



ALSPAC COVID-19 Summary for HDRUK/SAGE

Avon Longitudinal Study of Parents and Children (ALSPAC/'Children of the 90s')

ALSPAC comprises ~14,500 families now over three generations: original mothers/fathers, 'children of the 90s' (born 1991-92) and their offspring. The families were all originally from the Bristol/Avon area and ~50% still live in and around the city.

Background

Data have been collected from ALSPAC participants on the presence and impact of COVID-19 via three questionnaires so far (April/May, June/July and October (the last during serological testing)).

Questionnaire 1 - Northstone K, Haworth S, Smith D *et al.* The Avon Longitudinal Study of Parents and Children - A resource for COVID-19 research: Questionnaire data capture April-May 2020 [version 1; peer review: 1 approved with reservations]. *Wellcome Open Res* 2020, **5**:127 (<https://doi.org/10.12688/wellcomeopenres.16020.1>)

Questionnaire 2 - Northstone K, Smith D, Bowring C *et al.* The Avon Longitudinal Study of Parents and Children - A resource for COVID-19 research: Questionnaire data capture May-July 2020 [version 2; peer review: 2 approved]. *Wellcome Open Res* 2020, **5**:210 (<https://doi.org/10.12688/wellcomeopenres.16225.2>)

In the first two questionnaires we asked participants about their mental health and about the issues that were of most concern to them about the pandemic and its mitigation.

Antibody test results within ALSPAC - update

Of the participants completing COVID-19 questionnaires, 4750 participants (90% of 5200 recruited) have been involved in COVID-19 specific antibody testing (IgG – RBD) and reported the result of their antibody tests by questionnaire and photograph (lateral flow home testing).

212 (**4.5%**) participants were positive – i.e. they are highly likely to have had COVID-19 at some point in the past.

Our younger generation (28-29 year olds) were twice as likely as their parents (average age 59) to report a positive test (6% versus 3%). There were no differences in the proportion reporting positive according to age in the older generation, sex or whether a participant lived in Bristol or not.

By looking at occupation data collected before the pandemic we can see that in the younger generation, medical professionals (i.e. doctors, nurses, pharmacists, radiographers etc) are twice as likely to have reported an antibody test. We did not find any differences in any other occupation groups including teachers. Further stratified analyses of these data are being undertaken now in the context of available life course data in ALSPAC.

We asked participants whether they thought they had ever had COVID-19 before taking our test. Interestingly, **a quarter** of those who tested positive told us that they had **not** had COVID-19 – this was the same in both generations

Worries about the pandemic and mental health

In ALSPAC, around **6400** individuals completed mental health measures during the early part of the COVID-19 pandemic (April/May). Around **6100** individuals completed the same

measures again during COVID-19 (June/July). Approximately 6000 individuals completed both questionnaires – this report summarises the new evidence from analysis across these data collection points.

We have previously shown that there is observational evidence that depression and anxiety are higher, and mental wellbeing lower in younger populations (**Figure 1**). Results are similar across both COVID-19 questionnaires implying that for younger populations (particularly those aged 26-29), **the easing of lockdown was not associated with improved mental health**.

There was also observational evidence that anxiety and lower mental wellbeing are higher than pre-pandemic levels in young people (aged 26-29 years old) and **remained high even as restrictions were eased**. There was no observational evidence suggesting a substantive change in depression compared to pre-pandemic levels, although depression was higher in the early part of 2020 (**Figure 2**).

Figure 1. Depression, anxiety and mental wellbeing across COVID-19 questionnaires by age in ALSPAC

