39.6	11.5 (8.4 , 15.4	100.4	26.5 (22.0 , 31.4)	209.6	29.9 (26.6 , 33.5)	221.1	29.9 (26.5 , 33.6
	45-54	29.0	7.9 (5.5 , 11.1	55.4	15.7 (12.2 , 19.9)	159.0	22.7 (19.7 , 25.9)	144.2	18.9 (16.3 , 21.8
	55+	51.4	6.3 (4.8 , 8.1	142.3	16.2 (13.9 , 18.7)	311.5	18.4 (16.7 , 20.3)	296.3	17.4(15.8 , 19.2
Social grade	ABC1	139.2	11.5 (9.8 , 13.4	293.0	23.1 (20.9 , 25.6)	651.7	26.9 (25.2 , 28.7)	667.1	26.7 (25.0 , 28.5
	C2DE	69.3	7.6 (6.0 , 9.6	238.0	24.9 (22.1 , 27.9)	483.1	26.5 (24.4 , 28.6)	458.3	24.3 (22.2 , 26.6
Marital status	Married/ Civil Partnership	50.8	5.3 (4.1 , 6.9	113.8	11.3 (9.5 , 13.4)	268.0	14.4 (12.9 , 16.1)	283.3	14.2 (12.7 , 15.8
	Living as married	22.7	7.5 (5.0 , 11.1	63.5	21.3 (16.9, 26.5)	137.9	23.9 (20.6 , 27.6)	114.5	18.9 (15.8 , 22.6
	Separated/ Divorced	16.9	9.4 (6.0 , 14.5	65.8	32.2 (26.1 , 39.0)	146.3	39.0 (34.2 , 44.0)	137.9	37.6 (32.9 , 42.5
	Widowed	17.3	20.2 (13.1 , 29.9	29.0	39.2 (29.1 , 50.3)	51.6	35.2 (28.1 , 43.0)	51.2	37.3 (29.9 , 45.3
	Never Married	97.8	16.6 (13.6 , 20.1	253.2	40.8 (36.8 , 44.9)	523.3	41.1 (38.3 , 44.0)	528.3	42.5 (39.3 , 45.7
	Not known	2.9	22.1 (7.2 , 50.9	5.6	33.0 (14.2 , 59.5)	7.8	40.1 (19.8 , 64.5)	10.3	31.1 (16.1 , 51.5
Working Status	Employed ^b	99.6	8.4 (6.9 , 10.1	298.2	23.6 (21.3 , 26.1)	599.5	26.7 (24.9 , 28.6)	620.0	26.1 (24.2 , 28.0
	Unemployed	13.5	16.9 (9.2 , 29.1	28.5	32.9 (23.0 , 44.6)	94.3	47.6 (40.4 , 54.9)	46.4	25.5 (19.1 , 33.1
	Not working/Others	29.2	14.0 (9.8 , 19.6	63.2	29.4 (23.6 , 36.1)	146.4	29.8 (25.8 , 34.0)	160.1	30.7 (26.6 , 35.1
	Full time student	30.5	20.6 (14.4 , 28.6	60.8	44.9 (36.0 , 54.0)	112.6	45.8 (39.2 , 52.6)	105.8	48.5 (39.9 , 57.2
	Retired	35.7	7.1 (5.2 , 9.7	80.2	15.5 (12.7 , 18.7)	182.2	17.1 (15.0 , 19.5)	193.2	17.8 (15.8 , 20.1
Mental health condition/	No	-	- (-,-	-	- (-,-)	667.5	21.6 (20.2 , 23.1)	661.6	20.8 (19.3 , 22.3
Psychiatric diagnosis	Yes	-	- (-,-	-	- (-,-)	376.7	44.0 (40.6 , 47.3)	380.1	40.7 (37.3 , 44.2
	Prefer not to say/not known	-	- (-,-	-	- (-,-)	90.6	30.4 (25.4 , 36.0)	83.7	31.2 (25.3 , 37.9
Being parent/guardian		77.5	6.3 (5.1 , 7.8	218.9	17.6 (15.6 , 19.9)	518.2	22.5 (20.8 , 24.2)	466.6	19.4 (17.9 , 21.1
Number of children	0	149.9	10.3 (8.8 , 12.0	374.3	23.7 (21.6 , 25.9)	831.3	26.7 (25.2 , 28.3)	815.3	25.9 (24.3 , 27.5
in household	1	21.7	7.3 (4.8 , 10.9	79.3	28.5 (23.3 , 34.4)	133.3	28.2 (24.2 , 32.5)	157.8	28.7 (24.7 , 33.1
	2	26.1	10.5 (7.1 , 15.3	30.0	14.0 (10.0 , 19.4)	112.6	26.7 (22.6 , 31.2)	92.1	22.2 (18.0 , 26.9
	3+	6.6	7.6 (3.4 , 16.2	29.7	33.6 (23.8 , 45.2)	44.6	29.4 (22.4 , 37.6)	43.4	23.9 (17.5 , 31.6
	Refused to answer	4.1	12.2 (4.6 , 28.5	17.7	28.5 (18.6 , 41.1)	13.1	14.7 (8.5 , 24.4)	16.9	20.6 (12.8 , 31.3
Living arrangements ^c	Alone	-	- (-,-	-	- (-,-)	358.3	42.1 (38.8, 45.5)	353.4	46.6 (43.0 , 50.3
	Spouse/partner	-	- (-,-	-	- (-,-)	400.7	16.8 (15.4 , 18.4)	401.9	15.6 (14.2 , 17.1
	Relative(s)	-	- (-,-	-	- (-,-)	415.1	28.7 (26.4 31.2)	458.7	28.5 (26.0 31.1
	Friend(s)/housemate(s)	-	- (-,-	-	- (-,-)	97.1	52.5 (44.8 , 60.0)	51.4	39.8 (31.1 , 49.2
Urban/Rural area	Urban	-	- (-,-	-	- (-,-)	885.5	27.5 (26.0 , 29.1)	884.6	26.7 (25.1 , 28.4
	Town/Fringe	-	- (-,-	-	- (-,-)	102.1	25.4 (21.4, 29.9)	102.0	24.1 (19.9, 28.8
	Rural	-	- (-,-	-	- (- , -)	114.3	22.2 (18.8 , 26.1)	117.8	22.2 (18.7 , 26.0
	Not known	_	- (-,-	-	- (-,-)	33.0	29.3 (22.1 , 37.8)	21.1	18.1 (11.7 , 27.0

a Weighted based

^b Includes working full-time and part-time

 $^{^{\}mbox{\tiny c}}$ Row counts do not add up to total because categories are non-mutually exclusive.

					١	Wave 2 (02-03/	04/2020) ı	n = 2,164 (2,15	9.0) ^a				
	<u> </u>		Not well	b			Wellc			Not ap	plicable (ı	no stress)	
		Counts ^a	%ª	95% CI		Counts ^a	% ^a	95% CI		Counts ^a	%ª	95% CI	
Total		290.6	13.5 (12.1 , 15.0)	1,612.8	74.7 (72.8 , 76.5)	255.7	11.8 (10.5 , 13.3)
Sex	Male	104.2	10.0 (8.2 , 12.2)	782.9	75.3 (72.4 , 78.0)	152.8	14.7 (12.6 , 17.1)
	Female	186.3	16.7 (14.6 , 18.9)	829.9	74.2 (71.6 , 76.6)	102.9	9.2 (7.7 , 11.0)
Age (years)	18-24	52.3	22.3 (17.1 , 28.6)	158.1	67.4 (60.4 , 73.8)	24.0	10.2 (6.4 , 15.9)
	25-34	73.1	21.2 (17.1 , 26.0)	239.7	69.6 (64.3 , 74.4)	31.7	9.2 (6.4 , 13.0)
	35-44	62.8	17.3 (13.7 , 21.6)	268.8	74.0 (69.1 , 78.3)	31.7	8.7 (6.2 , 12.2)
	45-54	35.1	10.1 (7.3 , 13.8)	279.0	80.5 (75.9 , 84.4)	32.5	9.4 (6.7 , 13.0)
	55+	67.2	7.7 (6.2 , 9.6)	667.2	76.7 (73.8 , 79.3)	135.8	15.6 (13.4 , 18.1)
Social grade	ABC1	164.8	13.2 (11.4 , 15.2)	941.0	75.6 (73.1 , 77.9)	139.5	11.2 (9.6 , 13.1)
	C2DE	125.8	13.8 (11.6 , 16.2)	671.8	73.5 (70.4 , 76.4)	116.2	12.7 (10.6 , 15.2)
Marital status	Married/ Civil Partnership	90.3	9.1 (7.5 , 11.1)	777.6	78.7 (76.0 , 81.1)	120.5	12.2 (10.3 , 14.3)
	Living as married	35.1	12.1 (8.8 , 16.4)	226.4	78.1 (73.0 , 82.6)	28.3	9.8 (6.8 , 13.8)
	Separated/ Divorced	27.1	13.7 (9.5 , 19.3)	150.1	75.8 (69.3 , 81.2)	20.9	10.5 (7.0 , 15.6)
	Widowed	10.4	14.0 (7.9 , 23.6)	50.7	68.4 (57.4 , 77.7)	13.0	17.5 (10.6, 27.5)
	Never Married	126.6	21.4 (18.1, 25.0)	393.2	66.3 (62.2 , 70.2)	73.0	12.3 (9.7 , 15.5)
	Not known	1.0	6.5 (0.9, 34.9)	14.8	93.5 (65.1,99.1)	0.0	0.0 (0.0,0.0)
Working Status	Employed ^d	158.7	12.9 (11.1 , 14.9)	951.6	77.5 (75.0 , 79.8)	117.4	9.6 (8.0 , 11.4)
	Unemployed	21.7	26.2 (17.1, 37.9)	47.2	56.9 (45.0,68.1)	14.0	16.9 (9.5, 28.3)
	Not working/Others	41.6	20.7 (15.6, 26.8)	138.5	68.8 (62.0 , 74.8)	21.3	10.6 (7.0 , 15.6)
	Full time student	33.1	24.8 (17.8, 33.5)	82.7	61.9 (52.6, 70.5)	17.7	13.3 (7.9 , 21.5)
	Retired	35.5	6.9 (5.1, 9.3)	392.8	76.5 (72.8 , 79.8)	85.2	16.6 (13.7 , 19.9)
Being parent/guardian		133.6	11.0 (9.4 , 12.9)	939.9	77.4 (75.0 , 79.6)	141.0	11.6 (10.0, 13.5)
Number of children	0	186.4	12.1 (10.5, 13.8)	1,152.8	74.6 (72.3 , 76.7)	206.7	13.4 (11.7 , 15.2)
in household	1	49.4	18.5 (14.2, 23.7)	194.7	73.0 (67.1 , 78.1)	22.8	8.5 (5.6 , 12.8)
	2	25.1	12.1 (8.2 , 17.5)	167.3	80.7 (74.6 , 85.6)	14.9	7.2 (4.4 , 11.6)
	3+	13.2	15.2 (8.9 , 24.7)	70.7	80.9 (70.8 , 88.1)	3.4	3.9 (1.2 , 11.7)
	Refused to answer	16.5	31.9 (20.0 , 46.8)	27.2	52.9 (38.7 , 66.6)	7.8	15.2 (7.3 , 29.0)

^a Weighted based

^b Unwell included 'not very well' and 'not at all well'

^c Well included 'very well' and 'fairly well'

d Includes working full-time and part-time

Suppl. Table 5. Coping with stress stratified by sample characteristics for wave 3.

