US Civilian Active Shooter Incidents Involving a Semiautomatic Rifle Are More Lethal Than Incidents Involving Other Firearms

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In their study entitled, "Wounding patterns based on firearm type in civilian public mass shootings in the United States," the authors concluded that "civilian public mass shooting events with a handgun are more lethal than those associated with the use of a rifle."[1] This conclusion is not supported by the results reported by the authors or by previously published literature on this topic.[2]

This study reviewed 23 civilian public mass shooting events and analyzed autopsy reports for 232 victims. The sample included only 44% of the total persons killed in these incidents, resulting in a selection bias that severely limits the ability for appropriate causal inference. Of the victims included, 104 (44.8%) were shot by an assault rifle. The study reports no significant differences in case fatality rates (numbers of persons killed/number of persons wounded) between firearm types (handgun, shotgun, or rifle), no significant trends in the percentage of persons killed per firearm type, and no significant difference in the number of people shot in events with only 1 type of firearm. Despite the manuscript describing no statistically significant results by firearm type used for case fatality rates or the number of persons wounded or killed, the abstract conclusion reads, "Civilian public mass shooting events with a handgun are more lethal than those associated with the use of a rifle." Unfortunately, the abstract is the most frequently read and most easily accessed portion of the article.[3,4]

Furthermore, contrary to the authors' statements regarding the lack of previous studies, this study is not novel in this field. A 2018 JAMA publication examined the lethality of civilian active shooter incidents with and without a semiautomatic rifle.[2] All 248 active shooter incidents identified in Federal Bureau of Investigation reports from 2000 to 2016 were reviewed, with the exclusion of 2 incidents for pre-specified reasons. This study included all 898 persons wounded and 718 persons killed in these incidents. Active shooter incidents with the presence of a semiautomatic rifle were associated with an 81% increase in the number of persons wounded, a 97% increase in the number of persons killed, and a 91% increase in the number of persons wounded or killed. These results were all statistically significant. The case fatality rate (persons who died if wounded in incidents) was similar in incidents with and without a semiautomatic rifle.

The Oxford English Dictionary defines lethality as the capacity to cause serious harm or damage.[5] As Coble and colleagues[6] noted in 1992: semiautomatic rifles are designed for easy use, can accept large magazines, and fire high-velocity bullets—features enabling shooters to wound and kill more people per incident.

More people are wounded and killed in incidents in which semiautomatic rifles are present compared with incidents involving other firearms when the full dataset is examined. This arguably draws a more appropriate scientific conclusion, derived from statistically significant results, that civilian public shooting incidents with a semiautomatic rifle are more lethal than those associated with the use of other firearms (including handguns). These findings further highlight the need for improved publicly available data to understand the scope, factors, and possible interventions to reduce firearm-related injury.

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