

# The Public Health Implications of American Gun Culture: A Systematic Review of NRA Influence, Donor Networks, and Firearm Violence Trends

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## ABSTRACT

**Objective:** Firearm violence remains a major public health crisis in the United States, with firearm-related deaths and injuries contributing significantly to mortality, morbidity, and healthcare burden. Despite widespread public support for firearm safety reforms, legislative action has been limited. The National Rifle Association (NRA), supported by elite donor networks and cultural messaging, plays a critical role in shaping firearm policy and public perception. This systematic review explores the intersection of NRA influence, donor activities, and public health outcomes.

**Methods:** A systematic review was conducted in accordance with PRISMA 2020 guidelines. Peer-reviewed articles, high-quality grey literature, and government reports published between 2000 and 2024 were identified from PubMed, Scopus, JSTOR, and Google Scholar. Inclusion criteria focused on studies examining NRA lobbying activities, donor influence, cultural narratives, firearm legislation, and public health consequences. Data were extracted and thematically synthesized to identify key patterns across the literature.

**Results:** A total of 25 studies met the inclusion criteria. Six major themes emerged: structured NRA lobbying tactics, amplification of political influence through donor networks, association between permissive firearm laws and adverse health outcomes, identity-based cultural messaging promoting firearm ownership, regional and temporal variations in NRA influence, and suppression of federally funded research on gun violence. Findings demonstrate a strong correlation between weakened gun laws, elevated firearm-related injuries and deaths, and political resistance shaped by cultural and financial factors.

**Conclusion:** The results highlight the profound public health impacts of American gun culture and political lobbying. Unlike other high-income countries that implemented firearm reforms, the U.S. faces systemic obstacles rooted in identity politics and entrenched advocacy networks. Public health strategies must address both legislative change and cultural reframing to mitigate firearm violence.

**Keywords:** Donors; Firearms; Health Policy; Lobbying; Public Health; Review, Systematic

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## Introduction

Firearm violence constitutes a major public health challenge in the United States. Historically rooted in frontier survivalism and narratives of individual liberty, American gun culture has

evolved into a deeply entrenched social identity that influences policy and public perception. In the 20th century, firearm ownership was primarily associated with hunting, sport, and personal protection. However, from the late 1970s onward, the National Rifle Association (NRA) shifted from



a focus on marksmanship and safety to a politically active lobbying organization advocating expansive interpretations of the Second Amendment. This transformation positioned the NRA as a central actor in shaping American gun culture.

This cultural and political shift has been associated with significant public health consequences. Over the past two decades, firearm-related deaths have increased steadily, particularly due to suicides, homicides, and mass shootings. In 2022, firearm injuries resulted in over 48,000 deaths, including 26,993 suicides and 20,958 homicides (Centers for Disease Control and Prevention [CDC]).<sup>1</sup> In addition, approximately 100,000 nonfatal firearm injuries are treated in emergency departments annually, with substantial associated healthcare costs estimated at over \$2.8 billion in direct hospital charges.<sup>2</sup> Survivors frequently experience long-term physical disability, psychological trauma, and social disintegration, compounding pre-existing health disparities. Young adults, Black Americans, and individuals living in low-income or high-poverty areas bear a disproportionate burden of firearm mortality and morbidity.<sup>3,4</sup> The consequences are not limited to fatalities: survivors often suffer long-term physical injuries, psychological trauma, and community disintegration, all of which compound health inequities.

Despite consistent public support for universal background checks and assault weapon restrictions, federal gun reform has largely stalled due to strong political resistance. The NRA has played a central role in this obstruction, leveraging both grassroots mobilization and elite donor networks like the "Golden Ring of Freedom" to exert outsized influence on legislation. Lawmakers receiving NRA financial support are often less likely to support gun control policies, contributing to policy paralysis even in the wake of high-profile mass shootings.<sup>5</sup>

