

The Wellbeing Costs of COVID-19 in the UK

An Independent Research Report by Simetrica-Jacobs
and the London School of Economics and Political Science.

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Executive Summary

The COVID-19 health pandemic is having a major impact on our lives. Very little is known, however, about the effects of the policy responses on people's wellbeing. We estimate the wellbeing costs of COVID-19 and social distancing measures by looking at the impacts of the pandemic on the mental health and wellbeing of people in the UK between 9 and 19 April 2020 using a large survey with nationally representative quotas.

The key findings are as follows:

- Across a range of indicators, levels of wellbeing and psychological distress are substantially worse in the April 2020 survey period than they were during March/April in 2019. This pattern is consistent across all regions in the UK, between men and women, across all age groups and across different ethnic groups.
- In fact, levels of all measures of wellbeing are at the lowest they have ever been since records began in the UK.
- The UK population is suffering from high levels of psychological distress and the nation as a whole is just under the threshold for psychiatric morbidity as measured by the GHQ-12 (General Health Questionnaire) instrument. Psychological distress is particularly high for women, ethnic minority groups and key workers.

- Key workers are currently reporting higher levels of life satisfaction, but also higher levels of anxiety than other workers.
- The negative association between COVID-19 and wellbeing is worse for women than for men, and for ethnic minority groups on some measures.
- The effect size is around twice the magnitude of the impact of redundancy (in normal times) on wellbeing.
- **We calculate an indicative monetary value for the total wellbeing cost to adults in the UK to be around £2.25bn per day, or around £43 per adult per day.**
- One-third of this figure represents the health-related costs and two-thirds represents the economic and social impacts on people from the social distancing measures.

It is important to note that we focus on the impacts on people's wellbeing and do not include other costs, such as those related to COVID-19 deaths, and hence our figures should be seen as a lower bound estimate of the impact on society. When using the figures in this report the stated caveats should be properly accounted for.

Acknowledgements

We would like to thank Pinar Jenkins for her helpful comments on a final draft of this paper, which improved it significantly. This research was funded and conducted independently with the assistance of Watermelon for the data collection.

Introduction

1.0

COVID-19 is a global health pandemic (World Health Organisation, January 2020) and governments have brought in extraordinary measures to contain the spread of the virus by closing schools, encouraging social distancing, closing non-essential shops, pubs, restaurants, gyms, sport and cultural institutions, and passing laws to prevent non-essential travel and socialising. The implications have been an unprecedented shutdown of public life and an extended period of enforced isolation for the majority of citizens.

Investment of resources into health research, vaccines and medicines as well as the potential health impacts of the virus, has understandably been on an unprecedented scale. Governments have also taken significant steps to try to understand the potential economic impact and to roll out a number of policies to protect national economies, businesses and households. There has even been some analysis of the positive impacts on the environment through the reduction in CO₂ emissions and fossil fuel consumption. However, there has been very little research undertaken to date on the wider social impacts of COVID-19.

We use a large survey with nationally representative quotas to assess how wellbeing has changed with the onset of COVID-19 and the social distancing restrictions in the UK. Our analysis focuses on how people feel now (in April 2020) and how their wellbeing has changed compared to the previous year, and we do not make any extrapolations or assumptions about the future impacts of COVID-19.

There have been other important COVID-19 related wellbeing papers produced recently. We benchmark our statistics on wellbeing during the COVID-19 period with findings released by the ONS from the Opinions and Lifestyle Survey (COVID-19 module) between the 3 and 13 of April, which reached approximately 1,100 respondents¹. Using this data, the ONS released a report on 23 April assessing the impacts of the pandemic on people, households and communities in Great Britain². This analysis describes the impact on work, finances, relationships and wellbeing among other factors. In our study, we go further with regards to the impact on wellbeing by matching our data

with pre-pandemic levels and control for other factors. Unlike the ONS study, we provide indicative monetary estimates of the impacts. The ONS data do lend robustness to ours by also finding a steep decrease in key wellbeing measures. The average of life satisfaction in our COVID-19 survey, for example, falls within the 95% confidence interval of the ONS results (for adults in the 16-69 age range).

A major study by University College London (UCL) started surveying 74,000 participants at the start of the lockdown, asking how adults feel about the lockdown, government advice, feelings of loneliness and wellbeing, and their mental health. They report that average levels of life satisfaction are lower than at the same time last year, although as of 17 April, the survey found that wellbeing has improved in the last three weeks from initial low levels at the beginning of April, but with less evidence for improvements in wellbeing among people aged 18 to 29 and for those with a diagnosed mental health condition³. However, the UCL research has not produced any statistical modelling to better isolate the effect of COVID-19 on wellbeing in the way that we do in this study and does not attempt to estimate costs to society.

