

SAGE 84 - Differential impacts of the Coronavirus pandemic on men and women.

1. Purpose of paper

This paper provides evidence from the Office for National Statistics on the differential impacts of the Coronavirus pandemic on men and women.

Evidence from the University of Liverpool on difference in prevalence of COVID-19 by sex within work sectors is also included.

The paper covers:

- The latest analysis of infection rates, antibodies and long Covid by sex from the ONS Covid-19 Infection Survey (CIS);
- Initial findings from vaccination uptake data from the National Immunisation Management System (NIMS) linked to the ONS Public Health Data Asset (PHDA);
- Vaccine hesitancy findings from the ONS Opinions and Lifestyle Survey (OPN);
- The latest data on Covid-19 mortality by sex;
- Estimates of wellbeing, depression and anxiety from the OPN;
- The latest analysis of young people and children's mental health by sex from a study by NHS Digital and ONS;
- Data on childcare and homeschooling by sex from both the Time Use Survey and the OPN; and
- Inequalities in prevalence of COVID-19 by sex within work sectors from University of Liverpool

A summary of analyses of the differential impact of the pandemic on men and women was published on [10 March](#). Findings from this publication are included throughout the paper.

2. Executive Summary

Key findings include:

Health Impacts

- Analysis from CIS shows **no evidence to support the hypothesis that women are at higher risk of testing positive for COVID-19 than men. (Medium confidence)**
- In England, Wales and Scotland, **the percentage of people testing positive for antibodies was higher for females than males. (Medium confidence)**

- **Females had a significantly higher 5-week prevalence of symptoms** following infection than males, at 23.6% (22.2% to 25.0%) and 20.7% (19.3% to 22.1%) respectively. **(Medium confidence)**
- **Younger females (Aged 16 to 29) had higher vaccine hesitancy (19%) than younger men (15%). (Medium confidence)**

Social Impacts

- **Women are more likely to report higher levels of depression, anxiety and loneliness** than men during the pandemic, which continues the pre-pandemic trend. **(Medium confidence)**
- **16.7% of boys and 15.2% of girls had a probable mental disorder in July 2020.** These rates had increased from 11.4% and 10.3% respectively in 2017. **(Medium confidence)**
- **Women are more likely to provide homeschooling than men, and more likely to report their well-being was negatively affected by homeschooling than men. (Medium confidence)**

