

Study sheds light on COVID-19 risk for adults living with and without children

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A study published by *The BMJ* today sheds light on the risk of infection with SARS-CoV-2 and COVID-19 outcomes among adults living with and without children during the first two waves of the UK pandemic.

It finds no evidence of any increased risk in wave 1 (Feb to Aug 2020).

Small increased risks of [infection](#) and [hospital admission](#) were seen in wave 2 (Sept to Dec 2020), but this did not translate into a materially increased risk of COVID-19 mortality, say the researchers.

The role of children and adolescents in the transmission of SARS-CoV-2 is still uncertain. Some evidence suggests they are less susceptible to infection because they catch more colds from seasonal coronaviruses each year than adults.

Adults living with children also have more "common colds" than do those not living with children and this could result in a lower risk of serious outcomes from SARS-CoV-2 infection. Alternatively, living with children may lead to greater opportunities for infection with SARS-CoV-2 and increased risks to adults they live with.

To address this uncertainty, researchers investigated whether the risk of infection and serious outcomes from COVID-19 differed between adults living with and without school age children during the first two waves of the UK pandemic.

They drew on primary care data for 12 million adults (aged 18 years and over) linked to hospital and intensive care admissions and death records in England during wave 1 (1 February to 31 August 2020) and wave 2 (1 September to 19 December 2020).

Presence and age of children in each household was recorded, and factors known to be associated with severe COVID-19, such as age, sex, ethnicity, weight (BMI), and underlying health conditions were taken into account.

The researchers then analysed the data to see who developed SARS-CoV-2 infection, was admitted to hospital or intensive care, or died from COVID-19.

Outcomes for adults aged 18-65 years, and older adults (over 65 years) were analysed separately.

During the first wave, for adults aged 65 and under, living with children of any age was not associated with a markedly increased risk of SARS-CoV-2 infection or severe outcomes from COVID-19, compared with not living with children.

During the second wave, there was an increased risk of infection and COVID-19 related hospital admission (but not intensive care admission) for adults aged 65 and under living with children of any age, compared with those not living with children.

However, absolute increases in risks were small—researchers estimated the number of people recorded to have a SARS-CoV-2 infection rose from 810 to between 850-870 per 10,000 people living with children aged 0-11 years and to between 970-1000 for those living with children aged 12-18 years over the period of wave 2.

For hospital admissions with COVID-19, living with children aged 0-11 was associated with an increase from 160 to between 161-165 per 10,000 people years and for those living with children aged 12-18 years to between 162-166.

There was no increase in risk of death in either wave. People living with children of any age were less likely to die of non-COVID causes overall, and people living with children aged 0-11 years were also less likely to die of COVID-19 in the first and second waves.

This was a large, well-designed study using electronic health record data, and results were largely unchanged after further analyses, suggesting that they withstand scrutiny. However, the findings are observational and the authors cannot rule out the possibility that other unmeasured factors or

missing data may have affected the results.

They note that the increased risks during wave 2 were seen at a time when schools remained open, raising the possibility that widespread school attendance may have led to increased risks to households, but other differences between households with and without [children](#) could also have explained these findings.

As such, they conclude that "close monitoring and evaluation as schools reopen will be crucial to inform ongoing policy."

More information: Association between living with children and outcomes from covid-19: OpenSAFELY cohort study of 12 million adults in England, *BMJ* (2021). [DOI: 10.1136/bmj.n628](https://doi.org/10.1136/bmj.n628)

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