

# Tracking the Psychological and Social Consequences of the COVID-19 Pandemic across the UK Population

Findings, Impact, and Recommendations from the COVID-19 Social Study  
(March 2020 – April 2022)





## About this report

This report summarises the findings and impact of the COVID-19 Social Study, a UCL-led project funded and supported by the Nuffield Foundation [WEL/FR-000022583], the Wellcome Trust [221400/Z/20/Z], and UK Research and Innovation [ES/S002588/1] to study the effects of the COVID-19 pandemic on the UK population.

The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare, and Justice. It also funds student programmes that provide opportunities for young people to develop skills in quantitative and scientific methods. The Nuffield Foundation is the founder and co-funder of the Nuffield Council on Bioethics, the Ada Lovelace Institute and the Nuffield Family Justice Observatory. The Foundation has funded this project, but the views expressed are those of the authors and not necessarily the Foundation. Visit [www.nuffieldfoundation.org](http://www.nuffieldfoundation.org)





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# Introduction

On 21 March 2020, soon after the World Health Organization declared COVID-19 a global pandemic and two days before the UK's first lockdown, the Social Biobehavioural Research Group at University College London launched the COVID-19 Social Study. Led by Dr Daisy Fancourt and Professor Andrew Steptoe from the Department of Behavioural Science and Health, our team designed the study to track in real-time the psychological and social impact of the virus across the UK.

The study quickly became the largest in the country, growing to over 70,000 participants and providing in-depth and privileged insight into the effects of the pandemic on people's daily lives. Through our participants' remarkable two-year commitment to the study, as well as the profound effort and skills of our research team, we've collected 1.2 million surveys over 105 weeks, conducted more than 400 in-depth qualitative interviews, published over 100 scientific [papers](#) and 40+ public [reports](#), given over two dozen keynote speeches, presented at conferences around the world, and informed 1,000 media pieces. We have also consulted to the Cabinet Office, multiple government departments, the World Health Organization, and more than 100 third sector bodies. Today, the COVID-19 Social Study is one of the most widely used social science datasets from the pandemic informing national policy.

In this report, we provide an overview of our main findings from two years of research, the impact that the study has had in helping the government respond to the pandemic, its influence on people's daily lives, as well as the work we've done to collaborate with researchers around the world. As we move toward the next phase of the pandemic and the UK faces the longer-term effects of COVID-19, we also offer our recommendations for research, policy, and intervention priorities moving forward.



**70,000**  
participants



**1.2m**  
surveys over 105 weeks

**400** **100**  
interviews papers

**40+** **24+**  
reports keynotes



**1,000**  
media pieces

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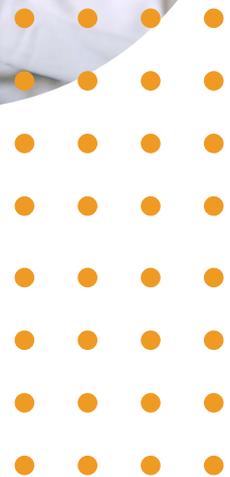
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# Acknowledgements

In addition to the generous support of the Nuffield Foundation, the Wellcome Trust, and UKRI, we would like to acknowledge the incredible work of our research team and collaborators. The COVID-19 Social Study was led by the [Social Biobehavioural Research Group](#) in the Department of Behavioural Science and Health at University College London.

Principal investigators were Dr Daisy Fancourt and Professor Andrew Steptoe. Team members were Dr Henry Aughterson, Dr Jess Bone, Alexandra Bradbury, Dr Feifei Bu, Dr Alexandra Burton, Jo Dawes, Dr Meg Fluharty, Vas James, Dr Hei Wan (Karen) Mak, Dr Tom May, Dr Alison McKinlay, Lucy Nicholls, Dr Elise Paul, Dr Keir Philip, Dr Katey Warran, and Dr Liam Wright. Additional members of the department and other external collaborators also contributed to the study. We are hugely grateful for their scientific expertise and collegial support.

We would also like to thank our steering group: Martin Cattermole (NHS England), Professor Peter Fonagy (University College London), Cheryl Lloyd (Nuffield Foundation), Dr Adam Kucharski (LSHTM), Jacob Diggie (Mind), Nancy Hey (What Works Centre for Wellbeing), Professor Jan-Emmanuel DeNeve (University of Oxford), and Shuranjeet Takhar (Taraki).

We are also grateful to our COVID-MINDS Network advisory group: Dr Nils Fietje (World Health Organization), Professor Matthew Hotopf (King's College London), Professor Kathleen Merikangas (National Institute of Mental Health), Professor Naja Hulvej Rod (University of Copenhagen), Dr Catherine Sebastian (Wellcome) and Grace Gatera Uwineza (Lived Experience Expert).

We are also enormously grateful to the organisations who rapidly mobilised at the start of the pandemic to help us recruit our participants. Thanks to them, tens of thousands of people joined the COVID-19 Social Study in a matter of weeks. They include: UCL BioResource, HealthWise Wales, the UKRI Mental Health Research Networks (Closing the Gap, Emerging Minds, enurture, the Loneliness and Social Isolation in Mental Health Network, the MARCH Network, SMARteN, TRIUMPH, and VAMHN), Find Out Now, SEO Works, FieldworkHub, and Optimal Workshop.

Finally, we would also like to thank the following organisations that helped us recruit participants for our telephone interviews throughout the study: Age UK, Alzheimer's Society, Arts Beyond Belief, Asian Women Cancer Group, Asthma UK, Breathe Arts Health Research, Bristol Drugs Project, British Youth Music Theatre, Change Grow Live, Healthwise Wales, Hillingdon Women's Centre, McPin Foundation, MQ, NCRI Consumer Forum, Outside Edge, Pathway, Solace Women's Aid, Taraki, Third Aid Project, University of Hertfordshire, Violence, Abuse and Mental Health Network (VAMHN), and Yorkshire Cancer Community.



# Executive Summary

## The COVID-19 Social Study

### An Overview

The Social Biobehavioural Research Group at UCL launched the COVID-19 Social Study in March 2020 with the aim of identifying the psychological and social effects of the pandemic on the UK population.

Despite the availability of extensive literature on social isolation and its consequences, enforced social isolation in the form of lockdowns for COVID-19 were unique in many features, sharing only some similarities with quarantine measures used during previous epidemics. In addition, the unprecedented nature of the virus's fast global spread made the social and psychological effects of COVID-19 unpredictable (1). We therefore designed the COVID-19 Social Study so that we could map how mental health and wellbeing changed alongside social restrictions, case rates, and death rates on an ongoing basis.

The study's creation was a hugely collaborative effort and we've highlighted many of our partners who championed its development in this report. In particular, we benefitted from the visionary financial investment of the Nuffield Foundation and the Wellcome Trust, and we relied on the research infrastructure of former projects funded by UKRI. With their collective support, we set out to:

1. Understand the psychological and social impact of COVID-19
2. Map how the psychosocial impact evolves over time as social distancing and lockdown measures were introduced and eased
3. Determine which groups were at greatest risk of adverse effects
4. Explore the interaction between psychosocial impact and adherence to healthy and protective behaviours
5. Identify protective activities during isolation that could buffer against adverse effects

**Part I** of this report is a synthesis of our key findings from the study, which we position in relation to broader theoretical literature regarding the societal impact of pandemics and health emergencies. **Part II** describes in narrative form the impact the study has had both within and beyond academia, featuring testimonials from key stakeholders who have utilised the data, as well as partners and study participants.





## Methods

The COVID-19 Social Study is a large mixed method panel study comprising online data collection (weekly until week 22 and monthly until week 86, with additional follow-ups until week 105) from over 70,000 adults in the UK. The study involved a multi-faceted recruitment strategy that resulted in good stratification and representation across all socio-demographic groups. Real-time data analysis involved sophisticated longitudinal statistical methods as well as linking via postcode data to external datasets, providing additional data on virus levels, social restrictions, area deprivation, and green space.

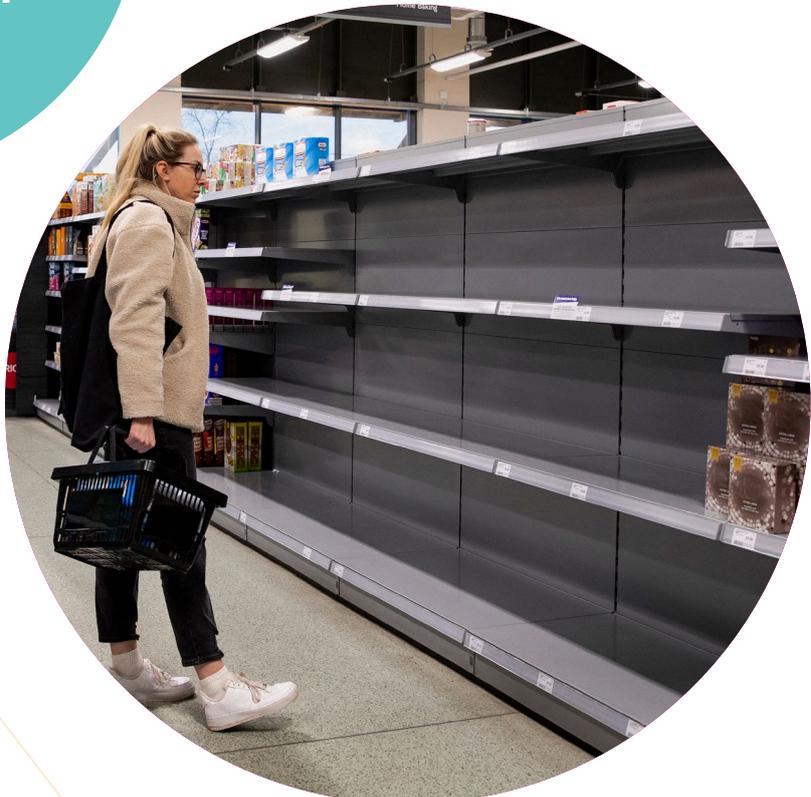
In addition, the study team collected over 30,000 written testimonials and undertook over 400

qualitative interviews to examine in-depth the psychosocial experiences of 17 specific population subgroups, including young adults, freelance workers, frontline healthcare workers, carers, new mothers, people with long-term conditions and mental illness, people experiencing homeless and domestic abuse, and people who inject drugs, amongst others.

Full details on sampling, recruitment, data collection, data cleaning, and sample demographics are available at <https://osf.io/jm8ra/>. The study was approved by the UCL Research Ethics Committee [12467/005, 14895/005 and 6357/002] and all participants gave informed consent.



The COVID-19 Social Study is a large mixed method panel involving over 70,000 adults in the UK.





## Part I: Findings

Our ongoing surveys and telephone interviews have allowed us to follow the UK population for over two years and collect a rich array of findings. In terms of mental health, we've examined the longitudinal trajectories of anxiety and depression; the risk factors for abuse, self-harm and suicidal ideation; the relationship between adversities, stressors and mental health; the causes of poor mental health in different occupational groups; the coping strategies used by people during lockdowns; the socio-demographic groups of people who have been at greatest risk of developing mental health problems; and individuals' experiences of loneliness, isolation and social support in lockdowns, among other topics.

From a social perspective, we've also looked at the predictors and patterns of compliance with government regulations; changes in drinking, eating, gambling and smoking habits; the socio-economic gradient in psychological and social experiences across the pandemic; differences between psychological experiences in the UK compared to other nations with lower virus levels and fewer restrictions; the predictors of vaccine hesitancy; the role of home-based arts and leisure activities as coping mechanisms during lockdowns; the relationship between area deprivation and green space and psychosocial experiences; and the psychological predictors and consequences of long Covid.

Some of our key findings are outlined below:

### i) Mental health

- Our results show how mental health worsened as the pandemic began and alongside increasing COVID-19 cases, death rates, and lockdowns. Symptoms of mental health tended to decrease as people psychologically adapted to lockdowns and as they gained a shared perception that their efforts to contain the virus were working.
- We also found clear associations between the severity of social restrictions and mental health, which were corroborated when we expanded our analyses beyond the UK and examined policy stringency in other countries. However, the relationship was not proportional. Increases in low level social restrictions had little impact on mental health, while increases in restrictions that infringed more on social freedoms had more damaging effects.
- The drivers of mental health symptoms were not just related to concerns about the disease itself but also to the circumstances surrounding the

pandemic, such as the adversities people experienced. These adversities included loss of income, loss of work, challenges accessing essentials, and bereavement. Both worrying about these adversities potentially happening and actually experiencing them had negative effects on mental health.

- Additionally, public trust in the government and trust that the health service would cope with the pandemic also drove psychological experiences, as did trust that people would be able to access food and medication. Mental health worsened when individuals were unable to access professional health services or receive treatment.
- While on average, reports of self-harm thoughts and behaviours did not significantly change during the pandemic, a proportion of our participants reported experiencing psychological or physical abuse, having thoughts of suicide or self-harm, and harming themselves. Young adults, women, those of lower SES, unemployed individuals, and people with disabilities, chronic physical illnesses, and a mental health condition were most at risk.



- Although some factors clearly acted as consistent predictors of mental health during the pandemic—such as stress related to catching or becoming ill from COVID-19, low confidence in government or healthcare services, and low levels of social support—other factors were dependent on the specific situations occurring within society. For example, increased COVID-19 deaths were associated with higher depressive symptoms only at early stages of the pandemic. After the vaccine roll-out, this factor was perceived as less of a threat and no longer had the same impact on mental health.
- While most people gradually adjusted to the novelty and stresses of the pandemic, groups who suffered disproportionately to others were those in already vulnerable positions before COVID-19. These groups' mental health tended not to recover as quickly as others. They included women, young adults, people of lower educational attainment, and those living alone or with children who had slower rates of recovery. They were also among groups who comprised 30% of our sample whose symptoms did not gradually decline but followed different pathways. Their symptoms either worsened, remained constant, worsened and then improved, or were very severe initially before reaching normal levels.
- We also found that people from different socio-economic and demographic backgrounds and with different personality traits employed different coping strategies. Some strategies were healthier than others and in general, improvements in mental health were seen among people who spent time outdoors, who had access to green space, who communicated with friends and family or had social contact, who exercised, pursued hobbies, and engaged in creative activities. People who consumed media regarding COVID-19 did not see similar improvements, and some people engaged in more harmful strategies such as self-harming or increasing alcohol consumption.

## ii) Inequalities

- More specifically, groups that stood out as experiencing psychological challenges during the pandemic included: people of lower socio-economic status (SES) (which, throughout our research, encompasses those with lower household income, educational qualifications, or employment status); people from ethnic minority groups; adolescents (13-18 years old) and young adults (18-29 years old); women; parents of young children; people with health conditions; and key workers.
- Lower SES was associated with higher levels of mental health symptoms early in the pandemic, and those experiencing financial or employment precarity continued to report elevated symptoms much later in the pandemic. The situation was compounded for those who were struggling financially before the pandemic because they were more likely than others to struggle even more during the pandemic.





## ii) Inequalities *continued*

- Compared to people of white ethnicity, people from ethnic minority backgrounds struggled more with their mental health. Higher rates of discrimination, loneliness, and barriers to healthcare likely factored into their poorer psychological health.
- Adolescents and young adults consistently had worse mental health than older age groups, primarily because they were more likely to face significant changes to their education, social lives, and support systems. They also experienced loss in the form of missing out on key milestones such as graduations and opportunities for employment. Additionally, they were more likely to use fewer healthy coping strategies compared to older age groups whose lives and routines were disrupted less and who could draw on more years of experience to manage the challenges of the pandemic.
- Women had a more psychologically challenging experience during the pandemic than men. Reasons were numerous but included having more responsibilities in the home, balancing childcare and professional commitments, experiencing increased domestic violence, or managing pregnancy and motherhood without the support of friends and family.

- Those who had pre-existing physical or mental health conditions were more likely to be worried about contracting COVID-19, had higher depressive symptoms, and faced more hurdles adapting to lockdown such as having to rely on others or trying to manage their health conditions without normal access to healthcare services.
- Key workers including health and social care workers, teachers, childcare workers, those in the public service, people working in essential services, and formal and informal carers had to manage heavier and often more dangerous working conditions during the pandemic and as a result their mental health was adversely affected. Symptoms of anxiety and depression were consistently higher in these groups.



Those who had pre-existing physical or mental health conditions were more likely to be worried about contracting COVID-19, had higher depressive symptoms, and faced more hurdles adapting to lockdown.”



### iii) Changes in behaviour

- We examined a number of behaviours in the early stages of the first lockdown including physical activity, eating, drinking, gambling, and smoking, as well as various forms of social, cultural and community engagement such as volunteering, neighbourhood, friend and family relationships, and home-based arts engagement. For the majority of people, their physical activity levels did not change much. However, more people became less physically active than more physically active during the first lockdown. Similarly, most people's diets stayed the same between the first and second lockdowns, but a significant proportion (17%) reported that the quality of their diets had worsened.
- Some of the groups who were most vulnerable to worse psychological experiences had the most changes in their behaviours. For instance, young adults tended to change (increasing or decreasing) their drinking behaviours more than older age groups. Women and individuals who were worried about their finances or about catching COVID-19 also tended to drink more.
- Regarding volunteering behaviours, we identified three types of volunteering during the first lockdown: formal volunteering in an organisation, social action that took place at home or online, and local neighbourhood support. More people volunteered less during the pandemic (23%) than more (12%), with a greater representation of certain groups that are not normally associated with volunteering such as those with pre-existing mental health conditions.
- Attitudes toward neighbourhoods changed in multiple ways across the pandemic, with nearly a third of respondents experiencing an improvement in their neighbourhood relationships between July 2020 and September 2021. At the same time,

a third of participants reported feeling less satisfied with their neighbourhoods overall.

- Between August 2020 and August 2021, partner or spousal relationships improved for 28% of respondents, while friendship breakdowns were more common among young adults. By the summer of 2021, a relationship breakdown of some sort had occurred for over 1 in 5 adults.
- A significant proportion of people increased their engagement with home-based arts activities during the first lockdown due to a number of reasons such as having more time and the greater availability of digital arts resources. Some of these people were less traditional participants, such as those with mental health conditions or a disability and those with lower household income. However, these increases in engagement were not maintained long-term: over time nearly a third of people engaged less in home-based arts activities despite initial increases in engagement, suggesting that people drew on the arts when they needed them most.





#### iv) Long Covid

- The lack of treatment options for people with long Covid was one of the greatest psychological difficulties people faced. Many felt unheard by friends, family, and health services, which exacerbated mental health symptoms.
- We found that people who developed long Covid had much higher initial increases in depressive symptoms than those with “short” COVID-19, supporting wider research suggesting long Covid may at least in part result from an immediate inflammatory response.
- Long Covid patients maintained higher anxiety and depressive symptoms in the months following their infection, with higher depressive symptoms lasting as long as two years.
- Like “short” COVID-19, people from lower SES backgrounds, those living in crowded accommodation or with children, those with lower educational attainment, or with physical or mental ailments were more likely to develop long Covid. Additional pre-infection risk factors for long Covid that we identified include having greater worries before catching COVID-19 and poorer sleep quality.



Throughout the pandemic, 80% or more of respondents maintained “majority compliance” with government rules and guidelines, meaning that they largely or completely followed them. During the first lockdown majority compliance was as high as 97%.”

#### v) Compliance and government trust

- Throughout the pandemic, 80% or more of respondents maintained “majority compliance” with government rules and guidelines, meaning that they largely or completely followed them. During the first lockdown majority compliance was as high as 97%. This shows remarkable public cooperation and solidarity and is contrary to fears of “behavioural fatigue” that were voiced amongst policymakers.
- People tended to comply for a number of reasons, including wanting to protect family and friends, feeling a sense of social responsibility, believing that it would help bring the pandemic under control, and feeling united in a shared identity and cause.
- Multiple tangible factors also influenced compliance such as people’s living environments and the ability to work from home and remain connected to family and friends through digital technologies or support bubbles.
- Social distancing was the most difficult measure to follow, especially in crowded places such as workplaces and schools.
- Comprehensibility of guidelines was important and was a barrier to compliance for many. For example, only 4 in 10 fully understood the rules in the winter of 2021 as changing rules caused much confusion and made it more difficult to comply.
- People tended to think they were following the rules more than others and that deviance from the rules was more common than it actually was. As many as 92% of participants reported believing that they felt their compliance was higher than others’. This was likely a result of media stories highlighting examples of others breaking the rules.



## v) Compliance and government trust *continued*

- Compliance (especially to more stringent measures relating to social contact) took its toll on mental health and many described the emotional challenges of abiding by restrictions. This is important because higher happiness was associated with higher compliance.
- Those who were older, who tended to follow low risk-taking behaviour, and were compliant across all measures rather than a select few were more likely than others to have continuous patterns of high compliance.
- Significantly, demographic predictors of compliance changed over time such as young age, which while continually a predictor of lower compliance, actually became an increasingly larger predictor as the pandemic continued.
- Regarding socio-economic predictors, we found interesting contrasts. Those from higher SES backgrounds were more compliant during the first lockdown, likely because they had more resources to comply, such as Wi-Fi to work from home and remain connected with others, access to green space or outdoors, or the means to order food deliveries, than people from less advantaged backgrounds.
- However, later on people from high SES backgrounds were less compliant and understood the rules less. It's possible that privilege played a role in their belief that the rules did not apply to them or that they could judge the pandemic situation themselves.
- Living with a child and living in overcrowded accommodation also became increasingly associated with low compliance, as did traits such as risk-taking, conscientiousness, openness, extraversion and lower empathy.



Importantly, we found associations between low compliance and low confidence or trust in the government.”