					١	Nave 3 (24-26/0	04/2020)	n = 4,135 (4,13)	1.9) ^a			
			Not wel	l ^b			Well	;		Not ap	plicable	(no stress)
		Counts ^a	%ª	95% CI		Counts ^a	%ª	95% CI		Counts ^a	% ^a	95% CI
Total		533.1	12.9 (11.9 , 14.0)	2,984.4	72.2 (70.8 , 73.6)	614.5	14.9 (13.8 , 16.0)
Sex	Male	228.6	11.4 (10.0 , 13.0)	1,402.3	70.0 (67.9 , 72.1)	371.6	18.6 (16.9 , 20.4)
	Female	304.4	14.3 (12.9 , 15.8)	1,582.1	74.3 (72.4 , 76.1)	242.9	11.4 (10.1 , 12.8)
Age (years)	18-24	95.9	21.6 (17.8 , 26.0)	288.0	64.9 (59.9,69.7)	59.7	13.5 (10.2 , 17.6)
	25-34	124.7	19.1 (16.2 , 22.4)	466.0	71.3 (67.6 , 74.8)	62.6	9.6 (7.4 , 12.2)
	35-44	103.9	15.4 (12.7,18.5)	495.5	73.3 (69.7 , 76.6)	76.8	11.4 (9.1 , 14.0)
	45-54	77.6	11.3 (9.1 , 13.9)	528.7	77.1 (73.8 , 80.1)	79.3	11.6 (9.4 , 14.2)
	55+	131.0	7.8 (6.6 , 9.2)	1,206.2	72.1 (69.9 , 74.2)	336.1	20.1 (18.3 , 22.0)
Social grade	ABC1	258.8	11.0 (9.7,12.3)	1,772.9	75.1 (73.3 , 76.8)	330.4	14.0 (12.6 , 15.5)
	C2DE	274.3	15.5 (13.8,17.4)	1,211.4	68.4 (66.2 , 70.7)	284.1	16.1 (14.4 , 17.9)
Marital status	Married/ Civil Partnership	168.8	9.3 (8.0 , 10.7)	1,365.9	75.0 (73.0 , 76.9)	286.4	15.7 (14.1 , 17.5)
	Living as married	88.6	15.8 (12.9 , 19.2)	404.3	72.1 (68.1,75.7)	68.2	12.2 (9.6 , 15.2)
	Separated/ Divorced	49.5	13.5 (10.4,17.5)	264.5	72.3 (67.5 , 76.6)	51.9	14.2 (11.0 , 18.1)
	Widowed	14.0	9.7 (5.8 , 15.7)	93.9	64.8 (56.9 , 72.0)	37.0	25.5 (19.3, 33.0)
	Never Married	207.3	17.0 (14.9 , 19.3)	848.4	69.5 (66.7 , 72.1)	165.3	13.5 (11.6 , 15.7)
	Not known	4.9	27.5 (10.4 , 55.2)	7.3	40.8 (20.0,65.5)	5.7	31.7 (13.6 , 57.8)
Working Status	Employed ^d	275.2	12.6 (11.2,14.1)	1,673.1	76.5 (74.6 , 78.3)	239.4	10.9 (9.7 , 12.4)
	Unemployed	51.2	26.7 (20.5, 33.8)	115.3	60.0 (52.6,67.1)	25.6	13.3 (9.1 , 19.1)
	Not working/Others	92.6	19.9 (16.4, 23.8)	297.9	63.9 (59.3,68.2)	75.7	16.2 (13.1, 20.0)
	Full time student	51.2	22.1 (17.0 , 28.3)	152.7	65.9 (59.0 , 72.2)	27.8	12.0 (8.0 , 17.7)
	Retired	62.8	6.0 (4.7 , 7.5)	745.4	70.7 (68.0 , 73.3)	246.0	23.3 (20.9, 25.9)
Mental health condition/	No	237.7	7.8 (6.9,8.9)	2,301.6	75.7 (74.1 77.2)	501.3	16.5 (15.2 , 17.9)
Psychiatric diagnosis	Yes	228.9	27.3 (24.4,30.5)	544.7	65.0 (61.6 68.2)	64.6	7.7 (6.0 , 9.8
	Prefer not to say/not known	66.4	26.3 (21.0, 32.3)	138.1	54.6 (48.2 60.8)	48.5	19.2 (14.6, 24.8)
Being parent/guardian		257.8	11.4 (10.1 , 12.8)	1,662.4	73.4 (71.5 , 75.2)	345.8	15.3 (13.8 , 16.8)
Number of children	0	368.6	12.1 (10.9 , 13.3)	2,199.7	72.1 (70.5 , 73.7)	482.5	15.8 (14.6 , 17.2)
in household	1	70.4	15.4 (12.3 , 19.2)	330.2	72.5 (68.0 , 76.5)	55.1	12.1 (9.3 , 15.6)
	2	62.7	15.3 (12.0 , 19.2)	308.9	75.1 (70.6 , 79.2)	39.4	9.6 (7.0 , 13.0)
	3+	26.6	17.9 (12.2, 25.6)	107.5	72.6 (64.3 , 79.6)	14.1	9.5 (5.5 , 15.9)
	Refused to answer	4.8	7.3 (2.7, 18.3)	38.0	57.4 (44.7,69.2)	23.4	35.3 (24.4, 48.1
Living arrangements ^e	Alone	109.9	13.3 (11.0 , 15.9)	577.7	69.8 (66.5 , 72.9)	140.3	16.9 (14.5 , 19.7
-	Spouse/partner	250.5	10.7 (9.5 , 12.1)	1,741.0	74.4 (72.6 , 76.2)	347.4	14.9 (13.5 , 16.4)
	Relative(s)	210.1	15.0 (13.2 17.0)	1,027.8	73.4 (70.9 , 75.7)	162.7	11.6 (10.0 , 13.5)
	Friend(s)/housemate(s)	46.8	25.9 (19.6, 33.4)	117.1	64.8 (57.0 , 72.0)	16.7	9.2 (5.4 , 15.3)
Urban/Rural area	Urban	422.0	13.5 (12.3 , 14.8)	2,267.7	72.7 (71.0 , 74.2)	431.2	13.8 (12.6 , 15.1
	Town/Fringe	43.0	11.0 (8.2 , 14.5)	274.7	70.0 (65.3 , 74.3)	74.9	19.1 (15.5 , 23.2)
	Rural	53.9	10.7 (8.2 , 13.7)	356.4	70.4 (66.3 , 74.3)	95.6	18.9 (15.7 , 22.5
	Not known	14.0	12.5 (7.7 , 19.5)	85.7	76.1 (68.0 , 82.8)	12.8	11.4 (7.0 , 18.1

a Weighted based

^b Unwell included 'not very well' and 'not at all well'

^c Well included 'very well' and 'fairly well'

d Includes working full-time and part-time

^e Row counts do not add up to total because categories are non-mutually exclusive.

Suppl. Table 6. Coping with stress stratified by sample characteristics for wave 4.

					١	Nave 4 (28-29/0)5/2020) ı	n = 4,290 (4,280.1) ^a			
	_		Not wel	l _p			Well ^c		Not ap	plicable	(no stress)
		Counts ^a	%ª	95% CI		Counts ^a	%ª	95% CI	Counts ^a	%ª	95% CI
Total		609.7	14.2 (13.2 , 15.4)	2,977.8	69.6 (68.1 , 71.0)	692.6	16.2 (15.1 , 17.4)
Sex	Male	248.2	12.0 (10.4 , 13.8)	1,395.6	67.4 (65.1 , 69.7)	425.4	20.6 (18.7, 22.5)
	Female	361.5	16.4 (14.9,17.9)	1,582.2	71.6 (69.7 , 73.4)	267.2	12.1 (10.8 , 13.5)
Age (years)	18-24	109.4	23.5 (18.9 , 28.9)	306.0	65.7 (59.8 , 71.2)	50.2	10.8 (7.4 , 15.4)
	25-34	140.6	20.7 (17.5 , 24.2)	475.9	70.0 (66.0 , 73.7)	63.2	9.3 (7.0 , 12.2)
	35-44	117.9	16.7 (14.0 , 19.9)	513.0	72.7 (69.0 , 76.1)	74.8	10.6 (8.4 , 13.3)
	45-54	99.2	13.3 (11.1,15.9)	545.0	73.2 (69.8 , 76.2)	100.8	13.5 (11.2 , 16.2)
	55+	142.6	8.5 (7.3 , 9.8)	1,137.9	67.6 (65.4 , 69.7)	403.7	24.0 (22.1 , 26.0)
Social grade	ABC1	327.9	13.4 (12.0 , 14.8)	1,756.1	71.7 (69.8 , 73.4)	366.4	15.0 (13.6 , 16.4)
	C2DE	281.8	15.4 (13.6 , 17.4)	1,221.7	66.8 (64.3 , 69.1)	326.2	17.8 (15.9 , 19.9)
Marital status	Married/ Civil Partnership	202.3	10.3 (9.0 , 11.7)	1,403.1	71.5 (69.5 , 73.4)	357.1	18.2 (16.6 , 19.9)
	Living as married	95.6	16.1 (13.1 , 19.8)	413.0	69.7 (65.5 , 73.7)	83.7	14.1 (11.3 , 17.5)
	Separated/ Divorced	56.4	15.7 (12.4 , 19.8)	255.0	71.2 (66.4 , 75.5)	46.9	13.1 (10.1 , 16.8)
	Widowed	12.6	9.3 (5.6 , 15.2)	82.5	61.4 (53.2 , 69.0)	39.4	29.3 (22.4, 37.3)
	Never Married	238.1	19.8 (17.3, 22.6)	802.6	66.8 (63.6 , 69.9)	160.4	13.4 (11.2, 15.8)
	Not known	4.7	14.9 (6.1 , 32.2)	21.4	68.4 (47.3,84.0)	5.2	16.6 (5.6, 40.3)
Working Status	Employed ^d	322.0	13.8 (12.3 , 15.4)	1,708.8	73.1 (71.1 , 75.0)	308.2	13.2 (11.8 , 14.7)
	Unemployed	47.4	28.0 (20.7, 36.6)	97.5	57.5 (48.7,65.9)	24.6	14.5 (9.3, 21.8)
	Not working/Others	118.3	23.7 (20.0, 27.9)	327.6	65.7 (61.1 , 70.0)	52.7	10.6 (8.0, 13.9)
	Full time student	45.7	22.5 (16.5, 30.0)	134.5	66.4 (57.7 , 74.0)	22.5	11.1 (6.4 , 18.6)
	Retired	76.3	7.1 (5.8 , 8.7)	709.3	66.3 (63.5 , 68.9)	284.7	26.6 (24.2, 29.2)
Mental health condition/	No	268.4	8.6 (7.6,9.7)	2,264.8	72.3 (70.7 , 73.9)	598.0	19.1 (17.7 , 20.6)
Psychiatric diagnosis	Yes	293.8	32.1 (28.9, 35.5)	568.8	62.1 (58.6,65.5)	52.8	5.8 (4.3 , 7.7
	Prefer not to say/not known	47.5	20.3 (15.4, 26.5)	144.2	61.8 (54.7,68.4)	41.8	17.9 (12.9 , 24.3
Being parent/guardian		279.2	11.9 (10.6, 13.3)	1,661.6	70.6 (68.8 , 72.4)	411.3	17.5 (16.0 , 19.0
Number of children	0	417.9	13.5 (12.3, 14.8)	2,129.7	68.7 (66.9 , 70.3	553.9	17.9 (16.5 , 19.3
in household	1	96.5	18.1 (14.6, 22.2)	389.7	73.0 (68.6 , 77.1)	47.5	8.9 (6.6 , 11.9)
	2	54.1	13.4 (10.1 , 17.6)	305.1	75.7 (71.0 , 79.8)	44.0	10.9 (8.2 , 14.3
	3+	28.0	16.2 (11.1, 23.0)	122.9	70.9 (63.2 , 77.6)	22.4	12.9 (8.7 , 18.9
	Refused to answer	13.2	19.3 (11.4,30.8)	30.4	44.4 (31.6 , 58.1	24.8	36.3 (23.6 , 51.2
Living arrangements ^e	Alone	123.4	16.6 (14.0 , 19.6)	495.4	66.7 (63.2 , 70.1)	123.8	16.7 (14.2 , 19.5
· -	Spouse/partner	290.0	11.4 (10.2 , 12.8)	1,820.3	71.6 (69.8 , 73.4)	431.7	17.0 (15.6 , 18.5
	Relative(s)	247.2	15.8 (13.9 , 18.0)	1,115.4	71.4 (68.8 , 73.8)	199.8	12.8 (11.0 , 14.8)
	Friend(s)/housemate(s)	21.4	17.3 (11.2 , 25.6)	92.1	74.1 (65.2 , 81.4)	10.7	8.6 (4.8 , 15.1
Urban/Rural area	Urban	475.8	14.7 (13.5 , 16.1)	2,241.2	69.5 (67.7 , 71.1)	509.1	15.8 (14.5 , 17.2
	Town/Fringe	57.2	13.8 (10.7 , 17.5)	297.1	71.5 (66.9 , 75.8)	60.9	14.7 (11.5 , 18.5
	Rural	62.1	11.9 (9.2 , 15.2)	360.6	68.9 (64.7 , 72.8)	100.5	19.2 (16.1 , 22.8)
	Not known	14.5	12.6 (7.3 , 20.9)	78.9	68.3 (58.9 , 76.4)	22.1	19.1 (13.0 , 27.2

^a Weighted based

^b Unwell included 'not very well' and 'not at all well'

^c Well included 'very well' and 'fairly well'

d Includes working full-time and part-time

^e Row counts do not add up to total because categories are non-mutually exclusive.

Suppl. Table 7. Cross-tabulation of working/furlough status against coping, suicidal thoughts and self-harm for data collected at wave 3 and wave 4.

		Employed (not furloughed)	Employed (furloughed)	Unemployed	Not working/Others	Full time student	Retired
Wave	Variable	Category Counts ^a % ^a 95% CI	Counts ^a % ^a 95% CI				
Wave 3							
	Total ^b	N/A 1,804.2 42.5 (41.0 , 44.0)	443.1 10.4 (9.5 , 11.4)	198.0 4.7 (4.0 , 5.4)	491.4 11.6 (10.6 , 12.6)	245.7 5.8 (5.1 , 6.6)	1,063.7 25.1 (23.8 , 26.4)
	Coping	No stress 179.2 10.2 (8.8 , 11.8)	60.2 13.9 (10.8 , 17.6)	25.6 13.3 (9.1 , 19.1)	75.7 16.2 (13.1 , 20.0)	27.8 12.0 (8.0 , 17.7)	246.0 23.3 (20.9 , 25.9)
		Well 1,364.9 77.8 (75.8 , 79.8)	308.2 71.0 (66.3, 75.2)	115.3 60.0 (52.6 , 67.1)	297.9 63.9 (59.3 , 68.2)	152.7 65.9 (59.0 , 72.2)	745.4 70.7 (68.0 , 73.3)
		Not well 209.4 11.9 (10.5 , 13.6)	65.8 15.2 (11.9 , 19.1)	51.2 26.7 (20.5 , 33.8)	92.6 19.9 (16.4 , 23.8)	51.2 22.1 (17.0 , 28.3)	62.8 6.0 (4.7 , 7.5)
	Suicidal thoughts	Yes 147.7 8.7 (7.4 , 10.2)	37.5 9.1 (6.5 , 12.4)	37.2 20.5 (15.0 , 27.2)	63.7 14.7 (11.6 , 18.4)	34.1 15.3 (11.0 , 20.8)	50.5 5.0 (3.8 , 6.5)
Wave 4	Self-harm	Yes 35.1 2.1 (1.4, 2.9)	8.9 2.1 (1.0 , 4.2)	7.5 4.0 (1.9 , 8.4)	17.4 4.0 (2.5 , 6.4)	13.9 6.1 (3.5 , 10.4)	5.5 0.5 (0.2 , 1.2)
vvave 4	Total	N/A 1,963.9 44.8 (43.3 , 46.4)	414.4 9.5 (8.5 , 10.4)	181.9 4.2 (3.5 , 4.9)	521.0 11.9 (10.9 , 12.9)	218.4 5.0 (4.2 , 5.9)	1,082.5 24.7 (23.5 , 26.0)
	Coping	No stress 257.9 13.4 (11.8 , 15.1)	50.3 12.2 (9.0 , 16.4)	24.6 14.5 (9.3 , 21.8)	52.7 10.6 (8.0 , 13.9)	22.5 11.1 (6.4 , 18.6)	284.7 26.6 (24.2 , 29.2)
		Well 1,414.7 73.4 (71.2 , 75.4)		97.5 57.5 (48.7 , 65.9)	327.6 65.7 (61.1, 70.0)	134.5 66.4 (57.7 , 74.0)	709.3 66.3 (63.5, 68.9)
		Not well 255.3 13.2 (11.7 , 15.0)	66.7 16.2 (12.5 , 20.8)	47.4 28.0 (20.7 , 36.6)	118.3 23.7 (20.0 , 27.9)	45.7 22.5 (16.5 , 30.0)	76.3 7.1 (5.8 , 8.7)
	Suicidal thoughts	Yes 173.9 9.3 (8.0 , 10.9)	45.3 11.5 (8.5 , 15.3)	37.2 21.5 (15.0 , 29.9)	76.0 16.1 (12.9 , 19.9)	46.0 23.1 (16.7 , 31.0)	35.8 3.5 (2.5 , 4.7)
	Self-harm	Yes 27.0 1.4 (0.9 , 2.2)	9.2 2.3 (1.1 , 4.8)	7.1 4.1 (1.8 , 8.9)	18.7 3.9 (2.4 , 6.3)	13.8 6.9 (3.9 , 12.0)	2.5 0.2 (0.1 , 0.8)

^a Weighted based ^b % of the whole respection sample size

Suppl. Table 8. Suicidal thoughts stratified by loneliness, coping and sample characteristics.