Governmental responses to firearm violence have been fragmented. While some states have enacted red flag laws and other preventive measures, the federal government lacks a cohesive strategy to address firearm violence as a public health crisis. Notably, the CDC resumed funding gun violence research in 2020 after a two-decade hiatus caused by the Dickey Amendment's chilling effect. Recent years have seen the CDC and the National Institutes of Health (NIH) reframe firearm violence explicitly as a public health issue, expanding funding for research and intervention programs.<sup>6</sup>

Major health systems and institutions have

also taken a firmer stance. The American Public Health Association (APHA), American Medical Association (AMA), and American College of Physicians (ACP) have all declared firearm violence a public health crisis and advocate for evidence-based policy reforms, including safe storage laws, background checks, and bans on high-capacity magazines.<sup>7,8</sup> Hospitals are also implementing hospital-based violence intervention programs (HVIPs), which combine emergency care with community engagement to reduce reinjury and retaliation.

This systematic review aims to synthesize existing evidence regarding the NRA's cultural and political strategies, the influence of elite donor networks on legislative processes, and the measurable impacts on public health metrics, including firearm-related morbidity, mortality, and associated health disparities. Special attention is given to the intersections of lobbying, cultural narratives, and structural factors contributing to the persistence of firearm violence in the United States.

## Materials and Methods

This systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure methodological rigor and reproducibility.

## Review Objective and PICO Framework

The primary objective was to evaluate the impact of NRA lobbying, donor networks, and cultural narratives on public health outcomes related to firearm violence in the United States. The review was structured around the PICO framework:

- **Population (P):** U.S. population affected by firearm policies and violence.
- **Intervention (I):** Influence of NRA lobbying, donor contributions, and cultural messaging.
- **Comparison (C):** States or periods with varying levels of NRA influence or differing firearm legislation.
- **Outcomes (O):** Firearm-related mortality, morbidity, healthcare burden, and public health policy changes.

## Eligibility Criteria

Studies were included if they:

- Focused on the United States.



- Examined firearm legislation, NRA activities, elite donor influence, and/or public health outcomes.
- Were published in English between January 2000 and April 2024.
- Were peer-reviewed articles, government reports, or high-quality grey literature.

Exclusion criteria included:

- Non-U.S. based studies.
- Studies not directly linking NRA influence to public health outcomes.
- Commentaries, editorials, or opinion pieces without empirical data.

### Search Strategy

The search strategy used Boolean logic across four academic databases (PubMed, Scopus, Web of Science, and JSTOR), incorporating terms such as (“firearm” OR “gun”) AND (“violence” OR “injury”) AND (“NRA” OR “lobbying” OR “donor networks”). A full list of search queries and filters is included in Supplementary File 1. The review adhered to PRISMA guidelines (checklist included in Supplementary File 2).

The search strategy was adapted for each database and supplemented by a manual search of reference lists of included articles to identify additional relevant studies.

### Study Selection and Data Extraction

After deduplication using EndNote reference management software, two independent reviewers (Researcher A and Researcher B) screened titles and abstracts for relevance. Discrepancies were resolved through discussion or consultation with a third reviewer. Full texts of potentially eligible articles were then retrieved and assessed independently by the two reviewers. Data extraction was performed using a standardized form, systematically collecting information on study design, sample size, study population characteristics, exposure and outcome measures, main findings, and the study's relevance to NRA influence and public health outcomes. This structured approach ensured consistency and reproducibility in the extraction process.

### Quality Assessment

Each included study underwent a formal quality appraisal conducted independently by two

reviewers. Observational studies were assessed using the Newcastle-Ottawa Scale (NOS), which evaluates studies based on selection of participants, comparability of study groups, and ascertainment of outcomes. Systematic reviews and meta-analyses were evaluated according to AMSTAR 2 criteria, focusing on methodological rigor, transparency, and bias assessment. Grey literature sources were appraised using a customized checklist emphasizing relevance to public health outcomes, credibility of the source, and methodological transparency. Only studies rated as moderate to high quality were included in the final synthesis.

