

# Rural firearm-suicides impacted by socioeconomic, environmental factors

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In an attempt to address the escalating rate of self-inflicted firearm injury deaths in rural America, researchers are proposing interventions to reduce these suicides be community-based and include programs to reduce other diseases of despair, such as heart and liver diseases, diabetes and accidental opioid overdose. The recent decline in life expectancy of Americans has been attributed to these diseases of despair

and appear to primarily afflict white rural America.

Given the gaps in understanding the socioeconomic and [environmental factors](#) related to [firearm](#) suicide deaths, researchers from Boston University School of Medicine (BUSM) sought to understand the patterns and clustering of rural counties in the U.S. based on firearm suicide and drug-related death rates in the context of economic and [socioeconomic characteristics](#).

The researchers examined rural county-specific data from 2012 to 2016 of firearm suicide deaths, [homicide rate](#), drug related mortality rate, opioid prescription rate, median home price, veteran population, violent crime rate, primary economic dependence of counties, county socioeconomic characteristics such as low employment, persistent poverty, population loss and whether the county is a retirement destination.

"Our findings suggest that the affected rural populations are very diverse and there are collective environmental risk factors, including the primary economies that play an important role in firearm suicide rates. Hence, focusing on actions related to firearms alone without considering the built environment may not reduce these deaths," explained corresponding author Bindu Kalesan, Ph.D., MPH, assistant professor of medicine at BUSM.

The study has important policy and prevention implications, researchers say. "While most programs focus on risk factors, including the temporary removal of firearms from home, safe storage and denying sale of firearms, we need to incorporate other factors such as primary economies, using a broader public health approach to target interventions in high-risk areas which can simultaneously reduce gun suicides and opioid deaths," added Kalesan, who also is an assistant professor of community health services at Boston University School of Public Health.

**More information:** Bindu Kalesan et al. Intersections of Firearm Suicide, Drug-Related Mortality, and Economic Dependency in Rural America, *Journal of Surgical Research* (2020). [DOI: 10.1016/j.jss.2020.06.011](https://doi.org/10.1016/j.jss.2020.06.011)

Provided by Boston University School of Medicine

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