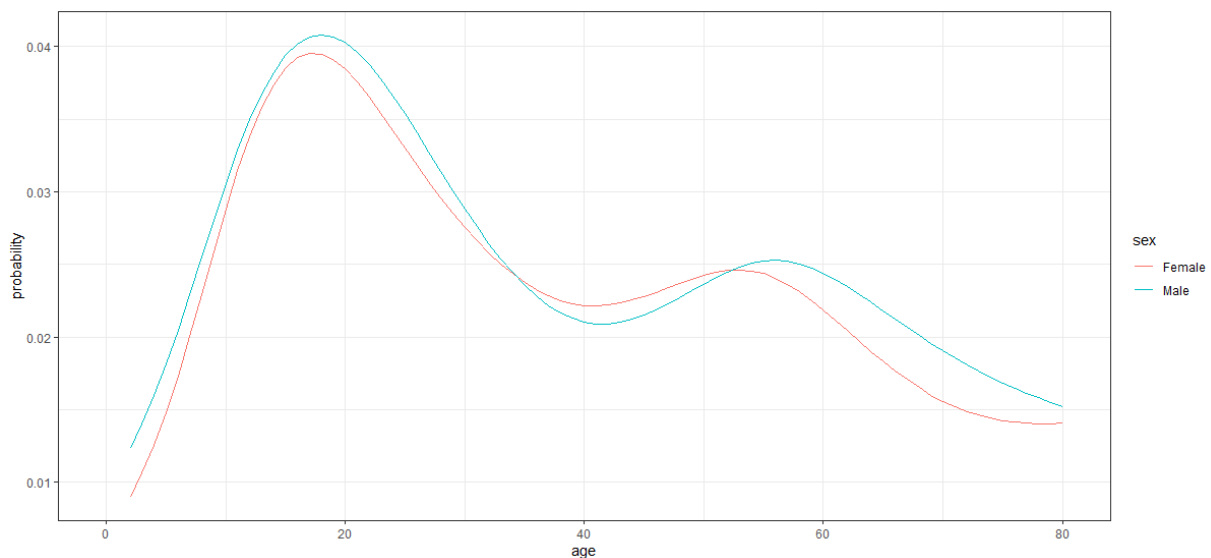
3. Health impacts

3.1 Infection rates

Analysis of the CIS showed no evidence to support the hypothesis that women are at higher risk of infection than men. (Medium confidence)

This model controlled a range of socio-demographic characteristics and was conducted on whether individuals ever tested positive between 1 September to 5 December 2020. [unpublished]

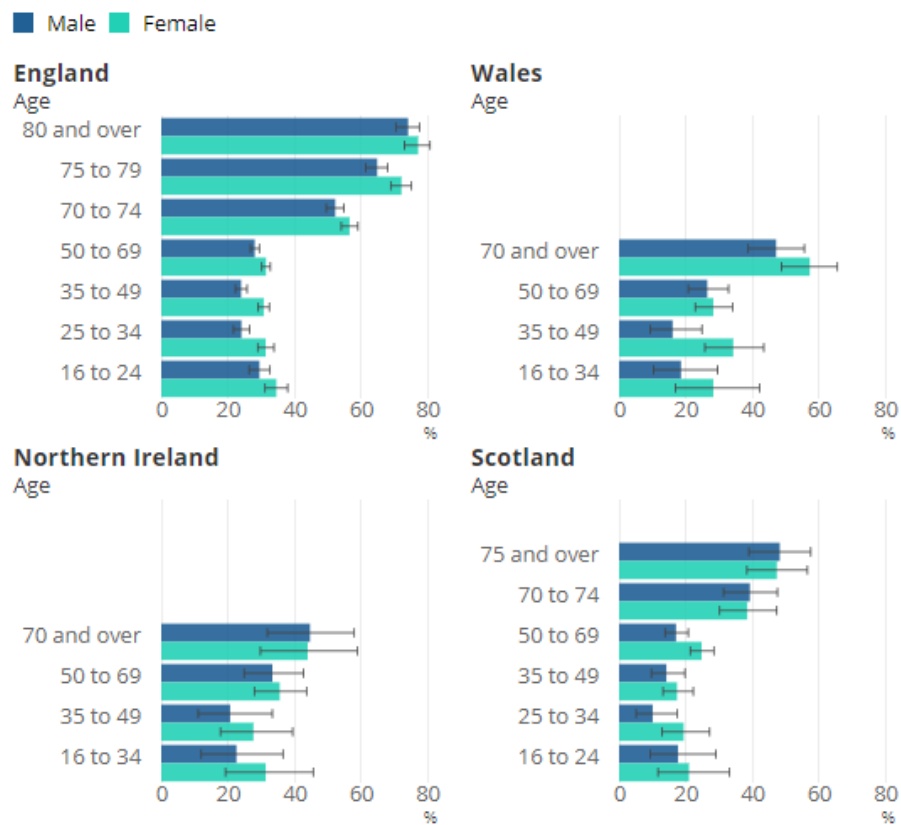
Figure 1: Predicted probability of infection by sex for each value of age. Source: Coronavirus Infection Survey.



