Intellectual Malpractice

A Preliminary Review of the Literature

The Canadian Coalition for Firearm Rights

The Canadian Coalition for Firearm Rights' discussion paper on the 19 academic and editorial sources cited by the Doctors for Protection from Guns as the definitive proof for gun-control measures.

Introduction

In early 2019, a group called Canadian Doctors for Protection from Guns (or CDPG) introduced a campaign advocating for significantly more stringent gun controls directly targeting legal firearm owners.

This campaign cited certain specific journal articles, editorial pieces, and studies as the proof needed to undergird their argument for greater restrictions on a community which is demonstrably more law abiding than the general public.[1,]

This document will broadly asses the quality of each of these sources' scholarship, and the perspectives and conclusions drawn from that scholarship. Specifically, this will highlight any notably fallacious arguments, identifying exclusion or inclusion biases in the data used, and present some critiques of the logic, conclusions, and recommendations these sources present to the reader.

This writer will also identify aspects of the literature which demonstrate good scholarship, as well as identify areas for further research which might clarify questions which these articles specifically fail to answer or ask.

Canada currently has extensive and complex firearm regulation. The CCFR believes that problems of violence can be solved without the application of further restrictions which in practice only limit the behaviour of the law abiding.

The Call

On April 9 of this year, the gun control advocates, Canadian Doctors for Protection from Guns, presented several academic, government, and editorial sources to support their claim that:

"the medical and social science evidence supporting common sense gun laws is overwhelming and irrefutable."[i]

AND that:

[i] Tweet, @Docs4GunControl, April 9, 2019.
<https://twitter.com/Docs4GunControl/status/1115761074408755201>

"The facts demonstrate the need for policy actions to restrict guns."[ii]

AND the call to Canadian Senators and other Government Members saying:

"Senators, it is time to pass C-71 intact. @BillBlair, @RalphGoodale, and @JustinTrudeau, it is time to implement an assault weapons and handgun ban."[iii]

The Sources

The nineteen sources were then threaded with those claims in a set of fifteen tweets on the social media site, Twitter.

The studies as listed by the Canadian Doctors for Protection from Guns in their own words:

1. Bauchner H, Rivara R, Bonow R, Death by Gun Violence – A Public Health Crisis, JAMA 2019[iv]
2. Naghavi M and the Global Burden of Disease 2016 Injury Collaboration, Global Mortality from Firearms JAMA Surgery 2018[v]
3. StatsCan, 2018 - https://www150.statcan.gc.ca/n1/pub/89-28-0001/2018001/article/00004-eng.htm[vi]
4. Reasonable control: Gun Registration in Canada, CMAJ, 2003[vii]
5. Stewart R, Kuhls D, Rotondo M, Bulger E, Freedom with Responsibility: A Consensus Strategy for Preventing Injury, Death and Disability from Firearm Violence, JACS, April 2018[viii]
6. Position Statement of the Canadian Pediatric Society, The Prevention of Firearm Injuries in Canadian Youth, 2018[ix]
7. Policy Statement of the American Academy of Pediatrics, Firearm-Related Injuries affecting the Pediatric Population, Pediatrics 2012[x]

[ii] Tweet, @Docs4GunControl, April 9, 2019 <https://twitter.com/Docs4GunControl/status/1115761087079690245>
[iii] Tweet, @Docs4GunControl, April 9, 2019 <https://twitter.com/Docs4GunControl/status/1115761087079690245>
[iv] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761075826438145
[v] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761075826438145
[vi] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761075826438145
[vii] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761076703047680
[viii] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761076703047680
[ix] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761077609017347
[x] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761077609017347