- Overall, changing predictors of compliance demonstrate how rules become harder to follow when norms become ambiguous, self-control lessens, boredom may increase, and individual characteristics start to override the desire to follow guidelines.
- Importantly, we found associations between low compliance and low confidence or trust in the government. This is significant given that confidence corresponded with key political events, such as the breaking of lockdown rules by Dominic Cummings, a senior aide to the British prime minister. The loss of confidence that followed in England between May and June 2020, which we called the “Cummings Effect,” was a strong indication of the close relationship between public trust, compliance and the actions of our political leaders.
- Trust was actually a bigger predictor of compliance than mental health, belief in the health service, or numerous other factors, demonstrating how dangerous “leader exceptionalism” can be for collective citizenship and social unity.



## vi) Attitudes towards vaccination

- Between September and October 2020, as the vaccines were going through trials, nearly a quarter of participants had general mistrust in the benefit of vaccines. Reasons for hesitancy and unwillingness included beliefs that vaccines did not work, that natural immunity was better, that vaccines were used for commercial profiteering, and that they would have unforeseen side effects.
- Predictors of being hesitant or unwilling to take up COVID-19 vaccines were associated with low compliance with restrictions, being female, living with children, not taking the flu vaccine the year previously, being a smoker, and coming from low socio-economic backgrounds or an ethnic minority group.
- We explored the experiences of people from ethnic minority groups in more detail. Of those who refused a vaccine when offered it in 2020 or the first half of 2021, nearly one in ten (6.7%) had experienced racial/ethnic discrimination in a medical setting since the start of the pandemic, which had lowered their trust in the healthcare service, thereby reducing their willingness to be vaccinated.
- By late 2021, many people in the UK who had previously been uncertain about being vaccinated had in fact received two vaccines. But if individuals had been unwilling to accept a vaccine, they were five times more likely to be uncertain or unwilling to accept a booster. As of February 2022, 77% of our sample said that they would be highly likely to get a fourth booster vaccination while 11% reported that they were very unlikely to do so.



As the vaccines were going through trials, nearly a quarter of participants had general mistrust in the benefit of vaccines.



## Part II: Impact and Engagement

As we tracked these measures, we also placed urgent priority on delivering our findings to the government, healthcare groups and charities, and other third sector bodies as quickly as possible. We've outlined this work and impact in Part II of this report. Our real-time analysis meant that we could inform political decision-making and healthcare and community responses on an ongoing basis as we moved through different phases of the pandemic. We have received powerful testimonials from collaborators in government and policy who have relied on our findings. Some of these

are highlighted in this report to demonstrate the societal impact of the COVID-19 Social Study. We also worked closely with academic partners across the UK and globally to share our knowledge and collaborate on further data collection and analysis. We formed a network comprised of hundreds of researchers, contributed to global research summaries such as the [World Happiness Report](#) and the [Lancet COVID-19 Commission reports](#), and conducted cross-cultural comparisons using pooled data from different countries amounting to over 200,000 participants.

Examples of the study's impact are outlined below:

### i) Government and policy impact

- Government bodies relied on our findings throughout the pandemic and particularly during times of policy change to consider the effects on the public. The Cabinet Office, the Office for Health Improvement and Disparities, the Department of Health and Social Care, the government's Tackling Loneliness Network, the Covid Commission, the APPG for Loneliness, the APPG for Compassionate Politics, and the ONS Covid Response Unit among other groups all used our study data and findings.
- One of our closest collaborations was with the Scientific Advisory Group for Emergencies (SAGE) whom we advised regarding social restrictions, the content of public messaging, and the types of economic support needed for individuals. Our papers and reports are cited in multiple SAGE documents.

### ii) Community impact

- Through our strong connections with the third sector, we reached multiple organisations to help inform their public health strategies and interventions.
- Organisations that worked with us include the National Suicide Prevention Alliance, the National Suicide Prevention Strategy Advisory Group, Samaritans, Thrive LDN, the British Red Cross, the Assembly Health Committee, Greater London Authority, and other councils and local authorities.
- In particular, our study helped inform the rollout of the COVID-19 vaccination programme. The Red Cross used our data to construct a map of vaccine hesitancy at the local authority level and share insights across the voluntary sector. Our data also reached the London Mayor and contributed to plans to debunk vaccine misinformation.
- Our research also contributed to projects related to: improving wellbeing in London; assessments of the pandemic's socio-economic impact in communities; reports on changing attitudes and behaviour in the public; advocacy efforts for the wellbeing of young adults; and policies to reduce local poverty.





### iii) Public engagement

- Throughout the pandemic, one of our main priorities was ensuring that our research reached the general public. We worked closely with a variety of media groups to share our findings. We produced over 50 press releases and were featured in over 1,000 newspaper articles.
- According to the UCL press office, the COVID-19 Social Study is the most cited research project in its media history.
- Researchers from the study team have also participated in over 100 television and radio interviews, documentaries, and feature articles to share findings from the study.
- One of the most gratifying aspects of the COVID-19 Social Study was the incredible commitment and support of our participants. With 70,000 people in total in our sample and a high retention rate throughout the pandemic, we sensed that the public was just as invested in our study as we were.
- In feedback we requested at the end of the study, we received tens of thousands of testimonials from participants emphasising how the study had not only helped them feel like they were contributing to science to tackle the pandemic, but that it helped them to manage their own mental health.
- 85% of all participants felt that taking part in the study was a worthwhile experience.

### iv) Academic collaborations:

- Connection and collaboration with other researchers has also been at the heart of our work. We published our study protocol at the beginning of the pandemic to help others design similar projects.
- In particular, we shared our findings with Ministries of Health across Europe and our study design was used as the basis for WHO Europe's own Behavioural Insights COVID-19 surveys, which are now run in 33 countries.
- The COVID-19 Social Study was recognised in a number of academic awards and nominations, including from the British Journal of Psychiatry, the Royal Society for Public Health, the Market Research Society, and the Economic and Social Research Council, amongst others.



**85% of participants felt that taking part in the COVID-19 Social Study was a worthwhile experience.**



## v) Global connections

- We also launched a network called COVID-MINDS to connect mental health researchers around the world and encourage data sharing, collaboration, and cross-cultural analysis. Researchers came from 60 countries and conducted 170 studies in total.
- Through the network, we helped launch new collaborations including special interest groups on key mental health topics during the pandemic, mental health studies in low-, middle- and high-income countries, and Latin America's first conference on the mental health effects of the pandemic.
- Among our research outputs, we published a number of international papers, including a time-series survey of 200,000 individuals in Europe, a comparison of policy stringency and mental health across 15 countries, and assessments of housing environment and mental health in Denmark, France, and the UK.

- Members of the study team also advised and presented to a number of international agencies and organisations including the UN High Level Political Forum. They also served on key committees such as on the Mental Health Task Force of the Lancet COVID-19 Commission, the World Health Organization's Technical Advisory Group on the mental health impacts of COVID-19, and the UK Government Office for Science Plenary Task Force.



Team members served on the Mental Health Task Force of the Lancet COVID-19 Commission, the World Health Organization's Technical Advisory Group on the mental health impacts of COVID-19, and the UK Government Office for Science Plenary Task Force.



## Summary and Recommendations

Many challenges lie ahead for the UK and societies around the world: geopolitical tension and war, the cost-of-living crisis and potential recession, climate change, and the downstream effects of the pandemic will all increase the global mental health burden. Our leaders need to take action to support people through these times. The wealth of evidence collected through the COVID-19 Social Study has wide-ranging health policy implications for how we both structure our health services and prepare for future pandemics or health crises.

We've learnt how people were impacted by the pandemic, how they adjusted and coped or followed varying mental health trajectories, and which groups struggled more than others. Among the extensive analyses we've conducted, we've tracked how health and social behaviours changed. We've examined compliance with social distancing restrictions and its relationship with mental health and with public confidence and trust in the government and health services. We've explored the experiences of those with long Covid and its long-term effects, and we've examined who might be hesitant to receive vaccines and why.

In light of our findings, we've identified seven priority areas of action:

- i) Focus on the most vulnerable groups
- ii) Invest in mental health services
- iii) Expand community-based support

- iv) Embed transparency and integrity in health policy
- v) Invest in social and behavioural research
- vi) Foster social solidarity and cohesion
- vii) Plan for the next pandemic or health emergency

These priority areas will tackle the greatest challenges ahead of us from multiple fronts: helping to remove the structural inequalities in the UK that made it so difficult for particular groups of people to cope with the pandemic; bolstering mental health services to meet mental health demand; harnessing the resources and potential of our communities by creating sophisticated and effective clinical-community links and referral pathways to comprehensively support wellness and mental health; strengthening our research infrastructure and training the next generation of mental health researchers; empowering individuals to integrate healthy mental health practices into their lives to build a more resilient and health literate society; increasing public confidence in the government to encourage collaboration and trust between our leaders and society; focusing on uniting our society as crises ahead may exacerbate social division; and finally using learnings from the extensive, high-quality research conducted during the pandemic to prepare for future health emergencies.

**The achievements of the COVID-19 Social Study would not have been possible without our participants, researchers, collaborators, and funders. We hope that the study will help the UK and the world to better understand the consequences of the largest enforced social restrictions in living history.**





# Methodology and Study Design

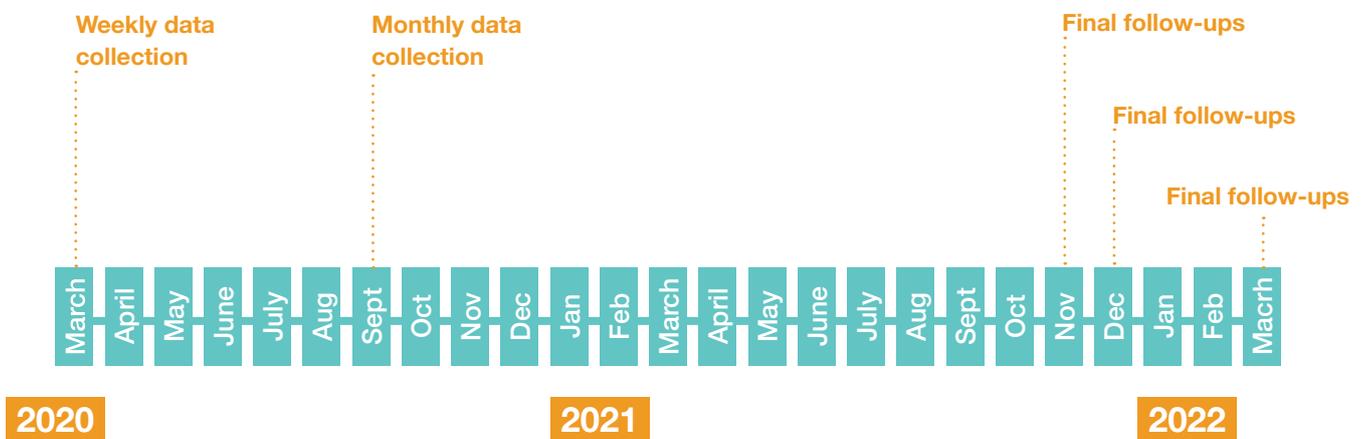
## Quantitative study

The COVID-19 Social Study is a large mixed method panel study comprising online data collection from over 70,000 adults in the UK.

The study involved a multi-faceted recruitment strategy comprising a combination of convenience sampling and more targeted recruitment focusing on groups who were anticipated to be under-represented. Recruitment was achieved through existing networks and mailing lists, print and digital media coverage, social media, and partnership work with research databases, targeted advertising companies, recruitment companies, and third sector organisations. It resulted in good stratification and representation across all socio-demographic groups, and we additionally weighted our data to align with UK demographic population proportions. Our baseline sample, once weighted, comprised 50.6% females, 12.8%

people from ethnic minority backgrounds, 84.3% people from England, and 20.4% people with a mental health diagnosis. Across the study, we maintained high levels of retention, which were supported by carrying out ‘recontacting’ waves, where we re-engaged with participants who had been lost to follow-up. Full details on sampling, recruitment, data collection, retention, and sample demographics are available in our User Guide at <https://osf.io/jm8ra/>.

On enrolling into the study, participants completed baseline questions on their backgrounds. They were then reapproached weekly (for the first 5 months until August 2020), monthly (until November 2021) and then at approximately six-week intervals until April 2022 to answer the same set of questions each time. This allowed us to track changes in experiences over time. Additionally, we included bespoke one-off modules on further topics to enhance our understanding of people’s lives during the pandemic. Survey question topics are shown in the box below.





## Survey questions

Our **baseline questions** covered the following factors: demographics including year of birth, sex, ethnicity, relationship status, country of dwelling, urban/rural dwelling, type of accommodation, housing tenure, number of adults and children in the household, household income, education, employment status, pet ownership, and personality. We also covered health and behaviours including pre-existing long-term physical health conditions, diagnosed mental health conditions, pregnancy, smoking, alcohol consumption, physical activity, caring responsibilities, usual social behaviours, and social network size.

**Repeated questions** included: COVID-19 status including whether the respondent has had COVID-19; whether they have come into likely contact with COVID-19; current isolation status and motivations for isolation; length of isolation; length of time not leaving the home; length of time not contacting others; trust in government; trust in the health service; adherence to health advice; experience of

adverse events due to COVID-19 (including severe illness within the family, bereavement, redundancy, or financial difficulties); mental health including wellbeing, depression, anxiety, which factors were causing stress, sleep quality, loneliness, social isolation, and changes in health behaviours such as smoking, drinking and exercise; how people are spending their time whilst in isolation, including questions on working, functional household activities, care and schooling of any children in the household, hobbies, and relaxation.

The **topics of one-off modules** included: volunteering behaviours; control, frustrations and expectations; coping style; fear of COVID-19; resilience; arts and creative engagement; life events; optimism; locus of control; emotional intelligence; weight; gambling behaviours; mental health diagnosis; use of financial support; region; faith and religion; relationships; neighbourhood; healthcare; lockdown holiday; discrimination; and life changes.

To analyse the data, we used a range of statistical methods through statistical software such as R, Stata and MPlus. We used conventional regression methods to identify predictors and risk factors for different behaviours and outcomes, as well as structural equation modelling to explore complex interrelationships between different traits and behaviours. We used longitudinal data analysis methods such as growth curve modelling and growth mixture modelling to track trajectories of change over time in addition to fixed-effects modelling to explore predictors and consequences of changes over time. We also used specialised techniques such as propensity score matching to

imagine hypothetical randomised controlled trials and compare the outcomes of groups who were exposed or unexposed to different situations. Importantly, our analyses took account of factors that could 'confound' associations by affecting both the exposures and outcomes we were testing (such as demographics, socio-economic factors, health conditions, and behaviours). So we were able to explore relationships independent of all of these other factors. We have also linked our postcode data to external datasets, providing additional data to enrich our analyses on virus levels, social restrictions, area deprivation, and residential green space.





## Qualitative study

In addition to the quantitative survey, the study team collected over 30,000 written testimonials from our survey sample about life during the pandemic and undertook over 400 telephone interviews to examine in-depth the psychosocial experiences of 17 specific population subgroups. These subgroups were carefully selected to cover people for whom there was concern that the pandemic could cause an increased risk of poor mental health and social isolation as a result of social distancing measures and changes to health, social care, education, and community service provision. We therefore chose to interview subgroups of the population for whom these effects were likely to have the greatest impact including people with mental health problems, long-term conditions, parents of young children, older adults, adolescents, and young adults. We also interviewed vulnerable groups who pre-pandemic were reliant on services that underwent huge changes to provision as a result of COVID-19 to ensure their voices and experiences were heard. These groups included injecting drug users, people experiencing homelessness, and women experiencing intimate partner violence.

To analyse these qualitative data, we took two approaches. In order to deal with the large volumes of text from the written testimonials, we used a text analysis technique called 'structural topic modelling', which analyses groups of words together to find common topics. To conduct structural topic modelling, we used the statistical software R, which allowed us to undertake fast analyses of large volumes of text. The technique has a number of strengths, including that it can be used in conjunction with other statistical tests, for example to look at how topics relate to the characteristics of the people who wrote them (e.g. age, ethnicity, socio-economic position etc.) or to assess the positivity or negativity of sentiments in text responses.

For our telephone interviews, we conducted reflexive thematic analyses for each research question to extract rich data from interview transcripts. Using NVivo 12 software, we took a mixed inductive and deductive approach to the coding of the transcripts, developing initial coding frameworks based on theoretical models of coping, mental health, and behaviour change that had previously informed the development of our interview questions. We then developed and added new codes to the frameworks based on participant accounts. Codes were then organised into similar topic groups and labelled as themes and sub-themes.





## Public involvement and ethics

The research questions in the COVID-19 Social Study built on patient and public involvement as part of the UKRI MARCH Mental Health Research Network, which focuses on social, cultural and community engagement and mental health. Members of MARCH helped us to prioritise research questions and measures for the study and they also played a role in helping us recruit participants and, later on, disseminate our findings. The study was approved by the UCL Research Ethics Committee [12467/005, 14895/005 and 6357/002] and all participants gave informed consent.



## Strengths and limitations

Our survey had a number of strengths, including its large sample size and wide heterogeneity, including good stratification across all major socio-demographic groups. In addition, analyses were weighted on the basis of population estimates of core demographics, with the weighted data showing good alignment with national population statistics. However, we cannot rule out the possibility that the study inadvertently attracted individuals experiencing either better mental health (who felt more able to complete regular surveys) or worse mental health (who wanted an opportunity to share the challenges they were facing), with subsequent weighting for demographic factors potentially failing to fully compensate for these differences. Prevalence therefore is not inferred. Additionally, as data collection only commenced at the start of the pandemic in the UK, we have not attempted to compare findings to “normal” pre-pandemic experiences.

Regarding our qualitative analyses, we were able to conduct rich and detailed interviews with a wide range of population subgroups at different stages of the pandemic. However, the study had some inherent limitations, including the challenges and sensitivities of interviewing vulnerable groups. We took great care to ensure interviewees were safely able to participate in the study, which sometimes limited the diversity of subgroups and may have meant we did not generate all possible themes and experiences across all topic areas. It's also possible that those experiencing greater mental health and wellbeing difficulties may have felt their experiences were more salient to the study so may have been more inclined to share their experiences resulting in some selection bias. However, many participants also described effective coping strategies and positive impacts of the pandemic on their mental health, wellbeing, and priorities for the future.

Finally, our overall findings may be biased towards those who had digital and economic means to take part in both the survey and remote interviews.



# Part 1

## Findings





# Mental Health

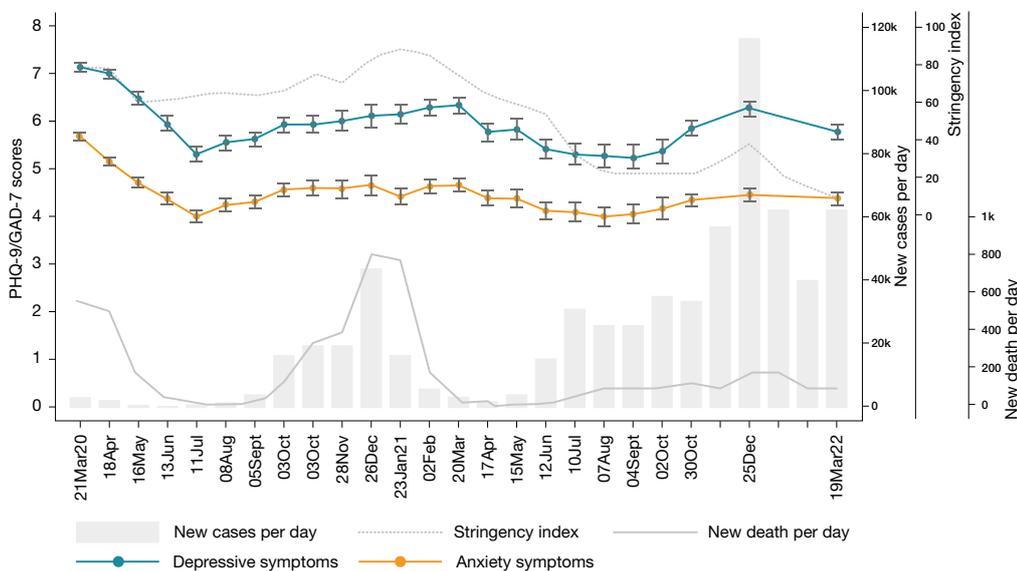
Throughout the pandemic, we have tracked how indicators of psychological health and wellbeing have changed over time to determine the relationships between the pandemic, its adverse effects, and mental health. As a result, we have been able to see how mental health has responded to social restrictions and other societal events.

## How did mental health change over the pandemic?

As demonstrated in the graph below, overall levels of depression and anxiety broadly corresponded with COVID-19 waves, lockdowns, and restrictions between March 2020 and March 2022. By the time the first lockdown was introduced, depression and anxiety levels were already higher than normal levels, driven by fears and stresses relating to the virus and surrounding uncertainty. Although there was evidence that home confinement contributed to some mental health symptoms (2), over the first lockdown many people had improvements in their mental health, showing processes of psychological adaptation that have been documented in response to other types of collective trauma such as earthquakes (3). These improvements became even more noticeable as virus

levels began to decrease and as individuals began to feel a shared perception that their collective efforts to contain the virus were working. As social restrictions were eased, symptoms continued to decrease and stabilise until the UK began approaching its second wave of COVID-19 in the autumn (4). As virus levels increased again and people anticipated more restrictions, mental health worsened. By October 2020, as many as 1 in 2 people reported that they did not feel in control of their mental health or only felt a little in control (5).

This fluctuation in mental health continued over the second year of the pandemic, with higher levels of depression and anxiety corresponding with an increase in COVID-19 cases and more social distancing restrictions, and lower levels corresponding with fewer restrictions and lower virus levels (6).