3.2 Antibodies

Findings from CIS show in the 28 days up to 03 March 2021, **females had higher rates of antibody positivity in each of England, Wales and Scotland**. Differences between males and females in Northern Ireland were less certain due to wide confidence intervals. In the 25-34, 35-49, 50-69 and 75-79 age groups, antibody prevalence is higher for females than males. Antibodies may be higher for females in all other age groups, but confidence intervals overlap so there is high uncertainty. [Full report here](#)

Figure 2: Estimated percentage of people testing positive for antibodies to SARS-CoV-2 from a blood sample, by age and sex, in the 28 days up to 3 March 2021, UK. Source: Coronavirus Infection Survey.



3.3 Long COVID

UK CIS analysis of 9,063 respondents who tested positive for COVID-19 to 14 December 2020 estimated that **females had a significantly higher 5-week prevalence of symptoms than males, at 23.6% (22.2% to 25.0%) and 20.7% (19.3% to 22.1%) respectively**. ONS will be publishing updated estimates of symptom prevalence rates for males and females, including at 12 weeks post-infection, on 1 April 2021. [Full report here](#)

3.4 Vaccination

A publication on vaccination uptake among people aged 70+ by socio-demographic characteristics (including sex) is due to be published on 29 March using NIMS data linked to the ONS PHDA. Preliminary estimates from this work show **amongst those aged 70+, the first dose vaccination rate is slightly higher for women (90.4%) than men (90.0%).** [\[unpublished\]](#).

Findings from the OPN show similar proportions of men and women reported vaccine hesitancy (9% and 10% respectively).

Younger females (Aged 16 to 29) had higher vaccine hesitancy (19%) than younger men (15%). For other age groups, there are no noticeable differences in vaccine hesitancy between men and women. [Full report here](#)

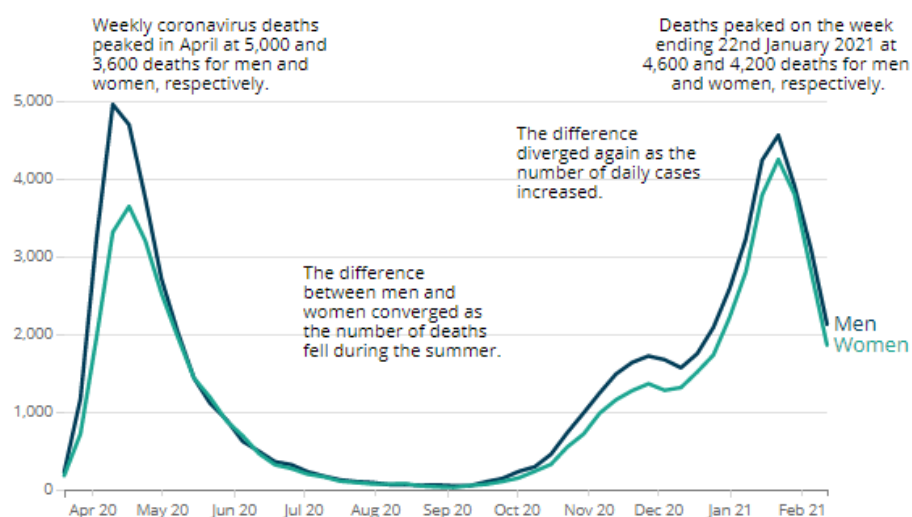
Of all adults that reported negative sentiment towards the vaccine, **around 1 in 10 (11%) women reported "I am pregnant or trying to get pregnant and afraid of the effects on my baby". Around one in five (21%) mothers living with a dependent child aged 0 to 4 years who reported negative sentiment towards the vaccine also reported this reason.** This compared with 5% of mothers living with a dependent child aged five years or above. Although these differences were not statistically significant, they provide insight into potential differences between these groups.

3.5 Mortality

There was an almost 18% difference in the total number of COVID-19-related deaths for men (63,700) and women (53,300), between March 2020 and January 2021 in England and Wales.

In the early stages of the pandemic, particularly between 1 March and 30 April 2020, the difference was even more pronounced: 30% more men (21,600) than women (16,600) died in the UK due to COVID-19 during those two months.

