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Data from 45 million mobile users further shows poorer people less able to stay at home COVID rules

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People living in deprived, less affluent neighborhoods spent less time indoors at home during lockdown, according to a study that tracked data from millions of mobile phone users across the United States.

The study, published in the journal *Annals of the American Association of Geographers*, adds to growing evidence that low earners are less likely to comply with stay-at-home orders, either because they simply can't afford to, or because they work in professions in which working from home is not possible.

The finding is concerning given the fact that vulnerable groups are already at greater risk from COVID.

In March 2020, the US like many countries in the world entered a state of lockdown, with its citizens advised to stay at home to curb the spread of Coronavirus. Non-essential businesses closed, with people asked to work from home.

To investigate levels of compliance with these orders, researchers analyzed anonymous tracking data from 45 million mobile phone users across the United States. The authors calculated how much time residents in New York, Los Angeles, Chicago, Dallas, Houston, Washington D.C., Miami, Philadelphia, Atlanta, Phoenix, Boston, and San Francisco spent at home in the period between 1 January 2020 to 31

August 2020.

They then compared this with demographic information about the neighborhoods in which people lived, collected through The American Community Survey (ACS), a demographics survey program conducted by the U.S. Census Bureau.

The findings revealed that people living in areas with a higher percentage of wealthy residents, and with a higher average household income level tended to spend more time at home under the stay-at-home orders than people living in poor communities. This finding was valid across all cities that the researchers looked at.

The study also showed that education was correlated with compliance, as people who lived in neighborhoods with a high percentage of postgraduates tended to spend longer at home.

"Our study reveals the luxury nature of stay-at-home orders, which lower-income groups cannot afford to comply with," says author Xiao Huang, Assistant Professor of Geosciences at the University of Arkansas.

"This disparity exacerbates long-standing social inequality issues present in the United States, potentially causing unequal exposure to a virus that disproportionately affects vulnerable populations."

In the UK, too, it has been well-documented that those in more deprived and ethnically diverse communities are at greater risk from the virus.

Data from the Office for National Statistics (ONS) shows that those living in the most deprived neighbourhoods have been more than twice as likely to die from COVID as those in the least deprived. One of the reasons for this is thought to be that low-income workers typically have jobs that cannot be done from home, placing them at greater risk of

contracting COVID-19.

They are also more likely to have insecure 'zero hours' contracts, making them worry that if they do not go into work they might not have a job to return to.

Previous research by SAGE has also shown that people who earn less than £20,000, or who have savings of less than £100 are three times less likely to self-isolate.

The authors of the study argue that more needs to be done to protect vulnerable groups from the effects of COVID.

"We must confront systemic social inequality and call for a high-priority assessment of the long-term impact of COVID-19 on geographically and socially disadvantaged groups," says Xiao Huang.

More information: *Annals of the American Association of Geographers*, DOI: 10.1080/24694452.2021.1904819 , www.tandfonline.com/doi/full/1 … 4694452.2021.1904819

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