**Trends of depressive and anxiety symptoms (weighted means) over time from March 2020 to March 2022.** We used the Patient Health Questionnaire (PHQ-9) and the Generalised Anxiety Disorder assessment (GAD-7), standard instruments for measuring depression and anxiety respectively in primary care. The stringency index was obtained from the Oxford COVID-19 Government Response Tracker, which records the strictness of governmental policies that restricted individual behaviour. It ranges from 0 to 100, with a higher value indicating a stricter response.

## What drove changes in mental health?

When considering the drivers of these changes in mental health, we identified several factors. In our international work, we found that countries with higher levels of virus cases and deaths had overall worse mental health during the pandemic (7). This appeared to be partly due to increased fear in these countries regarding COVID-19. Indeed, by May 2020 as many as 29% of participants reported experiencing physiological symptoms of anxiety such as sickness and trembles when they thought about COVID-19 (8). Stress levels regarding catching COVID-19 and becoming ill across the pandemic corresponded with depression and anxiety levels, suggesting that fear of the disease itself influenced mental health (6). However, both our qualitative and quantitative work demonstrated that as people became used to the virus being around and began receiving vaccinations, these stress levels decreased and their relationship to depression and anxiety levels became weaker (6) (9). Similarly, increased COVID-19 deaths were associated with higher depressive symptoms only at early stages of the pandemic. After the vaccine roll-out, the virus was perceived as less of a threat and no longer had the same impact on mental health (6).



“

I think everyone's relaxed a little bit. You get used to it, don't you? A little bit like a soldier on the battlefield. When they first go into it it's absolutely terrifying, but after a while the senses are dulled somewhat, and you get used to the fact that there's this risk floating over you.”

(Male, aged 45–49)

Second, social restrictions also had adverse effects on mental health. At an international level, our collaborative analyses have shown that countries with higher policy stringency had worse mental health, compared with countries who followed virus elimination strategies and as a consequence had to impose fewer and less stringent social restrictions (7). However, this does not mean that social restrictions were all bad for mental health. In the UK, mental health tended to improve at a population level once lockdowns came in, as people began to feel safer from the virus again and got used to new daily routines at home (10). Further, people who locked down at home in line with national social restrictions had better mental health than people who had to continue going to work as keyworkers during lockdowns (10). We also discovered that the effects of social restrictions on mental health was not proportional. Increases in low level social restrictions had little impact on mental health, while increases in restrictions that infringed more on social freedoms had more damaging effects (6). Nonetheless, some people had to spend more time at home during the pandemic due to issues including clinical vulnerability, local restrictions, or mobility issues. By the second year of the pandemic, these individuals had the highest number of depressive and anxiety symptoms (10). This was partly due to the persistence and expansion of the social isolation they experienced. But our qualitative work also revealed that it was due to a loss of the shared social identity that arose when social restrictions affected everyone more equally. The concept of shared social identity has been shown outside of the pandemic to be a protective factor by buffering psychological and physiological stress responses (11).



It was not just the virus and its restrictions that affected mental health. Our team also explored whether mental health deteriorated among those who had experienced adverse events as a result of the pandemic such as bereavement, financial difficulty, loss of paid work, difficulties accessing food and medication, and threats to personal safety. We found that worrying about these events potentially occurring and actually experiencing them were both related to worse mental health (12). The impact of the number of worries and number of experiences of adverse events on anxiety were in fact equal, demonstrating how the act of worrying can affect anxiety to a similar extent as experiencing the challenges themselves (12). Therefore, the mental health toll among adults in the UK was not limited to the experience of challenges brought on by the pandemic, but the thought of them potentially occurring and the mental health symptoms that emerged as a result.

Additionally, we found that people's mental health was affected by their confidence that the government would handle the pandemic effectively, that the health service would be able to cope under the increased pressure, and that access to essentials such as food and medication would be maintained. Trust in the continuation of our societal infrastructure and in the capabilities of our leaders was consistently a key driver of our psychological experiences during the pandemic (7). Notably, trust in our government and services remained one of the most constant predictors of mental health across the pandemic, both during and outside of lockdowns (6).



**Fear of what instability the future will bring because of the possible [sic] collapse of the economy/the government /food supply/ medical supplies. Civil unrest could happen, wars could increase. The infrastructures we rely on could crumble or be dismantled. Chaos could bring power to really evil people. Or a more subtle and nuanced version of any of the above."**

(Female, in full-time employment, aged 45-49)

Further, people's mental health was worsened by challenges in accessing health services, which meant that some mental health problems that could have been treated early became worse and some physical health deteriorated, causing secondary symptoms of anxiety and depression. For example, in July 2020, as many as 1 in 10 people said they had been unable to see or speak with a GP about their physical health since lockdown began, while 1 in 20 were unable to speak with a professional about their mental health. 1 in 6 adults had tests postponed or cancelled, and 1 in 10 had treatment postponed or cancelled. 1 in 12 reported not speaking to a health professional about their mental health when they normally would have done so because they were worried about putting pressure on already stretched health services (14).



**I struggled at the beginning of the lockdown with more anxiety and depression and mentioned it to the nurse at the surgery. Their response was that, even if I did need to see someone, there was no one virtually to refer me to anyway. So, it hasn't felt as though, if I'd needed support in that way, that there would have been any available really from the health service."**

(Female, aged 50-59, mental health condition)

**I should have seen my neurologist in January ... but that got cancelled. I contacted [the hospital] and got an answer phone, then I was told that the neurologist would be getting in touch and she never was .... A bit disappointed and I do feel like I think what I've got is a pretty serious condition, but it's obviously regarded as not that important at the moment ... but I can understand why."**

(Male, aged 60-69, neurological condition)

## Was there a rise in self-harm thoughts and behaviours and experiences of abuse?

In the earliest days of the pandemic, there was great concern that suicide rates would rise due to the hardships of the pandemic: isolation, loneliness, fear of the disease, loss of loved ones, financial difficulties, increased abuse, domestic violence, alcohol consumption, etc. (17). While on average self-harm thoughts and behaviours reported in our study did not change significantly throughout the pandemic (18), in the first month our data nonetheless showed substantial proportions of people thinking about and engaging in self-harm. Nine percent of surveyed adults experienced psychological or physical abuse; 18% experienced thoughts of suicide or self-harm; and 5% reported harming themselves at least once during the first lockdown. Given that our sample was not random (although it was weighted to increase representativeness of the general UK population), these figures do not provide exact data on prevalence, but they do suggest that a significant number of people were badly affected during lockdown. Those particularly at risk included young adults, women, those with lower SES, unemployed

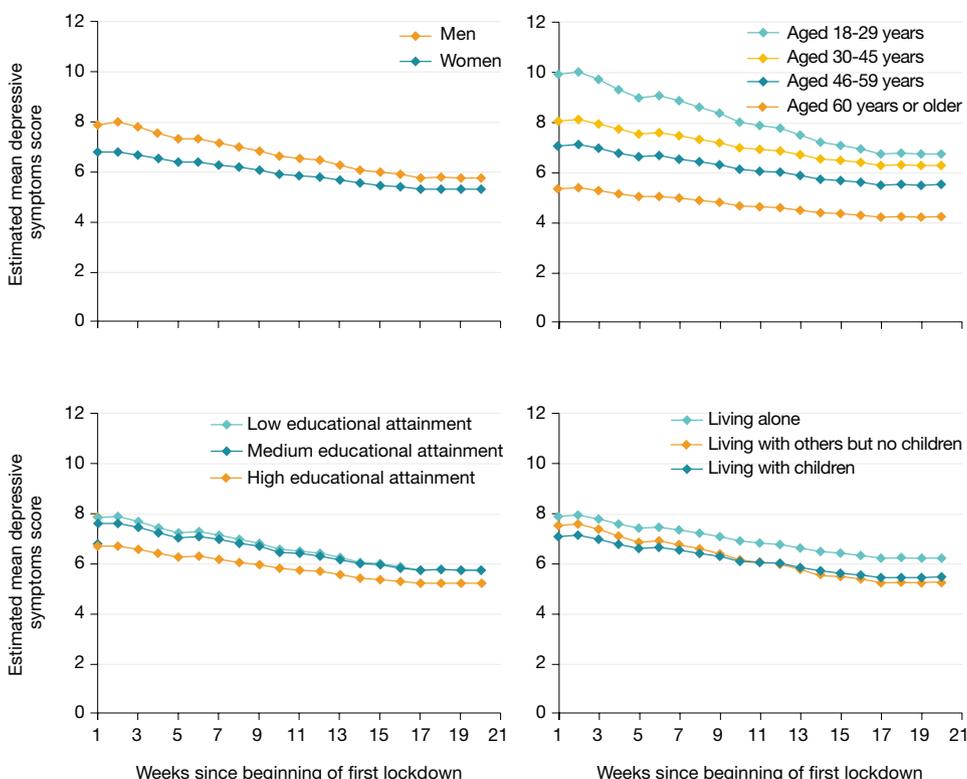
individuals, and people with disabilities, chronic physical illnesses, and a mental health condition (19). A year into the pandemic, nearly one quarter of adults reported experiencing thoughts of self-harm and nearly 8% had engaged in self-harming behaviours at least once during the pandemic. The greatest contributing factor was physical or psychological abuse, followed by financial worries (20). Higher loneliness also increased the likelihood that people would think about self-harm or act on it (21).

However, our data also highlighted the need for caution when using novel approaches to estimating self-harm thoughts and behaviours and abuse. In the early stage of the pandemic, internet search data was cited by some researchers and the media as an indicator of population mental health. But when we compared these internet data to our data, we found no relationship between Google Trends for searches on depression, anxiety, suicidal ideation and abuse and actual self-reported levels (22).



## Was everyone equally affected?

However, exploring trajectories of mental health averages can mask the experiences of individuals. As we probed further, we found that underlying the ‘average’ results there were more complex patterns of experiences for different groups. For example, in our early quantitative analyses, we could see that while average symptoms of anxiety and depression gradually decreased over time in the first five months of the pandemic, they did so at different rates for certain groups. As shown below, women, young adults, people of lower educational attainment, and those living alone or with children were at higher risk of anxiety and depression at the start of lockdown. This was also true for people with lower income or pre-existing mental health conditions. While gaps narrowed over time, anxiety and depression still remained higher for women and young adults, even after 20 weeks (4). This reflects pre-existing inequalities in mental health experiences within our society, but the exacerbation of adverse psychological experiences for these groups remained a recurring problem across the pandemic, which we’ve explored in more detail later in this report.

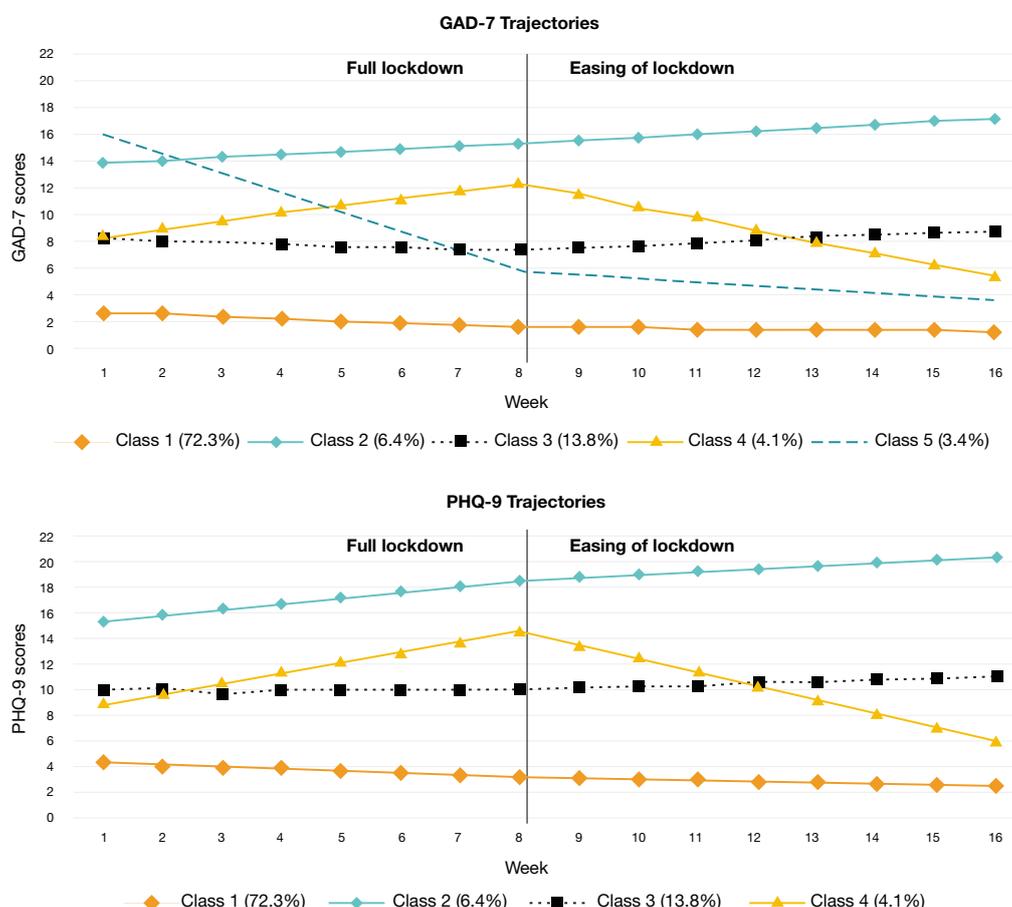


### Predicted growth trajectories of mean depressive symptom scores by individual characteristics.

Source: 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. *The Lancet Psychiatry*. 2021 Feb 1;8(2):141–9.



We additionally found that not everybody showed the same pattern as the average score. Around 70% of the sample showed patterns akin to the average trajectory, but others tended to follow one of four alternative anxiety pathways and three alternative depression pathways between March and July 2020 (23).



**GMM class solution trajectories (GAD-7 and PHQ-9)**

Source: Saunders R, Buckman JEJ, Fonagy P, Fancourt D. Understanding different trajectories of mental health across the general population during the COVID-19 pandemic. *Psychological Medicine*. 2021 Mar 3;1-9.

The characteristics of these groups are summarised below, demonstrating how factors such as age, living situation, prior mental and physical health conditions, social contact with others, gender, and ethnicity all had a role to play in mental health trajectories (23). In our analyses, we modelled all of these socio-demographic factors together, so our results show the independent effects of each factor after accounting for their overlap with other factors. Overall, people who were younger,

had a pre-existing mental health condition, and were female were more likely to be in one of the higher-symptom groups rather than the lowest symptom group (class 1). Interestingly, seemingly opposite living situations (living alone vs living with children or in overcrowded conditions) were both risk factors for being in higher-symptom groups, illustrating how the pandemic was hard for both those weathering it alone and for those balancing the needs and behaviours of family members (23).



CLASS	ANXIETY	DEPRESSION
1. Lowest overall symptoms – initially heightened but gradually improved over time	The average trajectory. All other trajectories below are described in comparison to this one.	
2. Moderate symptoms that became progressively worse over time	<ul style="list-style-type: none"> <li>• More likely to be younger</li> <li>• More likely to have fewer educational qualifications</li> <li>• 63% more likely to have a household income below £30,000 per year</li> <li>• Nearly 6 times as likely to have a mental health condition and nearly twice as likely to have a physical health condition</li> <li>• 26% more likely to be a carer</li> <li>• 31% more likely to live in overcrowded accommodation</li> <li>• 62% more likely to socialise very little before the pandemic</li> <li>• More likely to display neurotic personality traits</li> </ul>	<ul style="list-style-type: none"> <li>• More likely to be younger</li> <li>• 82% more likely to have a household income below £30,000 per year</li> <li>• More likely to live with children</li> <li>• 6.6 times more likely to have a mental health condition and twice as likely to have a physical health condition</li> <li>• 25% more likely to live in overcrowded accommodation</li> <li>• 71% more likely to socialise very little before the pandemic</li> </ul>
3. Moderate symptoms that remained relatively constant	<ul style="list-style-type: none"> <li>• More likely to be female</li> <li>• More likely to be younger</li> <li>• More likely to be from an ethnic minority background</li> <li>• More likely to live alone</li> <li>• Nearly 3 times more likely to have a mental health condition</li> <li>• 32% more likely to live in overcrowded conditions</li> </ul>	<ul style="list-style-type: none"> <li>• More likely to be female</li> <li>• More likely to be younger</li> <li>• More likely to be from an ethnic minority background</li> <li>• More likely to live alone</li> <li>• 3 times more likely to have a mental health condition</li> <li>• 31% more likely to socialise very little before the pandemic</li> </ul>
4. Worsening mental health symptoms during lockdown but improvements after lockdown easing	<ul style="list-style-type: none"> <li>• More likely to be female</li> <li>• More likely to be younger (4 times more likely to be under 30)</li> <li>• More likely to have fewer educational qualifications</li> <li>• More likely to live with children or live alone</li> <li>• Three times more likely to have a mental health condition</li> <li>• More likely to be a keyworker</li> </ul>	<ul style="list-style-type: none"> <li>• More likely to be female</li> <li>• More likely to be younger (4 times more likely to be under 30)</li> <li>• More likely to have fewer educational qualifications</li> <li>• More likely to live with children or live alone</li> <li>• Nearly three times more likely to have a mental health condition</li> <li>• 36% more likely to be very socially active before the pandemic</li> </ul>
5. For GAD-7 only – severe initial anxiety that decreased to normal range, predominantly during lockdown	<ul style="list-style-type: none"> <li>• Twice as likely to be female</li> <li>• More likely to be younger</li> <li>• Twice as likely to have a mental health condition</li> <li>• More likely to be a keyworker</li> <li>• Nearly twice as likely to be very socially active before the pandemic</li> </ul>	

#### GMM class solution trajectories (GAD-7 and PHQ-9)

Source: Saunders R, Buckman JEJ, Fonagy P, Fancourt D. Understanding different trajectories of mental health across the general population during the COVID-19 pandemic. *Psychological Medicine*. 2021 Mar 3;1–9.



## What factors helped people to cope?

As we tracked mental health symptoms across the first few months of the pandemic, we also began examining what protected people's health and how individuals chose to manage their mental health. A large portion of people (37%) did not consciously do anything to support their mental health, but others were more aware of taking intentional steps for their wellbeing (24). In the free-text portions of our surveys, people told us they adopted processes and activities such as thinking positively; taking one day at a time; keeping routines; keeping busy; spending time on specific activities such as arts, crafts, listening to music, radio, tv, films; going on long walks in nature; exercising; talking to family and friends; doing DIY and gardening; and engaging in any online activities such as group classes, courses, or ordering supermarket deliveries. Some engaged in harmful behaviours such as self-harming or increasing alcohol consumption (25). Strategies varied by demographic and socio-economic factors (24).

More likely among:	
Talking to friends or family (45%)	Women; people living alone; people who are extraverts
Engaging in self-care activities (43%)	Women; people living alone; people with problem-focused coping strategies; people with higher levels of conscientiousness
Taking medication (20%)	Adults over the age of 29; people with avoidant coping strategies
Speaking to mental health professionals (9%)	People with higher education; people living alone
Using helpline or online services (8%)	People from ethnic minority backgrounds

Source: Bu F, Mak HW, Fancourt D. Rates and predictors of uptake of mental health support during the COVID-19 pandemic: an analysis of 26,720 adults in the UK in lockdown. *Soc Psychiatry Psychiatr Epidemiol.* 2021 Dec 1;56(12):2287–97. NB people could select more than one activity that they engaged in.

In addition, demographic factors and personality traits also influenced coping strategies. Women and people high in openness were more likely to engage in creative activities. Conscientious people were more likely to report keeping busy, walking and spending time in nature, doing DIY, and gardening. Meanwhile people who had higher levels of neuroticism were more likely to spend time consuming media and, surprisingly, less likely to keep to routines (25). Those with lower educational attainment tended to adopt thinking positively, while individuals with diagnosed mental health conditions were more likely to report engaging in harmful behaviours and less likely to report walking and spending time in nature (25). There was also some evidence that those who participated in online religious services had higher life satisfaction and happiness and were less likely to have thoughts of self-harm during the first lockdown (26).

We saw different mental health outcomes for different strategies. Both our survey and interview data showed that how people chose to spend their time in lockdown influenced their psychological health. In general, improvements were seen among people who spent time outdoors, who gardened, exercised, read, pursued hobbies, communicated with friends and family or listened to music, with changes in these behaviours followed in subsequent weeks by improvements in mental health (27). This echoes a large evidence base on how leisure activities can support mental and physical health through activating beneficial psychological, biological, social and behavioural mechanisms (28). Spending time outdoors during the first lockdown, particularly if individuals were satisfied with the walkability and green spaces of their neighbourhoods, was associated with decreases in depressive and anxiety symptoms (29). In particular, during periods of greater restrictions, such as the early months of the pandemic, greater access to green space was consistently associated with fewer anxiety symptoms (31). These findings are in line with research that has shown the benefits of green space for mental health including through increasing physical activity, increasing a sense of community, removing individuals from stressful environments, and supporting affective, cognitive, and physiological restoration (32). Opposite mental health effects were found for those who spent their time watching the news about COVID-19 (27). Having to take on increasing amounts of childcare was also associated with higher depression and lower life satisfaction (27).



“

**I think that's why my mental health's been kind of okay after those few weeks when we started going out for a walk, because it was too much to just be totally indoors."**

**(Individual living with a long-term health condition, aged 30-34)**

In addition, creative activities were helpful for many. During the first lockdown, 22% of respondents in the study increased how much they engaged in arts activities, citing them as ways to cope with the pandemic through emotion regulation and approach or avoidance tactics (34). More specifically, people used the arts to distract themselves from the pandemic, connect with themselves emotionally and on a deeper level, engage creatively and learn new skills, and connect with others (35). This supports previous work on the use of arts and creativity to support emotion regulation (36).