8. Call it Femicide report - https://femicideincanada.ca/callitfemicide.pdf[xi]
9. Yanchar N, Beno S; the Canadian Association of Emergency Physicians and the Trauma Association of Canada, Annals of Surgery, 2018[xii] **[Some information was missing for this citation]**
10. Miller M, Azarel D, Hemenway D, Firearm Availability and Unintentional Firearm Deaths, Suicide and Homicide among 5-14 Year olds, Journal of Trauma 2002[xiii]
11. Saunders N, Lee H, Macpherson A, Gauan J, Guttmann A, Risk of Firearm injuries among Children and youth of immigrant families, CMAJ, 2017[xiv]
12. Suicide and self-harm trends in recent immigrant youth in Ontario, 1996 – 2012: a population based longitudinal cohort study[xv]
13. Cunningham B, Walton M, Carter P, The Major Causes of Death in Children and Adolescent in the United States, NEJM 2018[xvi]
14. Kaufman E, Morrison C, Branas C, Wiebe D, State Firearm Laws and Interstate Firearm Deaths from Homicide and Suicide in the United States, A Cross-sectional Analysis of Data by County, JAMA Intern Med, 2018[xvii]
15. Kalesan B, Mobily M, Keiser O, Fagan J, Galea S, Firearm Legislation and Firearm Mortality in the USA: a cross-sectional, state level study, Lancet, 2016[xviii]
16. Santaell-Tenorioa J, Cerda M, Villaveces A, Galea S, What do we know about the Association between Firearm Legislation and Firearm-Related Injuries, Epidemiol Rev 2016[xix]
17. Sarani B, Hendrix C, Matecki M, Estroff J, Amdur R, Robinson RH, Shapiro G, Gondek S, Mitchell R, Smith R, Wounding Patterns Based upon Firearm type in Civilian Public Mass Shootings in the US. JACS 2019[xx]
18. National Research Council 2005. Firearms and Violence: A Critical Review. Washington, DC: The National Academies Press.[xxi]
19. Ranney M, Betz M, Dark C, #ThisIsOurLane – Firearm Safety as Health Care's Highway, Perspective NEJM, Jan 2019[xxii]

[xi] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761078464581632
[xii] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761078464581632
[xiii] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761079311904768
[xiv] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761080209432576
[xv] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761081073446912
[xvi] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761081933283328
[xvii] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761082512154630
[xviii] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761083615260672
[xix] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761084315643904
[xx] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761084986810369
[xxi] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761086207266816
[xxii] Tweet, @Docs4GunControl, April 9, 2019. https://twitter.com/Docs4GunControl/status/1115761086207266816

Introduction & Summary

The citations can be divided into three main groups; peer reviewed studies, editorial content, and government statistics and studies. Articles will be addressed in the listed order; the type of content will be listed along with the full citation and a link to this author's route of access to the associated document.

Sources in all categories have commonalities in their exclusion of certain types of data which would otherwise bring to light the specific sources of violence and clarify the appropriate policy response. These issues will be discussed in relation to each case.

Here an important and frequent critique will be the clustering of types of firearm related incidents and mortality. Studies include incidents of violence and mortality like accidents, suicide, self-defence, and outright murder to create mass distributions which impose moral equivalencies on the occurrences of firearm uses.

Death by Gun Violence – A Public Health Crisis[2] [Editorial]

Authors: Howard Bauchner, MD; Frederick P. Rivara, MD, MPH; Robert O. Bonow, MD, MS; Neil M. Bressler, MD; Mary L. (Nora) Disis, MD; Stephan Heckers, MD; S. Andrew Josephson, MD; Melina R. Kibbe, MD; Jay F. Piccirillo, MD; Rita F. Redberg, MD, MSc; John S. Rhee, MD, MPH; June K. Robinson, MD
Journal/Publication: Journal of the American Medical Association: Internal Medicine
Date/Reference: December 2017: Volume 177, Number 12; p1725.
Link: https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2657425

Notes:

This article was republished in various American Medical Association Journals on the following dates: JAMA, November 14, 2017; JAMA Neurology, December 1, 2017; JAMA Pediatrics, December 1, 2017; JAMA Psychiatry, December 1, 2017; JAMA Internal Medicine, December 1, 2017; JAMA Ophthalmology, December 1, 2017; JAMA Surgery, December 1, 2017; JAMA Oncology, December 1, 2017; JAMA Cardiology, December 1, 2017; JAMA Dermatology, December 1, 2017; JAMA Facial Plastic Surgery, January 1, 2018; and JAMA Otolaryngology–Head & Neck Surgery, January 1, 2018.

Author Notes:

Preliminary searches of Medical literature revealed a host of recent (last three years) editorial content from the primary authors, outweighing actual studies by a 4:1 margin, with very few

related articles. Editorials do not research make. Frederick P. Rivara, MD, MPH the second author, has a long record back into at least the early 1990s presenting firearm violence as a medical or public health concern. The rest of the various authors publish widely differing degrees of recent research in their respective fields, roughly ranked by the above list order.

Critical Analysis:

The article begins in reference to the shocking Las Vegas shooting, examining that incident and the rates of gun violence in the United States as the route to providing an answer to what can and should be done. Continuing on, the article gerrymanders the war fatalities statistics, cutting them off in the middle of the last major US military conflict, Vietnam, for no stated or apparent reason. Comparing gun violence to an arbitrarily delimited set of statistics is effectively comparing them to nothing. A statistical stunt it seems intended to manipulate the reader rather than inform them.

