

Study finds firearm injuries increase in gentrified neighborhoods

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Gentrification can have a ripple effect on communities. While it can improve certain conditions in typically low-income areas, rising housing costs can displace residents, causing social disruption and other downstream effects.

Investigators from Brigham and Women's Hospital conducted a study

using national data to examine the relationship between the rate of [firearm injuries](#) and gentrification. Their findings, published in *JAMA Surgery*, show that gentrified neighborhoods have a 62% higher [firearm](#) injury incidence rate than non-gentrified neighborhoods with comparable socioeconomic characteristics.

"To prevent firearm injuries in these communities, we must understand where the behavior is stemming from," said corresponding author Molly Jarman, Ph.D., MPH, of the Center for Surgery and Public Health in the Department of Surgery at Brigham and Women's Hospital. "It's vital we begin to investigate the factors causing social disruption and housing displacement, such as gentrification, to develop and implement targeted interventions to prevent firearm injuries."

The Centers for Disease Control and Prevention reported that 45,000 firearm injuries occurred in the U.S. in 2020. Injuries from firearms are linked to attributes of socioeconomic disadvantage, such as [income inequality](#) and [minority status](#), but not all neighborhoods at socioeconomic disadvantage experience high levels of gun violence.

Jarman and colleagues conducted their study to identify factors that may put neighborhoods at greater risk for firearm injuries.

The team collected nationwide, urban U.S. Census tract-level data from the Agency for Health care Research and Quality Social Determinants of Health database between 2010 and 2019. They used Rural Urban Commuting Area codes to capture urban neighborhoods at risk of gentrification for the analysis.

A total of 59,379 urban Census-tracts were examined from this data set. The investigators also collected geographical firearm injury data from the Gun Violence Archive (GVA) from 2014 to 2019.

In the study, the investigators defined gentrification as a measurable value to identify and calculate the gentrified areas in their data sets. Their definition of gentrification was (a) an area in a central city neighborhood with (b) a median housing price that increased over the regional median value and (c) a median household income at or below the 40th percentile of the median regional household income. They identified 14,125 Census-tracts as gentrifying.

The team then compared the changes in rates of firearm injuries by identifying three financial categories with similar socioeconomic characteristics in the urban Census-tract data: low-income non-gentrifying, gentrifying, and high-income non-gentrifying.

The team found that gentrified neighborhoods had a 62% higher firearm [injury](#) incidence rate than non-gentrified communities with comparable sociodemographic characteristics. They also found that neighborhoods undergoing the gentrification process experienced an additional 26% increase in firearm incidence than non-gentrifying neighborhoods.

"The process of [social disruption](#) and housing displacement due to gentrification puts people in the community in a high-stress environment," said leading author Sarabeth Spitzer, MD, of the Brigham's Department of Surgery. "The solution is complicated, but our findings reveal an opportunity to identify communities that may be at increased risk of firearm violence. Hopefully, this allows support and resources, such as [community outreach](#) and education programs, to target these areas and mitigate this risk."

Limitations of the study include that the data set from the GVA contains data as far back as 2014 and provides geographical information only, withholding any identifiable information about who was involved in the reported firearm incident.

The study was observational in nature and cannot show causality. As its next steps, the team plans to conduct an interventional study that tests the effectiveness of social support and firearm violence prevention strategies in gentrified communities.

More information: Gentrification as a Factor in the Incidence of Firearm Injuries, *JAMA Surgery* (2023). [DOI: 10.1001/jamasurg.2023.3939](https://doi.org/10.1001/jamasurg.2023.3939)

Provided by Brigham and Women's Hospital

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