An important paper by the CEP Wellbeing Policy Group sets out how a wellbeing approach could be used to provide guidance on when to lift current lockdown by estimating the net impacts on income, unemployment, mental health, etc⁴. By relying on data gathered during the pandemic, our study takes a more general approach, focussing on people's reports of overall wellbeing (and how they change in comparison to a year ago) rather than on a subset of outcomes which are then aggregated up into an overall effect. We additionally assess mental health impacts through the GHQ-12 survey instrument. GHQ-12 is a prominent measure in academic research. It is a multidimensional scale that assesses several distinct aspects of mental distress and it is with correlated with measures of depression, anxiety, self-esteem, and stress⁵.

1. Coronavirus and the social impacts on Great Britain: <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/datasets/coronavirusandthesocialimpactsongreatbritaindata>
 2. Office for National Statistics 2020
 3. Fancourt et al. 2020
 4. Layard et al. 2020
 5. Romppel et al. 2013; Tait et al. 2003; del Pilar Sánchez-López and Dresch 2008

Data and methodology

2.0

We conducted a web survey delivered through an online panel of 1,982 adult residents of the United Kingdom of Great Britain and Northern Ireland (UK). Quotas were used on gender, age, and region to help make the survey representative of the nation. However, one caveat to note is that there may be some risk that the sample may be unrepresentative if certain types of people are more likely to complete these types of surveys during national crises and that these types of people are different in their levels of wellbeing. The survey was delivered by the online panel company Watermelon between 9-19 April 2020.

The survey included: questions on subjective wellbeing (SWB) as defined by the UK Office for National Statistics (ONS)⁶ covering life satisfaction, happiness, anxiety and sense of purpose (worthwhile); the 12-item General Health Questionnaire (GHQ), which is a key measure of psychological distress and mental health⁷; a set of questions about the respondent's experience of the COVID-19 pandemic; and a set of standardised socio-demographic questions from the ONS, including education level, marital status, employment status, annual income, and number of dependent children.

We estimate average scores/levels of wellbeing and other factors such as loneliness in the current sample experiencing COVID-19, and compare these levels with UK averages for March and April in 2019. We also conduct a series of statistical analyses using multivariate regression analysis to look at the associated impact of COVID-19 on the mental health and wellbeing of UK residents. We use data from the ONS Annual Population Survey (APS) from the period March to April 2019 to build a control group in order to assess the impact of COVID-19. Following UK Government Guidance⁸, we control for a range of other key determinants of mental health and wellbeing in the analysis. Inverse population weights are used in the APS data to make the sample nationally representative.

6. These are the same questions asked in the UK Annual Population Survey (APS), an annual cross-sectional survey of approximately 155,000 households and 360,000 individuals in Great Britain.

