

# Study finds link between state gun ownership rates and murders of women

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Women in states with higher rates of gun ownership are at greater risk of being killed by people they know than those in states where a smaller percentage of people own guns. And ownership rates alone explain 40 percent of the variation in women's homicide victimization rates, compared to only 1.5 percent of the variation in men's victimization rates, according to a new study by Boston University School of Public Health (BUSPH) researchers.

The study in the journal *Violence and Gender* is the first to examine the relationship between state-level firearm ownership and homicide [rates](#) by stratifying by both gender and stranger vs. non-stranger crimes.

The researchers found a "substantial" association between state [gun ownership](#) rates and killings of women by guns, concluding that while there are multiple factors that predict rates of gun deaths in which males are the victims, "the prevalence of firearm ownership alone is enough to predict the rate of firearm-related homicide of females in a state quite well."

Michael Siegel, MD, lead author of the study and a professor of community health sciences at BUSPH, noted that prior research has shown a correlation between state-level gun ownership rates and non-stranger homicides, defined as meaning that the victim and offender are family members or intimate partners or are otherwise acquainted. Distilling that association by gender is important, he said, because 88 percent of the killings of women in the U.S. are committed by non-

strangers.

"Because nearly nine in 10 femicides are committed by non-strangers, and because 40 percent of the variance in femicide is explained by state-level firearm ownership rates alone, these findings are particularly germane for those with an interest in women's homicide prevention," said co-author Emily Rothman, associate professor of community health sciences and an expert on domestic violence.

Siegel said the study found no support for the premise that a greater availability of guns protects women from homicide. Instead, he said, greater availability "does appear to increase the risk for firearm homicides committed by non-strangers."

The study found that the association between gun ownership rates and non-stranger shooting deaths was approximately equal for men and women. But, in contrast to the variance in the female [homicide rate](#), state-level gun ownership accounted for less than two percent of the variation in the male murder rate, suggesting that other factors influence the rate of male homicides.

The study found that for every 10 percentage point increase in state-level gun ownership, the female gun-related homicide rate increased by 10.2 percent. That suggests, the authors said, that if the proportion of gun ownership in Wyoming was to fall from 73 percent (the average level between 1981-2013) to 40 percent, its female homicide rate could be predicted to drop by about 33 percent.

Siegel and Rothman acknowledged that they could not establish a causal relationship between gun ownership and homicide rates because of the possibility of reverse association - i.e., that people in states with higher rates of homicide were more likely to purchase guns to protect themselves. The study controlled for 16 variables that help to rule out

alternate explanations for the association between gun ownership and the female homicide rate, however.

Also, because of a lack of data on gun ownership at the state level, the study used a proxy for estimating household gun ownership that is based on the extent to which guns are used in suicides and on state-level hunting license rates. The proxy correlates closely (.95) with self-reported survey measures of household firearm ownership, the authors said.

The study analyzed state-specific homicide data from the Supplemental Homicide Reports of the FBI's Uniform Crime Reports, the only national data source that records victim-offender relationships. The researchers controlled for state-level variables including age, race/ethnicity, poverty rate, crime rate and per-capita alcohol consumption.

The study found that the average gun ownership rate in the U.S. between 1981 and 2013 was about 40 percent, ranging from a mean average low of 12 percent in Hawaii, to a high of 73 percent in Wyoming. The average male gun-related [homicide](#) victimization rate across all states was 7.0 per 100,000 people, ranging from 1.2 per 100,000 in Iowa to 18 per 100,000 in Louisiana. Female victimization rates were lower, ranging from 0.4 per 100,000 in Massachusetts to 3.3 in Wyoming.

**More information:** Michael B. Siegel et al. Firearm Ownership and the Murder of Women in the United States: Evidence That the State-Level Firearm Ownership Rate Is Associated with the Nonstranger Femicide Rate, *Violence and Gender* (2016). [DOI: 10.1089/vio.2015.0047](#)

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