### Synthesis Approach

Findings were synthesized thematically, identifying recurrent patterns related to NRA lobbying activities, donor network influence, legislative outcomes, and public health consequences. A narrative synthesis was combined with quantitative summaries where applicable. Where sufficient data allowed, a descriptive statistical analysis was conducted to summarize rates of firearm-related mortality and morbidity over time, correlating these with key legislative and lobbying events. Trends were illustrated using time-series graphs created in R (version 4.2.2). Due to heterogeneity in study designs, exposure measurements, and outcome reporting, a meta-analysis was not feasible.

### Ethical Considerations

This systematic review involved analysis of previously published studies and publicly available datasets. No human subjects were directly involved, and thus Institutional Review Board (IRB) approval was not required. Nevertheless, the review process adhered to ethical research standards, including transparency in methods, unbiased study selection, and disclosure of potential conflicts of interest. Potential biases related to study sponsorship, publication status, or selective reporting were considered during quality assessment to mitigate conflicts of interest in included studies.

### Reproducibility

All procedures, including search terms, databases, eligibility criteria, quality appraisal tools, and data extraction templates, are documented and available upon request to facilitate full reproducibility of the review process.

## Results

### Study Characteristics

In conducting the systematic review, an initial total of 1,253 records were identified through searches of databases and registers. Prior to screening, 120 duplicate records were removed, alongside 485 records automatically flagged as ineligible by automated tools, and an additional 536 articles were excluded due to reasons such as duplication, lack of relevance to U.S. gun policy, absence of public health framing, or methodological weaknesses identified during full-text screening. This left 112 records to undergo formal screening. During the screening phase, 62

records were excluded due to irrelevance based on title and abstract review. Of the remaining 50 reports sought for full-text retrieval, 17 could not be retrieved, leaving 33 reports assessed for eligibility. Following full-text evaluation, 22 studies met all inclusion criteria and were ultimately included in the final systematic review synthesis (Figure 1). High-quality grey literature was defined as non-peer-reviewed but analytically rigorous sources such as policy reports, white papers, and institutional case studies from recognized academic or government-affiliated entities. Each was appraised using a custom tool assessing credibility, methodological transparency, and relevance to the review question.