Other elements discussing suicide mortality rates mention nothing about gender differences in suicide as a factor; and fail to account for the increased mortality of male suicide attempters, with or without firearms. These connections need to be examined more seriously since firearms remain the least of many other risk factors in suicide. Firearm ownership and suicide are necessarily associated, but not strongly connected, while suicide is the largest portion of gun deaths, gun suicides are replaced by other methods absent the gun.

The article moves on to invoke the Australia fallacy, and state categorially that “Guns kill people.”, makes a call for more “hotel, school, and venue security”, suggests more restrictions on ownership of any firearms, and makes vague reference to some sort of smart gun technology which does not exist in any useful form and has dozens of safety and policy hurdles.

This article follows an all to well worn pathway, guns are used illegally, they have some association with saddening events, therefore they must be removed from everyone with incrementally more severe restrictions placed on responsible use. The old politician’s fallacy: “Something must be done; this is something∴ therefore we must do it.”[3]

In addition to the foregoing, the entire data set originated from the United States. Again, this editorial proves entirely irrelevant to the Canadian experience as the regulatory system and the structure of rights in the United States is in absolutely no way similar to those in Canada.

Global Mortality From Firearms, 1990-2016[4] [Research]

Authors: Mohsen Naghavi, PhD, et al.
Journal/Publication: Journal of the American Medical Association
Date/Reference: JAMA. 2018;320(8):792-814.
Link: https://jamanetwork.com/journals/jama/fullarticle/2698492

Notes: This study covers many jurisdictions and brings together data from them all to present a picture of firearm mortality and violence which is relatively complete while failing in typical areas. Avoiding information about non-firearm related violence, suicide and homicide slants the data and prevents a whole-problem approach to criminality and suicide and potentially redirecting important resources and political energy from public policy solutions that address the social causes of violence and criminality, to a useless fight against legal and safe firearm owners.

Author Notes: One conflict of interest is reported where a contributor volunteers their time with an explicitly gun-control organization; there is no way to determine how much influence this individual had in the writing. Hundreds of individual researchers and organizations are listed as contributors to this study.

Critical Analysis: The article opens with a list of major factors in firearm related mortality:

"These variables include the illegal drug trade, substance abuse (including alcohol), inadequate support for mental health, the social and intergenerational transmission of firearm violence (indicates parents, family members, intimate partners, friends, and peers), and socioeconomic inequities …"

As if added as an afterthought to the emergent statistical relationships between the variables the article goes on to say:

"Access to firearms (the availability of firearms to individuals) and level of firearm ownership have been associated with firearm deaths at the population, household, and individual levels, and are associated with the strength and enforcement of laws and regulations controlling firearms."

The earlier paragraph is in line with other studies reviewed in this literature review and in other literature, conversely the second statement is not corroborated (including by the source which is cited to support this claim in the current article[5]) and in Canadian examples, the association between firearm suicides and firearm access was mitigated by "evidence of males switching to other methods."[6], known as substitution.

The gun control measures which this article strongly emphasises, are universal background checks and permitting, of course **already present in Canadian firearm legislation**. This in itself negates its usefulness in the Canadian context. Still, this literature is represented by the CDPG as evidence supportive of their position.

This article also appeals to the Australian case, glossing over substitution in suicide and overall rates of criminality, which remain similar to other developed nations.

Overall, this research provides ample support for most of its conclusions, evidence for trends, and makes reasonably balanced claims about the efficacy of certain kinds of polices. However, it certainly falls short of a strong call for the specific policy recommendations which our friends *Doctors for Protection from Guns* are pushing so strongly. It also cites sources which don't make strong claims about most gun-control measures beyond demonstrating some mostly stable trends; and again, with the strongest violence reduction trends being with measures Canada already has in place.

Firearm-related violent crime, 2009 to 2017[7] [Government Statistics]

Authors: Statistics Canada, Canadian Centre for Justice Statistics
Journal/Publication: Statistics Canada
Date/Reference: August 27, 2018
Link: https://www150.statcan.gc.ca/n1/pub/89-28-0001/2018001/article/00004-eng.htm

Notes: Canadian statistics, taking into account overall homicide rates as well as firearm related violent crime. Sources are Uniform Crime Reporting Survey, and Homicide Survey.

Critical Analysis: Provides statistics which demonstrate relatively stable rates of criminal behaviour with firearms and overall, no major variances. However, it excludes earlier years in which violence was much higher and this earlier data would give a clearer picture of long term trends and their relationship to legislative changes. The CDPG make no indication why this supports their position on various legislative recommendations.

Reasonable control: gun registration in Canada[8] [Editorial]

Authors: The Canadian Medical Association Journal's Editorial Board
Journal/Publication: Canadian Medical Association Journal
Date/Reference: FEB. 18, 2003; 168 (4):389
Link: http://www.cmaj.ca/content/cmaj/168/4/389.full.pdf

Notes: A very politically biased editorial about how ending the long-gun registry would be a mistake. Fortunately, Canadians disagreed, and time has proved that it made little difference.

