Finding the largest risk factors for COVID-19 infection

February 2 2022

Credit: Pixabay/CC0 Public Domain

Black residents of Baton Rouge and New Orleans faced twice the risk of SARS-CoV-2 infection as white residents, a study shows.

Ochsner Health and Pennington Biomedical Research Center analyzed

4,752 records from two large prevalence studies in both cities. The New Orleans data were collected in May 2020, the Baton Rouge data in July 2020.

"We found that communities that experience a lot of deprivation—high household crowding, lower income, disparities in education, etc.—are at higher risk for COVID," said Amy Feehan, Ph.D., a clinical research scientist at Ochsner and the lead author of the study. "But individual factors, such as race, marital status, age and other health issues, account for a lot of that risk."

The study shows that in Baton Rouge the odds of infection were higher for:

- People between 18 and 37 years old compared to people 38 and over.
- Black adults and single adults compared to white adults and married adults.
- People in health care, public-facing jobs, or other jobs compared to office workers.

The study shows that in New Orleans the odds of infection were higher for:

- Black adults and single adults compared to white adults and married adults. Infection risk for single adults was about 50 percent higher than for married adults.
- Households with multiple residents compared to people who lived alone.
- People with no other health issues compared to those with two or more medical conditions.

In addition to examining individual factors, the study also looked at characteristics of communities that might be related to higher COVID-19 infection. Infection risk was higher among residents in communities with larger differences in household income in New Orleans but not in Baton Rouge. Higher monthly rent in New Orleans and higher percentages of high school graduates in Baton Rouge communities were associated with lower odds of infection.

Kara Denstel, Project Manager for Population and Public Health Sciences at Pennington Biomedical, said the findings may have been influenced by when researchers gathered the information.

"New Orleans data were collected in May 2020, when residents were under a stay-at-home order. Most restaurants and shops were closed. Non-essential employees worked from home," Denstel said. "But when we collected the Baton Rouge data in July 2020, the stay-at-home orders had been lifted, businesses were reopening, and people were going back into the workplace."

"In addition, there was a rapid increase in knowledge and public health prevention campaigns during late spring and summer of 2020," Denstel said. "The reason young adults in Baton Rouge had the greatest risk of infection may have been because they were the first to go back to work and resume social activities. Meanwhile, by July 2020 older age had emerged as a major risk factor for severe COVID-19 so many older adults were still staying home."

The study was supported by Ochsner, the Baton Rouge Area Foundation, Louisiana COVID-19 Health Equity Task Force, The Humana Foundation, The Blue Cross and Blue Shield of Louisiana Foundation, Healthy Blue, the Huey and Angelina Wilson Foundation, and the Irene W. and C.B. Pennington Foundation.

Pennington Biomedical Executive Director John Kirwan, Ph.D., said the study illustrates another of the Research Center's strengths: flexibility. Pennington Biomedical responded quickly to the needs of Louisiana and its residents, pivoting to focus resources and the center's considerable talents on battling the pandemic.

"Knowing how the virus spreads and identifying the most vulnerable in our communities are important steps to slowing COVID-19 infections," Dr. Kirwan said.

The study was published in the journal *PLOS One*.

More information: Amy K. Feehan et al, Community versus individual risk of SARS-CoV-2 infection in two municipalities of Louisiana, USA: An assessment of Area Deprivation Index (ADI) paired with seroprevalence data over time, *PLOS ONE* (2021). DOI: 10.1371/journal.pone.0260164

Provided by Pennington Biomedical Research Center