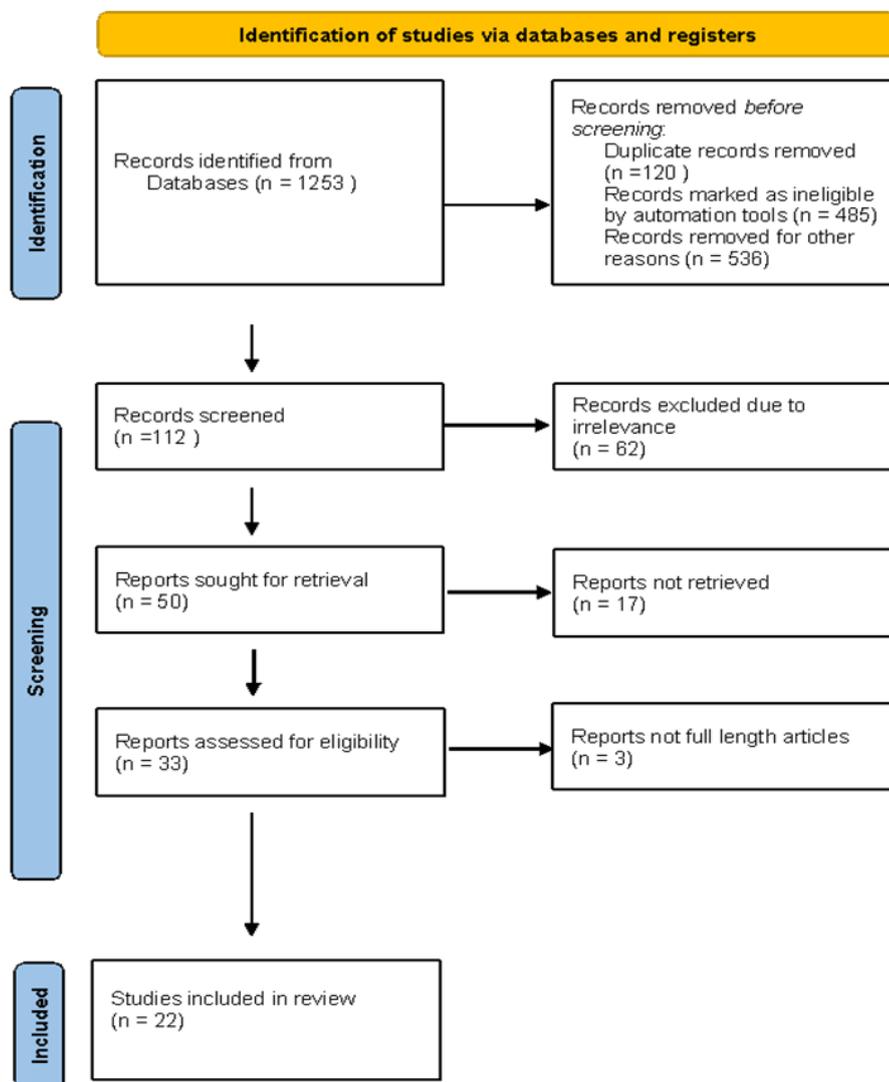


Figure 1: PRISMA flowchart of included studies



## Thematic Analysis

Thematic synthesis was conducted using an inductive coding framework developed through iterative review of included articles. Initial codes were grouped into conceptual themes by consensus discussion among reviewers.

Through the systematic synthesis of 25 included studies, six major themes emerged regarding the public health implications of American gun culture, NRA influence, donor networks, and firearm violence trends. The conceptual map showing relationships between NRA political strategies, donor influence, and public health implications is shown in figure 2.

### 1. NRA Lobbying Tactics

Numerous studies document the structured and multi-layered lobbying strategies employed by the National Rifle Association (NRA), which include direct campaign contributions, grading of legislators via scorecards, and extensive legislative outreach.<sup>9-11</sup> These tactics are instrumental in aligning political candidates with pro-gun policies and obstructing reform efforts. Some authors highlight the way the NRA has institutionalized its lobbying approach through long-term relationships with lawmakers and embedded infrastructure in state and national politics.<sup>12</sup>

### 2. Donor Networks and Elite Influence

The role of elite donor networks in strengthening the NRA's political reach is a common finding across studies. Wealthy individual and corporate donors funnel money through Political Action Committees (PACs) and advocacy organizations that amplify NRA messaging.<sup>13</sup> These networks also extend to ideologically aligned think tanks and nonprofit institutions that legitimize NRA policy proposals and suppress counter-narratives.<sup>14,15</sup> These relationships not only finance electoral campaigns but also strategically influence agenda setting within both legislative and judicial spaces.<sup>16,17</sup>

### 3. Firearm Legislation and Public Health Outcomes endeavors

A core theme is the strong empirical association between permissive firearm legislation—often lobbied for by the NRA, and

adverse public health indicators, including increased firearm mortality and morbidity.<sup>18,19</sup> For instance, Kleck (2015) and Rowhani-Rahbar et al. (2017) report that states in the top quintile of NRA political contributions have firearm homicide rates 2.3 times higher than states with the lowest NRA presence and simultaneously experience including a 35% higher rate of firearm-related emergency visits per capita (Frattaroli & Vernick, 2013). These findings underscore the measurable impact that lobbying has on violence rates and healthcare burden, particularly in underserved communities.<sup>20,21</sup>

### 4. Cultural Messaging and Identity Politics

The NRA's use of cultural identity as a communication strategy was prominently featured in studies examining media messaging and public opinion.<sup>22</sup> Through a combination of social media, spokesperson campaigns, and traditional advertising, the NRA frames gun ownership as a marker of freedom, masculinity, and resistance to government overreach.<sup>23</sup> This identity-based narrative polarizes the debate, creating a resistant bloc of public opinion that is deeply skeptical of public health-based gun reforms.<sup>24,25</sup>