Critical Analysis: This article gathered many critics even within the medical community and a few of them wrote in, to the Canadian Medical Association's Journal to complain about mistakes and misrepresentations.

One such misrepresentation is a claim that gunshot injuries and deaths cost Canada $6 billion each year. Critics were quick to point out that the study produced a very inclusive figure of ~$60 million including costs which exist even in the absence of firearm related injuries. The remaining costs were assigned to intangible costs like "pain, suffering, and lost quality of life."[9]

Other critics also pointed out that the billions of dollars wasted on the registry could have well be used in the provision of medical services for Canadians thereby saving many more lives in a traditional medical capacity.[10]

Freedom with Responsibility: A Consensus Strategy for Preventing Injury, Death, and Disability from Firearm Violence[11] [Editorial]

Authors: Ronald M Stewart, MD, FACS, Deborah A Kuhls, MD, FACS, Michael F Rotondo, MD, FACS, Eileen M Bulger, MD, FACS
Journal/Publication: Journal of the American College of Surgeons
Date/Reference: April 19, 2018
Link: https://www.journalacs.org/article/S1072-7515(18)30275-8/fulltext

Notes: This article comes to reasonable conclusions, considers both sides and attempts to create a consensus framework for moving forward without trampling on basic rights and freedoms. It accepts the conditions of the debate and focuses on factors which can be controlled.

Critical Analysis: The conclusions presented by the article are as follows:

"We propose the following as a starting point: Firearm ownership is a liberty protected by the US Constitution. Violence toward ourselves and others is a major cause of unnecessary death and suffering in America; however, we can reduce this violence if we all work together to make firearm ownership as safe as is reasonably possible (for firearm owners and those who do not own firearms). This means inclusively developing effective solutions using the power of innovation, technology, research, and responsible policy development. In broad policy terms, we agree:

1. Anyone who is a danger to themselves or others should not have a firearm.
2. Responsible ownership includes safe storage, education, training, and a commitment to keep firearms out of the hands of family members at high risk of self-harm, unlawful purchasers, and violent offenders.
3. Mental health access, mental health hygiene, and treatment must be improved.
4. We must identify, understand, and address proximate causes of violence.

If we come together, focusing our efforts on reducing violence while making firearm ownership as safe as reasonably possible, we can and we will save thousands of American lives every year."

These policies mirror the condition of firearm ownership in Canada and do not depart from the policies which most Canadian gun owners support. The title suggests a consensus starting point and the article is sensible enough to deliver one. It is hard to see how the Doctors for Protection from Guns see this imminently reasonable article that recognizes that, "Firearm ownership is a liberty protected by the US Constitution.", somehow supports their calls for highly restrictive gun control, and handgun bans in Canada. **There is no understandable relationship between this article and the position espoused by the Doctors for Protection from Guns.**

Firearm-Related Injuries Affecting the Pediatric Population[12] [Policy Statement]

Authors: M. Denise Dowd, MD, MPH; Robert D. Sege, MD, PhD.
Journal/Publication: American Academy of Pediatrics, Policy Statement
Date/Reference: Pediatrics: 130:5, November 2012, e1416-23
Link: https://pediatrics.aappublications.org/content/130/5/e1416

Notes: This policy statement from the American Academy of Pediatrics is incredibly one sided and makes the point of completely ignoring mitigating factors in the statistics, it fails to consider the limitations of the study and comes to strong conclusions where more thorough

studies have not. Without reservation this policy statement is so full of logical leaps and foregone conclusions that it can hardly be considered academic.

Critical Analysis: This article begins by making the following specific claim: "The absence of guns from children's homes and communities is the most reliable and effective measure to prevent firearm-related injuries in children and adolescents." Such an extraneous conclusion is hardly becoming of a serious professional body.

No doubt excluding people without vehicles in automobile fatality statistics would increase the incidence of automobile accidents and related mortality in the results of any study.

Similarly, in this case, individuals with firearms in any form of proximity will indeed be more likely to encounter and potentially be harmed by a firearm in some way. Any serious study of firearm injuries and mortality must however, compare firearm access to other factors in injury and mortality to help account for causation. They must consider non-firearm related homicide and suicide when discussing these kinds of incidents. In this case the authors completely disregard other factors which they list in various places throughout the article without ever digging deeper or comparing those factors to firearm access.