Figure 2: Weekly COVID-19-related death occurrences, England and Wales, March 2020 to February 2021. Source: Deaths registered weekly in England and Wales



For deaths registered between 9 March and 28 December 2020, **men who worked in elementary occupations or caring, leisure and other service occupations had the highest rates of death involving COVID-19**, with 66.3 and 64.1 deaths per 100,000 males, respectively. **For women, process, plant and machine operatives and caring, leisure and other service occupations had the highest rates of death involving COVID-19 when looking at broad occupational groups** with 33.7 and 27.3 deaths per 100,000 females, respectively.

Men (79.0 deaths per 100,000 males; 150 deaths) and women (35.9 deaths per 100,000 females; 319 deaths) who worked in social care occupations had statistically significantly higher rates of death involving COVID-19 when compared with rates of death involving COVID-19 in the population among those of the same age and sex. [Full report here](#)

4. Social Impacts

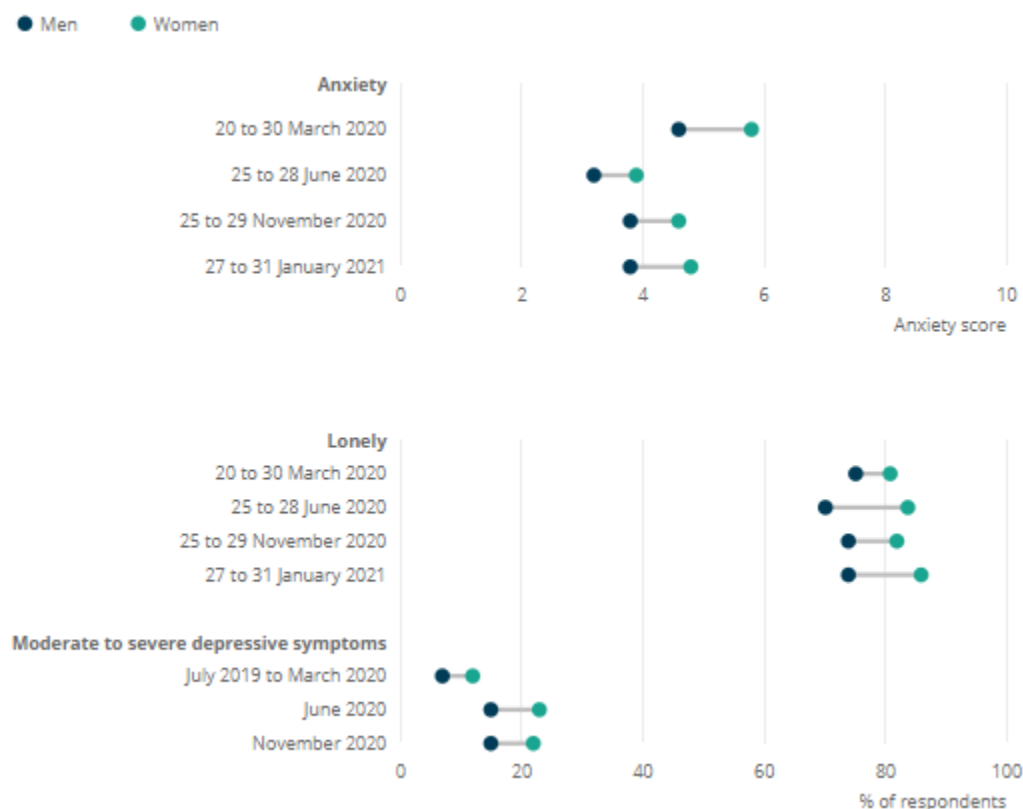
4.1 Depression and Well-being

In November 2020, **around 2 in 10 women experienced some form of depression (22%), compared with 15% of men**. In June 2020, a similar proportion of adults experienced some form of depression (23% of women and 15% of men), however rates during both periods in the pandemic were around two times greater than those observed before the pandemic (July 2019 to March 2020) for women (12%) and men (7%). [Full report here](#)