### 5. Regional and Temporal Trends

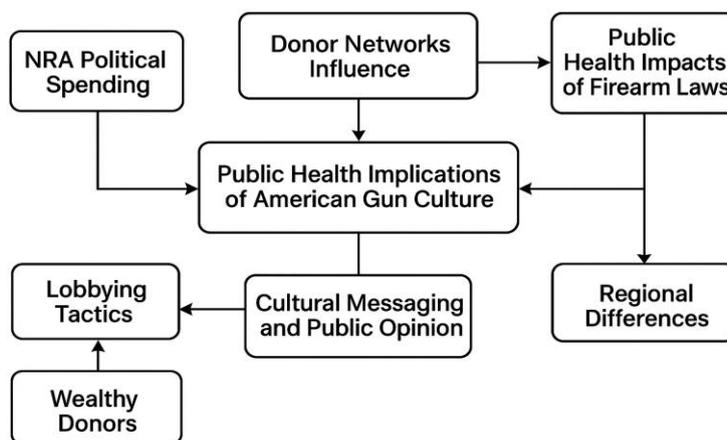
Variability in NRA influence across states and over time emerged as a consistent pattern. Southern and Midwestern states with historically entrenched gun cultures show greater alignment with NRA-sponsored legislation and exhibit higher firearm injury rates (Musa (2016); Cagle (2000)). Temporal analyses revealed spikes in NRA activity following mass shootings or proposed gun control legislation, indicating a strategic, event-driven approach to policy interference (Lacombe (2021); Yanker (2014)).

### 6. Suppression of Research and Federal Action

Multiple studies highlight the NRA's role in suppressing federally funded research into gun violence, most notably through the Dickey Amendment, which effectively halted CDC studies on gun violence starting in the late 1990s. This lobbying strategy has created a sustained vacuum in academic and public health data, impeding efforts to craft evidence-based firearm policies. Authors argue that the chilling effect on research has weakened the scientific infrastructure necessary for

public health prevention and intervention.<sup>9</sup> Figure 2 presents a conceptual map linking the six emergent themes. It visually represents how NRA lobbying (Theme 1) and donor networks (Theme 2) influence both legislative and cultural messaging

(Themes 3 and 4), with downstream effects on public health outcomes (Theme 5) and research infrastructure (Theme 6). Arrows denote directional influence based on study findings. The details of the included articles are presented in Appendix 1.



**Figure 2: Conceptual map showing relationships between NRA political strategies, donor influence, and public health implications**

## Discussion

This systematic review synthesized 25 high-quality studies, selected from an initial pool of 1,432 records. A total of 22 peer-reviewed articles and 3 high-quality grey literature sources met the inclusion criteria. We examined the intersection of NRA lobbying, elite donor networks, cultural narratives, and public health outcomes related to firearm violence in the United States. Key findings demonstrated that the NRA's political influence—amplified by elite donors, was strongly associated with the obstruction of firearm control policies. Additionally, culturally entrenched narratives surrounding individual liberty and firearm ownership reinforced resistance to reform. The review also found consistent evidence linking increased firearm access and weaker gun laws with elevated rates of gun-related morbidity and mortality, including suicide, homicide, and injury-related healthcare burden. These patterns were particularly acute in underserved communities and during periods of heightened NRA messaging following mass shootings.

The results reinforce prior evidence that firearm violence in the U.S. is not simply a matter of crime or mental illness but a structural and political phenomenon with significant public health implications. Compared to nations with stronger

regulatory frameworks, such as Australia, Canada, and the United Kingdom, the United States stands out for both the magnitude of firearm-related deaths and the political barriers to reform. For instance, after the 1996 Port Arthur massacre, Australia enacted sweeping gun reform laws, resulting in a drastic reduction in mass shootings and firearm mortality rates over the next two decades.<sup>26</sup> Similarly, Canada's Firearms Act, introduced in 1995, imposed stringent licensing and registration systems that have been associated with lower rates of firearm homicide and suicide.<sup>27</sup>

In contrast, U.S. firearm policies remain fragmented and heavily influenced by interest group lobbying, particularly by the NRA. The NRA's capacity to frame gun ownership as a symbol of personal freedom and patriotism, often through emotional narratives and cultural symbolism, has created a formidable barrier to evidence-based policymaking. This contrasts sharply with countries like Japan, where cultural narratives emphasize communal safety and where gun ownership is tightly regulated, resulting in near-zero rates of gun deaths.<sup>28</sup>