7. <https://eprovide.mapi-trust.org/instruments/general-health-questionnaire>

8. Fujiwara and Campbell 2011

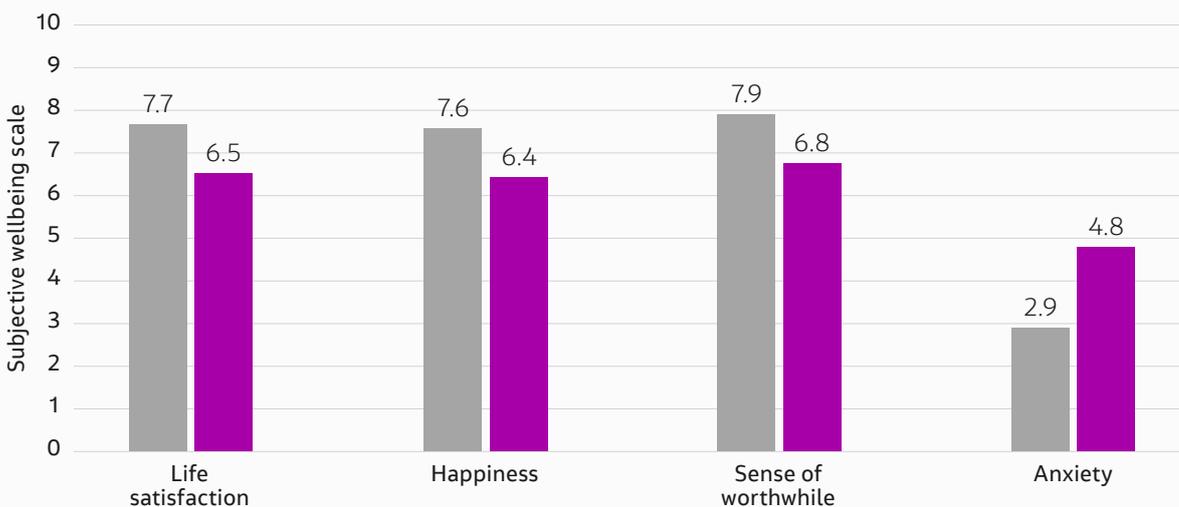
Results

3.0

3.1 Descriptive statistics

Seventy nine percent of people in the survey stated that their quality of life has been reduced because of COVID-19. Analysis of average levels of wellbeing show lower scores in all measures of wellbeing, and higher anxiety and psychological distress in April 2020 compared to March/April 2019. This pattern is consistent across all regions in the UK, between men and women, across all age groups and across different ethnic groups. Our findings are consistent with the latest wellbeing measurements from the ONS captured during the pandemic, with the exception of the 'sense of purpose' metric where we record a steeper decline. When making comparisons across different demographic groups, we focus on life satisfaction, which has featured prominently in a lot of work on SWB in policy.

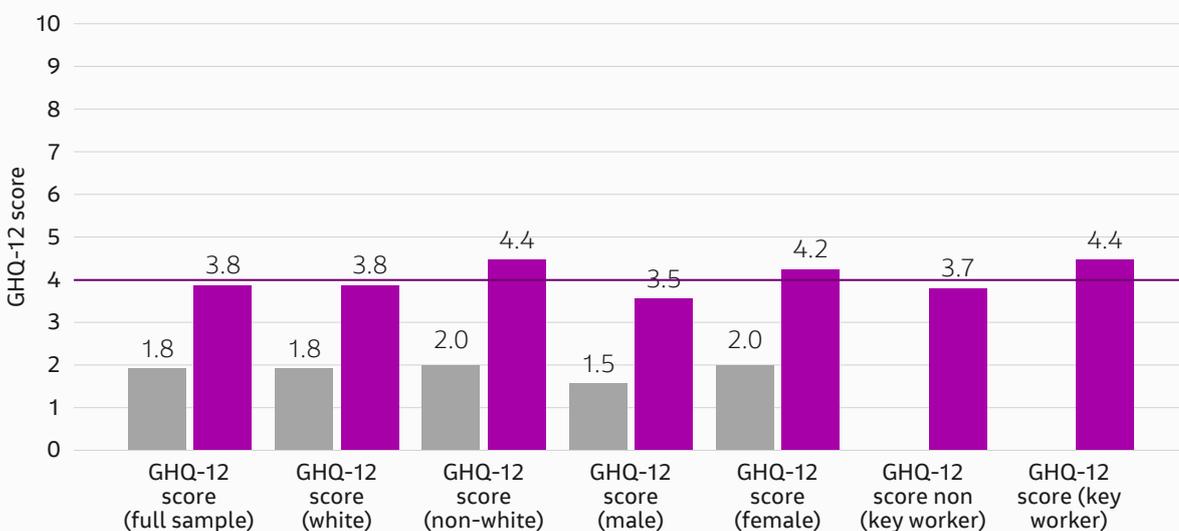
GHQ-12, a measure of psychological distress used frequently in academic research, is measured on a 0-12 point scale, where higher scores are worse as they represent higher levels of psychological distress. Scores over 4 indicate the presence of psychiatric morbidity⁹. Our analysis shows that, on average, the UK population is now suffering with high levels of psychological distress, and the nation as a whole is close to the threshold for psychiatric morbidity (mean score is 3.8). Psychological distress is particularly high for women, ethnic minority groups and key workers.



Average levels of subjective wellbeing

Note: GHQ-12 is measured on a 0-12 point scale. Higher scores are worse as they represent higher levels of psychological distress.