“

**I have been doing some online Zoom courses with a... drawing organisation, and they do online creative sessions... They're an hour, and they're completely absorbing, I just sort of, just draw, do creative stuff."**

**(Female, individual with mental health condition)**

A number of our analyses also demonstrated the powerful effect of social contact and relationships in protecting mental health, building on strong research into the major health benefits of social connections (37). Those who perceived themselves to have high social support had fewer depressive symptoms, and if individuals had daily face-to-face or phone or video contact, this was associated with slightly lower depressive symptoms (38). Having close friends or greater social support also appeared to protect against loneliness (39), and the more friends individuals had, the less likely it was that their worries about challenges during the pandemic would affect their quality of sleep (40). Furthermore, those who made greater use of socially-supportive coping strategies (such as speaking to people and asking for help) had a faster decline in depressive and anxiety symptoms during the first lockdown than those adopting other strategies (41).

“

**... it got to the point where I was just, not depressed every day but I was just thinking I don't have any motivation to work. I'm not sleeping at all. I've always been a touchy feeling person. I need someone to hug that isn't mum or dad."**

**(Female, aged 20-24)**



# Inequalities

Early on in the pandemic, public health messaging emphasised teamwork, unity and the popular “we’re all in it together” refrain. However, as indicated above, it quickly became obvious that people would experience the pandemic differently depending on their demographic and socio-economic backgrounds. For some, the ups and downs of COVID-19 would be manageable. For others it would have a devastating effect on their lives, and we’ve come to learn that the pandemic would expose and exacerbate existing inequalities in the UK.

## People of lower socio-economic position

Factors such as household income, educational qualifications, employment status, and housing relate to an individual’s socio-economic status (SES) and were all associated with disparities in mental health. In the first few weeks of the first lockdown, low SES was associated with higher symptoms of depression (42), and other indicators such as anxiety, thoughts of death, self-harm, life satisfaction, and happiness have all been worse across the pandemic among those with low household income (43). During the pandemic, people with low household income were additionally at even greater risk of being lonely than they were before the pandemic (44). Whilst we saw this relationship between SES and mental health before the pandemic, the pandemic provided new challenges and exacerbated socio-economic inequalities in mental health. Reasons for this poorer mental health were in large part due to the greater number of adversities faced by people of lower SES including worsening financial situations brought on by the pandemic. We found in the first few weeks of lockdown that people of lower SES were 1.5 times more likely to lose work, 7.2 times more likely to struggle to pay bills, and 4.1 times more likely to have difficulties in accessing sufficient food compared to those from more privileged backgrounds (45).

As the pandemic continued, we found further links between financial stress and psychological distress in our survey data. Those experiencing increased living costs, loss of work or reduction in wages, and increased debt reported the toll that financial hardship had on many aspects of their mental health (46). People of lower SES were also more likely to use avoidant coping strategies (which can include consuming alcohol, substance use, or withdrawing from others) that can negatively affect mental health (47). These experiences could act in a vicious cycle and exacerbate risks of contracting COVID-19. For example, in our interviews we found that people who inject drugs often resorted to risky behaviours, such as disregarding social distancing requirements to generate income to allow them to continue their drug use (48).





Our qualitative research showed that those working in industries that were particularly affected by the pandemic suffered greatly in terms of employment precarity and mental health. For example, freelance arts and cultural workers had symptoms of loneliness, anxiety and psychosomatic issues, particularly if they had lost work or were concerned they would (49). The work challenges of the pandemic impacted their sense of self and identity with ramifications for their general wellbeing (50).

“

**So now I think I feel obsolete, I feel redundant, I feel abandoned, I feel hopeless. I feel that me and my family don't matter....now that I need help I'm not being given any, and I am angry. I feel disenfranchised”**

(Independent production associate, community arts and film)

A year later, our interviews revealed many cultural workers had increased negative psychological and physical symptoms but experiences varied and depended on how much government support they received and whether their area of work could adapt with the pandemic (51).

We found similar financial effects amongst the population more broadly, with social inequalities continuing to widen as the pandemic continued. Our survey data show that, compared to those who were living comfortably before the pandemic, those who were finding it “very difficult” financially before the pandemic were consistently more than 10 times as likely to say they were much worse off during the pandemic (52).



“

**We don't have all the right nutrients, vitamins, all the rest of it, we're more tired. I think we're more anxious, we don't really go anywhere, do anything. We're housebound a lot, that sort of thing. Imagine living off cans constantly. That's your only choice, we can't really afford to buy all the stuff.”**

(Female, aged 26-30)

We continued to track financial hardship and its effects on mental health until April 2022, and unfortunately the problem became more pervasive. Only about half of our sample (56%) felt in control of their finances by April 2022 compared to 63% in October 2021. Differences were obvious across age groups. Working-age adults were twice as likely as older adults to report financial concerns, and younger adults (aged 18-29) felt least in control of their finances (46%) compared to 52% of adults aged 30-59 and 70% of older adults aged 60+ (18). Overall, the pandemic was particularly harsh on the mental health of the financially vulnerable, but given the growing cost of living crisis, the proportion of people within this group is only likely to increase during 2022 and beyond. Indeed, by April 2022, more people said they were worried about the cost-of-living crisis than about COVID-19.

## People from ethnic minority groups

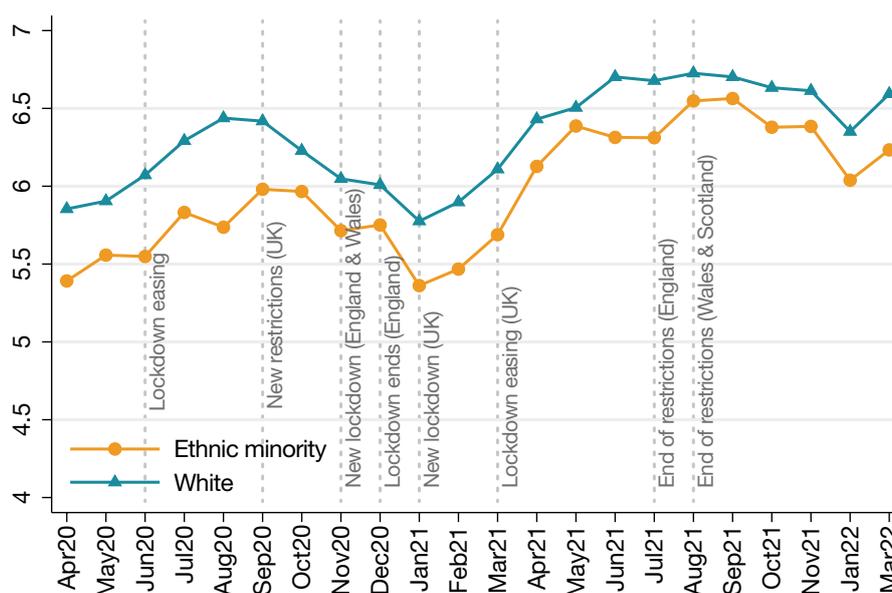
In this report we have used binary descriptors for ethnicity: ethnic minority versus white backgrounds. However, we acknowledge that ethnicity is not binary and recognise and reinforce calls for further research that explores the experiences of different ethnic groups.

Compared to people of white ethnicity, those from ethnic minority backgrounds had poorer experiences across all mental health measures in the pandemic including depression, anxiety, thoughts of death, self-harm, abuse, life satisfaction, loneliness, and happiness (43). By July 2020, as much as 23% of participants from ethnic minority backgrounds experienced loneliness compared to 17% of people from white backgrounds (53). And while on average fewer than 1 in 10 people experienced psychological or physical bullying or abuse during lockdown, rates were 80% higher among ethnic minority groups (53). One contributing factor was that people from ethnic minority backgrounds are more likely to be from low SES backgrounds due to structural racial inequalities in our society. However, our analyses still showed inequalities in experiences even when accounting for SES and other demographic factors. A further explanation that we uncovered was that people from ethnic minority groups were more likely to face discrimination. In our survey, 42% of people from ethnic minority backgrounds reported that they had experienced discrimination for a variety of factors

in the first few months of the pandemic, whereas among white people, only 24% had suffered discrimination (54). Unfortunately, the phenomenon of disease outbreaks leading simultaneously to unity in some respects and division in others has been documented across history (55). As people face challenges, they can become increasingly protective of those they perceive as ‘in-group’ and increasingly hostile to ‘out-group’ members, especially if there are opportunities for scapegoating. This happened in early months of the pandemic as around the world different segments of societies were blamed both for the disease itself and for their behavioural response to it. The United Nations Secretary-General António Guterres described the pandemic in May 2020 as unleashing a “tsunami of hate and xenophobia, scapegoating and scaremongering around the world” (56).

People from ethnic minority groups were also more likely to face barriers to accessing healthcare and mental health support, which would have exacerbated their mental health symptoms amidst the pandemic. For example, by July 2020, people from ethnic minority groups were 1.5 times more likely not to have gone for COVID-19 tests even though they were freely available (5.8% vs 3.9% from white backgrounds) (57). They were also less likely to access structured mental health services (24).

**Happiness by ethnicity**



Source: Fancourt D, Bu F, Mak HW, Paul E, Steptoe A. Covid-19 Social Study. University College London; 2022.

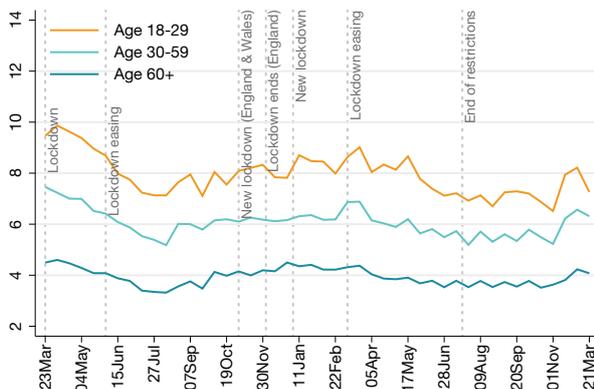


## Young adults

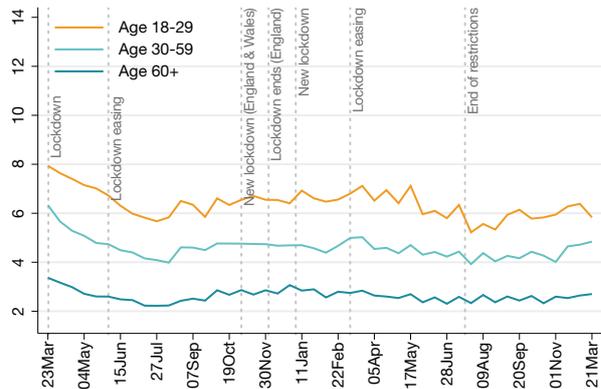
As our survey comprises adults aged 18 and over, we have been able to see clear differences in the mental health of those between 18 and 29 years old (referred to as “young adults”) compared to older age groups, even after accounting for differences in other socio-demographic factors between these age groups. Through our qualitative study, we also investigated the mental health of adolescents (13-18 years) in addition to young adults. Both methods of data collection have shown that throughout the pandemic adolescents and young adults have consistently had worse mental health than older age groups. This contradicted initial expectations that older adults would struggle more given their greater vulnerability and need to isolate. In fact, the depression, anxiety, and loneliness levels of

older adults have consistently remained below those of 18–29-year-olds, while other indicators of mental health and wellbeing, such as life satisfaction and happiness, have been higher (18). Most concerning, thoughts of death or self-harm have affected on average 20% of young adults since March 2020, whereas the prevalence of these thoughts is less than half that among the 60+ age group. Deliberately self-harming oneself has also been more commonly reported by people in younger age groups (18) (19). Whilst these patterns do exist outside of the pandemic, our qualitative research has suggested that the pandemic provided some unique drivers to exacerbate age-related inequalities in mental health.

### Depression by age groups



### Anxiety by age groups



Source: Fancourt D, Bu F, Mak HW, Paul E, Steptoe A. Covid-19 Social Study. University College London; 2022.

Much of the difference in mental health symptoms between the two age groups can be explained by the extent to which their routines were disrupted or new challenges were brought on by the pandemic. Adolescents and young adults faced dramatic changes in their lives. As they told us in interviews, their education was halted, their social support systems were removed, and many missed out on the key milestones of young adulthood such as completing national examinations, key school events, and starting university (58). Disruptions to usual patterns of education and a shift to more online teaching also meant that students in particular were at high risk of loneliness (44).



**I'm actually really upset that I couldn't sit my exams... It was a bit of an anti-climax, because I kind of wanted all of the build-up and the apprehension to finalise, what, two years' worth of ... Well, my entire education built up to this."**

(Female, aged 18–19)

Young adults in their twenties have also been more stressed about unemployment and their financial situations, and they have also been lonelier than older adults (18) (39) (44). Some of the key themes identified through our interviews that have affected adolescents and young adults are shown below.

**Concerns about disruption to education**

- Difficulties with remote learning and increased workload
- Uncertainty about assessments and exams
- Education expectations did not match experience
- Lack of support and communication

**Missing social contact during lockdown**

- Struggling with isolation
- Social withdrawal and loneliness

**Changes to social relationships**

- Adapting to maintain social connections
- Relationship tensions
- Family unity and connectedness
- Changes in feelings about socialising after lockdown

**Improved wellbeing during lockdown**

- Better mental health compared to pre-pandemic
- Increased self-awareness
- Increased awareness of mental health
- Accessing mental health support

Source: McKinlay AR, May T, Dawes J, Fancourt D, Burton A. 'You're just there, alone in your room with your thoughts': a qualitative study about the psychosocial impact of the COVID-19 pandemic among young people living in the UK. *BMJ Open* 2022;12:e053676. doi: 10.1136/bmjopen-2021-053676

Young adults' poor mental health may also be connected to their coping strategies. During the pandemic, they were more likely to use harmful avoidant strategies to cope with the pandemic, such as drinking alcohol, substance use, denial, or withdrawing from others, which can later have negative effects on mental health (25) (47). At the same time, young adults are generally more likely to use socially supported coping strategies (relying on others for emotional or instrumental support or for venting), which can be healthier than avoidant coping, but which may have been harder to access during lockdowns and social restrictions.

“

During lockdown, I got horrendously depressed. So, I've had stuff going on mentally, but I was finding it tough. The social isolation made everything crash really badly.”

(Male, aged 21–22)

I don't really speak to much of my mates as I used to. It's made me quite distanced with quite a lot of people.”

(Female, aged 16–17)

In contrast, our interviews showed that the lives of older adults (aged 60 and above) did not change as much during lockdown, resulting in greater resilience among this age group than expected. Many tended to adopt attitudes and behaviours that were protective for mental health, including enjoying the slower pace of life, taking the time to reflect on their values, and using well-practised coping skills. Not only were they able to maintain their routines, but they relied on a lifetime of experience, using their past coping skills to manage their feelings about the pandemic. Many also felt socially connected and supported because their families or neighbours took steps to ensure they felt supported during lockdown (59). That said, in interviews we found that some older adults did struggle with their mental health, particularly those who were concerned about accessing healthcare during lockdown. Some grieved the loss of normal life, putting their usual activities on hold, and being faced with their own mortality (59).

“

I thought, I'm going to be forced into being isolated at home. Can't go to the gym, can't go out walking, I'm going to physically deteriorate. And I really was quite scared about that.”

(Male, aged 80–84)



Similarly, there were exceptions among adolescents and young adults too. In our interviews, many acknowledged the positives that the pandemic had introduced into their lives, including the extra time they spent with their families, the wellbeing benefits of being at home, and being more cognisant of managing their mental health (58).



**It opened up really big conversations within our family about mental health that I don't think they've ever had before like the generations. So those are two really big positives for me."**

(Female, aged 23–24)

### Women, parents with young children, and new mothers

Overall, women have found the pandemic psychologically more challenging than men, even when taking account of socio-demographic differences between genders<sup>1</sup>. They've had higher levels of depression, anxiety, and loneliness and lower levels of life satisfaction and happiness (4). Reasons why include women having disproportionately greater housework and childcare responsibilities in the home than men (60). For women who experienced intimate partner violence prior to lockdown, social distancing restrictions often worsened their situation (61). Being confined to a home put their safety at risk, particularly as some perpetrators exploited unclear social distancing rules to carry out further harm and control over women's freedom.



**He'd always had a very short temper but I was noticing it more and more. Then over the winter lockdown that's just gone it was just the two of us in the house. I think the only way he was really able to regulate his emotions was by taking things out or blaming me for them. So that was a shift that I noticed, he didn't have any other outlet."**

(Female, late 20s)



<sup>1</sup> In this report we have used binary descriptors for gender: male and female. However, we acknowledge that gender is not binary and we recognise and reinforce calls for further research that explores the experiences of people of other genders.



Women have also been more stressed about catching or becoming seriously ill from the virus. However, their stress levels regarding their finances, employment, or access to food were no different to those of men (62). Similarly, thoughts of death or self-harm, reported self-harming, and reported abuse have been similar across genders (62).

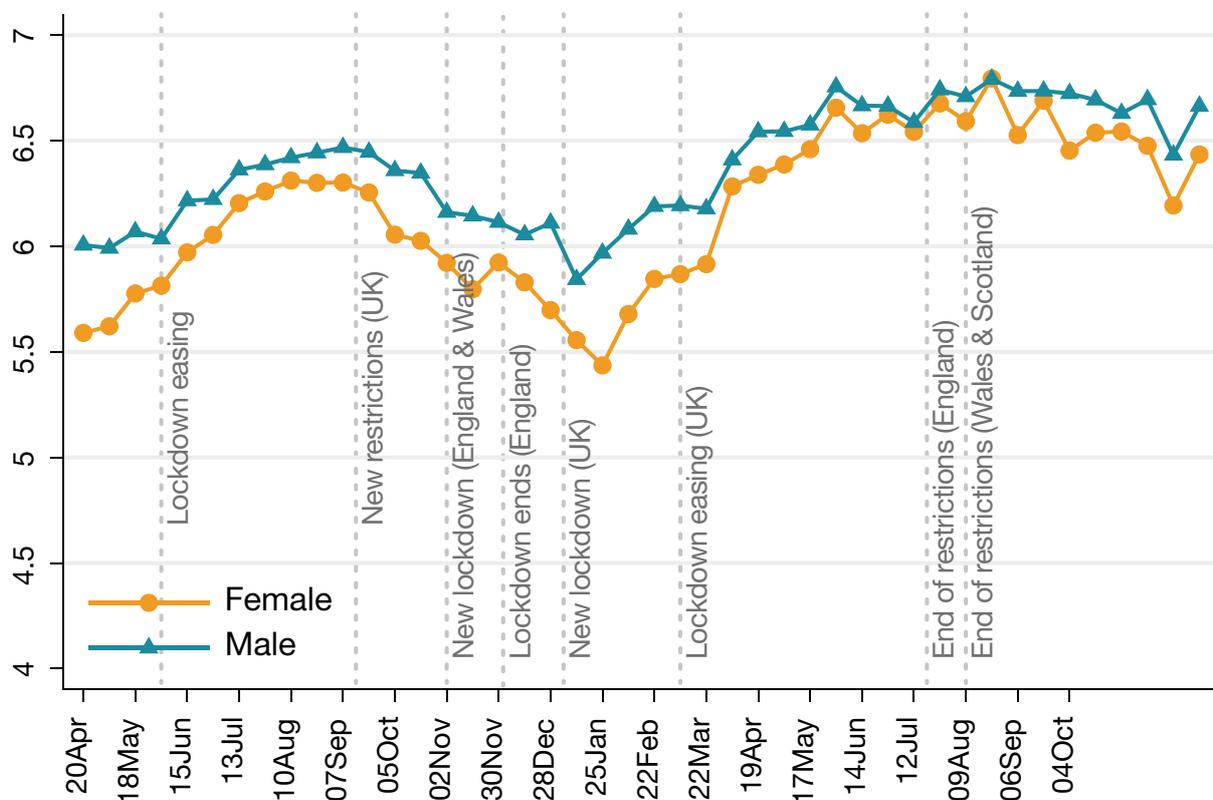


Stranger incidents increased during lockdown... bars and clubs and stuff weren't open so people were kind of looking for another way to harm people. I think what is really important to mention is that it was all still happening."

(Female, late 20s)

Parents have also had a difficult time during the pandemic, especially those with young children who faced the challenge of balancing their professional commitments, family responsibilities, and children's education all in the home. In interviews, lone parents stood out as carrying heavier loads (60). Key themes identified through our qualitative work that affected parents' mental health included feelings of guilt and stress if they were unable to fulfil all responsibilities for work and childcare; the difficulty of occupying children at home for long periods of time; closure of nurseries and schools and the consequent loss of usual support networks; and changes in personal relationships and lacking in-person engagement with friends and family (60). Protective measures for mental health included access to outdoor space, daily routines and organisation, and a healthy diet, and reduced alcohol intake; although sometimes the pressure of trying to do these things could also overwhelm parents who felt they couldn't take on any more (60).

