A New Era for Firearm Violence Prevention Research

Despite many remaining obstacles, there is hope that the US will soon have research that clarifies many of the unanswered questions about firearm violence and its prevention. The need is urgent: firearm violence levels are high and rising. In 2021, more than 48,000 firearm-related deaths occurred in the US, and untold numbers of quality-adjusted life-years were lost. Existing health disparities were exacerbated, particularly for Black individuals whose firearm homicide rates are 10 times greater than White individuals (with rates of 29.0 per 100,000 vs 2.9 per 100,000, respectively), and among whom the growth in firearm homicides has been concentrated.

However, important opportunity exists for discovery and lifesaving policy innovation. Many critical research questions, neglected for decades, may now benefit from recent federal and private research funding that has supported a surge in research on preventing firearm suicides, community-based gun violence, mass shootings, police shootings, unintentional firearm-related injury, and intimate partner homicides. These are the 6 concurrent epidemics that underlie the nation’s firearm violence problem.

Historically, the alignment of gun policy views with partisan politics led many researchers and their sponsors to forego gun violence research as too controversial. Despite widespread agreement that gun violence represents a major problem in the US, views on firearm policies remain deeply divided. In a 2021 Pew Research Center survey of 5,109 US adults, 72% of respondents ranked gun violence as a top concern for the country (comparable with COVID-19). However, respondents were split along partisan lines about how to address it; only 20% of self-described Republicans favored stricter gun laws, whereas 81% of self-described Democrats favored stricter gun laws.

If differences in values or objectives explained these policy disagreements, there might be little for science to contribute. But a recent analysis that involved 173 gun policy researchers, advocates, and analysts suggests that experts who favor laws encouraging wider access to firearms share a common set of objectives with those favoring restrictive laws. In fact, both groups rank their objectives almost identically; they prioritize policies that they believe will reduce firearm homicides, suicides, and mass shootings, and consider protection of individual rights, hunting, and sport shooting of secondary importance.

Instead, advocates of restrictive and permissive gun policies disagree on which policies are likely to achieve these shared goals. For instance, they disagree on whether owning firearms makes households more or less safe or whether policies that prevent firearm suicides and firearm homicides will merely cause suicides and homicides by other means to increase. That is, they disagree on questions about the real effects of policies and personal choices about firearms, questions that have (possibly complicated) right and wrong answers that scientific research can, in principle, help resolve.

Although good scientific studies have investigated questions like these over the past several decades, many gun policies have not been studied and many more have not been studied well. Unlike the overwhelming body of evidence that eventually swayed public opinion and policy on the dangers of smoking, comparable evidence has not yet been assembled to guide individuals and policymakers on gun policies. With few studies, many of which have significant methodological shortcomings, advocates of opposing policy positions can easily select isolated findings that support their preexisting views.

This partisan impasse resulted in passage of the 1996 Dickey Amendment, which triggered a funding drought lasting more than 2 decades during which only a few courageous philanthropies—notably the Joyce Foundation—supported work in this area. The limited funding for gun violence prevention research began to change in 2018, when Arnold Ventures committed more than $20 million to fund objective research through the National Collaborative on Gun Violence Research, a private philanthropy staffed by RAND.

This project, subsequently joined by other philanthropic donors, has funded more than 50 research projects across the country and supported more than a dozen dissertation and postdoctoral training awards. In late 2019, Congress appropriated $25 million in funding for firearm violence research, a line item that has remained in the budget annually and may increase to $50 million in fiscal year 2023. These investments, combined with those of private philanthropies, have driven an unprecedented wave of new research, with approximately 100 funded research projects under way investigating community-based violence reduction, officer-involved shootings, gun policies, and many other topics.

Already there is mounting evidence for the effectiveness of some gun policies. An ongoing and periodically updated systematic review evaluates evidence on the potential causal relationships of 18 gun laws with...
8 outcomes, including firearm homicides and suicides, mass shootings, police shootings, defensive gun use, and gun industry outcomes. In the most recent edition of this review, 2 policies were identified as now having “supportive” evidence, the highest evidence rating reserved for effects found in multiple methodologically stronger studies using at least 2 independent data sources. Specifically, child access prevention laws (laws requiring the safe storage of firearms) were associated with reductions in firearm-related childhood deaths and injuries, and stand-your-ground laws, which reduce the obligation to retreat when possible before using lethal force, were associated with increases in firearm homicides. As of the most recent update in 2020, other policy effects had moderate or limited evidence, although the publication of many more relevant studies since then will likely expand the number of policy areas with relatively strong and consistent evidence for at least some outcomes when the review is updated later this year.

Importantly, the quality of these studies has been improving as the field has become more aware of common sources of bias and error in the earlier literature. Because randomized trials have rarely been possible and effect sizes are expected to be small, rigorous assessment of gun policy effects requires careful use and interpretation of quasieperimental methods. As research advancements continue, investigators should avoid common major methodological problems that represent well-known limitations of earlier generations of this research, including use of cross-sectional study designs when longitudinal analyses are possible.

An ongoing obstacle to discovery in this field has been a weak data infrastructure for research. Currently, the federal government does not collect or maintain time-series data on nonfatal firearm injuries at the state level, nor provide estimates of state gun ownership. The Centers for Disease Control and Prevention’s (CDC) Behavioral Risk Factor Surveillance System collects data on risk behaviors, such as seatbelt use and consumption of fruit juice, but its core module has not inquired about gun access in more than 15 years.

The Federal Bureau of Investigation (FBI) maintained statistics on crimes, including gun crimes, for more than 90 years through the Uniform Crime Reporting Summary Reporting System. However, the FBI allowed this system to lapse in 2021, hoping law enforcement agencies across the country would switch to its new National Incident-Based Reporting System (NIBRS). NIBRS would be a vast improvement over the old system if most police departments joined it, but only 53% of 18,818 agencies had joined by 2021, and critically important agencies in large cities such as New York and Los Angeles have not. Consequently, the FBI did not release quarterly 2021 crime estimates for states, and it has warned that the planned release of 2021 data will not include crime trend data nor estimates for some states and regions.

Despite these and other shortcomings, some important data systems are improving. In 2018, Congress fully funded the National Violent Death Reporting System, meaning data with detailed information on the circumstances of violent deaths from every state will soon be available. This resource promises to become highly valuable for the study of fatal firearm violence. Other ongoing efforts, such as the CDC’s Firearm Injury Surveillance Through Emergency Rooms pilot, hold promise for improving data collection for nonfatal firearm injury. Similarly, individual researchers and organizations have developed and shared important new data resources on mass shootings, gun ownership, police shootings, historical gun laws, and nonfatal firearm injuries that are all being used in ongoing research.

With new funding, new data resources, and growing interest among researchers representing diverse disciplinary perspectives, the field of firearm injury research is expanding. In November 2022, the CDC and the National Institute of Justice are co-sponsoring the first National Research Conference on Firearms Injury Prevention in Washington, DC. This conference will be the first opportunity for most researchers with recently funded gun violence prevention projects to share their results, and hopefully the beginning of a new generation of research findings that will contribute to meaningful progress toward reversing the trend of rising firearm death rates.

ARTICLE INFORMATION
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Additional Information: Dr Morral leads the RAND Corporation’s Gun Policy in America initiative, and he is director of the National Collaborative on Gun Violence Research. Dr Smart is an economist at RAND’s Gun Policy in America initiative.

REFERENCES