		Wave 2 (02-03/04/2020) Wave 3 (24-26/04/2020)	Wave 4 (28-29/05/2020)
		n = 2,105 (2,096.5) ^a	n = 3,969 (3,968.4) ^a	n = 4,148 (4,134.8) ^a
		Counts ^a % ^a 95% CI	Counts ^a % ^a 95% CI	Counts ^a % ^a 95% CI
Total		161.5 7.7(6.6,9.0) 370.7 9.4 (8.5, 10.3)	414.1 10.0 (9.1 , 11.1)
Loneliness		88.0 17.7 (14.5 , 21.5	223.6 21.0 (18.6, 23.6)	252.4 23.5 (20.8 , 26.4)
Coping ^b	NA (no stress)	4.5 1.9 (0.7,5.1) 14.0 2.5 (1.4,4.3)	5.6 0.9 (0.3, 2.5)
	Well	74.5 4.8 (3.8, 6.1) 167.7 5.9 (5.1, 6.9)	174.4 6.1 (5.2,7.2)
	Not Well	76.629.3 (24.0, 35.1) 178.0 36.8 (32.4, 41.3)	222.739.2(34.9,43.6)
Sex	Male	81.1 8.2 (6.5, 10.2	2) 164.7 8.7 (7.4, 10.1)	163.2 8.3 (6.9, 9.9)
	Female	80.4 7.3 (5.9, 9.0) 206.010.0 (8.8, 11.4)	250.911.6(10.3,13.0)
Age (years)	18-24	27.713.0 (8.8, 18.6	5) 75.1 18.3 (14.6, 22.6)	97.521.6 (17.2, 26.9)
	25-34	33.4 9.9 (7.0 , 13.9	87.4 13.7 (11.2, 16.8)	106.7 16.4 (13.4 , 19.8)
	35-44	43.012.0 (8.8, 16.0	71.5 10.9 (8.7, 13.7)	80.611.6 (9.3,14.4)
	45-54	27.9 8.2 (5.7, 11.7	') 53.1 8.1 (6.3 , 10.5)	59.5 8.2 (6.5, 10.4)
	55+	,) 83.6 5.2 (4.2, 6.4)	69.7 4.3 (3.4,5.4)
Social grade	ABC1	,	, , , ,	220.6 9.3 (8.1, 10.6)
	C2DE	,	2) 176.9 10.5 (9.1 , 12.1)	193.511.0 (9.5, 12.7)
Marital status	Married/ Civil Partnership	39.7 4.1 (3.0, 5.6) 101.1 5.7 (4.7, 6.9)	108.8 5.8 (4.8, 6.9)
	Living as married	16.8 5.9 (3.5, 9.8) 43.7 8.1 (6.0, 11.0)	56.6 9.7 (7.3, 12.9)
	Separated/ Divorced	•	') 40.0 11.4 (8.4 , 15.2)	30.1 8.7 (6.2, 12.0)
	Widowed	,		3.4 2.7 (1.0,6.9)
	Never Married	,		
	Not known	,		
Working Status	Employed ^c	•		219.2 9.7 (8.4,11.1)
	Unemployed	·		37.221.5 (15.0,29.9)
	Not working/Others	•		
	Full time student	•		46.023.1 (16.7,31.0)
	Retired	,		35.8 3.5 (2.5, 4.7)
Mental health condition/		,) 153.7 5.2 (4.4, 6.1)	139.7 4.6 (3.9,5.5)
Psychiatric diagnosis	Yes	,) 183.4 22.5 (19.7, 25.5)	226.2 25.4 (22.4 , 28.6)
	Prefer not to say/not known	,) 33.6 17.0 (12.1, 23.3)	
Being parent/guardian		68.3 5.7 (4.5, 7.3	, , , , ,	150.0 6.6 (5.6,7.7)
Number of children	0		, , , ,	291.5 9.8 (8.7, 11.0)
in household	1	(, , , , ,	, ,
	2	= = - (=)	, , , , ,	37.7 9.5 (6.9 , 13.0)
	3+	(,	,	15.5 9.4 (5.5, 15.8)
	Refused to answer	,		3.6 6.0 (2.2, 15.0)
Living arrangements ^d	Alone	,) 85.210.9(8.8,13.3)	99.5 13.9 (11.4, 16.9)
	Spouse/partner	•) 148.7 6.6 (5.6, 7.7)	
	Relative(s)	•) 150.211.1(9.5,13.0)	174.011.4 (9.7, 13.3)
/5	Friend(s)/housemate(s)	•) 39.4 22.4 (16.5, 29.7)	23.2 19.5 (13.2, 27.9)
Urban/Rural area	Urban	,) 297.210.0 (8.9,11.2)	328.3 10.6 (9.4 , 11.8)
	Town/Fringe	•) 34.1 8.8 (6.4 , 12.1)	30.3 7.4 (5.2, 10.6)
	Rural	,) 25.7 5.2 (3.6, 7.5)	49.3 9.7 (7.2, 12.9)
-	Not known	(-,-) 13.7 13.1 (8.0, 20.7)	6.3 5.6 (2.7, 11.3)

^a Weighted based

^b Row counts do not add up to total because respondents who answered 'prefer not to say' or 'don't know' for coping were excluded

^c Includes working full-time and part-time

 $^{^{\}rm d}$ Row counts do not add up to total because categories are non-mutually exclusive.

Suppl. Table 9. Self-harm stratified by loneliness, coping and sample characteristics.

_		Wave 2 (02	2-03/04/2020)	Wave 3 (24	-26/04/2020)	Wave 4 (28-29/05/2020)
		n = 2,117	7 (2,111.1) ^a	n = 3,997	7 (3,988.4) ^a	n = 4,168 (4,1562) ^a
		Counts ^a % ^a	95% CI	Counts ^a % ^a	95% CI	Counts ^a % ^a 95% CI
Total		39.5 1.9	(1.3, 2.6)	88.3 2.2	(1.8 , 2.8)	78.3 1.9 (1.5 , 2.4)
Loneliness		26.7 5.4	(3.5 , 8.0)	44.8 4.1	(3.0 , 5.7)	43.0 4.0 (2.8 , 5.6)
Coping ^b	NA (no stress)	0.0 0.0	(0.0 , 0.0)	3.4 0.6	(0.2 , 1.9)	0.8 0.1 (0.0 , 0.9)
	Well	15.1 1.0	(0.5 , 1.7)	31.2 1.1	(0.8 , 1.6)	27.0 0.9 (0.6 , 1.4)
	Not Well	22.7 8.4	(5.5, 12.7)	49.6 9.9	(7.4,13.1)	49.6 8.7 (6.4 , 11.6)
Sex	Male	17.1 1.7	(0.9,3.0)	31.8 1.7	(1.1, 2.5)	32.1 1.6 (1.1 , 2.4)
	Female	22.4 2.0	(1.4 , 3.0)	56.5 2.7	(2.1 , 3.5)	46.2 2.1 (1.6 , 2.9)
Age (years)	18-24	9.1 4.2	(2.0 , 8.4)	23.7 5.7	(3.7 , 8.6)	24.1 5.4 (3.3 , 8.6)
	25-34	8.7 2.5	(1.2 , 5.5)	25.1 3.9	(2.6 , 5.9)	22.7 3.5 (2.2 , 5.5)
	35-44	12.4 3.4	(1.9,6.2)	21.0 3.2	(2.0 , 5.1)	11.0 1.6 (0.9 , 2.7)
	45-54	3.5 1.0	(0.3, 3.1)	7.7 1.2	(0.6, 2.3)	14.1 1.9 (1.2 , 3.3)
	55+	5.8 0.7	(0.3, 1.5)	10.9 0.7	(0.4, 1.2)	6.4 0.4 (0.2 , 0.8)
Social grade	ABC1	21.1 1.7	(1.1, 2.8)	48.2 2.1	(1.6, 2.8)	36.9 1.5 (1.1 , 2.1)
-	C2DE	18.4 2.1	(1.2, 3.4)	40.0 2.3	(1.7, 3.3)	41.4 2.3 (1.6 , 3.3)
Marital status	Married/ Civil Partnership	5.8 0.6	(0.2, 1.5)	23.9 1.4	(0.9, 2.1)	19.3 1.0 (0.7 , 1.6)
	Living as married		(0.2, 2.4)		(1.8, 4.9)	14.4 2.5 (1.4 , 4.4)
	Separated/ Divorced		(1.7, 7.7)		(0.8, 3.9)	5.5 1.6 (0.7 , 3.5)
	Widowed		(0.0,0.0)		(0.1, 4.4)	0.0 0.0 (0.0 , 0.0)
	Never Married		(2.6, 6.4)		(2.5, 4.9)	39.1 3.3 (2.3 , 4.8)
	Not known		(1.0, 37.5)		(0.0, 0.0)	0.0 0.0 (0.0 , 0.0)
Working Status	Employed		(0.9, 2.4)		(1.5, 2.8)	36.2 1.6 (1.1 , 2.3)
Training Clares	Unemployed		(2.9, 18.9)		(1.9, 8.4)	7.1 4.1 (1.8 , 8.9)
	Not working/Others		(1.7, 7.4)		(2.5, 6.4)	18.7 3.9 (2.4 , 6.3)
	Full time student		(1.8, 10.9)		(3.5, 10.4)	13.8 6.9 (3.9 , 12.0)
	Retired		(0.2, 1.7)		(0.2, 1.2)	2.5 0.2 (0.1 , 0.8)
Mental health condition/	No		(- , -)		(0.7, 1.5)	17.9 0.6 (0.4 , 0.9)
Psychiatric diagnosis	Yes		(-, -)		(4.3, 7.6)	48.4 5.4 (3.9 , 7.3)
,	Prefer not to say/not known		()		(2.7, 9.8)	12.1 5.7 (3.0 , 10.7)
Being parent/guardian	rolor flot to day/flot fallowin		(0.8, 2.3)		(1.0, 2.2)	28.2 1.2 (0.9 , 1.8)
Number of children	0		(0.9, 2.3)		(1.6, 2.7)	50.4 1.7 (1.2 , 2.3)
in household	1		(1.7, 7.1)		(1.2, 4.2)	12.5 2.4 (1.2 , 4.7)
III Household	2		(0.6, 6.5)		(1.1, 4.7)	7.9 2.0 (1.0 , 4.0)
	3+	_	(1.1, 10.0)		(1.3, 9.6)	4.8 3.0 (1.2 , 7.2)
	Refused to answer		(0.3, 14.2)		(1.1, 16.4)	2.7 4.3 (1.4 , 12.7)
Living arrangements ^d	Alone		()		(1.5, 10.4)	13.5 1.9 (1.0 , 3.4)
Living analycincills	Spouse/partner		(- , -)		(1.2, 2.3)	28.0 1.1 (0.8 , 1.7)
	Relative(s)		(- , -)		(1.6, 2.3)	38.3 2.5 (1.8 , 3.5)
	, ,		(- , -)			, , ,
Urban/Rural area	Friend(s)/housemate(s) Urban		(-, -)		(3.0, 11.4)	5.4 4.5 (1.9 , 10.5)
Olbail/Mulai alea			(- , -)		(2.0, 3.2)	56.1 1.8 (1.3 , 2.4)
	Town/Fringe		(- , -)		(0.7, 3.4)	5.3 1.3 (0.6 , 2.9)
	Rural		(- , -)		(0.2, 2.0)	16.9 3.3 (1.9 , 5.6)
	Not known		(- , -)	2.6 2.5	(0.8, 7.4)	0.0 0.0 (0.0 , 0.0)

^a Weighted based

^b Row counts do not add up to total because respondents who answered 'prefer not to say' or 'don't know' for coping were excluded

^c Includes working full-time and part-time

 $^{^{\}rm d}$ Row counts do not add up to total because categories are non-mutually exclusive.