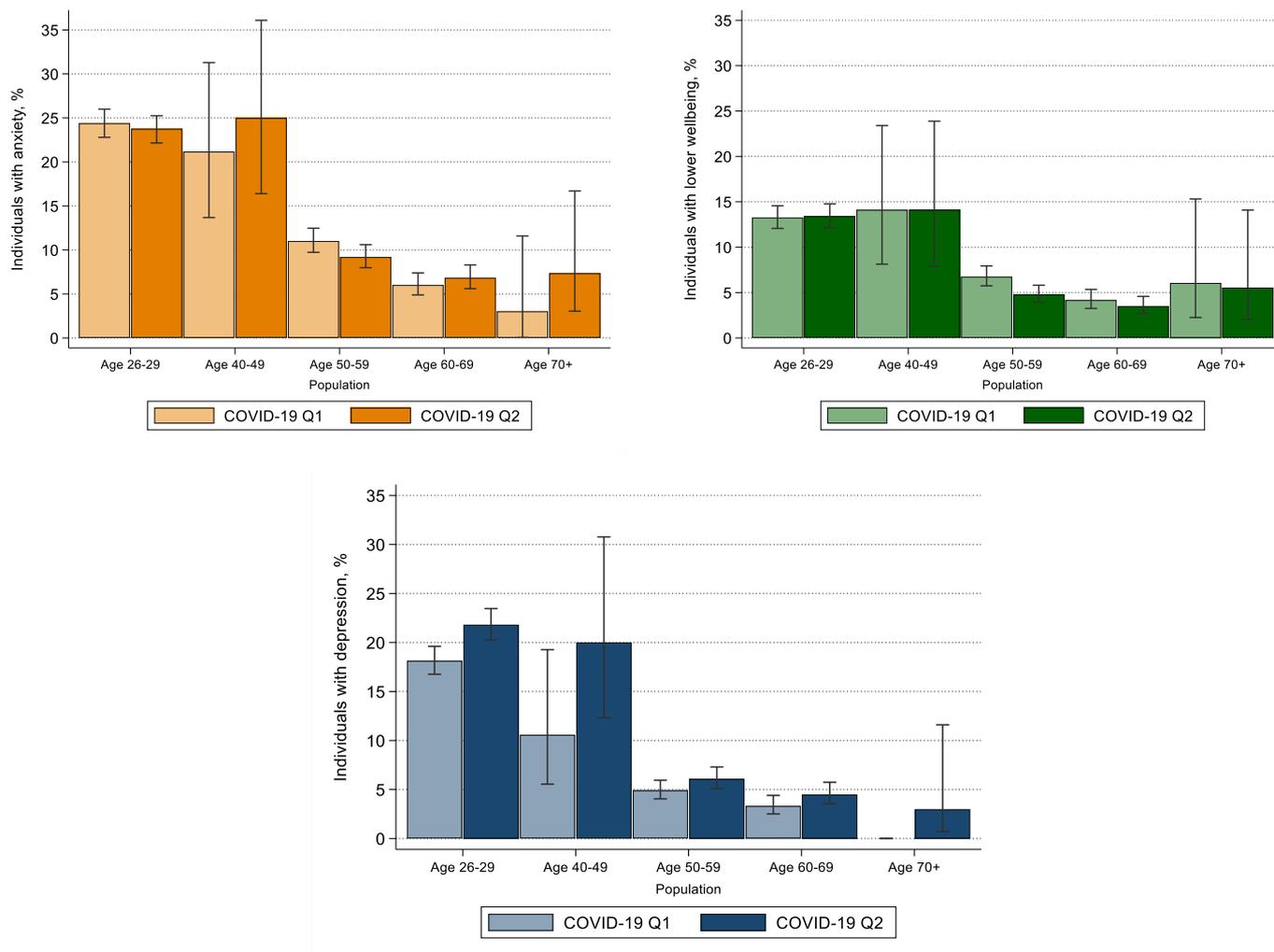