■ March/April 2019
■ COVID period



Average GHQ-12 scores for full sample and by different population groups

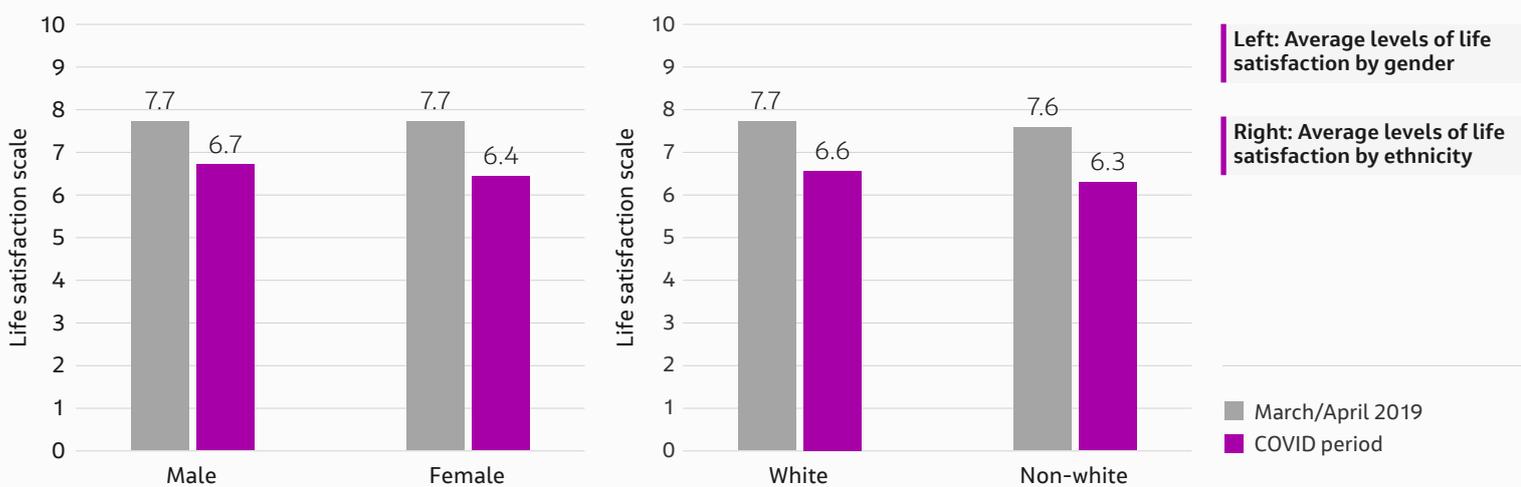
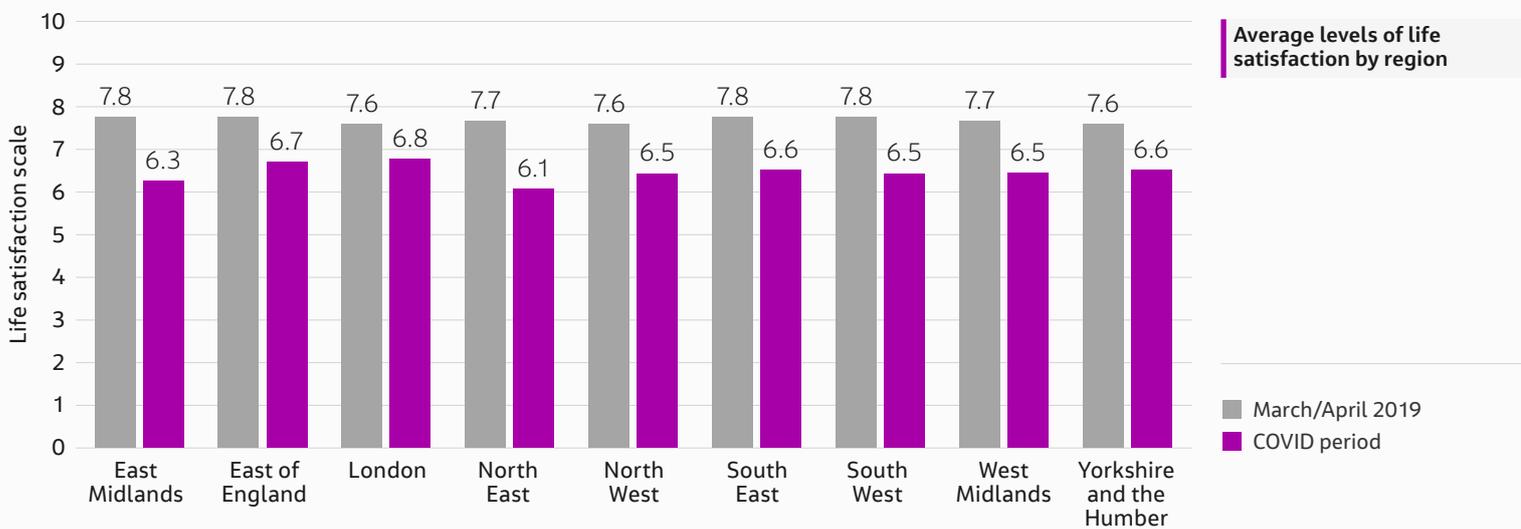
Note: GHQ-12 is measured on a 0-12 point scale. Higher scores are worse as they represent higher levels of psychological distress. We do not have data on key workers for 2019 therefore we just present April 2020.