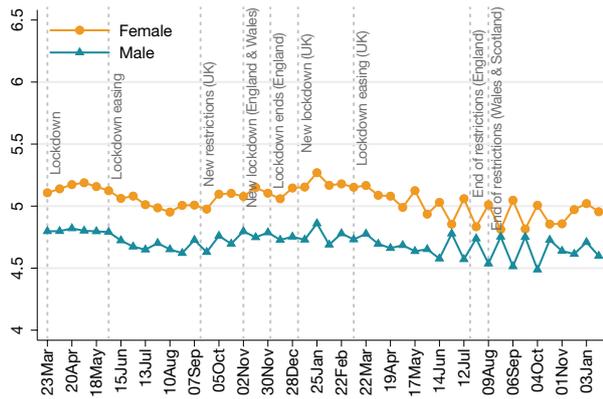
### Happiness by gender



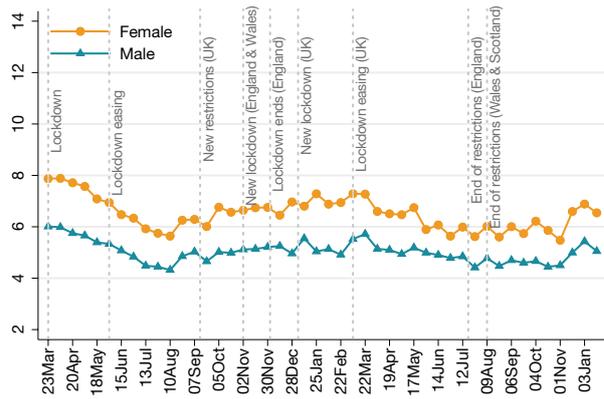
Fancourt D, Bu F, Mak HW, Paul E, Steptoe A. Covid-19 Social Study. University College London; 2022.



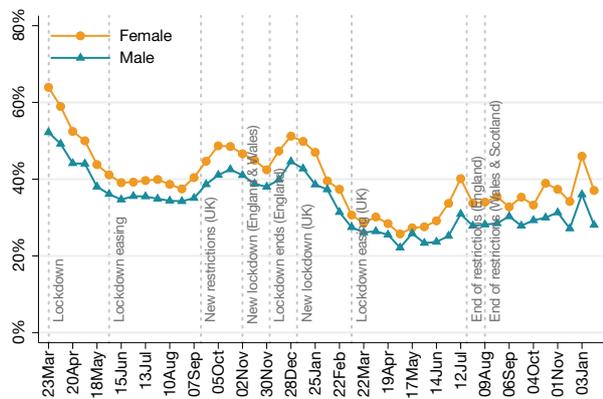
### Loneliness by gender



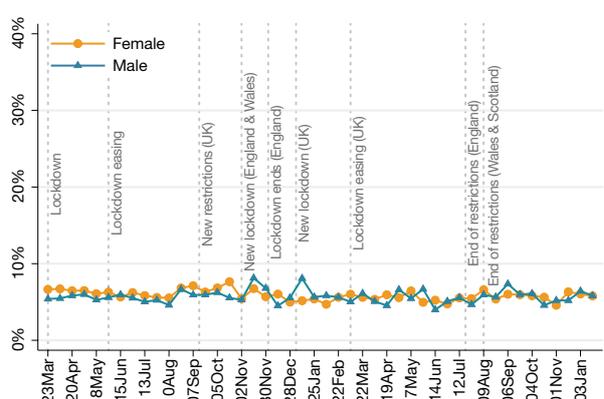
### Depression by gender



### COVID-19 stress by gender



### Abuse by gender



Fancourt D, Bu F, Mak HW, Paul E, Steptoe A. Covid-19 Social Study. University College London; 2022.



**It just feels like I've got about 500 balls in the air at the same time and keeping them all in the air is hard work."**

(Female, lone mother, 45-50)

**The one thing I thought I was good at, was that I was a good mum. And then because of the home schooling and how that made me feel, I started to feel like I wasn't a good mum, so that made me feel like I wasn't good at anything."**

(Female, lone mother, 40-45)

Women who were pregnant during the pandemic were also vulnerable to heightened mental health symptoms. While social distancing measures were welcomed by some, such as those who

experienced sickness during pregnancy and preferred being at home, many we interviewed grieved missed opportunities to share the experience with close family and friends. Pregnant women in our research said they were also not able to lean on their social support network as much as they would have liked to help them cope and adjust (63). Most significantly, partners were prevented from attending antenatal visits and labour, which could be traumatic, lonely, and distressing. Maternity services were stretched and under pressure and many new mothers felt they didn't get the care they would have received during pre-pandemic times (63).

**I couldn't have anybody there... I felt that the basic needs, like making sure that they've given me a bed or bath or support me to go and use the shower or supporting me to get changed, or any of that, just didn't happen, whatsoever."**

(Female, first baby, aged 35-40)



## People with health conditions

Given the higher risk of severe COVID-19 illness among those with comorbidities, we investigated how people with chronic conditions such as cancer, respiratory issues, cardiovascular disease, and mental health conditions were managing. Indeed, throughout the pandemic, people with physical and mental health conditions were more worried than others about catching COVID-19 or becoming seriously ill with it (52) and were more likely to develop moderate or severe depressive symptoms during the pandemic (42). Similarly in terms of anxiety, many had severe levels at the beginning of the first UK lockdown, or their anxiety worsened until lockdown lifted, or their anxiety became more severe beyond lockdown (23). In our interviews with participants we found that factors for poorer mental health included fear of catching COVID-19; the loss of independence while shielding and relying on others to access food or medicine; and anxiety about not knowing when and if their lives would return to normal (16).

“

**I don't want to catch it, [I have] already experienced being on a ventilator before for 17 days and I never want that experience again.”**

(Female, cancer and CVD, aged 60–69).

**I'm terrified of getting this virus, because I know that if I get it, it probably is the end of me.”**

(Female, respiratory condition, aged 70–79)

**They ended up cancelling my vulnerable status on their [online shopping] system... So, what am I meant to do? How the hell am I going to cope now? I haven't got three weeks' worth of food.”**

(Male, cancer, respiratory condition, and low immunity, aged 30–39)





In particular, people with mental health diagnoses have had consistently worse levels of depression, anxiety, and wellbeing throughout the pandemic (43) (64). Isolation, disruption to mental health services, cancelled plans and changed routines, uncertainty and lack of control, and media coverage all contributed to a deterioration in their mental health (15). Avoidant coping was more common in this group (47), and it was a particularly difficult time for those with severe mental illness due to a reduction in mental health service provision and support. However, some individuals were relieved that normal social pressures were removed and that they did not feel socially excluded like they did in pre-pandemic times (15). Some also used the period as an opportunity to manage their wellbeing in healthy ways, including drawing on coping strategies developed during previous experiences of adversity, engaging with hobbies and activities, and staying connected to others (15). Several individuals with PTSD reported positive aspects of the restrictions such as being able to better manage their symptoms at home (61).

“

**I think lockdown gave me that feeling of, we're all on the same platform right now; nobody's doing anything...I know I'm not missing out on anything, but I've felt like I'm on an even platform with all my peers again.”**

(Female, mental health condition, aged 40–44)



## Key workers

Our team also examined essential workforce groups to compare their mental health given the higher pressure they faced during the pandemic. Using government-defined groups for key workers, we created five categories including health and social care workers, teachers, childcare workers, those in the public service, and people working in essential services. We also interviewed formal and informal carers and other keyworkers. In our quantitative analysis, we found that essential services keyworkers, such as food chain or utility workers, consistently had higher levels of depression or anxiety compared to non-key workers. This appeared to be driven by a number of reasons such as higher workloads, higher risk of contracting COVID-19 and fear of spreading it to households, lack of recognition compared to health workers, and financial hardship (65). This was supported by our interviews with non-healthcare key workers who described having to deal with risky workplaces that were slow to implement adequate measures or provide PPE to workers (66).

“

**So when I come from school, I literally strip off at the door. Everything goes into a bag. Everything gets cleaned off. I don't talk to anyone or touch anyone. I don't go near anyone until I've decontaminated.”**

(Female, teacher, aged 45–50)

**I had two people in their 70s and an asthmatic child. The stress and worry and fear of me basically bringing that home to them was just crippling me.”**

(Female, supermarket worker, 45–50)

**There was no hand sanitiser. There was nothing. Absolutely zero. Even during lockdown, for the first part of it, there was nothing at all. It was down to the drivers.”**

(Male, bus driver, aged 40–45)



The mental health of health and social care keyworkers also suffered for many of the same reasons expressed by other key workers. Increased workloads, fear of giving COVID-19 to loved ones, and dissatisfaction with workplace management of the issue were cited as reasons during our interviews. Factors unique to healthcare included the difficulty of virtual consulting, which, while efficient at times, made it difficult to build relationships with patients or have difficult conversations (67).



**I know they (upper management in NHS) have difficult decisions to make quickly but I sometimes find their rule making quite vague. A bit like the government, I feel like they're making it up as they go along somewhat. And it changed every day so you'd log onto your emails and there'd be some new change."**

**(Female, community mental health nurse, aged 40-45)**

That said, some health and social care workers recognised positive factors introduced by the pandemic. They felt closer to their teams, enjoyed the benefits of virtual meetings, appreciated the public support for the health sector, and felt a greater sense of purpose in their work (67).

While not officially employed in healthcare, informal carers additionally carried a huge burden during the pandemic. They experienced higher levels of depressive symptoms and anxiety than non-carers at all time points. Notably, our survey showed that their loneliness and life satisfaction were not particularly affected, but as their mental health trajectories improved with easing restrictions, it was clear that lockdown had a strong negative affect (68).



# Changes in Behaviour

## Health-related behaviour

Another theme that we explored in the COVID-19 Social Study was how people's behaviours changed. To examine whether the first lockdown in 2020 had the potential to dramatically alter people's patterns of eating, exercising, drinking, gambling, and smoking, we began tracking these behaviours to determine how population health might be impacted and how public health messaging and interventions could be tailored to help people manage unhealthy changes in behaviour.

On the whole, the majority (62.4%) of our sample did not increase or decrease their levels of physical activity during the first lockdown, and nor did changes correspond with major changes in lockdown measures, represented in the figure below (69). However, a significant proportion became less physically active (28.6%), and only 9% increased their physical activity, highlighting the importance of encouraging more people to exercise in the UK, especially young adults and those with lower educational attainment (69). Through further exploration in our interviews, we learnt that people tended to exercise if they considered outdoor exercise as a way to socialise with others and if they understood that it protected their mental health. Caring responsibilities and conflicting priorities were barriers to exercise (33). However, by the time the second lockdown was introduced, 40% of adults reported exercising less than in the first lockdown, with only 13% reporting that they were exercising more (70).

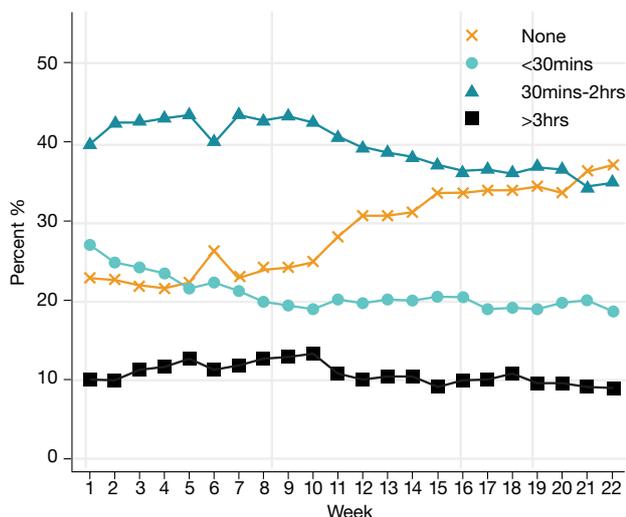
“

Walking has become a massive thing... I try to go for a walk at least every day. I've never done that before. So, we've found other ways that we can socially interact or meet up with each other, rather than just sitting in the pub.”

(Individual with a mental health condition, aged 40-44)

I got all the texts from the government telling me that I shouldn't leave the house. And I shouldn't even put the bins out or go in the garden if anyone else was going to be around. And so I did follow that really strictly. I didn't even go in the garden for about six weeks.”

(Individual living with a long-term health condition, aged 30-34)



**Descriptive changes of physical activity over 22 weeks.**  
 Source: Bu F, Bone JK, Mitchell JJ, Steptoe A, Fancourt D. Longitudinal changes in physical activity during and after the first national lockdown due to the COVID-19 pandemic in England. *Sci Rep.* 2021 Sep 2;11(1):17723.

Amongst other health behaviours, food intake did not change for most people in the first two months of lockdown, but 36% did experience changes. Middle-aged adults, those who were lonely, and those who were slightly or very overweight were more likely to eat more. Young adults and women were more likely to report changes in their eating behaviours (although these changes went in both directions), while higher educational attainment was protective against changes (71). During the second lockdown, 71% of participants reported that their food consumption had been about the same as in the first lockdown, with equal proportions (15% and 14% respectively) reporting that they had eaten less or more. For 72% of participants, the quality of their diets had stayed the same, but 17% reported a worse diet (70).

Varying demographic factors emerged when we examined who changed their alcohol consumption. Around a quarter of participants drank more while a quarter drank less during the first lockdown. Changes in both directions occurred more among young adults, echoing our research on other health behaviours which showed that this age group is less stable in behaviour. These changes were likely driven in part by drinking less with the closure of pubs and venues or drinking more in response to being negatively affected by lockdown. Women were more likely to drink more, which may have been a response to higher stress caused by the pandemic. People with higher income were more likely to increase their consumption compared to

those with low SES. Those who were stressed about their finances or catching COVID-19 or who had a diagnosed anxiety disorder also tended to drink more (72). By January 2021, 30% of study participants reported drinking less but 14% were drinking more (70).

Meanwhile, an increase in gambling was more prevalent among those who were employed, bored, frequent drinkers, and who had depressive or anxiety symptoms. Those who maintained or increased this higher frequency were more likely to be from ethnic minority groups, with lower educational attainment, and were current smokers (73). In addition to increased gambling, people who were current smokers also had a higher chance of contracting COVID-19, especially if they had lower educational attainment (74).

“ [I was] just scared and just waking up in fear every day, not being able to get out of bed because of it and just then the cycle continues: waiting as long as I could to get out of bed, just to go and get alcohol, to go back and do the same and watch crap telly.”

(Female, aged 40-45)

## Social, cultural and community engagement

The first lockdown dramatically changed how people viewed and engaged socially and with cultural and community resources. On the one hand, home confinement and venue closures removed opportunities for people to meet in person for work or leisure or connect with their neighbourhoods and cultural assets. But on the other hand, quick adaptation to online ways of working and the desire to fill more available time led to significant changes in how people viewed, appreciated, and engaged with others and their communities.

For example, we found that despite social restrictions, volunteering levels changed during the first lockdown, encompassing three types: formal volunteering in an organisation, social action that can take place at home or online, and local neighbourhood support. During the first lockdown 12% of participants had increased the amount they volunteered and by June/July 2020, 26% of this group had maintained or increased those levels. Meanwhile 23% volunteered less in April 2020 than before the pandemic, and of this group 17% continued to volunteer less by June/July (75). Apart from the usual predictors of volunteering (e.g. being female, living in a rural area, higher education qualifications, being an extrovert or more agreeable), we found less traditional predictors of volunteering emerged, such as having a mental and physical health condition and being older despite the risks posed by COVID-19 to the elderly at the time. (Previous studies show mixed results for associations between age and volunteering.) Having good social support and a larger social network predicted all types of volunteering behaviours (75). These shifting levels of volunteerism during a significant crisis period say a lot about the values and needs of the UK population and more research is needed to investigate whether volunteering served as a coping mechanism or mental health resource for many during the pandemic.



We also tracked how neighbourhood relationships changed a few months into the pandemic and a year and a half later. In July 2020, nearly a third (28%) of respondents said that there was an improvement in how willing people were to help their neighbours and this rose to 35% in September 2021. This mimics findings from past emergencies when solidarity with strangers and a desire to help those in need has also been noted (76). Similarly, the proportion of people who felt they shared similar values with their neighbours rose from 9% in July 2020 to 32% in September 2021. Neighbourhood trust, closeness, and cohesiveness also improved from 2020 to 2021, suggesting that the pandemic may have encouraged individuals to connect more with people in their local communities (77). In August 2020, as many as 40% of people wanted to increase their support for local businesses after the pandemic (78). However, a higher proportion of people (30%) felt less satisfied with their neighbourhoods than the proportion who felt more satisfied (14%). Possible reasons could relate to differences in how people engaged with others in their communities versus how they viewed their neighbourhoods (77). For example, as more people turned to their local communities as centres of engagement during the pandemic, they may have also begun to pay more attention to the quality of local amenities, green spaces, walkability, etc.

We expanded our analysis of people's relationships to also include family, friends, and colleagues between August 2020 and August 2021. On the positive side, partner or spousal relationships improved for 28% of respondents, particularly among young adults (46%). However, young adults were also most likely to report

a worsening of relationships with friends outside of the household (30%) if not a complete relationship breakdown, which was also common among people with a diagnosed mental health condition, those living with children, those with lower household income, people from ethnic minority groups, women, and people living in urban areas. A relationship breakdown of some sort had occurred for over 1 in 5 adults (22%) by August 2021 (79).

Finally, inside the home we also found changing patterns of cultural behaviour, particularly regarding arts engagement, suggesting that people drew on the arts during a challenging and unpredictable time. Between March and August 2020, nearly a third of participants increased their engagement with home-based arts activities after the start of lockdown, although they typically then engaged less again as restrictions eased (80). We examined both active participation in the arts and receptive non-participatory engagement, and activities that were most common were digital arts, musical engagement, crafts, and reading for pleasure (34). Normal predictors of engagement also changed. For instance, people with mental health conditions or a disability and those with lower household income were more likely to increase their engagement. Meanwhile, we found no association in longitudinal patterns of engagement with those living in remote areas who had traditionally been more engaged, suggesting that for a period of time, home confinement enabled or encouraged more engagement for certain groups (80). For example, in our qualitative interviews, we found that these enablers included having more free time, a change to normal routines, and the availability of arts resources online (81). However, at the same time, these could also be barriers for those who found digital arts formats inaccessible or who preferred to engage in person (81).

“

**The first thing I did when I went onto furlough, because you didn't know if you were going to be on for two, three, four months, so, what am I going to do? Get a new guitar. Get a Gibson Explorer. Bang. First thing, right? Got it, I came in, and I was off.”**

(Keyworker)

**There's a lot of free replays, National Theatre, Northern Ballet, South Bank Centre, Berlin Philharmonic, you name it... but I don't find it satisfactory looking on my laptop. I wish I could get it onto my big screen TV but I don't have the technical expertise to get the link which I think you could do to move it from your laptop to a TV.”**

(Adult with long-term condition)





# Long Covid

A number of factors shape the mental health of people who have not fully recovered from COVID-19. Our qualitative work revealed that their lives can be severely disrupted and many are unable to return to the activities they used to enjoy.

Fatigue and brain fog can make it difficult for individuals to do chores in the home or maintain personal care. Many have also felt unheard or not believed by friends, family, and the healthcare sector. There has been very little understanding of their conditions as well as few options for treatment or plans for a way forward. Our research showed that this has caused loss of confidence, uncertainty about the future, fear of employment challenges, and changes to self-identity (82).

“

There's that worrying that people just think you're making it up. I think it's just that anxiety thing, for me that I don't want to be an anxious person. And I think if I sense that I'm talking to a doctor, or sometimes they've said it outright, you're an anxious person, and I think oh great they just think I'm anxious.”

(Female, aged 35-39)

Our quantitative work also revealed that some of the psychological symptoms of long Covid may have roots in biological pathways. Symptoms of depression and anxiety emerge almost immediately after infection in both 'short' and long Covid sufferers, but interestingly, we found that those who developed long Covid had much higher initial increases in depressive symptoms than those with short Covid (83). Depressive symptoms are interconnected with inflammatory immune responses, which have been shown to rise following infection with COVID-19. This supports wider research suggesting that there may be an immediate inflammatory response caused by the virus in some patients that increases the risk of them going on to experience long Covid (84). Additionally, we found that patients with long Covid had heightened depressive symptoms in the months following infection compared to short Covid patients and that these symptoms can last as long as two years after initial infection. Long Covid patients also had very little improvement in initial anxiety symptoms experienced when they first contracted the virus, leading to widening differences in experiences compared to 'short' Covid patients, whose anxiety levels returned to normal within four months (83).

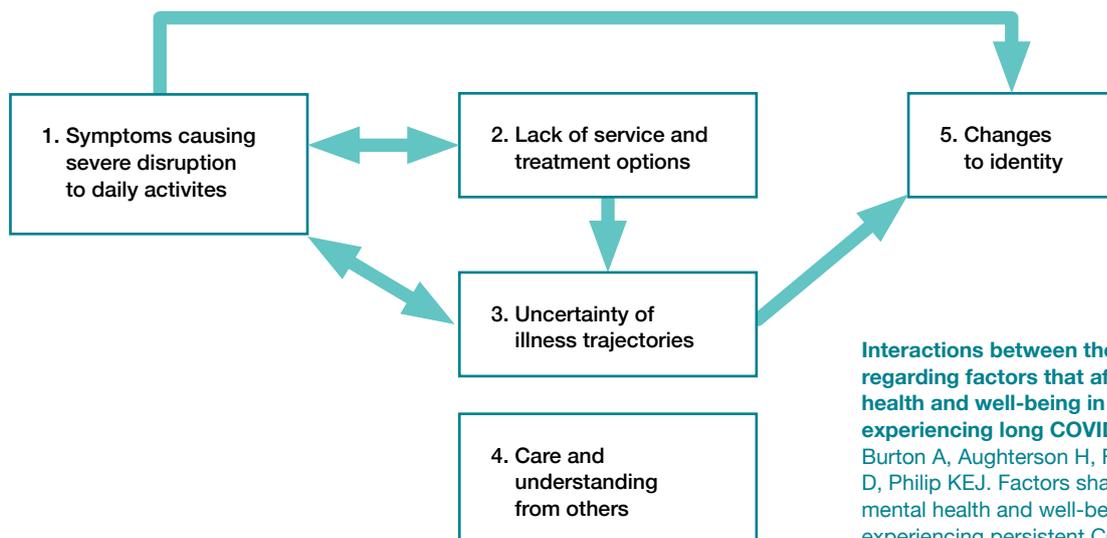
“

A lot of people don't understand long COVID, so when you explain to them, I'm still not feeling right six months down the line, a lot of people have said, 'I think you're just worrying too much.' That's what I think my parents come back with. They keep saying to me, 'You worry too much, there's nothing wrong with you.'”