Suppl. Table 10. Summary of binomial regression of suicidal thoughts for data collected at wave 3 and wave 4.

			Unadjusted model												sted model					
		_		Risk Ratio (RR) Risk Difference (RD)				Risk Ratio (RR)					Effect of va				rence (RD)		Effect of v	
Variable	Reference	Category	RR	p-value 95% CI	RD 0.007	p-value	95% CI		RR	p-value	95% CI		χ ² (df)			-value	95% CI	,		p-value
Wave	Wave 3	Wave 4	1.1	0.350 (0.9 , 1.2)	0.007	0.350 (-0.007, 0.020)	0.9	0.510 (0.7,1.2)	0.4 (1)			,	-0.004 , 0.020)	. ,	0.210
Loneliness	No	Yes	4.3	<0.001 (3.7,5.0)	0.171	<0.001 (0.200, 0.200)	1.8	<0.001 (1.5,2.1)	40.3 (1)		0.053	,	0.036, 0.069)	39.6 (1)	
Coping	Well	NA (no stress) Not well	0.3 6.3	<0.001 (0.2, 0.4) <0.001 (5.5, 7.2)	-0.044 0.321	<0.001 (<0.001 (-0.054 , -0.034 0.289 , 0.353)	0.3 3.4	<0.001 (<0.001 (0.2, 0.6 2.8, 4.0)	206.2 (2)	<0.001	-0.041 - 0.150 -		-0.055, -0.027 0.124, 0.176)	169.0 (2)	<0.001
Sex	Male	Female	1.3	0.001 (1.1, 1.5	0.024	<0.001 (0.010,0.038)	1.0	0.470 (0.9,1.2)	0.5 (1)	0.470	0.005	0.420 (-0.007, 0.017)	0.7 (1)	0.420
Age (years)	55+	18-24 25-34 35-44 45-54	4.2 3.2 2.4 1.7	<0.001 (3.4,5.3) <0.001 (2.6,3.9) <0.001 (1.9,3.0) <0.001 (1.4,2.2)	0.153 0.103 0.065 0.034	<0.001 (<0.001 (<0.001 (<0.001 (0.120,0.186 0.081,0.126 0.046,0.085 0.018,0.050)))	1.7 1.5 1.4 1.2	0.005 (0.023 (0.049 (0.240 (1.2,2.4 1.1,2.1 1.0,1.9 0.9,1.6))	9.4 (4)	0.051	0.034 0.026	0.005 (0.019 (0.043 (0.240 (0.014, 0.081 0.006, 0.062 0.001, 0.051 -0.009, 0.037))	8.8 (4)	0.067
Social grade	ABC1	C2DE	1.2	0.010 (1.0, 1.4	0.018	0.011 (0.004, 0.032)	1.1	0.200 (1.0,1.3)	1.7 (1)	0.200	0.008	0.200 (-0.004, 0.021)	1.7 (1)	0.200
Marital status	Married/Civil Partnership	Living as married Separated/ Divorced Widowed Never Married	1.6 1.7 0.8 2.9	<0.001 (1.2,2.0) <0.001 (1.3,2.3) 0.370 (0.4,1.3) <0.001 (2.4,3.4)	0.032 0.043 -0.013 0.109	0.002 (<0.001 (0.320 (<0.001 (0.012,0.052 0.019,0.066 -0.038,0.012 0.090,0.127)))	0.9 1.1 0.8 1.1	0.380 (0.720 (0.420 (0.690 (0.7,1.1 0.7,1.6 0.4,1.4 0.8,1.5))	2.6 (4)	0.630	-0.010 0.006 -0.021 0.007	0.370 (0.730 (0.380 (0.690 (-0.031, 0.012 -0.029, 0.042 -0.066, 0.025 -0.026, 0.039))	3.1 (4)	0.550
Working status	Employed	Unemployed Not working/Others Full time student Retired	2.3 1.7 2.1 0.5	<0.001 (1.8,2.9) <0.001 (1.4,2.0) <0.001 (1.6,2.6) <0.001 (0.4,0.6)	0.117 0.062 0.097 -0.050	<0.001 (<0.001 (<0.001 (<0.001 (0.068, 0.167 0.035, 0.088 0.054, 0.141 -0.063, -0.038)))	1.1 1.1 1.1 1.0	0.150 (0.490 (0.610 (0.770 (1.0, 1.4 0.9, 1.3 0.8, 1.3 0.8, 1.4)))	2.3 (4)	0.690	0.005 0.007	0.140 (0.520 (0.530 (0.720 (-0.005, 0.033 -0.011, 0.021 -0.016, 0.030 -0.025, 0.036)))	2.6 (4)	0.620
Mental health condition/ Psychiatric diagnosis	No	Yes Prefer not to say/not known	4.9 4.1	<0.001 (4.2,5.7) <0.001 (3.2,5.3	0.191 0.154	<0.001 (<0.001 (0.169,0.214 0.110,0.198)	2.2 2.5	<0.001 (<0.001 (1.9,2.7 1.9,3.1)	87.7 (2)	<0.001	0.077 - 0.089 -		0.059, 0.094 0.058, 0.121)	82.0 (2)	<0.001
Being parent/guardian	No	Yes	0.5	<0.001 (0.4, 0.6	-0.066	<0.001 (-0.080, -0.051)	0.9	0.350 (0.7,1.1)	0.9 (1)	0.350	-0.010	0.350 (-0.031, 0.011)	0.9 (1)	0.350
Number of children in household	0	1 2 3+	1.2 1.0 1.0	0.190 (0.9 , 1.4) 0.720 (0.8 , 1.3) 0.980 (0.7 , 1.5)	0.015 0.004 0.001	0.220 (0.720 (0.980 (-0.009,0.038 -0.019,0.027 -0.038,0.039))	0.9 1.1 1.0	0.480 (0.580 (0.860 (0.7,1.1 0.8,1.4 0.7,1.5)	1.3 (3)	0.730		0.470 (0.580 (0.860 (-0.026 , 0.012 -0.017 , 0.030 -0.034 , 0.041)	1.3 (3)	0.730
Living alone Living with spouse/partner Living with relative(s) Living with friend(s)/housemate(s)	No No No No	Yes Yes Yes Yes	1.4 0.5 1.3 2.3	<0.001 (1.2,1.6) <0.001 (0.4,0.5) 0.001 (1.1,1.5) <0.001 (1.8,2.9)	0.032 -0.077 0.024 0.120	<0.001 (<0.001 (0.002 (<0.001 (0.014,0.051 -0.092,-0.062 0.009,0.039 0.070,0.169)))	1.2 1.0 1.1 1.1	0.210 (0.990 (0.390 (0.540 (0.9,1.6 0.7,1.5 0.9,1.5 0.8,1.6))	1.6 (1) 0.0 (1) 0.8 (1) 0.4 (1)	0.210 0.990 0.390 0.540	0.000 0.012	0.240 (0.990 (0.390 (0.560 (-0.013, 0.051 -0.036, 0.037 -0.015, 0.039 -0.027, 0.049)))	1.4 (1) 0.0 (1) 0.7 (1) 0.3 (1)	0.990 0.390
Urban/Rural area	Rural	Urban Town/Fringe	1.4 1.1	0.012 (1.1,1.7 0.660 (0.8,1.5	0.028 0.006	0.005 (0.660 (0.008, 0.047 -0.020, 0.032)	1.0 1.0	0.910 (0.780 (0.8,1.2 0.7,1.3)	0.1 (2)	0.960		0.910 (0.780 (-0.021 , 0.019 -0.032 , 0.024)	0.1 (2)	0.960
Wave × Loneliness	Wave 3, Not lonely	Wave 4 × Lonely	-	- (-,-	-	- (-,-)	0.9	0.590 (0.6,1.3)	0.3 (1)	0.590	-0.005	0.760 (-0.036, 0.027)	0.1 (1)	0.760
Wave × Coping	Wave 3, NA (no stress)	Wave 4 × Well Wave 4 × Not well	-	- (-,- - (-,-	-	- (- (-,- -,-)	2.2 2.3	0.240 (0.210 (0.6,7.8 0.6,8.6)	1.6 (2)	0.460		0.180 (0.140 (-0.009, 0.048 -0.013, 0.096)	2.7 (2)	0.250
Wave × Sex	Wave 3, Male	Wave 4 × Female	-	- (-,-	-	- (-,-)	1.2	0.180 (0.9,1.5)	1.8 (1)	0.180	0.016	0.160 (-0.007, 0.040)	1.9 (1)	0.160
Wave × Age	Wave 3, 55+	Wave 4 × 18-24 Wave 4 × 25-34 Wave 4 × 35-44 Wave 4 × 45-54	-	-(-,- -(-,- -(-,- -(-,-	- - -	- (- (- (-,- -,- -,- -,-)))	0.8 0.9 0.9 0.9	0.500 (0.840 (0.730 (0.820 (0.5, 1.5 0.5, 1.7 0.5, 1.6 0.5, 1.6)	0.8 (4)	0.940	-0.001 -0.006	0.530 (0.960 (0.790 (0.870 (-0.071 , 0.037 -0.048 , 0.046 -0.052 , 0.040 -0.047 , 0.040))	0.6 (4)	0.960
Wave × Working status	Wave 3, Employed	Wave 4 × Unemployed Wave 4 × Not working/Others Wave 4 × Full time student Wave 4 × Retired	-	-(-,- -(-,- -(-,-	-	- (- (- (-,- -,- -,-)))	1.1 0.9 1.3 0.6	0.500 (0.510 (0.330 (0.076 (0.8,1.6 0.6,1.2 0.8,2.1 0.3,1.1))	5.3 (4)	0.260	-0.010 0.023	0.430 (0.540 (0.320 (0.088 (-0.022, 0.051 -0.041, 0.021 -0.023, 0.070 -0.115, 0.008)))	5.2 (4)	0.270

^{*} Based on Wald chi-square test; df: degree of freedom

Suppl. Table 11. Summary of binomial regression of self-harm for data collected at wave 3 and wave 4.