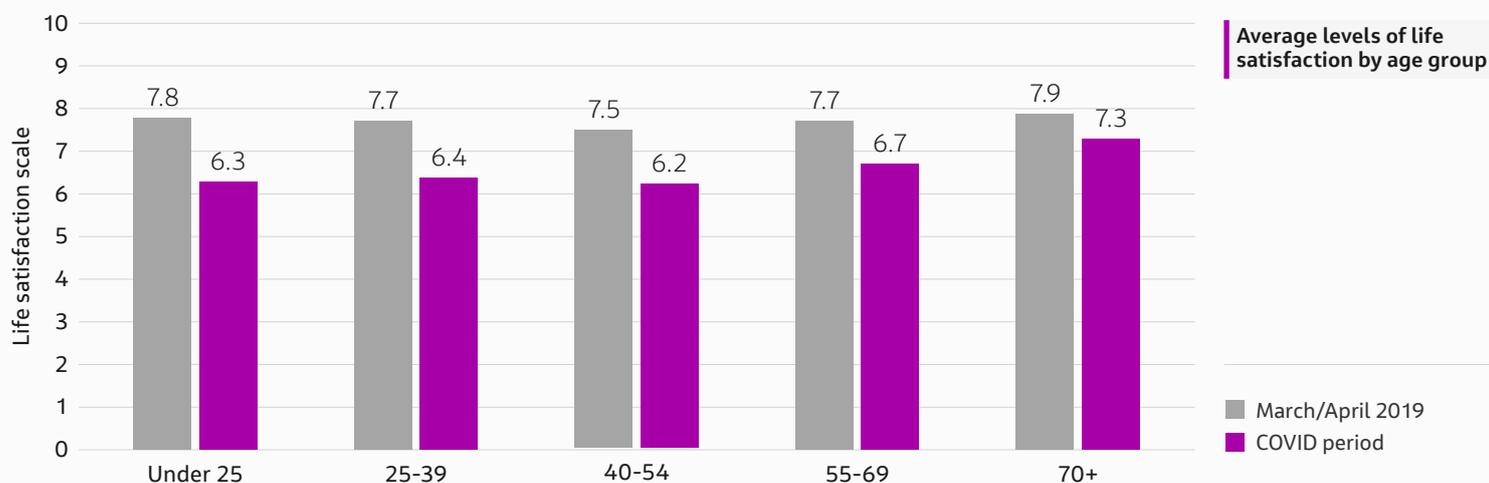
■ March/April 2019
■ COVID period
— Threshold for diagnosis of psychiatric morbidity

9. Goldberg and Williams 1988

The North East of England and the East Midlands saw the largest falls in wellbeing during this period and London saw the smallest fall. Overall, women saw a larger fall in wellbeing than men, people aged under 25 had the biggest reduction in wellbeing across all age groups, and ethnic minorities reported a larger decrease in wellbeing than whites. Whilst women have reported the largest falls in wellbeing, the group with the lowest levels of wellbeing on all metrics are men

under the age of 25. Currently, key workers report higher levels of life satisfaction, happiness and sense of purpose, but also higher levels of anxiety and greater psychological distress than non-key workers. Interestingly, whilst the evidence suggests that men are more vulnerable to COVID-19 infection and mortality, it is women who report the most suffering in terms of wellbeing and psychological distress.





The levels of wellbeing observed in April 2020 are the **lowest** they have been in the UK since the ONS started collecting data on national wellbeing in 2011.

It should be noted, however, that not all the observed changes in wellbeing and psychological distress can be attributable to COVID-19, as other factors such as Brexit may also have had an effect during this period. We look more closely at this issue in the statistical analysis in section 3.3.