(Male, aged 45-49)

We also identified pre-infection factors that are associated with an increased chance that individuals develop long Covid. Those with greater worries before catching COVID-19 were at higher risk and they were also more likely to develop cognition difficulties following COVID-19 infection (85). People with poorer sleep quality were also more likely to develop long Covid (86). This suggests that stress is linked to long Covid, potentially acting as one driver of the initial

heightened inflammatory response seen in long Covid, although it's not yet clear whether poor sleep and worries are symptoms of another factor at play (85) (86). However, similar to 'short' Covid, people from lower SES backgrounds, those living in crowded accommodation or with children, or those who had physical or mental ailments were much more likely to develop long Covid, demonstrating a link to deprivation that may also be associated with sleep quality, worries and stress (85) (86).



**Interactions between themes regarding factors that affect mental health and well-being in people experiencing long COVID.** Source: Burton A, Aughterson H, Fancourt D, Philip KEJ. Factors shaping the mental health and well-being of people experiencing persistent COVID-19 symptoms or 'long COVID': qualitative study. *BJPsych Open*. 2022 Mar 21;8(2):e72.

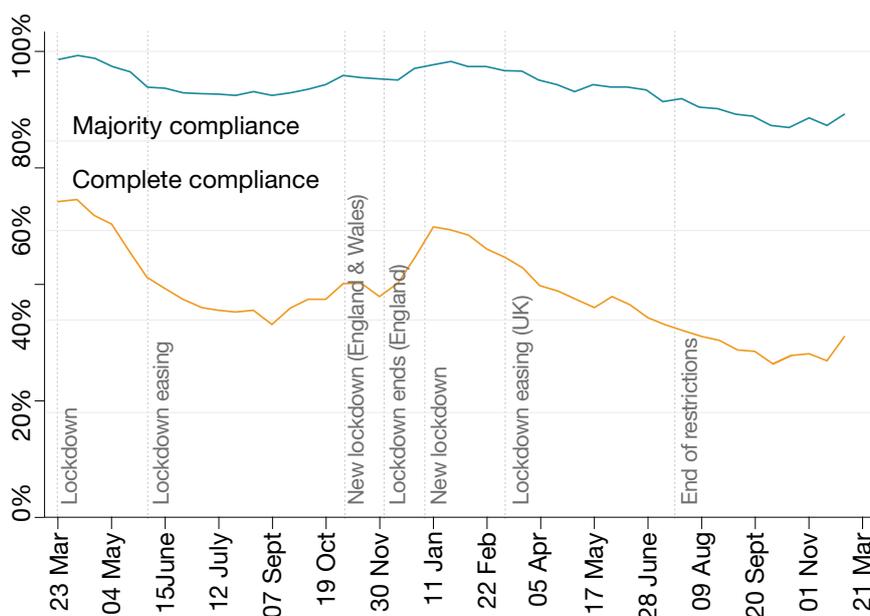


# Compliance and Government Trust

Throughout the pandemic, contrary to initial policy concerns when lockdowns were first discussed, our data showed that the UK population had very high levels of compliance with government rules and guidelines. “Majority compliance” with rules (i.e. largely or completely following them) was over 97% during the first lockdown and remained above 80% throughout the pandemic until rules were lifted.

Meanwhile “complete compliance” was lower but fluctuated with restrictions, notably improving when stricter measures were brought in as the urgency and danger of the situation was reiterated. This solidarity and cooperation in emergencies and disasters has been documented repeatedly in past studies and was shown to be true in a pandemic situation too (87). There were also initial concerns at a policy level that many people would suffer “behavioural fatigue” and find it increasingly difficult to maintain adherence. However, behavioural scientists disagreed that “behavioural fatigue” was a viable scientific concept (88), and trajectories in our data show that only a minority of people (1 in 7) had decreasing levels of compliance into the second wave (89). Further, many of these individuals increased their compliance again later on, suggesting that their non-compliance was a “reset” rather than a complete break with the rules (90).

Compliance with guidelines



Fancourt D, Bu F, Mak HW, Paul E, Steptoe A. Covid-19 Social Study. University College London; 2022.



## Facilitators and barriers to compliance

We asked participants in our free-text survey questions about why they were so willing to comply. Overall, the leading motivators to complying were prosocial: wanting to protect one's family and friends and others who were vulnerable to COVID-19 as well as wanting to reduce the burden on the NHS and its staff (90). Participants also spoke about feeling a sense of social responsibility, civic duty, and "common sense" in following the rules, and a belief that if they played their part, life would return to normal sooner (90). People also reported feeling motivated to comply by believing that it was the "norm" and finding a sense of collective social identity in making their own sacrifices to support pandemic efforts. Compliance did not just rely on individual motivation, however. Tangible facilitators that increased people's capacity and opportunity to comply included the availability of hand sanitisers (e.g. in shops), reminders to wash hands and wear masks in public places, opportunities to work from home, and the availability of support bubbles (90).

However, a number of factors also acted as barriers to compliance with rules. In our survey, participants reported that social distancing was the most difficult measure to follow (91), and this was echoed in our free-text questions, with participants explaining that social distancing was challenging in certain public places such as supermarkets, workplaces, and schools (90). The comprehensibility of guidelines was also a substantial barrier. For example, during the second lockdown in November 2020, only 1 in 5 people said they fully understood the rules (92). Meanwhile complete compliance was substantially lower compared to the first lockdown (46-49% versus 63-69%) (93). Then after a wave of COVID-19 cases in the winter of 2021, government restrictions were again unclear to many. Only 4 in 10 people said they understood the rules fully or near fully and 1 in 10 said they didn't understand them at all. Compliance was at an all-time low, with complete compliance decreasing to just 1 in 3 people, even though majority compliance remained above 80% (94). Geographical variation in rules, especially for people living near borders, caused further confusion and difficulty (90).



**It infuriates me as somebody who works in education, the style of communication that we received from the government. Often messages that are full of difficult vocabulary, idioms, colloquialisms, that I suspect quite a lot of first-language speakers of English wouldn't always follow, let alone speakers of other languages."**

**(Female, aged 34–39)**

People also reported that reading media stories highlighting examples of rule-breaking so that they appeared the 'norm' rather than the exception acted as a barrier to complying (90). Perceived norms are known powerful drivers of compliance behaviours (95). Indeed, by the end of 2020, 92% of participants felt their compliance was higher than the average, and they incorrectly believed overall compliance to be lower than it actually was (93).

Given the impact of restrictions on wellbeing and the recent evidence that policy stringency was linked with mental health across countries (7), we looked at whether such factors created barriers to compliance. While some participants did talk about the emotional toll of complying (90) and the need for emotional support from others which made it difficult to comply (9), worries, social isolation and loneliness were not strongly related to compliance (96). However, general happiness measured through life satisfaction, mood, and feeling that things in life were worthwhile did predict compliance, demonstrating the importance of trying to maintain positive public mental health during a pandemic (97).

Overall, there were a number of demographic predictors of compliance. But one of our most significant discoveries was that demographic predictors of compliance actually changed over time (98). We tracked demographic factors, personality traits, motivations, living environments, and SES between April and August 2020 and found that some had larger influences on compliance by later months. For example, high compliance was strongly related to older age, and these individuals tended to be compliant across all measures (mask wearing, hand washing, indoor household mixing, outdoor household mixing, social distancing, etc.) rather than compliant with only one or two specific restrictions (89). These age-related differences grew considerably as the pandemic continued,



with younger age becoming an increasingly large predictor of lower compliance (98). In our qualitative work, we found that this was partly due to increasing peer pressure, young adults' need to access emotional support, and their perceived low risk of severe illness from COVID-19 (9).

We also discovered an interesting changing pattern over time with regards to socio-economic status. The most privileged in society (people who were wealthier, better educated and lived in larger homes) were more compliant during the first lockdown as their privilege supported their ability to follow the rules. For example, people from higher socio-economic backgrounds were more likely to be able to work from home, had better technology and Wi-Fi set-ups to engage in online activities and virtual meetings with friends and family, and had access to a strong infrastructure -- from social support networks to scheduled food deliveries. All of these factors facilitated compliance with the rules (9) (90). People also found it easy to socially distance if they had a garden or access to space and nature, while others living in cities or in crowded conditions found it more difficult to adhere to guidelines (9).



**I found it really difficult [to socially distance] at the start because we live two miles from the city centre, so it's a really built-up area. The pavements are very narrow..."**

**(Female, aged 30-34)**

However, over time, people from higher socio-economic backgrounds in fact began to comply less with the rules than others. Notably, we found that better educated people actually professed to understanding the rules they were supposed to be following less, suggesting that they did not try to follow them as closely as other groups (57). This behaviour may have been driven by a greater sense of privilege leading to a belief that the rules did not fully apply to them, or by a belief that they could make their own logical judgements on safety, or a lack of financial fear over fines (98).

Meanwhile the impact of gender and ethnicity on compliance did not change much (with men less likely to comply but little difference based on ethnicity), but associations of lower compliance with living with a child and living in overcrowded accommodation did become even more prominent (98). Among traits, having a predisposition to risk-taking had the strongest increase in association with lower compliance, almost doubling 3-4 months into the pandemic, and conscientiousness, openness, extraversion, and lower empathy also increased in association with lower compliance. Our results help to explain why previous studies have found varying determinants of compliance. Essentially predictors are context-specific and have different "situational strengths" over time. Behaviours are less determined by personal characteristics in contexts where normative behaviour is clearly prescribed (such as lockdowns) (99). But over time, self-control can deplete and boredom can increase, meaning that individuals' abilities to follow restrictive rules can decrease and individual characteristics can become more potent in determining compliance (99). In terms of public health messaging, this is crucial for understanding what motivated particular people to comply with restrictions at different stages of the pandemic (98).

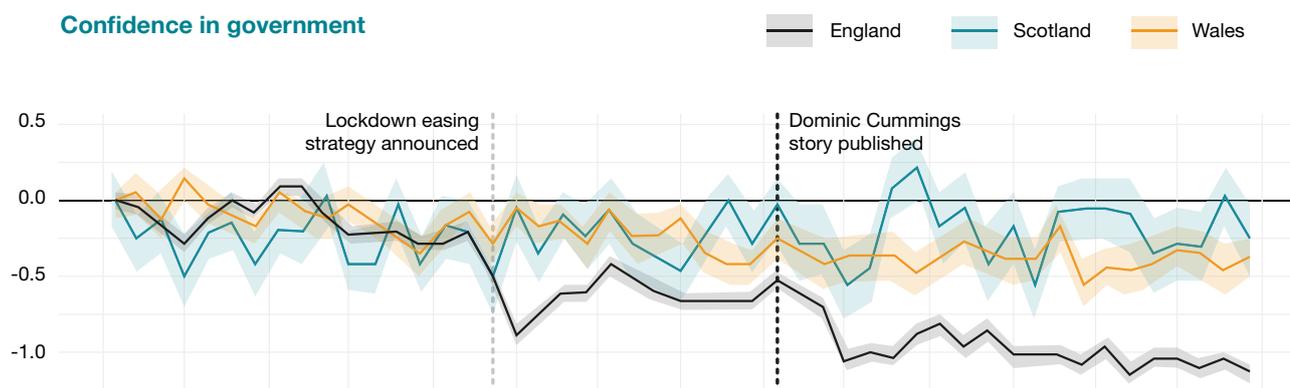


## Attitudes to government

We also identified important patterns in attitudes towards government that had implications for compliance. Between May and June 2020, we noticed in England that confidence in the government to handle the pandemic decreased soon after it was reported in the media in May 2020 that Dominic Cummings, a senior aide to the British prime minister, had broken lockdown rules. This “Cummings Effect” was unique to England, as Scotland and Wales experienced no similar

decrease. In further analysis, we subsequently revealed that there was a direct relationship between public trust in the government and compliance with COVID-19 rules and guidelines (9) (91) (96). Indeed, trust was a bigger predictor of compliance than mental health, belief in the health service or numerous other factors (96). This highlighted how the behaviour of government officials could have an effect on efforts to control the pandemic.

### Confidence in government



**Daily average response (+95% confidence intervals) to questions on confidence in each government relative to country-specific average response on 24 April 2020.** Grey dotted line at 10 May indicates the date when the UK Government planned to ease lockdown. Dashed line at 22 May indicates the date when the *Daily Mirror* and *Guardian* newspapers released information on Dominic Cummings’ journey to Country Durham. Source: Fancourt D, Steptoe A, Wright L. The Cummings effect: politics, trust, and behaviours during the COVID-19 pandemic. *Lancet* 2020; published online August 6. [http://dx.doi.org/10.1016/S0140-6736\(20\)31690-1](http://dx.doi.org/10.1016/S0140-6736(20)31690-1)





Our qualitative research helped explain why this ‘leader exceptionalism’ was so dangerous, showing that once the precedence of following the rules strictly had not just been broken but defended as being an acceptable ‘interpretation’ of the rules, it eroded the sense of collective citizenship that had been helping to maintain high levels of compliance. Additionally, the defence of Cummings’ actions combined with the recent decisions to relax strict lockdown rules undermined the message that the virus was severe enough to warrant such extreme levels of personal sacrifice, and individuals were not needed to ‘play their part’. In the absence of this sense of ‘we’ and a common cause to identify with, people were discentivised from following the rules, we found, echoing findings from past research on conformity (100). The ‘enemy’ changed from being the virus itself to being the measures designed to curb the virus.



**We decided that... we are going to the pub to meet, that we are going to see our children and grandchildren. If it's all right for one of the chief advisors of the government then it must be okay.”**

(Male, aged 60–64)

The actions of Dominic Cummings were not the only thing to erode confidence in the government. To further delve into reasons for low confidence, we asked participants what was bothering them during the pandemic, and from 4,000 responses we identified 11 topics related to the government. Concerns included fear that COVID-19 policy decisions were based on political issues rather than science; that rules were inconsistent or were difficult to understand; and that the government had no plan for the future. For example, people commented on the lack of transparency for policy decisions; perceived corruption or cronyism in the government; and a lack of government support for people’s financial situations (13). Confidence in the English government remained low throughout the pandemic, never recovering to pre-pandemic levels (18). The importance of government behaviour, public messaging, and transparency for controlling the pandemic was apparent throughout our analyses. We found similar results when pooling our data with other countries. Compliance

behaviour in the UK, Austria, and Germany was also associated with political trust (101).



**Even though I have followed all their guidelines, I still find myself questioning everything they say and do.”**

(Female, retired, aged 60–65)

Taken together, these findings echo theories developed in previous work on the management of crowds during mass emergencies and disasters. Trust is crucial if people are to accept and cooperate with the rules they are given by officials, but trust has to be mutual (102). Fairness is also vital, as the perception that reasons for rules are open and transparent and that everyone shares in the same identity of being bound by the same rules helps to promote a sense of ‘procedural justice’ (103). People also need to have the opportunity to do what is asked of them and be capable of following rules, and not be hampered by financial or logistical barriers to compliance (104). Across the pandemic, politicians’ own behaviours suggested a lack of respect towards the public and precipitated a loss of reciprocal trust from the public and weakening of a sense of procedural justice. Individuals also found themselves in situations where they felt unable to comply with the rules but unsupported in finding solutions. So as more stories of rule-breaking from senior figures along with increasing confusion and perceived unfairness began to abound, bending the rules inevitably became more common, despite majority compliance remaining high throughout the pandemic.

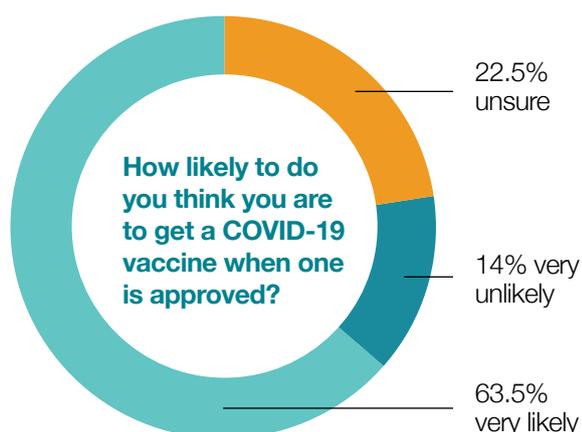
# Attitudes towards Vaccination

The arrival of COVID-19 vaccines signalled the start of controlling the pandemic through measures other than isolation and social distancing. However, there were many behavioural unknowns during the rollout, such as how willing people would be to receive the vaccination, or if they did, whether this would reduce compliance with social restrictions that were still in place as people began to feel safer (105).

We began examining levels of hesitancy to identify factors associated with the potential for low uptake, measuring participants' mistrust of vaccine benefit; their worries about unforeseen future effects; concerns about commercial profiteering; their preference for natural immunity; and their self-reported likelihood of getting a COVID-19 vaccine when one was available.

Alarming, between September and October 2020, as data on the first vaccines were emerging, 16% of participants had high levels of mistrust in vaccines, 14% were unwilling to get vaccinated for COVID-19 when it became available, and 23% were unsure (106). Specifically, our data in September 2020 showed that 38% of study participants believed that natural immunity was better than immunity from vaccines, 53% were worried about unforeseen side-effects, 25% believed that vaccines were used for commercial profiteering, and 15% felt that vaccines did not work (107).

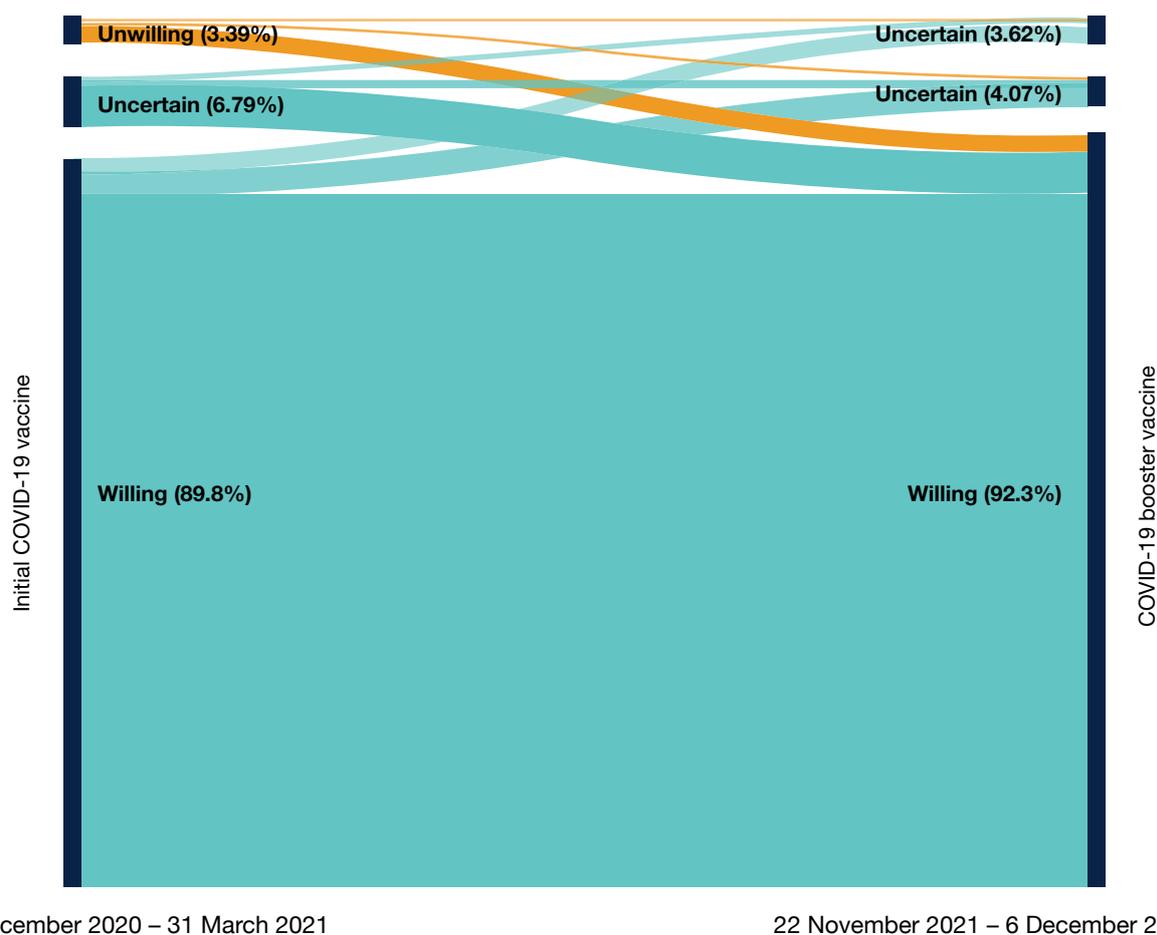
Those most likely to belong to groups uncertain or unwilling to get vaccinated were people from ethnic minority groups and those from lower socio-economic backgrounds, which is greatly concerning given that these groups were also at a higher risk of contracting and dying from COVID-19 (106). Specifically, amongst people from ethnic minority groups who refused the vaccine between December 2020 and 14 June 2021, we found that experiences of racial/ethnic discrimination may have been a factor. Nearly 1 in 10 (6.69%) who had refused a COVID-19 vaccine had experienced racial/ethnic discrimination in a medical setting since the start of the pandemic and they had experienced twice as many incidents of racial/ethnic discrimination as those who had accepted the vaccine (108). Discrimination may have led to mistrust of healthcare settings and ultimately to vaccine refusal. Our statistical analyses showed



**Intent to vaccinate against COVID-19 in the weighted sample (N = 32,361).** Source: Paul E, Steptoe A, Fancourt D. Attitudes towards vaccines and intention to vaccinate against COVID-19: Implications for public health communications. *The Lancet Regional Health – Europe* [Internet]. 2021 Feb 1 [cited 2022 Apr 25];1. Available from: [https://www.thelancet.com/journals/lanep/article/PIIS2666-7762\(20\)30012-0/fulltext#%20](https://www.thelancet.com/journals/lanep/article/PIIS2666-7762(20)30012-0/fulltext#%20)

that the effect of racial/ethnic discrimination on vaccine refusal was mediated by low trust in the health system (108).