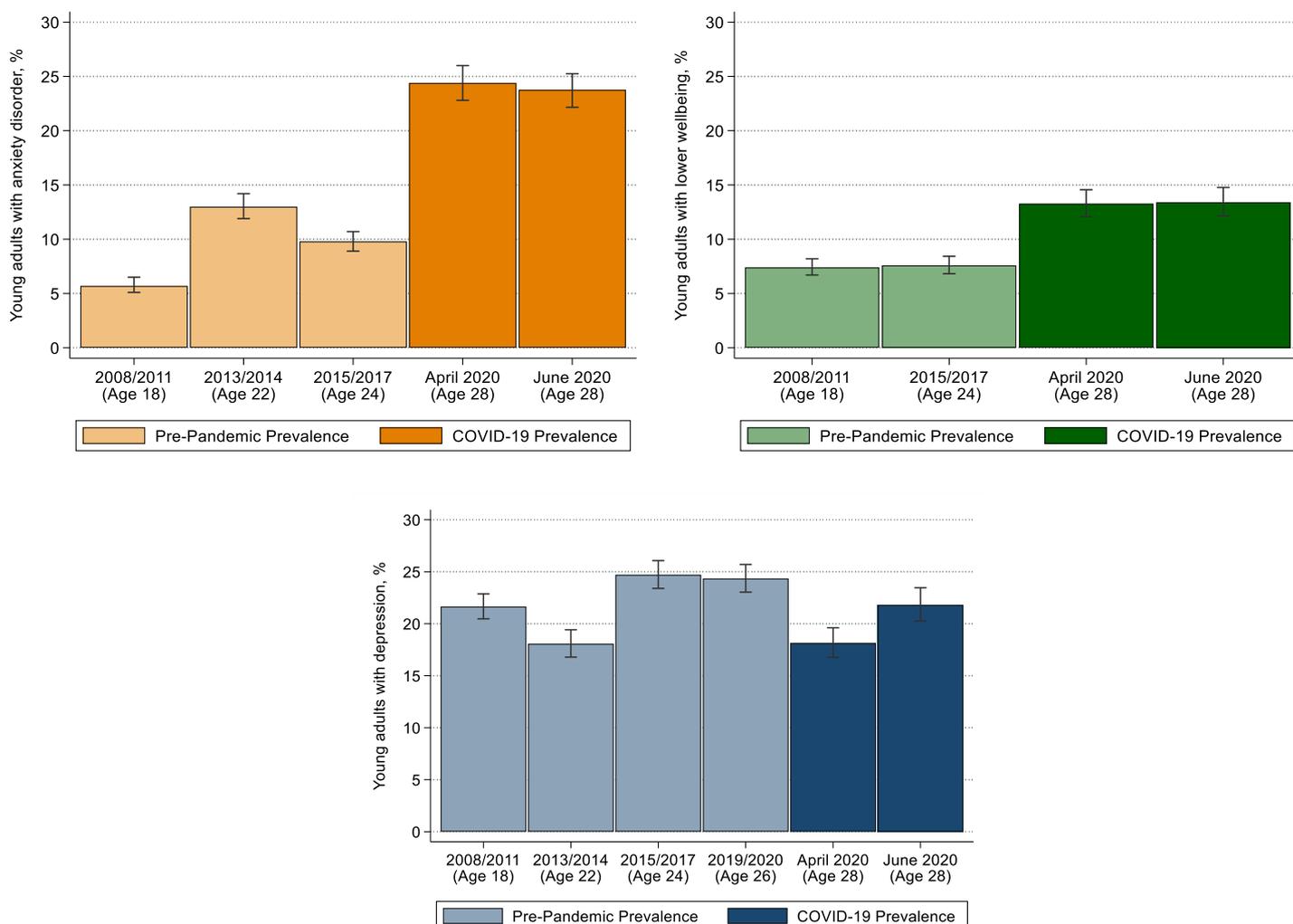