Wellbeing measure	COVID-19 period	Lowest previously recorded
Mean of Life satisfaction	6.5	7.45
Mean of Happiness	6.4	7.69
Mean of Sense of worthwhile	6.8	7.3
Mean of Anxiety	4.8	3.05

Table 1: Levels of wellbeing in the UK

Note: Higher scores for anxiety equal higher levels of anxiety.

3.2 Public opinion and perceptions

The two biggest concerns that people have at present are the longer-term social and economic impacts of COVID-19, and potential impacts on the physical health of friends and family (both issues

raised by 68% of the sample). In general, people are more concerned about the mental and physical health of friends and family than about their own health.

To what extent do you agree with the following statements about the coronavirus outbreak?	% who "Agree" or "Strongly Agree"
I am concerned about the longer-term social and economic impacts of social isolation	68%
I am fearful about my family and friend's physical health	68%
I am concerned that other areas of policy and other social issues are being ignored	59%
I am fearful about my physical health	52%
I am fearful about my family and friend's mental health	50%
I am fearful about my household's financial position	40%
I am fearful about my mental health	39%

Table 2. Public concerns regarding COVID-19

In April 2020 there is a higher proportion of people reporting that they are feeling lonely 'some of the time' compared to March/April 2019, although the proportion of people reporting they 'often' or 'always' feel lonely has not increased.

Around half of the sample feel that the UK Government is doing 'enough' on social distancing, on protecting the economy and on combatting COVID-19. Few people (around 5%) say the Government is doing too much, but a large proportion (a third or more) of people feel the Government could be doing more in all areas.

How do you feel about the UK Government's response to the following?	Not doing enough	Doing enough	Doing too much
Combatting the health impacts of the coronavirus outbreak	43%	52%	5%
Social distancing and social isolation policy in response to the outbreak	33%	61%	6%
Protecting jobs and the economy in response to the outbreak	34%	61%	5%

Table 3. Public's perception of UK Government response

3.3 Statistical analysis

We conduct statistical analysis on a pooled sample merging our data with the APS data from March and April 2019. We use data from March and April 2019 from the APS to increase sample size. The total sample size for the statistical models is over 16,000 people.

We conduct multivariate regression analysis controlling for the key determinants of wellbeing in order to better understand the impacts of COVID-19 on people in the UK. This allows us to extract (control for) some of the other key factors that drive wellbeing, such as marital status and educational qualifications. In wellbeing analysis there are also problems if too many factors are controlled for as we may weaken the impact of an event on wellbeing. This is because some factors are mediators. Therefore, in our analysis we do not control for health status, income and employment status as these variables are affected by COVID-19 and controlling for them would therefore artificially reduce the impact of COVID-19.

3.31 The wellbeing impacts of COVID-19

We focus here on the impacts on people's wellbeing and do not include costs related to COVID-19 deaths, and hence our figures should be seen as a lower bound estimate of the impact on society. In multivariate regression analysis¹⁰ COVID-19 is associated with a statistically significant¹¹ decrease in life satisfaction, daily happiness and sense of purpose, and higher daily

anxiety even after controlling for a number of key drivers of wellbeing. Compared to average levels of wellbeing in March/April 2019, the effect sizes represent a **15% reduction in life satisfaction**, a 15% reduction in daily happiness, a 14% reduction in sense of purpose in life and a 66% increase in daily anxiety. **The difference in life satisfaction of -1.13** (on a scale of 0-10) is very large in relative terms and, in comparison to previous research, is equal in magnitude to about twice the effect of being made redundant on wellbeing (in normal times)¹².

These differences cover a comprehensive range of outcomes related to COVID-19 as they will incorporate any aspect of COVID-19 and social distancing that impacts on people's self-reported levels of wellbeing, both in a positive and negative way. This will include health impacts (e.g. being infected, family/friend being infected, risk and fear of being infected by COVID-19, physical and mental health issues), economic impacts (e.g. job loss, income loss, loss of business, concerns about the future economy), social impacts (e.g. self-isolation, bereavement, reduction in social activities, being with family more, concern about children's education, changing holiday plans, working from home, loneliness, general uncertainty, fears about crime and security, arguments at home, domestic abuse), and environmental impacts (e.g. better air quality, less traffic noise) insofar as these things impact on people's self-reported wellbeing.

10. Regression analysis allows the researcher to simultaneously explore multiple relationships between variables, holding other social and demographic factors constant. This allows us to isolate the association between changes in a variable of interest, such as experience of COVID-19, and an outcome, like health or wellbeing. We control for gender, age, ethnicity, educational qualifications, marital status and region in the UK. These cover the key recommended control variables for wellbeing regression analysis as set out in Government guidelines (Fujiwara and Campbell, 2011). However, we do not control for health status, income and employment status as these variables are affected by COVID-19 and controlling for them would therefore artificially reduce the impact of COVID-19.