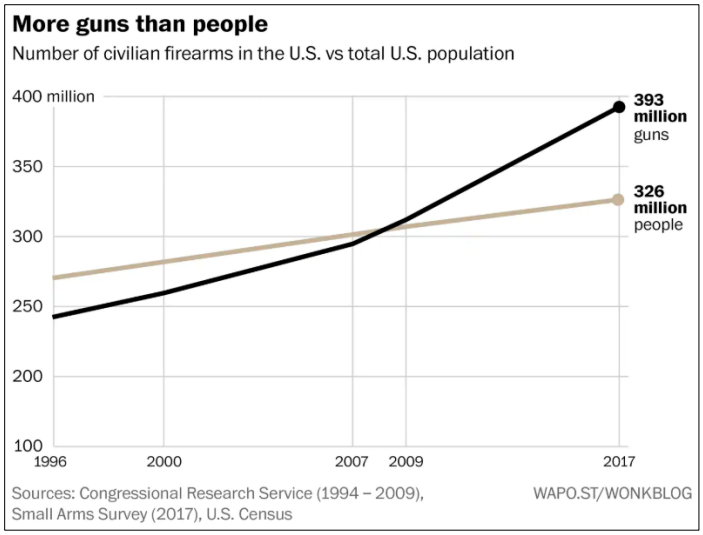
"Recognized risk factors for violence involving children and adolescents include exposure to family violence, history of antisocial behavior, depression, suicidal ideation, drug/alcohol use, poor school performance, bullying, and isolation from peer groups."[13]

AND

"Well-established behavioral risk factors for carrying guns include gang membership, use of alcohol and other drugs, victimization by violence, and perpetration of violence."[14]

Nowhere are these listed factors compared to the firearm access factor to determine the comparative benefit of access control rather than programs which target other risk factors. Earlier and subsequent studies show firearm access to be a less significant risk factor for suicide and other firearm violence than a whole host of other factors.[15] Beginning with foregone conclusions and excluding any comparative study of risk factors; turns a potentially useful discussion about firearm safety rules into a clearly biased proclamation that manages to either ignorantly or maliciously include data to support a particular result.

One final element which this article completely ignores, is the consistently rising proportion of firearms to US population in the same periods which they admit firearm mortality and violence



decrease.[16] A consistently ignored question in the gun debate, critics of firearm ownership do not account for rising rates of ownership simultaneous with consistent reductions in violence and fail here once again, to consider the broader view.

The prevention of firearm injuries in Canadian youth[17] [Policy Statement]

Authors: Katherine Austin, Margo Lane, Adolescent Health Committee
Journal/Publication: Paediatric Child Health
Date/Reference: Paediatric Child Health 2018 23;(1):35–42
Link: https://www.cps.ca/en/documents/position/the-prevention-of-firearm-injuries-in-canadian-youth

Notes: This article immediately highlights high rates of adolescent and young adult male violence despite high rates in all jurisdictions regardless of firearm restrictions like the ones recommended in this article. Failing to account for non-firearm related forms of violence and rates of suicide; paediatric physicians again fail public policy makers and the public at large by ignoring a major source of data which can help demonstrate the accuracy of their claims.

Critical Analysis: The evidence cited here, similarly to the above cited article from the American Academy of Pediatricians, excludes important statistical information about suicide rates, criminal violence and the risk ratio of firearm presence in the home compared to many other more serious factors in violence and mortality[18]. This article makes specific suggestions for safe storage regulations which have already existed in Canada since 1993. Other suggestions are so broad and disconnected from the literature on the effectiveness of various types of firearm laws; that it becomes clear that the authors did not take the time to investigate which sorts of policies are shown to be effective in reducing each kind of violence and accidents. Here they shoddily slapped one size fits all bans and campaigns onto complex social problems. Using what appear to be poorly researched and incredibly vague policy ideas, these pediatricians affix onto

the end of their document a set of solutions with no serious consideration given to the effectiveness of their suggestions, no reference to the relevant literature, or even a simple explanation of the relationship between the solutions presented and the problems of youth violence.

Not one citation is provided in either of the recommendation sections for clinicians or government. No serious consideration of anything except increased blanket regulation of firearms and a toothless call for more gang violence and mental health initiatives, completely free of specifics. This article could not pair stronger claims with weaker evidence.

#CallItFemicide: Understanding gender-related killings of women and girls in Canada 2018[19][Government Sponsored Report]

Authors: Myrna Dawson, Danielle Sutton, Michelle Carrigan, and Valérie Grand'Maison
Journal/Publication: Canadian Femicide Observatory for Justice and Accountability (CFOJA)
Date/Reference: 2019
Link: https://femicideincanada.ca/callitfemicide.pdf

Notes: This document chronicles the problem of murdered women across Canada in intimate partner and other violence. It touches on firearms as the largest reported method of killing.