Figure 2. Anxiety, mental wellbeing and depression during COVID-19 compared to previous waves in the younger ALSPAC cohort (ages 26-29 years old)



New analyses have examined data from ~2000 young participants who completed questions about COVID-19 specific and mitigation-related worries (**Table 1**) in April/May (Q1) and were then assessed for anxiety and depression again in June/July (Q2). Anxiety was measured using the generalised anxiety disorder assessment (GAD-7). Depression was measured using the mood and feelings questionnaire (SMFQ).

Table 1. Domains of ‘worries’ questions. Each question has responses between 1 (not at all) and 5 (very worried).

COVID-19 worries	Non-COVID-19 health worries	Financial worries	Relationship worries
1. Someone close getting COVID-19	1. Access to medication	1. Serious financial trouble	1. Relationship with partner/spouse
2. Getting COVID-19 themselves	2. Access to food	2. Losing their job	2. Not seeing friends or family

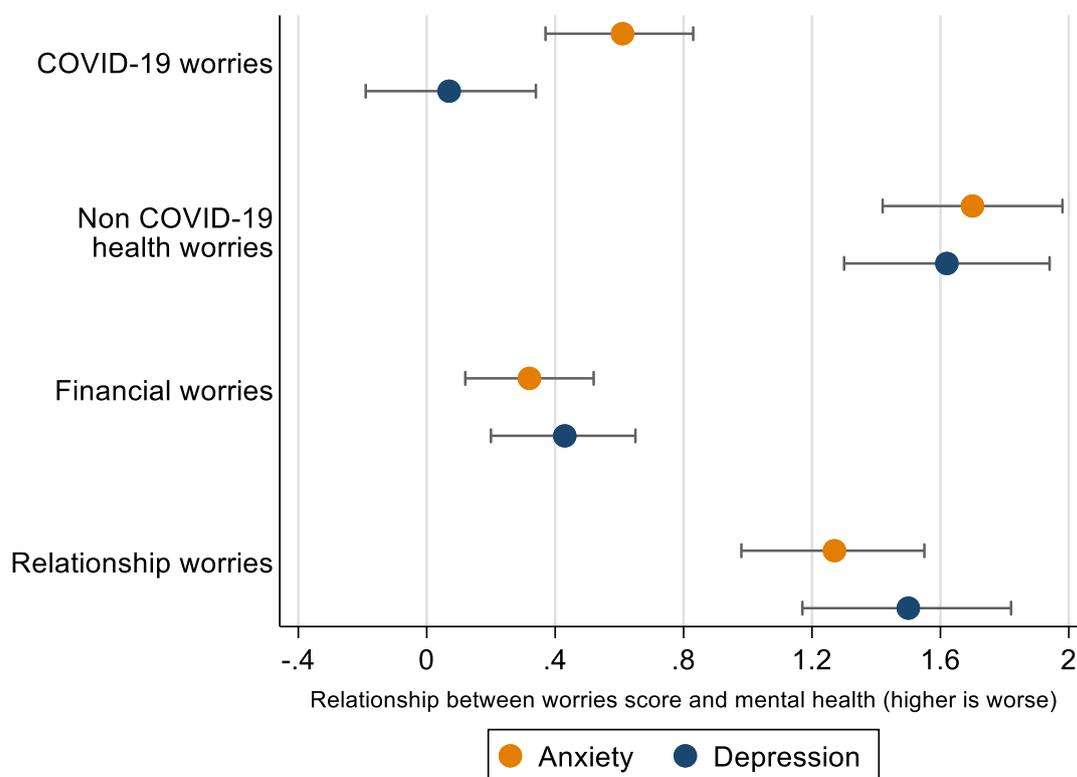
3. Passing on COVID-19 to others	3. Physical health	3. Paying rent/mortgage	3. Relationship with rest of family
4. Dying due to COVID-19	-	-	-
5. Someone close dying of COVID-19	-	-	-

Items have been grouped according to theoretically relevant domains and inter-item correlations. Items within each domain were then summed to create 4 scores. The 4 worry scores were highly correlated, but this was accounted for in analyses.

All worries during lockdown were associated with later anxiety, with similar results for depression (**Figure 3**). The associations between worries and later depression and anxiety were largest for general health and relationship worries, implying that some aspects of life, e.g., **seeing friends and family**, having **access to medication** and **food**, and their **physical health** were more important for later mental health, than worrying about COVID-19 specifically.

These findings suggest that access to usual services and the maintenance of relationships (such as social bubbles) are key to reducing anxiety and depression during and beyond lockdowns. We are now exploring this in the older generation and identifying if this is the same for all groups of people.

Figure 3. Association between worries during lockdown in March/April and anxiety/depression following lockdown in June/July



Circles represent the difference in anxiety or depression scores for each 1 unit increase in the worry score (adjusted for all other worry scores) Higher scores indicate more worries.

Additional ALSPAC COVID-19 references:

Mental health during the COVID-19 pandemic in two longitudinal UK population cohorts

Alex Siu Fung Kwong, Rebecca M Pearson, Mark J Adams, Kate Northstone, Kate Tilling, Daniel Smith, Chloe Fawns-Ritchie, Helen Bould, Naomi Warne, Stan Zammit, David

J Gunnell, Paul Moran, Nadia Micali, Abraham Reichenberg, Matthew Hickman, Dheeraj Rai, Simon Haworth, Archie Campbell, Drew Altschul, Robin Flaig, Andrew M McIntosh, Deborah A Lawlor, David Porteous, Nicholas J Timpson
medRxiv 2020.06.16.20133116; doi: <https://doi.org/10.1101/2020.06.16.20133116>

The impact of asthma on mental health & wellbeing during COVID-19 lockdown

Daniel H Higbee, George Nava, Alex S F Kwong, James W Dodd, Raquel Granell
medRxiv 2020.09.10.20190793; doi: <https://doi.org/10.1101/2020.09.10.20190793>

Kwong ASF, Pearson RM, Smith D *et al.* Longitudinal evidence for persistent anxiety in young adults through COVID-19 restrictions [version 1; peer review: 2 approved with reservations]. *Wellcome Open Res* 2020, **5**:195 (<https://doi.org/10.12688/wellcomeopenres.16206.1>)