11. All results are highly statistically significant at less than 1% level. Heteroscedasticity-robust standard errors are used.

12. Fujiwara 2013

	Life Satisfaction	Daily Happiness	Daily Anxiety	Sense of Purpose
Coefficient on COVID-19	-1.13***	-1.16***	1.92***	-1.12***
S.E. (robust)	0.06	0.06	0.08	0.055
P-value	0.00	0.00	0.00	0.00
Sample size	16,003	15,983	15,988	15,972

Table 4. Association between full effect of COVID-19 and wellbeing

Notes: *** = Significance at <1% level. All models control for gender, age, ethnicity, educational qualifications, marital status and region. Higher anxiety scores represent higher levels of anxiety. Heteroscedasticity-robust standard errors.

Through interactive models we test whether there are statistically significant differences in effect size by gender and ethnic group:

- The negative association between COVID-19 and life satisfaction, daily happiness and sense of purpose is statistically significantly worse for women than for men.
- The association between COVID-19 and higher levels of daily anxiety is statistically significantly worse for ethnic minority groups.

The results in Table 4 cover the full impacts of COVID-19 and the social distancing period.

With our data, it is also possible to get an indicative sense of the impact of the social distancing measures only. To do so we look at the sample of people who have not been infected by COVID-19 and who do not say that they are fearful of themselves or their family and friends contracting COVID-19. This, in theory, represents the group of people who have not been impacted by the health

effects of COVID-19 and hence any association between COVID-19 and lower levels of wellbeing would be driven by the social distancing measures through their economic and social impacts for this particular group. However, it should be noted that by splitting the sample in this way we may be making our survey sample less similar to the control sample in the APS as we may be focusing on people who are more resilient and less risk averse to COVID-19. If these people have a natural disposition to higher levels of wellbeing, then our findings on the impacts of social distancing will be underestimates of the true effect. Our findings on the impacts of social distancing should therefore be interpreted with this caveat in mind and should be seen as an indicative result.

As would be expected, associations between COVID-19 and the four measures of wellbeing are less in magnitude when focusing just on the impacts of social distancing measures, but they are still statistically significant and substantial.

	Life Satisfaction	Daily Happiness	Daily Anxiety	Sense of Purpose
Coefficient on COVID-19	-0.82***	-0.68***	0.54***	-0.82***
S.E.	0.12	0.12	0.16	0.12
P-value	0.00	0.00	0.00	0.00
Sample size	15,963	15,945	15,948	15,932

Table 5. Association between social distancing and wellbeing

Notes: *** = Significance at <1% level. All models control for gender, age, ethnicity, educational qualifications, marital status and region. Higher anxiety scores represent higher levels of anxiety. Heteroscedasticity-robust standard errors.

3.3.2. The wellbeing effects of employment changes during COVID-19

We assessed the effects of losing your job, losing your business, being furloughed, having salary or work hours reduced and being a key worker during the COVID-19 crisis in the UK.

- Losing your business is statistically associated with a large decrease in life satisfaction, whilst being a key worker is statistically associated with increases in life satisfaction.
- Being a key worker was statistically associated with increases in daily anxiety. This suggests that whilst key workers' overall satisfaction with life has improved (potentially due to feeling that their work is important and being more appreciated), they are feeling more anxious.
- The other job factors did not have a statistical association with wellbeing, but this may be because of sample size issues as this analysis was conducted only on the April 2020 survey data.

3.3.3. Monetising the wellbeing costs of COVID-19

Using the Wellbeing Valuation method as set out in the HM Treasury Green Book (2018) and Fujiwara and Dolan (2016) we value the costs to individuals in society of COVID-19, focusing on the impacts on people's wellbeing. This is done by assessing how much money would be required to compensate people in the UK, such that their life satisfaction reverts back to the levels they were before COVID-19. This method is employed in Cost-Benefit Analysis and business case assessments in the UK.

The values pick up the impacts on individuals' wellbeing and do not include business impacts, government and healthcare expenditure and mortality¹³ due to COVID-19, and hence the full cost to society will be higher. Note also that our figures will be underestimates because we do not include the impact on people under 18 in our analysis.