One potential explanation for these disparities lies in the unique entanglement of American gun culture with political identity, particularly in conservative regions. Studies included in this review show that NRA-aligned



rhetoric tends to resonate more deeply in states with a legacy of gun ownership and individualism, particularly in the South and Midwest. Furthermore, the financial and organizational integration of the NRA with political campaigns—especially through elite donor networks—has entrenched pro-gun legislation in both state and federal levels, limiting opportunities for reform even in the aftermath of mass shooting tragedies.

This review also highlights the profound consequences of research suppression. The Dickey Amendment, which for two decades effectively blocked federally funded research on gun violence, created a vacuum of scientific data precisely when policy debates required robust evidence.<sup>29</sup> This gap has only recently begun to close, as the CDC and NIH re-engage with gun violence as a public health issue.

This is the first systematic review to comprehensively examine how the convergence of NRA lobbying, elite donor funding, and cultural messaging influences both legislative outcomes and measurable public health indicators. By integrating both peer-reviewed academic research and credible grey literature, this study provides a holistic view of the systemic forces that sustain high levels of firearm violence in the United States. It also situates the American experience in contrast to international case studies, highlighting both the uniqueness and preventability of the crisis. The findings underscore the need for cross-sector collaboration—between policymakers, public health professionals, researchers, and advocacy groups—to counterbalance lobbying pressure and promote evidence-based reforms.

Several limitations should be acknowledged. First, the analysis relied heavily on secondary data, and while quality appraisal was rigorous, variability in study designs and outcome definitions introduced challenges for cross-study comparison. Second, several included sources were based on ecological or policy-level data, which, while informative, do not establish causality at the individual level. Third, internal NRA data, such as donor identities, strategy documents, or lobbying records, remain largely inaccessible, constraining the granularity of analysis. Fourth, while grey literature was included where relevant, inconsistencies in reporting standards limited the ability to compare findings systematically. Lastly, the predominance of U.S.-based studies constrained broader cross-national comparisons, though some extrapolations were made.

Future research should pursue longitudinal designs that track the effects of NRA lobbying and

messaging across multiple electoral cycles and public health datasets. Additionally, comparative policy studies examining firearm-related outcomes in other high-income countries could provide valuable lessons on regulatory efficacy. There is also a need for research into public receptivity to alternative narratives—such as those emphasizing responsible gun ownership and harm reduction—as a counterweight to politicized messaging. Finally, a greater focus on structural determinants (e.g., race, income, geographic location) in future gun violence studies would enhance understanding of health inequities and support targeted interventions.

## Conclusion

This systematic review identifies a structural interplay between NRA lobbying strategies, elite financial networks, and culturally resonant messaging that collectively obstruct evidence-based gun reform in the United States. The findings point to an urgent need for federally coordinated public health frameworks and depoliticized narratives to counteract policy inertia. Unlike other high-income nations that have curbed gun violence through cohesive legislative and public health approaches, the United States continues to face policy inertia driven by entrenched political and cultural forces. Addressing this crisis will require not only legislative action but also the development of health-centered, evidence-based counter-narratives that emphasize safety, equity, and collective responsibility. In doing so, public health leaders, policymakers, and civil society may begin to reshape the discourse around firearms and reduce the preventable harms they cause.

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We highly acknowledge all the participating reviewers for their time.

## Author Contribution

The authors conceived the idea, collected data and wrote the manuscript

## Data Availability Statement

All relevant data are within the manuscript. Additional data supporting this study are available from the corresponding author upon reasonable request.



## Ethical Consideration

This study is a systematic review of previously published literature and does not involve any new studies with human participants or animals performed by the authors. Therefore, ethical approval and informed consent were not required.