Critical Analysis: Unfortunately, due to the tiny sample size and a great deal of missing information as, “Information on method of killing has not been publicly released in 46 percent of the cases”. It is difficult for us, as it was for the study’s authors, to make policy pronouncements based on the data limitations and severe gaps in information about the mechanism of killing.

It is unclear how this report supports the Doctors’ for Protection from Guns very specific calls for radical gun-control measures.

Can We Do Better?: A Canadian Perspective on Firearm Injury Prevention[20] [Editorial]

Authors: Yanchar, Natalie, L., MD, MSc, FRCSC*; Beno, Suzanne, MD, FRCPC the Canadian Association of Emergency Physicians and the Trauma Association of Canada
Journal/Publication: Annals of Surgery
Date/Reference: June 2018 - Volume 267 - Issue 6 - p 1009–1010
Link: https://journals.lww.com/annalsofsurgery/Fulltext/2018/06000/Can_We_Do_Better___A_Canadian_Perspective_on.6.aspx

Notes: This article presents evidence of its foregone conclusion in several places, engages in the Australia fallacy and other inclusion/exclusion bias fallacies, and the authors immediately subordinate individual rights to unproven "well-being of their society" social goods. They speak about responsibility to speak and act in favour of specific policy goals without first justifying the effectiveness of those policies.

Critical Analysis: This article has two statements which assume the foregone conclusion that gun control measures are better for society than individual liberty.

"In Canada, we can be proud that we have a society that generally respects this responsibility with policy makers that have put societal safety ahead of individual "rights.""

AND

"Their [Australia's] reaction to the deadly 1996 Port Arthur massacre, to bring in strict policy limiting availability and access to semiautomatic firearms, stringent background checks with prolonged pre-acquisition waiting periods, and an intense gun-buy-back program reflects the mindset of putting the well-being of their society ahead of individual rights to "bear arms.""

In both quotations they assume the effectiveness of gun control [without demonstrating it], and in the second accept the premises of the common Australia fallacy which excludes overall crime rates and murder rates despite removing legal firearms from most of society. To properly see the effects of firearms restrictions on illegal activity; statistics for all violence, regardless of the weapons used, must be considered. Banning firearms, or severely restricting their use will always influence firearm specific statistics but these effects will not necessarily cross over to lower crime or suicide rates. In some instances, restrictions on firearm ownership will increase some types of dangerous criminal activity, as in the case of armed robberies[xxiii], and home invasions[xxiv] (while the occupants are home).[21]

[xxiii] Reported as a 69% increase.
[xxiv] Reported as a 21% increase.

This editorial piece focuses on specific cases and statistics to support the foregone conclusion that restricting legal firearm ownership is somehow an effective method of reducing the incidence of tragedy.

Firearm Availability and Unintentional Firearm Deaths, Suicide, and Homicide among 5–14 Year Olds[22] [Research & Editorial]

Authors: Mathew Miller, MD, MPH, ScD, Deborah Azrael, PhD, and David Hemenway, PhD
Journal/Publication: The Journal of Trauma Injury, Infection, and Critical Care
Date/Reference: J Trauma. 2002;52:267–275.
Link: https://content.csbs.utah.edu/~rhuef/courses/Notes5321-6321/trauma_article.pdf

Notes: This article attempts to bring together and normalize modeled data as proxies for firearm ownership rates. However, they model the firearm ownership rate on the suicide rates with and without firearm involvement and the same for homicides, creating a ratio between the two. Then the study attempts to use these ratios as proxies of firearm ownership comparing it to the self-same data on firearm suicide and homicide.

Critical Analysis: When completing the initial analysis of this article this author was concerned that he may have misunderstood the methodology used by the authors of the study. It was only after taking the time to dig deeper into the literature that it became clear that the initial reading was in fact accurate. A statistical proxy for state by state firearm ownership rates known as FS/S which uses a ratio of the firearm related suicides to all suicides in each state to establish a rate of firearm ownership for that state which often correlates with other proxies of firearm ownership was used. These proxies for firearm ownership are used because reliable rates of firearm ownership do not exist due to underreporting and since no state by state firearm registration or purchase information is recorded reliably and uniformly. When completing state by state comparisons of firearm ownership analysis this and other proxies are the most reliable way of establishing a baseline of firearm ownership.