			Unadjusted mo	del				Adjusted mode	el		
				Risk Difference (RD)		Risk Ratio (RR)	Effect of		tisk Difference (RD)		f variable*
Variable	Reference	Category RR	p-value 95% CI RD	p-value 95% CI	RR	p-value 95% CI	χ ² (df)	p-value RD	p-value 95% CI	χ ² (df)	p-value
Wave	Wave 3	Wave 4 0.9	0.340(0.6,1.2) -0.003	0.330(-0.010,0.003)	0.6	0.150(0.3,1.2)	2.0 (1)	0.150 -0.001	0.760(-0.008 ,0.006)	0.1 (1)	0.760
Loneliness	No	Yes 3.1	<0.001(2.2,4.3) 0.028	<0.001(0.018,0.037)	1.2	0.360(0.8,1.7)	0.9 (1)	0.360 0.003	0.370(-0.004,0.011)	0.8 (1)	0.370
Coping	Well	NA (no stress) 0.3 Not well 9.1	0.043(0.1,1.0) -0.007 <0.001(6.5,12.8) 0.082	0.003(-0.011,-0.002) <0.001(0.063,0.102)	0.4 4.6	0.160(0.1,1.4) <0.001(3.1,6.8)	64.6 (2)	<0.001 -0.005 0.040	0.120(-0.012,0.001) <0.001(0.027,0.053)	39.2 (2)	<0.001
Sex	Male	Female 1.5	0.030(1.0,2.1) 0.008	0.023(0.001,0.014)	1.1	0.520(0.8,1.6)	0.4 (1)	0.520 0.003	0.510(-0.005,0.010)	0.4 (1)	0.510
Age (years)	55+	18-24 10.4 25-34 6.9 35-44 4.4 45-54 3.0	<pre><0.001(5.9,18.2) 10.400 <0.001(4.0,12.1) 6.900 <0.001(2.4,7.9) 4.400 <0.001(1.6,5.6) 3.000</pre>	<pre><0.001(5.900,18.200) <0.001(4.000,12.100) <0.001(2.400,7.900) <0.001(1.600,5.600)</pre>	5.7 4.0 2.8 2.0	<0.001(2.3,14.2) <0.001(1.8,9.0) 0.007(1.3,5.9) 0.068(1.0,4.1)	15.3 (4)	0.004 0.034 0.022 0.014 0.007	<0.004(0.011,0.057) 0.001(0.009,0.035) <0.004(0.005,0.024) 0.057(0.000,0.015)	16.0 (4)	0.003
Social grade	ABC1	C2DE 1.3	0.130(0.9,1.8) 0.005	0.14(-0.002,0.012)	1.2	0.470(0.8,1.7)	0.5 (1)	0.470 0.003	0.480(-0.005,0.011)	0.5 (1)	0.480
Marital status	Married/Civil Partnership	Living as married 2.3 Separated/ Divorced 1.4 Widowed 0.3 Never Married 2.9	<pre><0.001(1.4,3.7)</pre>	0.006(0.004,0.026) 0.360(-0.005,0.015) 0.021(-0.016,-0.001) <0.001(0.013,0.032)	1.2 0.8 0.4 0.6	0.590(0.6,2.1) 0.560(0.3,1.9) 0.360(0.0,3.0) 0.170(0.3,1.3)	3.4 (4)	0.500 0.005 -0.006 -0.017 -0.011	0.600(-0.013,0.023) 0.550(-0.028,0.015) 0.190(-0.043,0.009) 0.220(-0.030,0.007)	3.1 (4)	0.550
Working status	Employed	Unemployed 2.2 Not working/Others 2.2 Full time student 3.6 Retired 0.2	0.010(1.2,4.0) 0.022 <0.001(1.4,3.3) 0.021 <0.001(2.3,5.7) 0.047 <0.001(0.1,0.4) -0.014	0.055(-0.001,0.045) 0.003(0.007,0.035) <0.001(0.021,0.073) <0.001(-0.019,-0.009)	1.1 1.5 1.7 0.7	0.780(0.6,2.2) 0.100(0.9,2.5) 0.072(1.0,2.9) 0.390(0.3,1.6)	6.9 (4)	0.140 0.002 0.009 0.013 -0.005	0.780(-0.011,0.015) 0.140(-0.003,0.021) 0.110(-0.003,0.028) 0.370(-0.016,0.006)	6.2 (4)	0.180
Mental health condition/ Psychiatric diagnosis	No	Yes 6.9 Prefer not to say/not known 6.8	<0.001(4.8,10.0) 0.047 <0.001(4.0,11.8) 0.047	<0.001(0.036,0.059) <0.001(0.022,0.072)	2.8 3.8	<0.001(1.9,4.2) <0.001(2.1,6.8)	33.1 (2)	<0.001 0.020 0.030	<0.001(0.012,0.028) <0.004(0.009,0.051)	30.6 (2)	<0.001
Being parent/guardian	No	Yes 0.5	<0.001(0.3,0.7) -0.015	<0.001(-0.022,-0.008)	1.4	0.280(0.8,2.4)	1.2 (1)	0.280 0.007	0.310(-0.006,0.019)	1.0 (1)	0.310
Number of children in household	0	1 1.2 2 1.1 3+ 1.7	0.430(0.7,2.1) 0.004 0.630(0.7,2.0) 0.003 0.130(0.8,3.5) 0.013	0.460(-0.007,0.016) 0.650(-0.009,0.014) 0.240(-0.009,0.036)	0.8 1.1 1.4	0.510(0.4,1.6) 0.870(0.6,2.0) 0.420(0.6,3.1)	1.8 (3)	0.610 -0.004 0.001 0.008	0.490(-0.015,0.007) 0.870(-0.013,0.015) 0.480(-0.014,0.030)	1.7 (3)	0.640
Living alone Living with spouse/partner Living with relative(s) Living with friend(s)/housemate(s)	No No No No	Yes 1.1 Yes 0.5 Yes 1.3 Yes 2.8	0.690(0.7,1.6) 0.002 <0.001(0.3,0.6) -0.016 0.100(0.9,1.8) 0.006 <0.001(1.6,4.9) 0.035	0.700(-0.007,0.011) <0.001(-0.023,-0.009) 0.120(-0.001,0.013) 0.0180(0.006,0.063)	1.1 0.5 0.8 1.1	0.770(0.5,2.3) 0.110(0.2,1.2) 0.450(0.4,1.5) 0.890(0.5,2.5)	0.1 (1) 2.6 (1) 0.6 (1) 0.0 (1)	0.770 0.002 0.110 -0.014 0.450 -0.005 0.890 0.001	0.780(-0.014,0.018) 0.130(-0.032,0.004) 0.450(-0.018,0.008) 0.900(-0.017,0.019)	0.1 (1) 2.3 (1) 0.6 (1) 0.0 (1)	0.780 0.130 0.450 0.900
Urban/Rural area	Rural	Urban 1.1 Town/Fringe 0.7	0.800(0.6,1.8) 0.001 0.330(0.3,1.5) -0.006	0.790(-0.009,0.012) 0.330(-0.019,0.006)	0.8 0.6	0.430(0.5,1.4) 0.130(0.3,1.2)	2.3 (2)	0.320 -0.005 -0.011	0.470(-0.018,0.009) 0.140(-0.026,0.004)	2.8 (2)	0.250
Wave × Loneliness	Wave 3, Not lonely	Wave 4 × Lonely -	-(-,-) -	-(-,-)	1.3	0.420(0.7,2.7)	0.6 (1)	0.420 0.006	0.440(-0.009,0.020)	0.6 (1)	0.440
Wave × Coping	Wave 3, NA (no stress)	Wave 4 × Well - Wave 4 × Not well -	-(-,-) - -(-,-) -	-(-,-) -(-,-)	3.5 3.6	0.300(0.3,36.1) 0.290(0.3,37.3)	1.1 (2)	0.570 0.006 0.004	0.380(-0.007,0.019) 0.800(-0.024,0.031)	0.8 (2)	0.680
Wave × Sex	Wave 3, Male	Wave 4 × Female -	-(-,-) -	-(-,-)	0.8	0.430(0.4,1.5)	0.6 (1)	0.430 -0.006	0.420(-0.020,0.008)	0.7 (1)	0.420
Wave × Age	Wave 3, 55+	Wave 4 × 18-24 - Wave 4 × 25-34 - Wave 4 × 35-44 - Wave 4 × 45-54 -	-(-,-) - -(-,-) - -(-,-) - -(-,-) -	-(-,-) -(-,-) -(-,-)	0.9 1.2 0.6 1.8	0.940(0.2,3.8) 0.840(0.3,4.4) 0.400(0.2,2.1) 0.420(0.4,7.5)	4.2 (4)	0.380 -0.007 0.001 -0.014 0.007	0.690(-0.044,0.029) 0.950(-0.023,0.025) 0.140(-0.033,0.005) 0.350(-0.008,0.023)	4.3 (4)	0.360
Wave × Working status	Wave 3, Employed	Wave 4 × Unemployed - Wave 4 × Not working/Others - Wave 4 × Full time student - Wave 4 × Retired -	-(-,-) - -(-,-) - -(-,-) - -(-,-) -	-(-,-) -(-,-) -(-,-)	1.7 1.3 2.3 0.7	0.400(0.5,6.3) 0.590(0.5,3.2) 0.130(0.8,6.8) 0.690(0.1,4.0)	3.0 (4)	0.570 0.010 0.004 0.021 -0.003	0.420(-0.015,0.035) 0.710(-0.018,0.027) 0.160(-0.008,0.051) 0.800(-0.026,0.020)	2.7 (4)	0.620

^{*} Based on Wald chi-square test; df: degree of freedom

Suppl. Table 12. Summary of binomial regression of suicidal thoughts for combining data collected at wave 2, wave 3 and wave 4 as sensitivity analysis.

					djusted mo						ted mode				
				atio (RR)		Risk Difference (RD)		Risk Ratio (RR)	Effect of			Risk Difference			of variable*
Variable	Reference	Category R			RD	p-value 95% CI	RR	p-value 95% CI	χ ² (df)	p-value	RD		95% CI	χ ² (df)	p-value
Wave	Wave 2	Wave 3 1 Wave 4 1		38 (1.0,1.5) 02 (1.1,1,6)	0.017 0.023	0.032 (0.001,0.032) 0.004 (0.008,0.039)	1.2 1.1	0.180 (0.9, 1.6) 0.610 (0.8, 1.4)	2.0 (2)	0.370	0.010 0.014		005 ,0.024)	3.8 (2)	0.150
Loneliness	No	Yes 4	.3 <0.0	01 (3.7,4.9)	0.167	<0.001 (0.149, 0.185)	2.0	<0.001 (1.7,2.3)	71.2 (1)	< 0.001	0.063	<0.001 (0.	.048,0.079)	67.1 (1)	< 0.001
Coping	Well	NA (no stress) 0 Not well 6		01 (0.2,0.4) 01 (5.6,7.2)	-0.042 0.312	<0.001 (-0.052, -0.033) <0.001 (0.283, 0.341)	0.3 4.2	<0.001 (0.2, 0.6) <0.001 (3.6, 4.8)	376.9 (2)	<0.001	-0.040 0.191		.052,-0.028) .165,0.217)	252.7 (2)	<0.001
Sex	Male	Female 1	.2 0.0	02 (1.1,1.4)	0.020	0.002 (0.007, 0.032)	1.0	0.560 (0.9, 1.2)	0.3 (1)	0.560	0.004	0.450 (-0.	.007,0.016)	0.6 (1)	0.450
Age (years)	55+	18-24 4 25-34 3 35-44 2 45-54 1	.1 <0.0 .5 <0.0	01 (2.6,3.8)	0.147 0.099 0.068 0.036	<0.001 (0.117,0.176) <0.001 (0.078,0.119) <0.001 (0.050,0.085) <0.001 (0.021,0.051)	1.6 1.6 1.6 1.4	0.004 (1.2, 2.3) <0.001 (1.2, 2.2) 0.002 (1.2, 2.1) 0.023 (1.0, 1.8)	12.1 (4)	0.017	0.043 0.042 0.037 0.024	<0.001 (0. 0.001 (0.	.014,0.072) .018,0.066) .014,0.060) .003,0.045)	13.2 (4)	0.010
Social grade	ABC1	C2DE 1	.2 <0.0	01 (1.0,1.4)	0.017	0.010 (0.004, 0.030)	1.1	0.110 (1.0, 1.2)	2.5 (1)	0.110	0.009	0.110 (-0.	.002,0.021)	2.5 (1)	0.110
Marital status	Married/Civil Partnership	Living as married 1 Separated/ Divorced 1 Widowed 0 Never Married 2	.9 <0.0 .8 0.4		0.031 0.047 -0.010 0.107	0.001 (0.012,0.049) <0.001 (0.026,0.069) 0.380 (-0.033,0.013) <0.001 (0.090,0.124)	1.0 1.4 0.9 1.3	0.920 (0.8, 1.3) 0.007 (1.1, 1.7) 0.660 (0.5, 1.5) 0.005 (1.1, 1.6)	15.3 (4)	0.004	0.001 0.029 -0.008 0.024	0.013 (0. 0.640 (-0.	.017,0.019) .006,0.052) .044,0.027) .008,0.041)	15.6 (4)	0.004
Working status	Employed	Unemployed 2 Not working/Others 1 Full time student 2 Retired 0	.7 <0.0 .0 <0.0	01 (1.4,2.0)	0.116 0.062 0.094 -0.049	<0.001 (0.071,0.161) <0.001 (0.038,0.086) <0.001 (0.055,0.133) <0.001 (-0.060,-0.037)	1.2 1.3 1.1 1.1	0.026 (1.0, 1.5) <0.001 (1.1, 1.5) 0.680 (0.8, 1.3) 0.580 (0.8, 1.5)	13.2 (4)	0.010	0.023 0.026 0.006 0.009	0.002 (0. 0.610 (-0.	.004,0.041) .009,0.042) .016,0.027) .019,0.037)	12.6 (4)	0.014
Being parent/guardian	No	Yes 0	.5 <0.0	01 (0.4, 0.6)	-0.064	<0.001 (-0.076, -0.051)	0.9	0.180 (0.7, 1.1)	1.8 (1)	0.180	-0.012	0.180 (-0.	.030,0.006)	1.8 (1)	0.180
Number of children in household	0	1 1 2 1 3+ 1	.0 0.6	79 (1.0,1.5) 90 (0.8,1.3) 00 (0.7,1.5)	0.018 0.004 0.002	0.099 (-0.003,0.039) 0.690 (-0.017,0.025) 0.900 (-0.033,0.037)	1.0 1.0 0.9	0.940 (0.8, 1.2) 0.76 (0.8, 1.3) 0.470 (0.6, 1.3)	0.8 (3)	0.850	-0.001 0.004 -0.011	0.760 (-0.	.020,0.018) .020,0.027) .041,0.018)	0.9 (3)	0.830
Wave × Loneliness	Wave 2, Not lonely	Wave 3 × Lonely Wave 4 × Lonely	-	- (-,-) - (-,-)	-	- (-,-) - (-,-)	1.0 0.9	0.900 (0.7, 1.6) 0.780 (0.6, 1.5)	0.3 (2)	0.860	0.009 0.003		.031,0.049)	0.3 (2)	0.880
Wave × Coping	Wave 2, NA (no stress)	Wave 3 × Well Wave 3 × Not well Wave 4 × Well Wave 4 × Not well		-(-,-) -(-,-) -(-,-)	- - -	-(-,-) -(-,-) -(-,-)	1.0 1.0 2.2 2.1	0.990 (0.3, 3.3) 0.940 (0.3, 3.3) 0.310 (0.5, 9.9) 0.350 (0.4, 10.0)	1.7 (4)	0.800	0.004 0.019 0.021 0.044	0.640 (-0. 0.190 (-0.	.029,0.037) .060,0.098) .011,0.054) .032,0.121)	3.1 (4)	0.550
Wave × Sex	Wave 2, Male	Wave 3 × Female Wave 4 × Female	-	- (-,-) - (-,-)	-	- (-,-) - (-,-)	1.4 1.7	0.093 (0.9,2.0) 0.004 (1.2,2.5)	9.0 (2)	0.011	0.026 0.047		.006,0.058) .015 0.079	8.9 (2)	0.012
Wave × Age	Wave 2, 55+	Wave 3 x 18-24 Wave 3 x 25-34 Wave 3 x 35-44 Wave 3 x 45-54 Wave 4 x 18-24 Wave 4 x 25-34 Wave 4 x 35-44 Wave 4 x 45-54	-	-(-,-) -(-,-) -(-,-) -(-,-) -(-,-) -(-,-) -(-,-) -(-,-)	-	·(·,·) ·(·,·) ·(·,·) ·(·,·) ·(·,·) ·(·,·) ·(·,·) ·(·,·)	1.2 1.1 0.7 0.6 1.0 1.0 0.6	0.70 (0.5, 3.2) 0.87 (0.5, 2.4) 0.35 (0.3, 1.5) 0.21 (0.3, 1.3) 0.95 (0.4, 2.7) 0.99 (0.5, 2.1) 0.21 (0.3, 1.3) 0.16 (0.3, 1.2)	8.3 (8)	0.410	0.028 0.015 -0.027 -0.039 0.014 0.012 -0.035 -0.042	0.580 (-0. 0.380 (-0. 0.210 (-0. 0.700 (-0. 0.660 (-0. 0.240 (-0.	.042,0.098) .039,0.070) .087,0.033) .101,0.022) .055,0.082) .041,0.065) .094,0.024)	7.7 (8)	0.470
Wave × Working status	Wave 2, Employed	Wave 3 × Unemployed Wave 3 × Not working/Others Wave 3 × Full time student Wave 3 × Retired Wave 4 × Unemployed Wave 4 × Not working/Others Wave 4 × Full time student Wave 4 × Retired	-	-(-,-) -(-,-) -(-,-) -(-,-) -(-,-) -(-,-)	- - - - - -	-(-,-) -(-,-) -(-,-) -(-,-) -(-,-) -(-,-) -(-,-) -(-,-)	1.0 0.7 0.7 1.2 1.4 0.7 0.9	0.93 (0.6, 1.9) 0.18 (0.5, 1.2) 0.34 (0.3, 1.6) 0.75 (0.5, 2.8) 0.24 (0.8, 2.5) 0.17 (0.5, 1.1) 0.80 (0.4, 2.1) 0.38 (0.3, 1.6)	10.5 (8)	0.230	0.003 -0.030 -0.035 0.019 0.039 -0.029 -0.006 -0.031	0.250 (-0. 0.380 (-0. 0.640 (-0. 0.110 (-0. 0.270 (-0. 0.880 (-0.	.045,0.051) .080,0.021) .112,0.043) .062,0.101) .009,0.088) .079,0.022) .085,0.073)	10.4 (8)	0.240

^{*} Based on Wald chi-square test; df: degree of freedom

Suppl. Table 13. Summary of binomial regression of self-harm for combining data collected at wave 2, wave 3 and wave 4 as sensitivity analysis*.

