

Study suggests stay-at-home orders reduced COVID-19 infections and deaths

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New research on the impact of COVID-19 suggests that, in the complete absence of stay-at-home orders, the United States could have seen 220 percent higher rates of infection and a 22 percent higher fatality rate than if stay-at-home orders had been implemented nationwide.

The study, from researchers at the University of Alabama at Birmingham and published today in *JAMA Network Open*, analyzed daily state-level positive case rates against the presence or absence of statewide stay-at-home orders, or SAHOs. The team looked at the time period of March 1 to May 4, 2020, as SAHOs began to be implemented.

"During March and April, most states in the United States imposed shutdowns and enacted SAHOs in an effort to control the disease," said senior author Bisakha Sen, Ph.D., Blue Cross Blue Shield Endowed Chair in Health Economics, Department of Health Care Organization and Policy in the School of Public Health. "However, mixed messages from [political authorities](#) on the usefulness of SAHOs, popular pressure and concerns about the economic fallout led some states to lift the restrictions before public health experts considered it advisable."

Sen's team used data collected from the [COVID Tracking Project](#), which was initiated by the magazine *The Atlantic* in partnership with Related Sciences. The project collates data from state health agencies and makes it publicly available. The sample included 3,023 data observations.

"Our results indicate that a scenario of no SAHOs over this [time period](#) would have resulted in 220 percent higher cumulative case rates and 22 percent higher cumulative fatality rates compared to if there had been full imposition of SAHOs," said Sangeetha Padalabalanarayanan, Department of Health Services Administration, School of Health Professions and co-first author of the study.

For purposes of the study, SAHOs were considered to be in effect when a state's governor issued an order for residents of the entire state to leave home only for essential activities, and when schools and nonessential businesses were closed. Seven states never imposed SAHOs, and 12 states lifted their SAHOs before the May 4 study cut off.

A second aim of the study was to see if the proportion of African Americans in a state was associated with the number of positive cases of COVID-19 in that state.

"Previous attempts to understand the extent of COVID-19 cases within the African American population had been done at a county level," said co-first author Vidya Sagar Hanumanthu, Department of Health Services Administration. "Our state-level analysis showed that there was an association between the African American population and COVID-19 cases statewide. This finding adds to evidence from existing studies using county-level data on racial disparities in COVID-19 infection rates and underlines the urgency of better understanding and addressing these disparities."

The findings underscore the importance of stay-at-home orders in addressing the COVID-19 pandemic and the need to address racial disparities in rates of infection.

"While the high economic cost makes SAHOs unsustainable as a long-term policy, our findings could help inform federal, state and local policymakers in weighing the costs and benefits of different short-term options to combat the pandemic," Sen said. "Our findings also emphasize the importance of understanding and addressing the drivers of racial disparities in COVID-19 outcomes as part of the overarching goal of improving health equity in the United States."

More information: Sangeetha Padalabalanarayanan et al. Association of State Stay-at-Home Orders and State-Level African American Population With COVID-19 Case Rates, *JAMA Network Open* (2020). [DOI: 10.1001/jamanetworkopen.2020.26010](https://doi.org/10.1001/jamanetworkopen.2020.26010)

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