At the start of the pandemic, average anxiety scores increased to the highest levels recorded since the ONS began collecting personal well-being data in 2011. **Women reported significantly higher anxiety than men at almost every point between 20 March 2020 and 7 February 2021, continuing the pre-pandemic trend**. Analysis also found that, while controlling for other characteristics such as age, disability and access to essentials, **women were 1.3 times more likely to report often or always feeling lonely than men** during April – May 2020. [Full report here](#)

Data from early March 2021 shows women were more likely (55%) to report their wellbeing was being affected by the pandemic than men (45%). Women were also more likely (66%) than men (57%) to report feeling worried about the effect COVID-19 was having on their lives. [Full report here](#)

Figure 3: Anxiety, lonely at some point, and moderate to severe depressive symptoms, Great Britain, March 2020 to January 2021. Source: Opinions and Lifestyle Survey



4.2 Mental health of children and young people

In July 2020, a study by NHS Digital and ONS of 3,570 children and young people in England found **16.7% of boys and 15.2% of girls had a probable mental disorder in 2020**. These rates had **increased from 11.4% and 10.3% respectively in 2017**.

While rates of probable disorders in children were similar in school aged children, **differences were found in young adults aged 17 to 22 years old**, where 27.2% of young women and 13.3% of young men were identified as having a probable mental disorder. Additionally, analysis found **18.8% of young women said they felt lonely often / always, compared to 9.1% of young men**. [Full report here](#)

4.3 Impact on lives

A smaller proportion of females (37%) reported feeling comfortable or very comfortable leaving their home due to the pandemic compared to males (45%) in March 2021. A higher proportion of males (33%) than females (26%) reported thinking life will return to normal in less than six months in March 2021.

[Full report here](#)

A consistently **greater number of women than men were furloughed** between 1 July and 31 December 2020. [Full report here](#). Men were more likely (46%) than women (38%) to report that their work has been affected by the pandemic. [Full report here](#)

4.4 Household work, childcare and homeschooling

While both men and women spent more time working from home throughout the pandemic, women did more unpaid household work than men. This includes things like cleaning the house, ironing, adult care, making meals, or volunteering either for or through an organisation. **In the first lockdown, women spent an extra 52 minutes on housework per day compared to men, which has narrowed when compared to data from 2014/15. This gap increased in Sept/Oct, with women spending an extra 64 minutes per day on housework compared to men (excludes travel and childcare).** [Full report here](#)

At the beginning of the UK's first lockdown in March 2020, **women spent 55% more time than men on unpaid childcare. This difference increased in September and October 2020, when women spent 99% more time on unpaid childcare than men.** [Full report here](#)

A significantly greater proportion of women (67%) than men (52%) homeschooled a school-age child in late January and early February (13 January and 7 February 2021). **In April and early May 2020, around one in three women (34%) reported that their well-being was negatively affected by homeschooling a school age child compared with only one in five men (20%). By late January and early February 2021, it was taking a greater toll on both women (53%) and men (45%).** [Full report here](#)

5. Occupational Inequalities in Prevalence of COVID-19

This analysis is taken from Mark Green's (University of Liverpool) paper on Occupational Inequalities in Prevalence of COVID-19: Evidence from the ONS COVID Infection Survey, August 2020 to January 2021. The use of the ONS survey data in this work does not imply ONS endorsement.

There were some differences in estimates of prevalence between males and females, but limited conclusions can be drawn since confidence intervals overlap for all work sectors other than retail and manufacturing, where prevalence was higher for males.

Whilst the CIS collects information on occupation, this doesn't mean that transmission occurred in the workplace. Furthermore, work sectors will include a range of different occupations adding to the complexity of understanding transmission amongst individuals.

Figure 4: COVID-19 prevalence by work sector and sex. Source: Coronavirus Infection survey