		_				aaju	isted mo		(55)		_				sted mod				
	5 /	<u> </u>		Risk Ratio				Risk Differe				Risk Ratio (RR)	Effect of			isk Differe			f variable
Variable	Reference	Category		p-value	95% CI		RD	p-value	95% CI			p-value 95% CI	χ ² (df)	p-value	RD	p-value	95% CI	χ ² (df)	p-value
Wave	Wave 2	Wave 3 Wave 4	1.2 1.0	0.420(0.970(0.8,1.8 0.7,1.5)	0.003 0.000	0.400(0.970(-0.005,0.011 -0.008,0.008		1.5 0.9	0.210(0.8,2.6) 0.860(0.5,1.8)	3.4 (2)	0.190	0.002 0.000	0.600(0.950(-0.006 ,0.010) -0.008 ,0.008)	0.6 (2)	0.740
Loneliness	No	Yes	3.4	<0.001(2.5,4.5)	0.030	<0.001(0.020,0.039) .	1.5	0.032(1.0,2.0)	4.6 (1)	0.032	0.007	0.044(0.000,0.014)	4.1 (1)	0.04
Coping	Well	NA (no stress) Not well	0.3 9.1	0.027(<0.001(0.1,0.9 6.6,12.4)	-0.007 0.082	<0.001 (<0.001 (-0.011,-0.003 0.064,0.099		0.4 6.1	0.130(0.2,1.3) <0.001(4.3,8.6)	113.8 (2)	<0.001	-0.006 0.052	0.034(<0.001(-0.011,-0.000) 0.038,0.066)	59.4 (2)	<0.00
Sex	Male	Female	1.4	0.026(1.0,2.0)	0.007	0.020(0.001,0.013) .	1.1	0.620(0.8,1.5)	0.2 (1)	0.620	0.002	0.590(-0.005,0.008)	0.3 (1)	0.590
Age (years)	55+		6.5 4.5	<0.001(<0.001(<0.001(<0.001(5.9,16.2 3.9,10.7 2.7,7.5 1.6,4.9))	0.048 0.030 0.019 0.010	<0.001(<0.001(<0.001(0.003(0.032,0.064 0.020,0.041 0.011,0.027 0.003,0.016) 3) 2	4.4 3.6 2.6 1.7	<0.001(1.9,9.9) <0.001(1.8,7.3) 0.006(1.3,5.2) 0.120(0.9,3.4)	16.1 (4)	0.003	0.027 0.020 0.014 0.006	0.006(<0.001(0.003(0.110(0.008,0.045) 0.009,0.032) 0.004,0.023) -0.001,0.013)	16.7 (4)	0.002
Social grade	ABC1	C2DE	1.3	0.110(0.9,1.7)	0.005	0.120(-0.001,0.011) .	1.2	0.230(0.9,1.8)	1.5 (1)	0.230	0.004	0.240(-0.003,0.011)	1.4 (1)	0.240
Marital status	Married/Civil Partnership	Living as married Separated/ Divorced Widowed Never Married	1.7 0.3	<0.001(0.051(0.180(<0.001(1.4,3.6 1.0,3.0 0.0,1.9 2.2,4.5)))	0.014 0.008 -0.008 0.024	0.007(0.097(0.012(<0.001(0.004,0.023 -0.001,0.018 -0.015,-0.002 0.016,0.032) ·	1.2 1.5 0.4 1.1	0.430(0.7,2.1) 0.180(0.8,2.7) 0.430(0.1,3.3) 0.640(0.7,1.8)	3.0 (4)	0.550	0.004 0.009 -0.010 0.002	0.440(0.230(0.250(0.640(-0.006,0.015) -0.006,0.024) -0.026,0.007) -0.007,0.011)	4.1 (4)	0.390
Working status	Employed	Full time student		<0.001(<0.001(<0.001(<0.001(1.5,4.2 1.5,3.2 2.3,5.4 0.1,0.4)	0.026 0.021 0.045 -0.014	0.017(0.001(<0.001(<0.001(0.005,0.048 0.008,0.034 0.022,0.068 -0.018,-0.009) ·	1.4 1.7 1.7 0.8	0.290(0.8,2.5) 0.017(1.1,2.6) 0.056(1.0,3.0) 0.520(0.3,1.7)	8.8 (4)	0.066	0.006 0.011 0.012 -0.003	0.340(0.041(0.093(0.550(-0.007,0.019) 0.000,0.022) -0.002,0.027) -0.014,0.007)	7.5 (4)	0.110
Being parent/guardian	No	Yes	0.5	<0.001(0.4,0.7)	-0.015	<0.001(-0.021,-0.008) .	1.2	0.560(0.7,2.0)	0.3 (1)	0.560	0.003	0.570(-0.008,0.014)	0.3 (1)	0.570
Number of children in household	0	1 2 3+	1.3 1.2 1.8	0.200(0.560(0.080(0.9,2.1 0.7,1.9 0.9,3.3)	0.006 0.003 0.014	0.250(0.580(0.170() (0.8 0.9 1.2	0.450(0.4,1.4) 0.720(0.5,1.6) 0.67(0.6,2.3)	1.1 (3)	0.770	-0.004 -0.002 0.003	0.420(0.720(0.690(-0.014,0.006) -0.013,0.009) -0.012,0.019)	1.2 (3)	0.760
Wave × Loneliness	Wave 2, Not lonely	Wave 3 × Lonely Wave 4 × Lonely	-	-(-(-,- -,-)	-	-(-(-,- -,-		0.4 0.5	0.055(0.2,1.0) 0.190(0.2,1.4)	3.7 (2)	0.160	-0.016 -0.011	0.083(0.220(-0.035,0.002) -0.030,0.007)	3.0 (2)	0.220
Wave × Sex	Wave 2, Male	Wave 3 × Female Wave 4 × Female	-	-(-(-,- -,-)	-	-(-(-,- -,-		1.5 1.3	0.380(0.6,3.7) 0.580(0.5,3.3)	0.8 (2)	0.670	0.008 0.005	0.380(0.590(-0.010,0.027) -0.013 0.024)	0.8 (2)	0.670
Wave × Age	Wave 2, 55+	Wave 3 × 18-24 Wave 3 × 25-34 Wave 3 × 35-44 Wave 3 × 45-54 Wave 4 × 18-24 Wave 4 × 25-34 Wave 4 × 45-44 Wave 4 × 45-44	-	-(-(-(-(-(-(597 597 597 597 597 597 597))))))	-	-(-(-(-(-(-(797 797 797 797 797 797 797) 2	2.7 2.0 1.5 1.9 3.1 2.3 1.0	0.300(0.4,18.2) 0.410(0.4,10.3) 0.610(0.3,7.2) 0.520(0.3,14.2) 0.240(0.5,20.4) 0.330(0.4,12.5) 0.980(0.2,5.4) 0.190(0.5,27.6)	6.3 (8)	0.620	0.023 0.012 0.005 0.007 0.018 0.010 -0.007 0.014	0.280(0.410(0.750(0.520(0.300(0.500(0.580(0.190(-0.018,0.064) -0.017,0.042) -0.024,0.034) -0.014,0.028) -0.016,0.052) -0.018,0.038) -0.034,0.019) -0.007,0.036)	6.8 (8)	0.560
Wave × Coping interaction is not inclu	Wave 2, Employed	Wave 3 × Unemployed Wave 3 × Not working/Others Wave 3 × Full time student Wave 3 × Retired Wave 4 × Unemployed Wave 4 × Not working/Others Wave 4 × Full time student Wave 4 × Retired	-	-(-(-(-(-(797 797 797 797 797 797 797)))))	-	-(-(-(-(-(797 797 797 797 797 797 797) ()	0.4 0.6 0.4 0.9 0.7 0.9 1.0	0.170(0.1,1.5) 0.360(0.2,1.7) 0.320(0.1,2.3) 0.950(0.1,6.2) 0.600(0.2,2.8) 0.830(0.3,2.5) 0.960(0.2,5.0) 0.670(0.1,5.0)	4.0 (8)	0.860	-0.021 -0.009 -0.019 -0.001 -0.010 -0.003 0.002 -0.005	0.250(0.510(0.420(0.930(0.610(0.840(0.930(0.680(-0.058,0.015) -0.035,0.017) -0.064,0.027) -0.030,0.027) -0.048,0.028) -0.028,0.023) -0.044,0.049) -0.029,0.019)	3.5 (8)	0.900

^{*} Wave × Coping interaction is not included due to 0 counts in the coping subgroup * Based on Wald chi-square test; df: degree of freedom

Questions for Wave 1

What is your current marital or relationship status?

Married/In a civil partnership

Living as Married

Separated/Divorced

Widowed

Never married

Which of these applies to you?

Working full time

Working part time

Full time student

Retired

Unemployed

Not working/Other

Are you the parent/ guardian of children of any of the following ages? (Please select all that apply.)

Not parent/ guardian

4 years and under

5 to 11 years

12 to 16 years

17 to 18 years

18 years and under

Over 18 years

Children in Household (Please select all that apply.)

0

1

2

3+

Refuse to answer

LMC_Q1. The 2019 novel coronavirus (2019-nCoV), otherwise known as COVID-19, is an infectious disease first identified in the city of Wuhan, capital of Hubei province in China, after 41 people developed pneumonia without a clear cause. Infections have since been reported around the world. Symptoms include fever, coughing and breathing difficulties. Throughout this questionnaire, we will refer to the disease as Coronavirus). Which, if any, of the following statements do you agree with regarding Coronavirus (COVD-19? (Please select all that apply)

I feel well informed about the need for measures to control the spread of the outbreak personally I have everything I need to manage if I am self-isolated (e.g., sufficient food. etc.)

I understand the benefit of washing my hands often

I understand the benefit of self-isolating if needed to

I feel I can make a positive contribution to efforts to limit the spread/impact of the outbreak None of these

Don't know

LMC_Q2. For the following few questions, we have provided you with a "Prefer not to say" option, which you can select if you do not wish to share your experiences on a particular question. Which, if any, of the following emotions have you felt as a result of the Coronavirus pandemic so far? (Please select all that apply)

Afraid

Panicked

Anxious or worried

Empathetic

Indifferent

Hopeful

Hopeless

Ashamed

Guilt

Loneliness

Unprepared

None of these

Don't know

Prefer not to say

For the following question, we have provided you with both a "Not applicable" and "Prefer not to say" options, as some questions may either not apply or are of a sensitive nature. Please select the option that best applies to you. Are you worried about any of the following as a result of the Coronavirus pandemic? (Please select one option on each row)

Options:

Yes

No

Don't know

Not applicable

Prefer not to say

LMC_Q3_1. Financial concerns (e.g., going into debt, ability to pay bills, etc.)

LMC_Q3_2. Losing my job

LMC Q3 3. Becoming ill with the virus

LMC_Q3_4. Being able to cope with uncertainty (e.g., not knowing what will happen)

LMC_Q3_5. Having no-one to care for me, as a result of becoming ill with the virus

LMC_Q3_6. Being unable to access my benefit payments

LMC_Q3_7. Not being able to care for friends and family, as a result of becoming ill

LMC_Q3_8. Being separated from friends and family if I have to self-isolate

LMC_Q3_9. Being separated from friends and family if they have to self-isolate

LMC_Q3_10. Having enough food to meet my / my households basic needs

LMC_Q3_11. Being vulnerable because of an existing medical condition

LMC_Q3_12. My education or career training being interrupted

LMC_Q3_13. Looking after my children if I get sick

LMC_Q3_14. Passing the coronavirus on to someone else if I became infected

LMC_Q3_15. Being vulnerable because of my age

LMC_Q3_16. Experiencing discrimination if I contract the coronavirus

LMC_Q3_17. Making my existing mental health problems worse

LMC_Q3_18. How the mental health of my child(ren) will be affected by the pandemic

LMC_Q4. Still thinking about the Coronavirus...Which, if any, of the following statements apply to you? (Please select all that apply)

I would volunteer to help tackle the coronavirus as long as it didn't increase my risk of catching it (e.g., dropping food off to people's houses, etc.)

I would volunteer to help tackle the coronavirus even if it increased my personal risk of catching it (e.g., dropping off food to people's houses, caring for people who are sick. etc.)