Where this use of FS/S ratios goes wrong is that it introduces circularity to the data. The proxies are based in part on suicide statistics and then inferences are made by comparing this ratio to suicide rates. Correlations are inevitable and this study in particular makes no note as to the limitation of this methodology nor does it address the well-established criticisms of this proxy even in literature that our friends from Doctors for Protection from Guns cite in this selfsame set of "proofs" for the sureness of their gun ban demands.[23] The enormous 340 page National Academies of Science, Engineering, and Medicine publication Firearms and Violence: A Critical

Review, sourced by our lobby doctor friends heavily critiques these methodologies. The eminent criminologist Gary Kleck refers to this FS/S proxy as percentage of suicides committed with guns (PSG) and makes a scathing review of the use of this proxy. In a 2015 methodological review he dismantles the use of this proxy and also critiques the use of these proxies in temporal analysis rather than simply as a way of understanding state by state geographical differences.[24]

This study outlines many limitations of itself, including no consideration of firearm legislation, storage rules and other social problems. Later studies on a state by state basis do a much better job of highlighting state by state statistics and relating them to local legislation and conditions. This study does one thing correctly by looking at non-firearm related suicide and homicide, this is one element that should be included in all other research. As an earlier example of research into these questions it is possible to excuse the mistakes made in this study, but as proof of a need for strong gun-control including outright bans this article falls flat as a merely preliminary look into the factors that may play a role in violence. **Later research totally eclipses this work as irrelevant and imprecise.**

Risk of firearm injuries among children and youth of immigrant families[25] [Research]

Authors: Natasha R. Saunders, Hannah Lee, Alison Macpherson, Jun Guan and Astrid Guttmann
Journal/Publication: The Canadian Medical Association Journal
Date/Reference: CMAJ March 27, 2017 189 (12) E452-E458.
Link: http://www.cmaj.ca/content/189/12/E452

Notes: This study looks directly at violence and accidents in the recent immigrant community and draws very minimal conclusions from the results. It is not clear, how this supports the radical policy pronouncements of the Doctors for Protection from Guns.

Critical Analysis:

The conclusion of this study summarizes it well:

"We counted almost 1800 firearm injuries among children and youth in Ontario over a 5-year period, which represents almost 1 injury per day. Non-immigrant youth had the highest rates of unintentional firearm injury. Immigrant children and youth were at lower risk of unintentional firearm injury overall, but the risk of assault-related firearm injury was higher among refugees and among immigrants from Africa and Central America compared with non-immigrants. Understanding why the immigrant paradox was not observed in these subgroups

needs further study and intervention. Prevention strategies for firearm safety should target non-immigrant youth as well as these newly identified high-risk immigrant populations."

A particularly good response was posted on the CMJA website and questions the authors inclusion of BB and air guns in the data, since this increases the reporting of unintentional injuries with "firearms".[26] In addition, the authors of this study included individuals up to age 24 when the age of majority in Canada is between 18 and 19. Conveniently, moving the definition of children [or youth] to include those up to age 24, included gang-related and other criminal shootings. The authors also demonstrate their lack of expertise in this topic by providing policy recommendations including some that have been in place since the late 1930's in Canada.

Suicide and self-harm trends in recent immigrant youth in Ontario, 1996-2012: a population-based longitudinal cohort study[27] [Research]

Authors: Natasha Ruth Saunders, Michael Lebenbaum, Therese A Stukel, Hong Lu, Marcelo L Urquia, Paul Kurdyak, Astrid Guttmann
Journal/Publication: The British Medical Journal
Date/Reference: BMJ Open 2017;7:e014863
Link: https://bmjopen.bmj.com/content/7/9/e014863

Notes: This article investigates suicide rates in recent and long-term immigrant populations.

Critical Analysis: Very little in this article references the very low rates of recent immigrant firearm suicide. The typical error of associating access with suicide by firearm is made in this article with the following statement:

> "Firearm access, often cited as being associated with suicide by firearm"

The only conclusion which relates to firearms is simply a call for further study:

> "Patterns of suicide and self-harm mechanisms may also have implications for availability and access to lethal means (ie, firearms) for at-risk populations which warrants further study."

How this relates to a clear call for a ban on firearms is a matter of conjecture not fact.

The Major Causes of Death in Children and Adolescents in the United States[28] [Research]

Authors: Rebecca M. Cunningham, M.D., Maureen A. Walton, M.P.H., Ph.D., and Patrick M. Carter, M.D
Journal/Publication: The New England Journal of Medicine
Date/Reference: NEJM DEC 20, 2018. 379;25.
Link: https://www.nejm.org/doi/full/10.1056/NEJMsr1804754

Notes:

This article only reported the trends and direction of statistics and did not suggest any policy solutions. The data, again, originates from the United States; an entirely different country, legal structure and cultural landscape from Canada.