## Funding

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## Conflict of Interest

None

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Appendix

Table 1: Details of included articles

Author(s)	Design	Database	Year	Independent Variable	Dependent Variable	Population	Results
Balogun et al.	Policy Analysis	ResearchGate	2024	NRA lobbying and coalition building	Gun control policy outcomes	U.S. legislators and advocacy coalitions	NRA lobbying influences policy delay and redirection.
Musa	Descriptive Study	ResearchGate	2016	NRA lobbying	Legislative positions	Federal policymakers	NRA maintains strong influence over legislative behavior through political leverage.
Moore	Qualitative Report	CiteSeerX	2015	Lobbying networks	Public opinion, policy	General public	Lobbying polarizes and shapes perception of public health.
Zoller & Casteel	Framing/Communication Analysis	Taylor & Francis	2022	Gun industry messaging	Health policy discourse	Media and health advocates	Industry reshaped public discourse through cultural frames.
Hussain et al.	Qualitative Framing Analysis	ScienceDirect	2023	Firearm manufacturer narratives	Public risk perceptions	General population	Messaging undermines science and promotes gun culture.
Yanker	Historical Analysis	Univ. Colorado	2014	NRA lobbying evolution	Gun reform inertia	Policy environment	NRA financial strategies stalled reforms over decades.

Author(s)	Design	Database	Year	Independent Variable	Dependent Variable	Population	Results
Smucker	Comparative Policy Analysis	Springer	2019	State lobbying strength	Domestic violence-related firearm policies	State-level policymakers	Policy passed despite pro-gun pressure under selective framing.
Heldahl	Historical Case Study	NTNU Open	2019	Republican-NRA ties	Gun policy evolution	U.S. federal system	NRA had long-standing policy alignment with GOP.
Leroux & Feeney	Nonprofit Influence Study	Routledge	2021	NRA as nonprofit	Policy influence	Policymaking networks	NRA shaped agenda via nonprofit advocacy strategies.
Sierpien	Strategic Analysis	NPS	2006	Political tactics	NRA influence	Policy environment	NRA evolved into strategic political operator.
Barth	Public Will Framework	University of Mainz	2016	Messaging tactics	Public will and discourse	U.S. voters	Gun rights framed to undermine public health focus.
Schwartz	Narrative/Media Analysis	Books.google	2022	Gun narratives	Cultural/political engagement	Gun owners and public	Storytelling tied gun ownership to identity.
Smyth	Historical Investigation	Books.google	2020	NRA history	Public and political legitimacy	U.S. electorate	NRA embedded gun culture across institutions.
Lacombe	Political Science Analysis	Cambridge Univ. Press	2021	Group identity	Democratic resilience	Political institutions	Weaponized identities stall gun reform consensus.

Author(s)	Design	Database	Year	Independent Variable	Dependent Variable	Population	Results
Choi et al.	Public Relations Study	Elsevier	2024	Gun debate narratives	Issue legitimacy	NRA vs. MDA comparison	NRA discourse frames opposition as anti-freedom.
Goss	Political Science Monograph	Torrossa	2010	Movement absence	Gun reform weakness	U.S. social movements	Gun control lacked counter-movement to NRA.
Zussman	Journalistic Policy Analysis	Harvard Political Review	2017	NRA tactics	Interest group dominance	Political parties and voters	NRA institutionalized influence across elections.
Peterson & Densley	Mixed-Methods Case Analysis	Abrams Press	2021	Mass shooting dynamics	Policy response	Gun violence victims	Policy inertia despite data from mass shootings.
Rowhani-Rahbar et al.	Ecological Study	AJPH	2017	Firearm dealer density	Suicide rates	U.S. counties	More dealers = higher suicide risk.
Kleck	Quantitative Correlation	Homicide Studies	2015	Gun ownership levels	Homicide rates	National sample	Higher ownership correlated with homicide risk.
Luca et al.	Quasi-Experimental	HKS Working Paper	2017	Mass shooting events	Gun law activity	State legislatures	Mass shootings trigger NRA-supported pro-gun laws.
Frattaroli & Vernick	Policy Review	Future of Children	2013	Background checks	Firearm injury rates	U.S. population	Universal checks linked to reduced violence.