I am worried about someone I know who is living alone and may need help during the pandemic

I am planning to help someone I know who is living alone during the pandemic

I am worried about someone who is particularly vulnerable (e.g., elderly, someone with a pre-existing medical condition)

I live alone and will not have support of family or friends if I became infected

I think tackling the Coronavirus is solely the job of Government, public services and NHS

I believe that concern about the Coronavirus is exaggerated

It has negatively affected how well I sleep

I am caring for someone and worried about how they will cope if I became infected

I am a carer and worried about how I will cope if I became infected

None of these

Don't know

Prefer not to say

Questions for Wave 2

What is your current marital or relationship status?

Married/In a civil partnership

Living as Married

Separated/Divorced

Widowed

Never married

Which of these applies to you?

Working full time

Working part time

Full time student

Retired

Unemployed

Not working/Other

Are you the parent/guardian of children of any of the following ages? (Please select all that apply.)

Not parent/ guardian

4 years and under

5 to 11 years

12 to 16 years

17 to 18 years

18 years and under

Over 18 years

Children in Household (Please select all that apply.)

0

1

2

3+

Refuse to answer

LMC_QA. The 2019 novel coronavirus (2019-nCoV), otherwise known as COVID-19, is an infectious disease first identified in the city of Wuhan, capital of Hubei province in China, after 41 people developed pneumonia without a clear cause. Infections have since been reported around the world. Symptoms include fever, coughing and breathing difficulties. Throughout this questionnaire, we will refer to the disease as Coronavirus. For the following question, we would like you to think about yourself, members of your household or other family members who have been affected by Coronavirus. Which, if any, of the following applies to how you have been affected by Coronavirus (COVID-19) in the past 2 weeks? (Please select all that apply)

I have been tested for Coronavirus and had a positive result

I have been tested for Coronavirus and had a negative result

Someone in my household has tested positive for Coronavirus

A family member living at a different address has tested positive for Coronavirus

I am self-isolating with symptoms of Coronavirus

My household is self-isolating because someone else has symptoms of Coronavirus

A family member living at a different address is self-isolating with symptoms of Coronavirus

As part of my current work I am working directly with individuals who have tested positive for Coronavirus

None of these

Don't know

LMC_Q1. Which, if any, of the following statements do you agree with regarding Coronavirus (COVD-19 in the past 2 weeks? (Please select all that apply)

I feel well informed about the need for measures to control the spread of the outbreak personally

I have everything I need to manage if I am self-isolated (e.g., sufficient food. etc.)

I understand the benefit of washing my hands often

I understand the benefit of self-isolating if needed to

I feel I can make a positive contribution to efforts to limit the spread/impact of the outbreak

None of these

Don't know

LMC_Q2. For the following few questions, we have provided you with a "Prefer not to say" option, which you can select if you do not wish to share your experiences on a particular question. Which, if any, of the following emotions have you felt as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select all that apply)

Afraid

Panicked

Anxious or worried

Empathetic

Indifferent

Hopeful

Hopeless

Ashamed

Guilt

Loneliness

Unprepared

None of these

Don't know

Prefer not to say

For the following question, we have provided you with both a "Not applicable" and "Prefer not to say" options, as some questions may either not apply or are of a sensitive nature. Please select the option that best applies to you. Have you been worried about any of the following as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select one option on each row)

Options:

Yes

No

Don't know

Not applicable

Prefer not to say

LMC_Q3_1. Financial concerns (e.g., going into debt, ability to pay bills, etc.)

LMC_Q3_2. Losing my job

LMC_Q3_3. Becoming ill with the virus

LMC_Q3_4. Being able to cope with uncertainty (e.g., not knowing what will happen)

LMC_Q3_5. Having no-one to care for me, as a result of becoming ill with the virus

LMC_Q3_6. Being unable to access my benefit payments

LMC_Q3_7. Not being able to care for friends and family, as a result of becoming ill

LMC_Q3_8. Being separated from friends and family

LMC_Q3_9. Being able to cope with self-isolation

LMC_Q3_10. Having enough food to meet my / my households basic needs

LMC_Q3_11. Being vulnerable because of an existing medical condition

LMC_Q3_12. My education or career training being interrupted

LMC_Q3_13. Looking after my children if I get sick

LMC_Q3_14. Passing the coronavirus on to someone else if I became infected

LMC_Q3_15. Being vulnerable because of my age

LMC_Q3_16. Experiencing discrimination if I contract the Coronavirus

LMC_Q3_17. Making my existing mental health problems worse

LMC_Q3_18. How the mental health of my child(ren) will be affected by the pandemic

LMC_Q4. Still thinking about the Coronavirus...In the past 2 weeks, which, if any, of the following statements apply to you? (Please select all that apply)

I would volunteer to help tackle the Coronavirus as long as it didn't increase my risk of catching it (e.g., dropping food off to people's houses, etc.)

I would volunteer to help tackle the Coronavirus even if it increased my personal risk of catching it (e.g., dropping off food to people's houses, caring for people who are sick. etc.)

I am worried about someone I know who is living alone and may need help during the pandemic

I am planning to help someone I know who is living alone during the pandemic

I am worried about someone who is particularly vulnerable (e.g., elderly, someone with a pre-existing medical condition)

I live alone and will not have support of family or friends if I became infected

I think tackling the Coronavirus is solely the job of Government, public services and NHS

I believe that concern about the Coronavirus is exaggerated

It has negatively affected how well I sleep

I am caring for someone and worried about how they will cope if I became infected

I am a carer and worried about how I will cope if I became infected

None of these

Don't know

Prefer not to say

LMC_Q5. For the following question, if you have not experienced any stress related to the Coronavirus pandemic, please select the 'Not applicable' option. Overall, how well do you think you are coping with stress related to the Coronavirus (COVID-19) pandemic?

Very well

Fairly well

Not very well

Not at all well

Don't know

Prefer not to say

Not applicable - I have not experienced any stress related to the Coronavirus

LMC_Q6. For the following question, if nothing has helped you cope with stress related to the Coronavirus pandemic, please select the 'Not applicable' option. Which, if any, of the following have helped you to cope with stress related to the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select all that apply)

Contacting my family (e.g., phone, video chat, etc.)

Contacting my friends (e.g., phone, video chat, etc.)

Contacting a mental health worker or counsellor (e.g., via phone, video chat etc.)

Maintaining a healthy lifestyle (e.g., balanced diet, enough sleep, exercise etc.)

Keeping up to date with relevant information (e.g., TV news, newspapers, online etc.)

Limiting my exposure to the news about the Coronavirus

Limiting exposure to social media (e.g., Facebook, Instagram, Snapchat, Twitter etc.)

Contacting a support group (i.e., where members with the same issues can come together for sharing coping strategies, to feel more empowered and for a sense of community)

Going for a walk outside

Doing a hobby

Volunteering to help in my local community or for the NHS

Other

Don't know

Not applicable - Nothing has helped me to cope with stress related to the Coronavirus

For the following question, if you do not normally do any of the following, please select the 'Not applicable' option. We have also provided you a 'Prefer not to say' option as the question might be of a sensitive nature. Which, if any, of the following have you done more or less of to cope with the stress of the Coronavirus (COVID-19) pandemic situation in the past 2 weeks, or has there been no change? (Please select one option on each row)

Options:

More

Less

No change

Not applicable

Prefer not to say

LMC_Q7_1. Drunk alcohol

LMC_Q7_2. Smoking (e.g., cigarettes, cigars, etc.)

LMC_Q7_3. Used illicit drugs or other substances

LMC_Q7_4. Eaten too much

LMC_Q7_5. Eaten too little

LBC_Q8A. The following questions are on the topic of self-harm and suicidal thoughts, and your own personal experiences of this. We understand this can be a sensitive topic, but please remember your answers will always be treated anonymously and will never be analysed individually. We will provide you with a "Prefer not to say" option for particularly sensitive questions, which you can select if you do not wish to share your opinion or experiences on a particular question. Are you happy to continue with this section of the survey?

Yes

No

Have you done or experienced any of the following, as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select one option on each row)

Options:

Yes

No

Prefer not to say

LMC_Q8_1. Experienced suicidal thoughts/ feelings

LMC_Q8_2. Deliberately hurt myself

LMC_Q8_3. Worried about someone close to me dying

How often have you done each of the following as a result of the Coronavirus (COVID-19 pandemic in the past 2 weeks? (Please select one option on each row)

Options:

Once a day or more often

Nearly every day

A few times a week

Passing thoughts

Don't know

Prefer not to say

LMC_Q9_1. Experienced suicidal thoughts/ feelings

LMC_Q9_2. Deliberately hurt myself

LMC_Q9_3. Worried about someone close to me dying

Questions for Wave 3

What is your current marital or relationship status?

Married/In a civil partnership

Living as Married

Separated/Divorced

Widowed

Never married

Which of these applies to you?

Working full time

Working part time

Full time student

Retired

Unemployed

Not working/Other

Are you the parent/ guardian of children of any of the following ages? (Please select all that apply.)

Not parent/ guardian

4 years and under

5 to 11 years

12 to 16 years

17 to 18 years

18 years and under

Over 18 years

Children in Household (Please select all that apply.)

0

1

2

3+

Refuse to answer

Which, if any, of the following best describes your current living arrangements? Please select all that apply.

I live alone

Living with a spouse or partner

Living with friend(s) or housemate(s)

Living with parent(s)

Living with brother(s) or sister(s)

Living with child(ren) who are over 18

Living with child(ren) who are below 18

Living with other adult family members, e.g., Grandparents, Cousins, etc.

Living with grandchild(ren) (by grandchildren we mean the children of your children, whether by birth, adoption, or relationship)

Prefer not to say

None of these

LMC_QA. Which, if any, of the following applies to how you have been affected by Coronavirus (COVID-19) in the past 2 weeks? (Please select all that apply)

I have been tested for Coronavirus and had a positive result

I have been tested for Coronavirus and had a negative result

Someone in my household has tested positive for Coronavirus

A family member living at a different address has tested positive for Coronavirus

I am self-isolating with symptoms of Coronavirus

I am self-isolating but don't have any symptoms of Coronavirus

My household is self-isolating because someone else has symptoms of Coronavirus

A family member living at a different address is self-isolating with symptoms of Coronavirus

As part of my current work I am working directly with individuals who have tested positive for Coronavirus

None of these

Don't know

LMC_QBA. Which ONE, if any, of the following BEST describes your current employment since the outbreak of the Coronavirus (COVID-19)?

I am still in employment and continue to work at my workplace (i.e., not from home)

I was working from home before the outbreak and continue to work from home now

I am currently working, but now from home permanently, where I didn't before the outbreak

I have taken temporary unpaid leave

I have been temporarily furloughed by my employer

I have been laid off by my employer

None of these

Don't know

LMC_Q1. Which, if any, of the following statements do you agree with regarding Coronavirus (COVD-19) in the past 2 weeks? (Please select all that apply)

I feel well informed about the need for measures to control the spread of the outbreak personally

I have everything I need to manage if I am self-isolated (e.g., sufficient food. etc.)

I understand the benefit of washing my hands often

I understand the benefit of self-isolating if I needed to

I feel I can make a positive contribution to efforts to limit the spread/impact of the outbreak

None of these

Don't know

LMC_Q2. Which, if any, of the following emotions have you felt as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select all that apply)

Afraid

Panicked

Anxious or worried

Empathetic

Indifferent

Hopeful

Hopeless

Ashamed

Guilt

Loneliness

Unprepared

None of these

Don't know

Prefer not to say

Have you been worried about any of the following as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select one option on each row)

Options:

Yes

No

Don't know

Not applicable

Prefer not to say

LMC_Q3_1. Financial concerns (e.g., going into debt, ability to pay bills, etc.)

LMC_Q3_2. Losing my job

LMC_Q3_3. Becoming ill with the virus

LMC_Q3_4. Being able to cope with uncertainty (e.g., not knowing what will happen)

LMC_Q3_5. Having no-one to care for me, as a result of becoming ill with the virus

LMC_Q3_6. Being unable to access my benefit payments

LMC_Q3_7. Not being able to care for friends and family, as a result of becoming ill

LMC_Q3_8. Being separated from friends and family

LMC_Q3_9. Being able to cope with self-isolation

LMC_Q3_10. Having enough food to meet my / my households basic needs

LMC_Q3_11. Being vulnerable because of an existing medical condition

LMC_Q3_12. My education or career training being interrupted

LMC_Q3_13. Looking after my children if I get sick

LMC_Q3_14. Passing the coronavirus on to someone else if I became infected

LMC_Q3_15. Being vulnerable because of my age

LMC_Q3_16. Experiencing discrimination if I contract the Coronavirus

LMC_Q3_17. Making my existing mental health problems worse

LMC_Q3_18. How the mental health of my child(ren) will be affected by the pandemic

LMC_Q4. Still thinking about the Coronavirus...In the past 2 weeks, which, if any, of the following statements apply to you? (Please select all that apply)

I would volunteer to help tackle the Coronavirus as long as it didn't increase my risk of catching it (e.g., dropping food off to people's houses, etc.)

I would volunteer to help tackle the Coronavirus even if it increased my personal risk of catching it (e.g., dropping off food to people's houses, caring for people who are sick. etc.)

I am worried about someone I know who is living alone and may need help during the pandemic

I am planning to help someone I know who is living alone during the pandemic

I am worried about someone who is particularly vulnerable (e.g., elderly, someone with a pre-existing medical condition)

I live alone and will not have support of family or friends if I became infected

I think tackling the Coronavirus is solely the job of Government, public services and NHS

I believe that concern about the Coronavirus is exaggerated

It has negatively affected how well I sleep

I am caring for someone and worried about how they will cope if I became infected

I am a carer and worried about how I will cope if I became infected

I have experienced a loss due to COVID-19

None of these

Don't know

Prefer not to say

LMC_Q4A. For the following question we would like you to think about kindness in general. By kindness we mean the quality of being friendly, generous and considerate. Which, if any, of the following statements do you agree with? (Please select all that apply)

Being kind to myself has a positive impact on my mental health

Being kind to others has a positive impact on my mental health.