We estimate a wellbeing cost¹⁴ for the 11-day period covering 9–19 April and, in this analysis, we assume that the levels of wellbeing reported at the time of the survey reflect a constant level of wellbeing over the survey period. We do not extrapolate or assume that these costs will be representative of the wellbeing costs going forward as that will depend on the severity of the social distancing measures and infection and mortality rates in the future.

On average, we find that we would **need to compensate every adult in the UK £43 per day to offset the effect of COVID-19 and the social distancing policies** over the 11-day period between 9–19 April. Based on a figure of around 52.5m adults¹⁵ in the UK, this amounts to a total cost to individuals of **£2.25 billion per day**¹⁶.

The wellbeing costs of social distancing policies represent a subset of this figure. Bearing in mind the caveats stated above, we find that we would **need to compensate every adult in the UK £29 per day to offset this effect over this period**. This amounts to a total cost to individuals of **£1.5 billion per day** over the 11-day period.

Impact types	Wellbeing costs
Health impacts on wellbeing	£750m
Social distancing policies	£1.5bn
Total wellbeing costs	£2.25bn

Table 6. Breakdown of daily wellbeing costs of COVID-19 for the period 9–19 April 2020

13. We do not include the costs of loss of life but we do include the impact and emotional costs of bereavement.

14. Wellbeing costs are estimated as compensating surplus measures. These are akin to a willingness to accept compensation value for COVID-19.

15. <https://www.ons.gov.uk/aboutus/transparencyandgovernance/freedomofinformationfoi/projectedukadultpopulationfor2018>

16. Note that it is possible to derive a value of a life year based on our estimates here. Assuming an average life year has a mean level of life satisfaction of 7.5, our WTA figures would result in the value of life year of £100,104. A willingness to pay estimate (i.e. the monetary value of not having to experience the effects of COVID-19 and social distancing etc in the first place.) would result in the value of life year of £58,018.

Conclusion & Caveats

4.0

Our analysis has shown that the health, social and economic impacts of COVID-19 and social distancing are associated with large reductions in a range of wellbeing measures and increases in psychological distress, with some evidence that the impacts are more severe for women and ethnic minority groups. We find that we **need to compensate every adult in the UK £43 per day to offset the effect of COVID-19 and the social distancing policies** over the 11-day period between 9–19 April. This amounts to a total cost to individuals of **£2.25 billion per day**.

Over the period of this study, the evidence suggests that the social and economic impacts of the social distancing policies have had a larger negative effect than the health impacts alone. We find that we would **need to compensate every adult in the UK £29 per day to offset the social distancing effects alone over this period**. This amounts to a total cost to individuals of **£1.5 billion per day** over the 11-day period. It is important to bear in mind that we reach this conclusion by comparing a group of people whose wellbeing has not been affected by COVID-19 (from March/April 2019) with those whose wellbeing has, and although we control for key determinants of wellbeing, there may be some important differences between these two groups.

This and other caveats we have highlighted throughout should be considered when interpreting and using these findings. It should be noted that the reductions in wellbeing that have been observed in April 2020 may also be due to other factors. In order to minimise the impacts of these other confounding factors and to focus on the impact of COVID-19, to the greatest extent possible we have controlled for the main determinants of wellbeing in the statistical analyses and have used data from a close control group of people from the same period last year. This follows guidelines for wellbeing analysis set out by the HM Treasury¹⁷ and OECD¹⁸. It should also be noted when using these figures that our sample may not be completely representative of the UK if certain types of people select into doing these types of surveys during national crises. Our estimates do not include the impact of deaths related to COVID-19 and only cover the specific period of our survey and caution should be applied when extrapolating these estimates into the future.

We hope that our research, which shows the significant wellbeing and mental health impact of COVID-19 in the UK at the current time, acts as a catalyst for further research and policy appraisal.

4.1 About Simetrica-Jacobs

Simetrica-Jacobs are globally-renowned leaders in quality of life and wellbeing analysis. We played a key role in the development of wellbeing measures and analysis techniques in the UK and across the OECD and have published widely on wellbeing in leading peer-reviewed journals. We have conducted wellbeing analysis of employees, customers and stakeholders for a large number of organisations including Football Association (FA), Government of Japan, Thames Water, Everton F.C., Lendlease, Ministry of Defence, Anglian Water, British Museum, Natural History Museum, Danone, Highways England, Sellafield, Department for Transport, Siemens, Department for Digital, Culture, Media and Sport, Sport England, and the Government Property Agency.

17. Fujiwara and Campbell 2011
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