In exploring other groups who were more likely to be hesitant or unwilling to be vaccinated early on, those who had low compliance with restrictions in general, who were female, living with children, and who had not received the flu vaccine the year previously were more likely to not want a vaccine (106). In addition, smokers were particularly more likely to be doubtful of the benefits of vaccines, as well as uncertain or unwilling to receive a COVID-19 vaccine, which, given their higher likelihood of coming from lower SES backgrounds where health inequalities already exist, was again concerning (109).



December 2020 – 31 March 2021

22 November 2021 – 6 December 2021

**Changes in willingness to receive a COVID-19 vaccine (2 December 2020 to 31 March) and a COVID-19 booster vaccine (22 November to 6 December 2021) (weighted, N = 22,139).**



In late 2021 we conducted similar analyses of our survey data, again examining who would be distrustful of the booster vaccine among fully vaccinated adults. Many people who had previously been uncertain about being vaccinated had in fact received a vaccine. But as previously shown, people who had lower levels of education and lower socio-economic position were again most likely to be hesitant about a booster.

Underlying this was our additional finding that if individuals had been uncertain or unwilling to accept the first vaccine, they had five times the risk of being uncertain or unwilling to accept the booster (110). As of February 2022, 77% of our sample said that they would be highly likely to get a fourth booster vaccination while 11% reported that they were very unlikely to do so (111).

### Additional analyses

**This report covers our findings and impact work up to June 2022. But our work is not over. We are currently working on further analyses including qualitative research on the experiences of young carers, those who have physical disabilities, people who are homeless, suffer domestic abuse, and use alcohol. Our quantitative work is also continuing, with a focus on those who faced discrimination during the pandemic, as well as relationship breakdown, loss, and conflict. We encourage other researchers to explore further topics. A fully anonymised version of the dataset will be made available for use by other scientists in early 2023 to continue the learnings from the study.**





# Part 2

## Impact and Engagement



COVID-19 Social **Study**

# Government and Policy Impact

The COVID-19 Social Study has informed policy across government. For two years, the study team prepared bespoke weekly and monthly data reports for the Cabinet Office, multiple government departments, NHS England, and Public Health England.

Examples of the impact of the study are wide-ranging. For example, the Department of Health and Social Care (DHSC) used our data to continually monitor the effects of the pandemic and changes in public behaviour and response. The DHSC was then able to predict and monitor how demand for health services would increase or decrease. The DHSC also used our data to develop a ministerial mental health recovery dashboard, providing continuous updates on psychological experiences in the UK.

In addition, the Mental Health Intelligence Network within Public Health England (now The Office for Health Improvement and Disparities (OHID)) used the COVID-19 Social Study to report to government departments and the NHS on the effects of the pandemic on population mental health. As described by the OHID, the data was a mainstay of the work, both for presenting weekly data and for conducting nuanced and robust assessments. The OHID also drew heavily on our data to produce spotlight reports to determine mental health and wellbeing by age, gender, ethnicity, pre-existing mental health conditions, employment and income, parents and carers, and geographical location. As of Spring 2022, OHID also used our data for the Wider Impacts of COVID-19 on Health monitoring tool, and the Mental Health Intelligence Network continued to use our data to inform future planning.

“

The COVID-19 Social Study was the single most important source of data for the social sciences during the pandemic... I applaud Dr Fancourt and the team for doing everyone such an extraordinary service.”

Professor Jan-Emmanuel De Neve,  
University of Oxford

**In a time of fast-changing policies and among an overwhelming sea of analysis, opinion and debate, the COVID-19 Social Study shone out as an invaluable source of reliable, data-informed information.”**

Baroness Deborah Bull, House of Lords

We have also contributed our findings to over a dozen All-Party Parliamentary Group meetings and debates in the Houses of Commons and Lords. Our team members gave talks to the Cabinet Office, the government's Tackling Loneliness Network, the Covid Commission, the APPG for Loneliness, the APPG for Compassionate Politics, the ONS Covid Response Unit, and several parliamentary committees. Dr Fancourt also contributed to the Government Office for Science Plenary Task Force led by Sir Patrick Vallance.

“

**This survey has been incredibly valuable in helping us understand the impact of the pandemic. It has been brilliantly conducted and extremely well analysed.”**

Baron Richard Layard, House of Lords &  
London School of Economics



The UCL study helped us to understand the state of loneliness during lockdown in a timely way when many other surveys had either paused or were not reporting quickly enough, allowing us to see the real-world impact of some of the measures that were being imposed in order to control the spread of infection.”

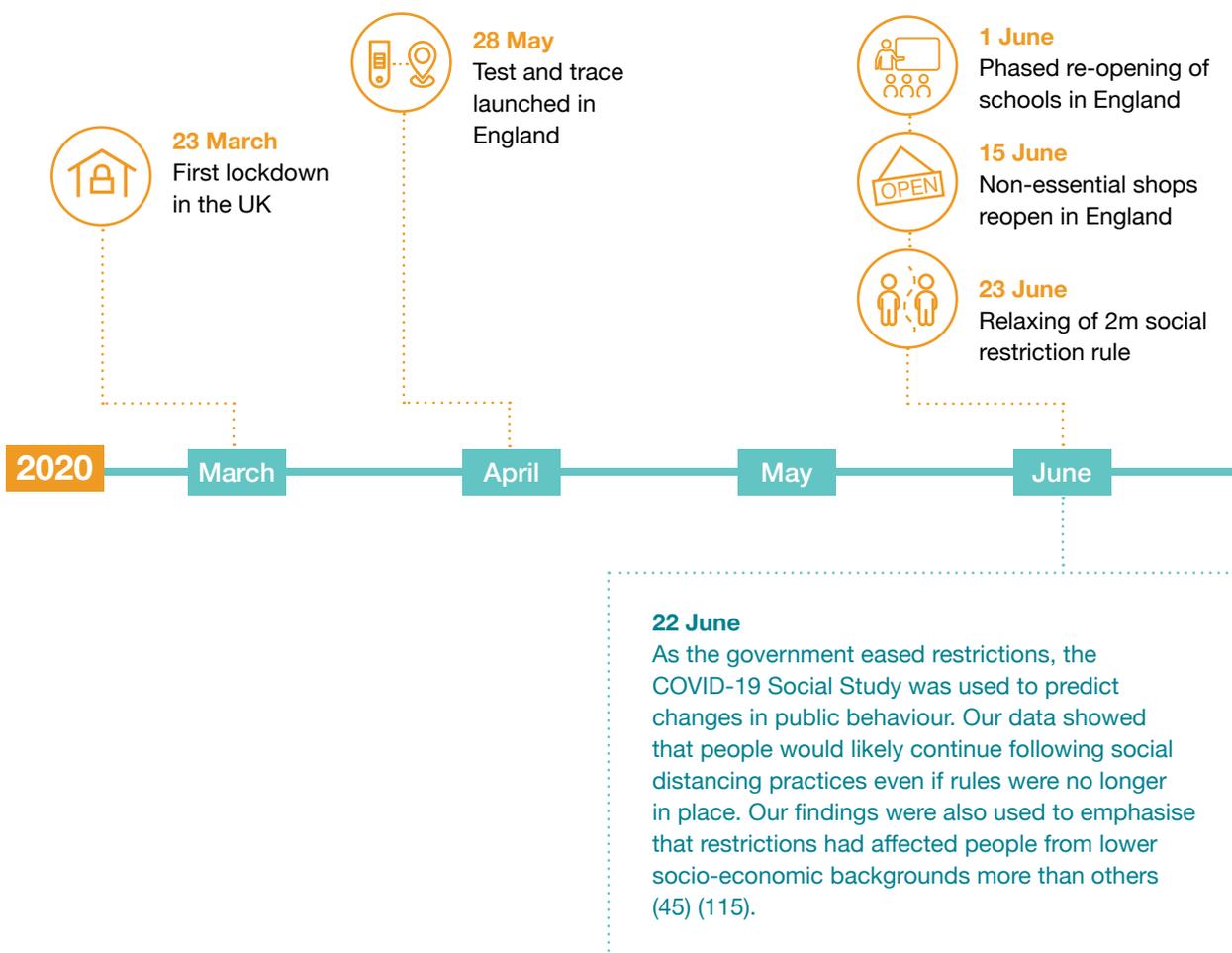
Professor Jan-Emmanuel De Neve, University of Oxford

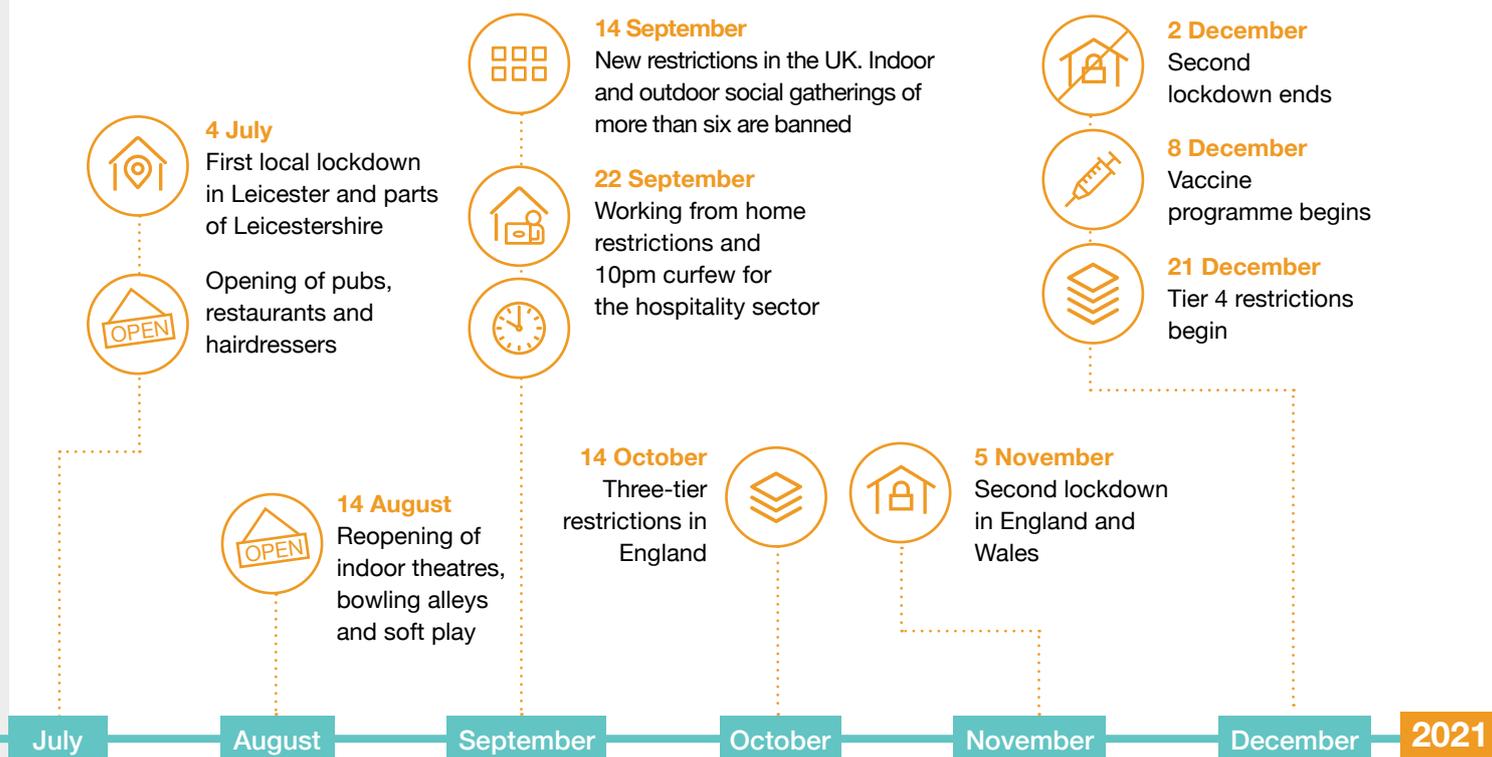
One of our closest collaborations was with the Scientific Advisory Group for Emergencies (SAGE), which provides scientific and technical advice to the government during national crises. SAGE relied on

our data during crucial times in the pandemic when the government was faced with decisions regarding how and when social restrictions should be enforced, the content of public health messaging, and the types of economic support needed for individuals.

SAGE also leaned heavily on one of our most important findings – the “Cumplings Effect” – on how individual politicians’ behaviour could impact the outcome of controlling the pandemic. Our paper (published in *The Lancet*) was referred to frequently, especially when new control policies were being introduced. For example, in late 2021 when Plan B measures were being considered, SAGE used our results to emphasise the importance of the legitimacy of policymakers for public trust and compliance (112) (113) (114).

### Promoting data-informed policy decisions: Examples of our work with SAGE in 2020



**30 July**

When the government was considering what might prevent people from adhering to local lockdowns rather than a nationwide lockdown, we provided evidence of how support measures from the government had been essential for reducing challenges caused by the pandemic (45) (116).

**22 October**

As England and Wales headed towards a second lockdown, the government sought advice on how to maintain long-term adherence to infection control measures. More positive approaches were advised; ones that engaged the public and did not pressure or blame. As an example, our results showed that even though compliance among young adults was lower than other age groups, young adults were still making an effort to follow specific guidelines (119). However, their confidence in the government and their mental health and wellbeing were also lower than other age groups (120).

**17 December**

In response to the question of how the vaccination rollout would affect guideline compliance, SAGE again cited our study to emphasise the importance of being transparent with the public about any uncertainties it faced (121) (123).

**21 August**

Towards the end of the summer, when the DCMS was considering opening certain events to the public, we supplied our data on how the majority of people had complied with COVID-19 guidelines, and that this only decreased as restrictions eased. These findings also fed into discussions about whether mass testing should be enforced to help the government make projections about adherence moving forward (117) (118) (54).

**11 November**

When the government was considering whether reducing the duration of quarantine would improve adherence, our data was cited as a reminder that people are more likely to adhere to guidelines when they are confident in the government. Therefore changes in restrictions needed to be explained transparently and in a way that showed scientific competence (121) (122).

(Timeline source: Institute for Government. Further examples of the policy impact of the COVID-19 Social Study from beyond 2020 are available on the SAGE website.)

# Community Impact

**We made it a priority early in the pandemic to share our research beyond the government to third sector organisations and to carry out bespoke data analyses to inform their strategies.**

To help us disseminate findings, we leveraged the substantial membership of our ESRC-funded [MARCH Network](#), a 2000-member mental health network focused on social, cultural, and community engagement. As a result, our research was used by over 400 organisations to support their work to help people adversely affected by the pandemic.

For example, we were the only regular source of directly-reported information on self-harm in the first year of the pandemic, serving as a resource for the National Suicide Prevention Alliance and the government's National Suicide Prevention Strategy Advisory Group. By highlighting which groups were most in need, we were also able to inform Samaritans' services, outlining how people's use of formal and informal mental health support services fluctuated during the pandemic and identifying which demographic groups were most likely to use their services.

“

**During the pandemic the COVID-19 Social Study was one of the most important sources of data on mental health, providing invaluable, up-to-date evidence on self-harm at a time of widespread concern that suicide rates would rise.”**

Professor Louis Appleby, Lead – National Suicide Prevention Strategy for England

Thrive LDN, a movement to improve the wellbeing of Londoners, also relied on our study to know when to increase mental health support for the public. Thrive LDN used our results to create new communications toolkits, campaigns, and community engagement with groups disproportionately at risk of poor outcomes.

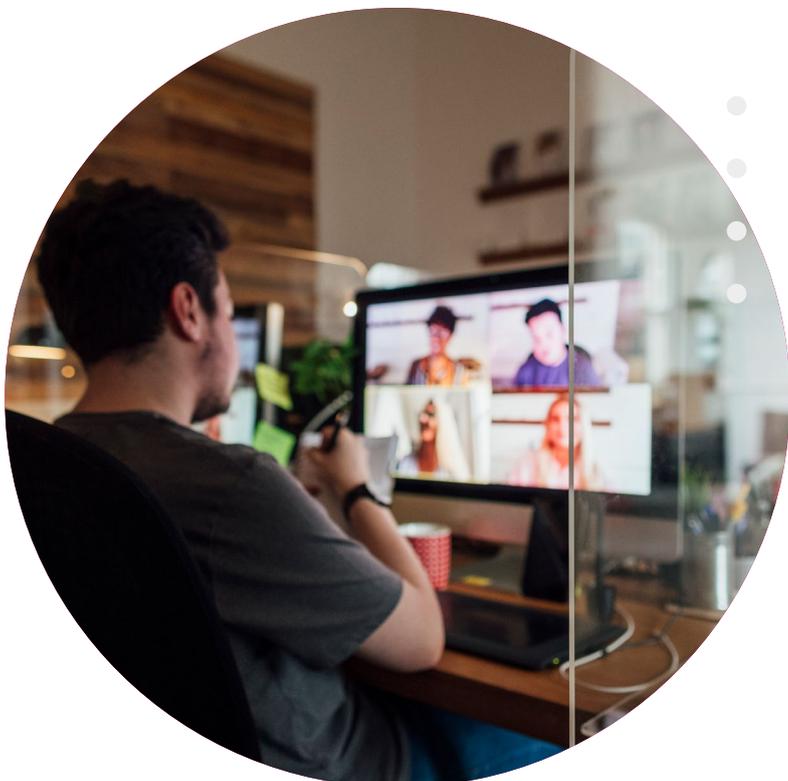
**The COVID-19 Social Study has been a consistent and reliable source of data and intelligence throughout the pandemic, informing and strengthening Thrive LDN's response to COVID-19 and influencing the development of a regional public mental health research and community insights function for London.”**

Dan Barrett, Director, Thrive LDN

National charity Covid Aid relied on our data to support individuals affected by COVID-19 across the UK.

**We massively appreciated the COVID-19 Social Study, considering it a trusted source of data and intelligence since the beginnings of our charity. We have used the results to produce courses and advice articles, host expert Q&As, and support the mental health and wellbeing of people affected by COVID-19 and long Covid across the UK.”**

Michael MacLennan, Founder and Chief Executive, Covid Aid



Our research had a tangible impact on the roll-out of the COVID-19 vaccination programme, helping to increase vaccination rates especially amongst marginalised communities. For example, using our data, the Red Cross was able to construct a map of vaccine hesitancy at the local authority level, produce an insights pack on vaccine hesitancy to share across the voluntary sector, and evaluate the effectiveness of the programme to ensure the correct areas were being targeted. Additionally, the London Mayor was very receptive to the recommendations of the Assembly Health Committee, which used our findings to develop strategic guidelines on how to debunk vaccine misinformation.



**The COVID-19 Social Study was an invaluable resource in helping the British Red Cross deliver and evaluate its Vaccine Voices programme to improve vaccine uptake.”**

**Mike Page, Data Scientist, Red Cross**

We also supported community impact by working with local councils and local authorities. For example, Greater London Authority used our data to assess the socio-economic impact of COVID-19, citing our work in its regular research briefings during 2020 and 2021. Kent County Council used the study to produce a report on changing attitudes and behaviour during COVID-19 and to inform a public health campaign on alcohol use during the pandemic. Oldham Council was influenced by the study's findings to argue for the need for more support for younger people in Greater Manchester and to develop an agenda for how to 'build back better' after the pandemic to reduce local poverty.





## Public Engagement

We focused on disseminating our findings through as many channels as possible to keep the public informed with reliable scientific data.

Our team members have presented findings extensively across the media, to date producing over 50 press releases with UCL's media team, which led to over 1,000 newspaper articles. We've discussed our results in over 100 television and radio interviews for outlets such as the BBC, ITV, LBC, and Sky. The study has featured in a Channel 4 Despatches documentary, and team members have written for the *BMJ*, *Conversation*, UKRI's Campaign for Social Sciences, and the *Guardian*. A key feature of the study was the speed with which these outputs occurred, with the first report, press release and media articles published just two weeks after the study began.



The COVID-19 Social Study has become the UK's barometer on how we feel about all things COVID: vaccines, wellbeing, confidence in our leaders, financial security, social distancing and returning to work... As a single campaign, no other UCL study has ever received this amount of media coverage, highlighting its value as an important piece of public health research."

Henry Kilworth, Deputy Head of Media Relations, UCL





One of the most rewarding aspects of the COVID-19 Social Study is the commitment and investment of our study participants, who number more than 70,000 people across the UK. Our retention rates have been unprecedentedly high, largely due to our extensive ongoing public engagement programme, including personal messages to study participants at each data collection point, monthly newsletters informing them of the impact their involvement was having, and animation videos explaining our findings. We've also demonstrated our own investment in the study, adding personal touches such as introducing members of our team to participants by including their profiles in newsletters, and we created a process whereby study participants could propose topics they felt we should focus on.