When other people are kind it has a positive impact on my mental health.

The desire to be kind motivates me to be more socially active (e.g., joining groups, volunteering)

I try to make sure I make time to be kind to myself

It's important to look after my own needs as well as being kind to others

It's important that politicians value kindness

It's important that politicians prioritise kindness in policy making

It's important that politicians prioritise kindness in service provision

Trying to be kind to too many people can sometimes feel overwhelming

None of these

Don't know

LMC_Q4B. Thinking now about the Coronavirus (COVID-19)...Which, if any, of the following statements do you agree with? (Please select all that apply)

It's important we show kindness to key workers who are working during the pandemic

It's important to show kindness to young people during the pandemic

It's important to show kindness to older adults during the pandemic

It's important to show kindness to people with underlying health conditions during the pandemic

It's important to show kindness to people who have been bereaved during the pandemic

It's important that we show kindness to the families and friends of people who have died in the pandemic

It's important that we learn from this crisis in order to be more kind as a society

It's important after the pandemic that politicians value kindness more than they did previously

It's important that after the pandemic politicians prioritise kindness in policy making

It's important that after the pandemic politicians prioritise kindness in service provision

It's important to remember to be kind to ourselves in order to cope with the pandemic

I sometimes feel overwhelmed by trying to be kind to too many people during the pandemic

None of these

Don't know

LMC_Q5. For the following question, if you have not experienced any stress related to the Coronavirus pandemic, please select the 'Not applicable' option. Overall, how well do you think you are coping with stress related to the Coronavirus (COVID-19) pandemic?

Very well

Fairly well

Not very well

Not at all well

Don't know

Prefer not to say

Not applicable - I have not experienced any stress related to the Coronavirus

LMC_Q6. Which, if any, of the following have helped you to cope with stress related to the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select all that apply)

Contacting my family (e.g., phone, video chat, etc.)

Contacting my friends (e.g., phone, video chat, etc.)

Contacting a mental health worker or counsellor (e.g., via phone, video chat etc.)

Maintaining a healthy lifestyle (e.g., balanced diet, enough sleep, exercise etc.)

Keeping up to date with relevant information (e.g., TV news, newspapers, online etc.)

Limiting my exposure to the news about the Coronavirus

Limiting exposure to social media (e.g., Facebook, Instagram, Snapchat, Twitter etc.)

Contacting a support group (i.e., where members with the same issues can come together for sharing coping strategies, to feel more empowered and for a sense of community)

Going for a walk outside

Doing a hobby

Volunteering to help in my local community or for the NHS

Other

Don't know

Not applicable - Nothing has helped me to cope with stress related to the Coronavirus

Which, if any, of the following have you done more or less of to cope with the stress of the Coronavirus (COVID-19) pandemic situation in the past 2 weeks, or has there been no change? (Please select one option on each row)

Options:

More

Less

No change

Not applicable

Prefer not to say

LMC_Q7_1. Drunk alcohol

LMC_Q7_2. Smoking (e.g., cigarettes, cigars, etc.)

LMC_Q7_3. Used illicit drugs or other substances

LMC_Q7_4. Eaten too much

LMC_Q7_5. Eaten too little

LBC_Q8A. The following questions are on the topic of self-harm and suicidal thoughts, and your own personal experiences of this. We understand this can be a sensitive topic, but please remember your answers will always be treated anonymously and will never be analysed individually. We will provide you with a "Prefer not to say" option for particularly sensitive questions, which you can select if you do not wish to share your opinion or experiences on a particular question. Are you happy to continue with this section of the survey?

Yes

No

Have you done or experienced any of the following, as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select one option on each row)

Options:

Yes

No

Prefer not to say

LMC_Q8_1. Experienced suicidal thoughts/ feelings

LMC_Q8_2. Deliberately hurt myself

LMC_Q8_3. Worried about someone close to me dying

How often have you done each of the following as a result of the Coronavirus (COVID-19 pandemic in the past 2 weeks? (Please select one option on each row)

Options:

Once a day or more often

Nearly every day

A few times a week

Passing thoughts

Don't know

Prefer not to say

LMC_Q9_1. Experienced suicidal thoughts/ feelings

LMC_Q9_2. Deliberately hurt myself

LMC_Q9_3. Worried about someone close to me dying

LMC_Q10. Do you have a current pre-existing mental health condition or psychiatric diagnosis?

Yes

No

Don't know

Prefer not to say

Questions for Wave 4

What is your current marital or relationship status?

Married/In a civil partnership

Living as Married

Separated/Divorced

Widowed

Never married

Which of these applies to you?

Working full time

Working part time

Full time student

Retired

Unemployed

Not working/Other

Are you the parent/ guardian of children of any of the following ages? (Please select all that apply.)

Not parent/ guardian

4 years and under

5 to 11 years

12 to 16 years

17 to 18 years

18 years and under

Over 18 years

Children in Household (Please select all that apply.)

0

1

2

3+

Refuse to answer

Which, if any, of the following best describes your current living arrangements? Please select all that apply.

I live alone

Living with a spouse or partner

Living with friend(s) or housemate(s)

Living with parent(s)

Living with brother(s) or sister(s)

Living with child(ren) who are over 18

Living with child(ren) who are below 18

Living with other adult family members, e.g., Grandparents, Cousins, etc.

Living with grandchild(ren) (by grandchildren we mean the children of your children, whether by birth, adoption, or relationship)

Prefer not to say

None of these

LMC_QA. Which, if any, of the following applies to how you have been affected by Coronavirus (COVID-19) in the past 2 weeks? (Please select all that apply)

I have been tested for Coronavirus and had a positive result

I have been tested for Coronavirus and had a negative result

Someone in my household has tested positive for Coronavirus

A family member living at a different address has tested positive for Coronavirus

I am self-isolating with symptoms of Coronavirus

I am self-isolating but don't have any symptoms of Coronavirus

My household is self-isolating because someone else has symptoms of Coronavirus

A family member living at a different address is self-isolating with symptoms of Coronavirus

As part of my current work I am working directly with individuals who have tested positive for Coronavirus

None of these

Don't know

LMC_QBAB. Which ONE, if any, of the following BEST describes your current employment since the outbreak of the Coronavirus (COVID-19)?

I am still in employment and continue to work at my workplace (i.e., not from home)

I was working from home before the outbreak and continue to work from home now

I am currently working but now from home permanently, whereas I didn't before the outbreak

I have taken temporary unpaid leave

I have been temporarily furloughed by my employer

I have been laid off by my employer

I have returned to work in the last 2 weeks (e.g., after being furloughed, laid off etc.)

None of these

Don't know

LMC_Q1. Which, if any, of the following statements do you agree with regarding Coronavirus (COVID-19) in the past 2 weeks? (Please select all that apply)

I feel well informed about the need for measures to control the spread of the outbreak personally

I have everything I need to manage if I am self-isolated (e.g., sufficient food. etc.)

I understand the benefit of washing my hands often

I understand the benefit of self-isolating if I needed to

I feel I can make a positive contribution to efforts to limit the spread/impact of the outbreak

None of these

Don't know

LMC_Q2. For the following few questions, we have provided you with a "Prefer not to say" option, which you can select if you do not wish to share your experiences on a particular question. Which, if any, of the following emotions have you felt as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select all that apply)

Afraid

Panicked

Anxious or worried

Empathetic

Indifferent

Hopeful

Hopeless

Ashamed

Guilt

Loneliness

Unprepared

None of these

Don't know

Prefer not to say

For the following question, we have provided you with both a "Not applicable" and "Prefer not to say" options, as some questions may either not apply or are of a sensitive nature. Please select the option that best applies to you. Have you been worried about any of the following as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select one option on each row)

Options:

Yes

No

Don't know

Not applicable

Prefer not to say

Refused

LMC_Q3_1. Financial concerns (e.g., going into debt, ability to pay bills, etc.)

LMC_Q3_2. Losing my job

LMC_Q3_3. Becoming ill with the virus

LMC_Q3_4. Being able to cope with uncertainty (e.g., not knowing what will happen)

LMC_Q3_5. Having no-one to care for me, because of becoming ill with the virus

LMC_Q3_6. Being unable to access my benefit payments

LMC_Q3_7. Not being able to care for friends and family, as a result of becoming ill

LMC_Q3_8. Being separated from friends and family

LMC_Q3_9. Being able to cope with self-isolation

LMC_Q3_10. Having enough food to meet my / my household's basic needs

LMC_Q3_11. Being vulnerable because of an existing medical condition

LMC_Q3_12. My education or career training being interrupted

LMC_Q3_13. Looking after my children if I get sick

LMC_Q3_14. Passing the coronavirus on to someone else if I became infected

LMC_Q3_15. Being vulnerable because of my age

LMC_Q3_16. Experiencing discrimination if I contract the Coronavirus

LMC_Q3_17. Making my existing mental health problems worse

LMC_Q3_18. How the mental health of my child(ren) will be affected by the pandemic

LMC_Q4. Still thinking about the Coronavirus...In the past 2 weeks, which, if any, of the following statements apply to you? (Please select all that apply)

I would volunteer to help tackle the Coronavirus as long as it didn't increase my risk of catching it (e.g., dropping food off to people's houses, etc.)

I would volunteer to help tackle the Coronavirus even if it increased my personal risk of catching it (e.g., dropping off food to people's houses, caring for people who are sick, etc.)

I am worried about someone I know who is living alone and may need help during the pandemic

I am planning to help someone I know who is living alone during the pandemic

I am worried about someone who is particularly vulnerable (e.g., elderly, someone with a pre-existing medical condition)

I live alone and will not have support of family or friends if I became infected

I think tackling the Coronavirus is solely the job of Government, public services and NHS

I believe that concern about the Coronavirus is exaggerated

It has negatively affected how well I sleep

I am caring for someone and worried about how they will cope if I became infected

I am a carer and worried about how I will cope if I became infected

I have experienced a loss due to COVID-19

None of these

Don't know

Prefer not to say

LMC_Q5. For the following question, if you have not experienced any stress related to the Coronavirus pandemic, please select the 'Not applicable' option. Overall, how well do you think you are coping with stress related to the Coronavirus (COVID-19) pandemic?

Very well

Fairly well

Not very well

Not at all well

Don't know

Prefer not to say

Not applicable - I have not experienced any stress related to the Coronavirus

LMC_Q6. For the following question, if nothing has helped you cope with stress related to the Coronavirus pandemic, please select the 'Not applicable' option. Which, if any, of the following have helped you to cope with stress related to the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select all that apply)

Contacting my family (e.g., phone, video chat, etc.)

Contacting my friends (e.g., phone, video chat, etc.)

Contacting a mental health worker or counsellor (e.g., via phone, video chat etc.)

Maintaining a healthy lifestyle (e.g., balanced diet, enough sleep, exercise etc.)

Keeping up to date with relevant information (e.g., TV news, newspapers, online etc.)

Limiting my exposure to the news about the Coronavirus

Limiting exposure to social media (e.g., Facebook, Instagram, Snapchat, Twitter etc.)

Contacting a support group (i.e., where members with the same issues can come together for sharing coping strategies, to feel more empowered and for a sense of community)

Going for a walk outside

Doing a hobby

Volunteering to help in my local community or for the NHS

Being able to visit green spaces (e.g., outdoor spaces, parks etc.)

Other

Don't know

Not applicable - Nothing has helped me to cope with stress related to the Coronavirus

For the following question, if you do not normally do any of the following, please select the 'Not applicable' option. We have also provided you a 'Prefer not to say' option as the question might be of a sensitive nature. Which, if any, of the following have you done more or less of to cope with the stress of the Coronavirus (COVID-19) pandemic situation in the past 2 weeks, or has there been no change? (Please select one option on each row)

Options:

More

Less

No change

Not applicable

Prefer not to say

LMC_Q7_1. Drunk alcohol

LMC_Q7_2. Smoking (e.g., cigarettes, cigars, etc.)

LMC_Q7_3. Used illicit drugs or other substances

LMC_Q7_4. Eaten too much

LMC_Q7_5. Eaten too little

LBC_Q8A. The following questions are on the topic of self-harm and suicidal thoughts, and your own personal experiences of this. We understand this can be a sensitive topic, but please remember your answers will always be treated anonymously and will never be analysed individually. We will provide you with a "Prefer not to say" option for particularly sensitive questions, which you can select if you do not wish to share your opinion or experiences on a particular question. Are you happy to continue with this section of the survey?

Yes

No

Have you done or experienced any of the following, as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks?

Options:

Yes

No

Prefer not to say

LMC_Q8_1. Experienced suicidal thoughts/ feelings

LMC_Q8_2. Deliberately hurt myself

LMC_Q8_3. Worried about someone close to me dying

How often have you done each of the following as a result of the Coronavirus (COVID-19) pandemic in the past 2 weeks? (Please select one option on each row)

Options:

Once a day or more often

Nearly every day

A few times a week

Passing thoughts

Don't know

Prefer not to say

LMC_Q9_1. Experienced suicidal thoughts/ feelings

LMC_Q9_2. Deliberately hurt myself

LMC_Q9_3. Worried about someone close to me dying

LMC_Q10. For the following questions, please remember that your answers are always treated confidentially and are never analysed individually. We have provided you with a "Prefer not to say"

option if you would rather not share your experiences. Do you have a current pre-existing mental health condition or psychiatric diagnosis?

Yes

No

Don't know

Prefer not to say

Refused