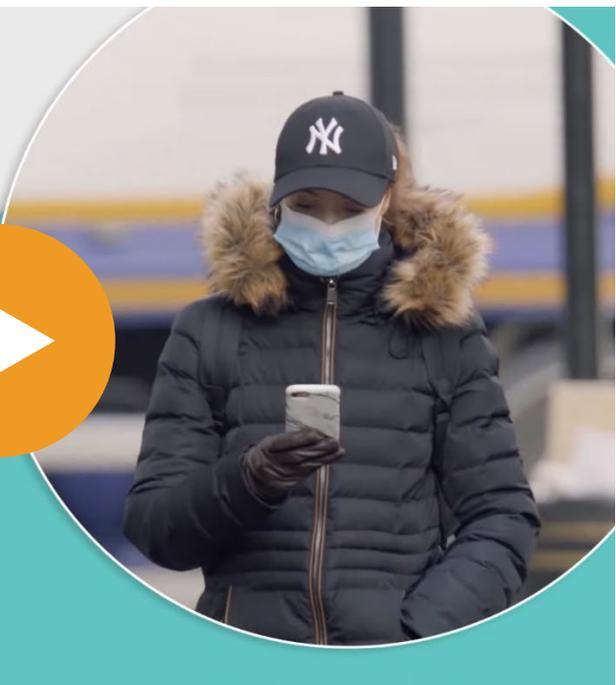
We received extensive feedback from participants explaining why they felt it was so important to continue contributing to the COVID-19 Social Study. Their main reasons included: their belief in the study, its validity and scientific rigour; feeling a sense of civic duty and contributing to health policy; the importance of helping in some way during the pandemic; recognising that some people were struggling more than others and that the study might help solve this; the desire to stay

informed about COVID-19 to protect themselves and their loved ones; their use of the study as a “barometer” for monitoring their own mental health; an increasing appreciation for mental health and wellbeing in general; and gratitude that researchers in the UK cared about how they were doing throughout the pandemic.



**85% of participants felt that taking part in the COVID-19 Social Study was a worthwhile experience.**

 COVID-19 Social**Study**





## Participant feedback March 2022

“

One of the few studies that looks beyond the biomedical aspects of the pandemic and explores the things that actually matter in my life.”

“

It has made me realise how fortunate I have been and understand that other answers would be quite different from my own.”

“

My ideas and experiences may help to shape policy.”

“

It has changed my outlook on life... for example... I don't worry about the pile of ironing. I'm more likely to try new things, get a tattoo, learn an instrument. Life is too short to worry.”

“

It's been good to be part of something far bigger than myself.”

“

It has reinforced my belief in good science.”

“

Politicians make decisions which affect us all and we need to have a way to communicate back on the effect this is having on our lives.”

“

It helped me take stock of my own mental health and reminded me to take care of myself.”

“

I would like to say a BIG thank you. At my lowest, the regular surveys helped me to stay connected.”

“

It's nice that someone kept emailing to check on me, even if it was just for the survey.”

“

I would do this again in a heartbeat.”



“

Sometimes I'd be having a really difficult time and would end up looking forward to filling out the questionnaire because it felt like... somebody cared.”

“

One of the few constants throughout the pandemic.”

“

We now think more deeply about how we can give to the less advantaged and we thank you for that.”

“

The down to earth continuous support from your team. Exuding the quiet confidence we used to get from family GPs. Felt useful and supported by you all.”

“

It made me feel useful, when so many others are going through worse experiences, that I could possibly help them in the future by taking part.”

“

Having an official body contacting me directly to ask how I am, has made me feel valued throughout the pandemic.”

“

It's helped me recognise the traumas I've been through and understand why it's impacted my mental health.”

“

It has helped me feel less alone.”

“

Made me realise there are more vulnerable people out there in the world than I realised.”

“

I believe real change is made from research opportunities such as this and commend the researchers who spend the time and stress getting such things to fruition.”

“

It has helped me feel that knowledgeable people are doing something positive to help understand the pandemic.”

“

Contributing to important work that will hopefully lead to improved lives for others.”

“

It was thought-provoking, meaningful, socially responsible and I'm proud to have participated.”



# Academic Collaborations

In addition to our policy and public engagement, we've collaborated widely with other academic teams also working to track the impact of the pandemic not just in the UK but globally.

We published our Study Protocol as soon as the study started, including the full data dictionary, our methods of recruitment, and details of our retention rates and how these varied socio-demographically week by week. We made all our bespoke measures freely available. We also analysed our data as efficiently as possible and released our findings as freely available preprints.

In the first two years of the pandemic, we collaborated with a network of partners on data analysis, producing a collection of peer-reviewed scientific papers.

In 2023, we are making a fully anonymised version of the dataset from the COVID-19 Social Study available for other researchers to use and learn from, along with resource videos and documents to support their use of the data.



**The UCL COVID-19 Social Study has been an extremely valuable data source, being the only panel with a large number of respondents that was, almost immediately at the start of the pandemic, made available to the wider research community."**

Dr Christian Krekel, London School of Economics





## Awards and Recognition

The COVID-19 Social Study has been widely cited and acknowledged in academic circles. Our study team was a finalist for the MRS President's Medal in 2021 for outstanding contributions to research and is a current finalist for the 2022 ESRC Celebrating Impact Prize for Outstanding Societal Impact in recognition of the benefits of our research for wider society. Our paper on risk factors for abuse, self-harm and suicidal ideation during the pandemic won the *British Journal of Psychiatry* Editor's Award in 2020. In addition, our paper on volunteering was awarded the Royal Society for Public Health's annual prize for being the most downloaded paper of 2021 in *Perspectives in Public Health*. Our chapter in the *World Happiness Report* on mental health during the pandemic was read over a million times in the first year following its publication. Additionally, our Principal Investigator Dr Daisy Fancourt was awarded a Fellowship of the Royal Society of Arts and the United Cities and Local Governments International Researcher Award for her contributions to COVID-19 research. Team members have also been invited to give over a dozen keynote speeches on the data including for the BMJ Conference, the OECD, the International Association for Mental Health Research Funders, the WHO, and the United Nations. Papers from the study have been published in high-impact journals including the *Lancet*, *Lancet Psychiatry*, *Lancet Regional Health Europe*, and *British Journal of Psychiatry* amongst others.





# Global Connections

## The COVID-MINDS Network

Our impact on scholarship extended beyond the UK. In the early stages of the pandemic, we disseminated key findings to Ministries of Health across WHO Europe, helping to convince Member States of the benefits of investing in such surveys in their own countries. Our study's design was then used as the basis for the development of WHO Europe's own Behavioural Insights COVID-19 surveys, which are now run in 33 countries. We also supported the establishment of sister studies in low- and middle-income countries including Argentina, Fiji, India, Iran, and the Philippines, as well as the higher-income nations of Barbados, Kuwait and Saudi Arabia. We provided questionnaires and pro-bono consultancy on issues including ethics, patient public involvement, data collection, and analysis.



**Through COVID-MINDS, we were able to disseminate initial findings from the mental health theme of the National Core Study Longitudinal Health and Wellbeing to a broader audience."**

Dr Praveetha Patalay, Associate Professor, Centre for Longitudinal Studies and MRC Unit for Lifelong Health and Ageing, University College London

**Through the COVID-MINDS Network we learnt about mental health studies in our region and worldwide, allowing us to learn from other methodologies and connect with other researchers."**

Dr Nadja Maric Bojovic, University of Belgrade

These collaborations formed the basis of a global community, the **COVID-MINDS Network**, which we launched in May 2020 to support researchers around the world conducting studies on mental health during the pandemic. The Network served to connect researchers and help them collaborate and share data and expertise. We have to date involved over **170 studies from 60 countries** and provided the community with extensive resources on our website, which have attracted over 13,000 visitors from 130 countries to date. Researchers have contributed interviews and opinion pieces on mental health research during the pandemic, covering for example, the importance of including people with lived experience of mental health challenges in research; advice regarding patient and public involvement; findings from living systematic reviews and from particular subgroups such as parents and children, school teachers, and people with chronic illnesses; the importance of improving the quality of survey-based mental health research; and the benefits and challenges of conducting research during a pandemic. In response to the need to align core mental health measures across countries to enable cross-cultural comparisons, we provided the network the most widely recommended scales and newly validated bespoke COVID-19 mental health measures in languages from 60 countries.



**COVID-MINDS.**



The COVID-MINDS Network also supported the launch of the first Latin American conference on the mental health effects of the pandemic, which attracted 750 researchers conducting 18 studies from 13 universities in Brazil, Argentina, Chile, Guatemala, and Cuba. We also brought together researchers from across our network to form special interest groups focused on key areas of research including the mental health of pregnant women and mothers, the wellbeing of young adults, those at risk of self-harm and suicidal ideation, and loneliness and social isolation. These groups continue to meet and collaborate on research ideas, to consult each other regarding methodology and funding opportunities, and to disseminate their results.



**Thanks to the COVID-MINDS Network, researchers across Latin America were able to come together to organise our forum. Most of the mental health research during the pandemic originated in Europe, especially in the early months. It was important to establish our own research connections and study the impact of Covid from a local and regional perspective.”**

**Dr Lorena Canet-Juric, National University of Mar del Plata, Argentina**



**The special interest group meetings were very inspiring for me and helped me with analyses of our COVID data.”**

**Elizabeth Buimer, PhD candidate, Utrecht University**

Our study also had global policy impact. We provided weekly updates on our findings to the World Health Organization, helping to inform global policy on COVID-19. Dr Fancourt became a member of multiple global research and policy groups including the World Health Organization Technical Advisory Group on the mental health impacts of COVID-19, which made key behavioural recommendations for global policy (124). Additionally, Dr Fancourt presented to the United Nations High Level Political Forum on the impact of the societal pandemic. She also served on the Mental Health Task Force of the Lancet COVID-19 Commission. This international group of epidemiologists, psychologists, economists, medical doctors, and mental health specialists together collated the **best available evidence** on how COVID-19 impacted mental health across the world. They examined evidence of the neurological consequences of COVID-19 (125) (126), as well as the impact on mental health during the first year of the pandemic (127). Most recently, the Task Force



assessed the association between COVID-19 policy restrictions and mental health across 15 countries, finding that higher stringency related to poorer population mental health (7).

Finally, the COVID-MINDS Network enabled us to connect and collaborate with other researchers on international analyses. We pooled our data with seven studies from Denmark, France, the Netherlands,

and the UK to compare responses to the pandemic using time-series survey data of 200,000 individuals (128). We also compared the relationship between housing environment and mental health in Denmark, France, and the UK. We found that living in dwellings with more rooms was related to better mental health, while having access to outdoor space was related to lower levels of anxiety (129). Further international comparisons are underway.

### COVID-MINDS Blog

7 Jul 2022  
**What Did the Pandemic Teach Us about Our Soaring Rates of Child Mental Health?**



2 Nov 2021  
**From our Founder**



17 March 2021  
**Lancet COVID-19 Commission Releases First Report on Pandemic Consequences on Mental Health**



21 Feb 2022  
**“Clap for Carers” and Other Empty Promises**



31 August 2021  
**When Method Speaks Volumes: What COVID-19 Has Shown about Mental Health Research**



1 Feb 2021  
**Study Shows the Resilience of Parents and Children**



8 Feb 2022  
**Capturing the Experiences of People with Chronic Illness during COVID**



20 July 2021  
**The Pros, Cons and In-betweens**



13 October 2020  
**Lived Experience and Co-Production**



**COVID-MINDS**  
is an international network of scholars who have been studying the global impact of the pandemic on mental health.



# Summary and Recommendations

During COVID-19, population mental health has been affected both by the intensity of the pandemic in terms of cases and death rates, but also by lockdowns and restrictions themselves. Worsening mental health coincided with higher rates of COVID-19, tighter restrictions, and the weeks leading up to lockdowns. Mental health then generally improved during lockdowns and most people were able to adapt and manage their wellbeing. However, a substantial proportion of the population suffered disproportionately to the rest and experienced deteriorating mental health during lockdowns. Stay-at-home orders harmed those who were already financially, socially, or medically vulnerable, while socio-economic factors, including low income, low educational attainment, and household overcrowding continued to be associated with worse experiences of the pandemic. These included greater experience of poor mental health and wellbeing, financial struggles, self-harm thoughts and behaviours, risk of contracting COVID-19 and developing long Covid, and vaccine hesitancy.

Standout findings from our research include that: people struggling financially before the pandemic were more than 10 times as likely to be worse off financially during the pandemic; rates of thoughts of death or self-harm have hovered around 20% for young adults throughout the pandemic; women more than men carried a heavy psychological burden; pregnant women in particular faced challenges receiving support and care; and people with mental health or physical conditions at the start of the pandemic consistently had worse mental health, as did key workers and people with long Covid. These inequalities existed before the pandemic but were further exacerbated by COVID-19, and such groups remain particularly vulnerable to the future effects of the pandemic and other national crises.

It is important to recognise that the psychological and social consequences of the pandemic are not going to go away but will continue as the ramifications of this period emerge in the years to come. People may face new psychological challenges as a result of the downstream effects of this virus and its impact on society. Over the coming months and years, mental health challenges will likely result from personal and financial losses during the pandemic, as well as the rise in inflation and cost of living, persisting and growing cases of long Covid, and the combination of other forces such as Brexit, global political unrest, and climate change. Without sufficient mental health services and support, people with moderate mental health problems could develop more serious illness. Yet the UK is far from having sufficient mental health services and support. The government's current "COVID-19 mental health and wellbeing recovery action plan" does not go far enough to meet demand, which is projected to rise to 10 million people who will need new or enhanced mental health support (130).





Addressing these challenges will require extensive governmental and community collaboration and support, effective public health messaging, and close partnership with the public. Much of our research in this report has important policy implications that can support these partnerships. Most importantly, public trust in the government and in our healthcare system is crucial for managing health crises. Political leaders need to demonstrate they are worthy of public trust, and they also need to place greater trust in the public. Our study showed that the vast majority of people acted for the common good, volunteering for their communities, feeling connected to the values of their neighbourhoods, and maintaining high compliance rates throughout the pandemic despite concerns from the government that they would not. Behavioural fatigue, selfish behaviours, and rule breaking were very much in the minority. However, the effects on public trust were long-lasting when those in prominent positions broke their own guidelines.

In terms of healthcare delivery and vaccine uptake, it is also important to have an in-depth understanding of what prevents people from adhering to restrictions, what motivates them to accept vaccines, and what may be the facilitators and barriers for healthcare access and how these change over time. People with lower compliance, people from ethnic minority groups, with lower socio-economic backgrounds, and who smoked were most likely to be uncertain or unwilling to get vaccinated. Policymakers and practitioners should design interventions that meet the needs of the public, and public health messaging should appropriately address the public's concerns and beliefs. A one-size-fits-all approach is neither appropriate nor effective, especially given the overwhelming evidence collected through this study and others during the pandemic.

We therefore offer seven recommendations:

1. Focus on the most vulnerable groups
2. Invest in mental health services
3. Expand community-based support
4. Embed transparency and integrity in health policy
5. Invest in social and behavioural research
6. Foster social solidarity and cohesion
7. Plan for the next pandemic or health emergency





## Moving forward we recommend the following areas of action:

### 1 FOCUS ON THE MOST VULNERABLE GROUPS

Our data has highlighted the crucial attention that needs to be paid to groups of people who suffer the most when crises hit. Those from lower SES, young adults, women, people with health conditions, people from ethnic minority backgrounds, and essential workers all carried heavier psychological burdens during the pandemic than others. These inequalities existed before COVID-19 and are at high risk of worsening as we weather the effects of the last two years, as has been shown in previous disasters (131). Without action, these groups will need significantly more mental healthcare than is currently available. Past emergencies and disasters can become catalysts for addressing inequalities and injustices in society and this could prove pertinent if we can capitalise on the momentum (87). Initiatives should be short- and long-term, both providing immediate support to these groups and removing the structural inequalities within our society that made these groups especially vulnerable when the pandemic hit.

### 2 INVEST IN MENTAL HEALTH SERVICES

Recent studies have estimated that mental health conditions cost the UK a conservative £117.9 billion per year (132), and yet our “impoverished” mental health services continue to be underfunded (133). Billions of pounds need to be invested in mental health services. Spending more now will save more in the future as the burden of mental health in the UK continues to rise. The pandemic offered a valuable opportunity to test innovative programmes such as the convenience of online consultations. The strengths and weaknesses of online mental health services are now much better understood and can be properly implemented in tandem with in-person treatment. These and other forms of treatment should be explored and expanded to adequately meet demand for a historically overlooked but vital aspect of population health. Additionally, as demonstrated

by our study participants in their feedback on the COVID-19 Social Study and supported by wider research studies, the UK population has become more concerned about mental health due to COVID-19. This awareness could help us to improve mental health literacy so that people understand how to obtain and maintain positive mental health, learn to recognise symptoms for which they might need support, and know where to turn for formal and informal support. More broadly, increased mental health literacy could enhance help-seeking behaviours and reduce mental health stigma. We should build on this public interest and concern about mental health through targeted initiatives.

### 3 EXPAND COMMUNITY-BASED SUPPORT

As our data have shown, most of the factors that helped to protect public health (both mental and physical) were community-based. Cultural assets, green spaces, community activities, connecting with others, social support – these all constitute enormous in-kind resources to health and social care. But they are rarely prioritised as mental health interventions. We need to think more strategically about prevention and develop these sectors to support health. We should invest more in schemes like social prescribing, which is already recognised as a key component of personalised care within the NHS Long Term Plan (134). Through social prescribing people can be referred to community programmes by health and social care professionals to receive more effective and holistic support and treatment. These programmes not only benefit individuals but also provide additional resources for health services to draw on in times of excess demand.



#### 4 EMBED TRANSPARENCY AND INTEGRITY IN HEALTH POLICY

The actions, policy decisions, and communication strategies of the government have far-reaching effects and strongly influence the actions of the public. This was made clear during the pandemic when we found that officials' behaviour influenced public trust in the government, which then influenced whether people were likely to comply with government restrictions or not. Thousands of participants in the COVID-19 Social study have told us that confusing, untransparent, or unfair rules and regulations from the government lowered their belief that their leaders were capable of handling the pandemic. To maintain public trust and cooperation regarding COVID-19 and other issues, it is essential that the government demonstrate its commitment to integrity, to making evidence-based policy decisions, and to effectively communicating with the public.

#### 5 INVEST IN SOCIAL AND BEHAVIOURAL RESEARCH

The COVID-19 Social Study illustrates the benefits of large-scale cohort studies. We need to ensure that we continue to build our research infrastructure for undertaking these studies and for training the next generation of social and behavioural researchers so that we are better prepared to understand and respond to people's needs during future crises. Ongoing longitudinal studies are especially important for understanding how changes in our society, especially health or economic crises, affect the population. Investment could also help studies such as this be 'ready to go' in the event of future health emergencies so they can be mobilised efficiently to support policymakers, health services, and third sector organisations.

#### 6 FOSTER SOCIAL SOLIDARITY AND COHESION

Our data have shown the adverse effects that social isolation during the pandemic had on individuals, while collective social identity and perceived social support acted as a psychological and physiological buffer and enabled supportive group behaviours including compliance with the rules. Unfortunately, we saw increasing social divisions as the pandemic continued. While in the early stages of the pandemic there was a surge in engagement with neighbours and mutual support, many who were vulnerable are now feeling more alone and forgotten than ever. While initially we united in agreeing with lockdowns and making personal sacrifices, there has been increasing polarisation in attitudes towards how to manage the virus. While many are emerging much worse off from the last two and a half years, others have made great personal and financial gain from events. As vaccines, new treatments, and habituation to the circumstances have led many to view the virus less anxiously, other concerns relating to the climate crisis, wars and civil unrest and political upheavals are rising to the forefront again. This polarisation and perceived breakdown of society erodes social identity, leading individuals to act more selfishly and hold more negative beliefs about the future of their country and humanity as a whole. This can have negative effects on mental health (135). To counteract this, we need





to build a collective social identity that focuses on the wellbeing of society above self, politics, or financial gain. We need our leaders to put aside partisan differences and build unity. This could be achieved through identifying and working towards shared goals that address people's leading concerns (e.g. financial, infrastructural, health-related, environmental). We need to focus on language that is inclusive and supportive and we need to invest in initiatives that build a strong sense of collaboration and community. In particular, we need to reawaken the sense that we are all, globally, in this together. The wellbeing of individuals depends on the wellbeing of societies, which depends on the collective wellbeing of all nations.

## 7 PLAN FOR THE NEXT PANDEMIC OR HEALTH EMERGENCY

We now know a phenomenal amount about the challenges individuals faced during the pandemic, including what support is most effective, and how to implement policies and guidelines. We need to draw on these lessons to prepare for the next health emergency, whether a pandemic or otherwise. In particular, we now know which groups are most vulnerable to adverse experiences during pandemics. We

know that providing adequate financial and social support to people is vital not just for maintaining basic living essentials but also for mental health and to enable adherence to infection control regulations. We know that health behaviours can be adversely affected during crises, so more support and public campaigns are needed to help individuals to stay physically well. We know that whilst many people show great resilience during social upheavals, others are vulnerable to resorting to risky behaviours or being exploited. We know that some of the most vulnerable within society can be most overlooked in the development of emergency policies and that they need to be better protected. We know that key workers who provide an incredible service to their country need greater practical and psychological support. We know that the public shows remarkable altruism in complying with social restrictions, providing policies are clearly communicated and upheld by everyone within society. In addition, we know that communities can pull together in powerful acts of solidarity and kindness, but societal divisions can also be easily exposed, especially if trust in our leading figures is eroded. It is vital that we use this new knowledge to prepare specific plans to minimise adversities faced by the UK public, avoid past pitfalls, and form an even stronger response that protects our society as much as humanly possible during future crises.

**In the early weeks of 2020, when the first cases of COVID-19 began to be recorded in the UK, there was very little understanding or recognition of what the psychological and social ramifications of the pandemic would be. Two years later, the COVID-19 Social Study has provided an incredible resource of data that has transformed our understanding of the real-time impact of global health emergencies. The study has been, and continues to be, a phenomenal team effort, comprising the scientists behind the study, our funders and advisers, the policy, health and community organisations we've worked with so closely, and our remarkable participants who gave their time so generously. We would like to thank each and every one of them.**



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