Critical Analysis: Two quotes which indicate two mitigating factors related to firearm violence rates covered in this study were gender and poverty:

"For **all leading causes of death**, male children and adolescents died at higher rates than their female counterparts, ...2.8 times as high by 19 years of age. **This higher rate among male children and adolescents was most pronounced for firearm deaths** (**5.1 times the rate among female children and adolescents**)"

"Finally, one limitation of CDC WONDER data is the lack of inclusion of poverty variables. However, a broad literature indicates that poverty is an important risk factor for injury across ages, including contributing to increased risks of motor vehicle crashes and firearm injuries."

This study simply reinforces what we already know about education, poverty, and gender as major underlying factors in all questions of violence, injury, and accidental death. No discernible link can be made between this study and the dramatic conclusions which our friends with Doctors for Protection from Guns suggest as solutions.

State Firearm Laws and Interstate Firearm Deaths From Homicide and Suicide in the United States: A Cross-sectional Analysis of Data by County [Study Statistical Modelling]

Authors: Elinore J. Kaufman, MD, MSHP, corresponding author Christopher N. Morrison, PhD, MPH, Charles C. Branas, PhD, and Douglas J. Wiebe, PhD
Journal/Publication: Journal of the American Medical Association
Date/Reference: JAMA Intern Med. 2018 May; 178(5): 692–700.
Link: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5885268/

Notes: This article uses highly modeled data, making many assumptions about the strength and effectiveness of various firearm laws. It ranked states for their firearm policies and assigned a score related to those policies. They then weighted the effects of those policies and allowed adjacent counties to bleed policy effectiveness to even out the affects of state policies across state lines. The data, again, originates from the United States; an entirely different country, legal structure and cultural landscape from Canada.

Critical Analysis: A more detailed look at the modelling may reveal more assumptions in the modeling of this study. With so many variables and attempts to control for covariates it is likely that the complexity and multitude of factors involved in the modelling resulted in correlations that don't exist in the actual statistics. Other studies cited do not come to this strong of a conclusion. This article also makes no assessment of which kinds of policies might be effective and under which conditions. Broadness here limits the usefulness of this work for making specific policy recommendations or assessing the effectiveness of particular policies.

In the discussion of the limitations of the study the authors admitted: "in a cross-sectional analysis, we were unable to test for a causal relationship between state policies and firearm deaths."

It is of note that this geographical analysis is one of the places in which FS/S or PSG or the percentage of suicides using firearms would be a potentially valid proxy for determining firearm prevalence unlike in longitudinal studies where the proxy fails Kleck's tests.[29]

Firearm legislation and firearm mortality in the USA: a cross-sectional, state-level study[30] [Research]

Authors: Bindu Kalesan, Matthew E Mobily, Olivia Keiser, Jeffrey A Fagan, Sandro Galea
Journal/Publication: Journal of the American Medical Association
Date/Reference: JAMA Intern Med. 2018 May; 178(5): 692–700.
Link: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)01026-0/fulltext

Notes: This study isolates the mortality rate associated with each type of state law and identifies associations between some types of firearm laws and effective reduction of those rates. The data, again, originates from the United States; an entirely different country, legal structure and cultural landscape from Canada.

Critical Analysis: Unlike many of the other studies in this literature review, this research clearly associates state level data on increases and decreases in violence with state level firearm laws and categorizes them to isolate the effectiveness of individual policies. They successfully identify which policies are most effective and provide policy makers and the public with useful and what appears to be unbiased research to support decision making.

Their conclusion notes that only a very few firearm laws are associated with reduced mortality and that the evidence supports focusing on the most effective laws which are universal background checks for firearm and ammunition purchases and firearm identification.

"Findings 31,672 fi rearm-related deaths occurred in 2010 in the USA (10.1 per 100 000 people; mean state-specific count 631.5 [SD 629.1]). Of 25 firearm laws, nine were associated with reduced firearm mortality, nine were associated with increased fi rearm mortality, and seven had an inconclusive association. After adjustment for relevant covariates, the three state laws most strongly associated with reduced overall firearm mortality were universal background checks for firearm purchase (multivariable IRR 0.39 [95% CI 0.23–0.67]; p=0.001), ammunition background checks (0.18 [0.09–0.36]; p<0.0001), and identification requirement for firearms (0.16 [0.09–0.29]; p<0.0001). Projected federal level implementation of universal background checks for firearm purchase could reduce national firearm mortality from 10.35 to 4.46 deaths per 100,000 people, background checks for ammunition purchase could reduce it to 1.99 per 100,000, and firearm identification to 1.81 per 100,000."

"In this study, which assessed the effect of firearm regulatory laws on firearm homicides, state licensing and authorised inspections were associated with lower homicide rates, but record keeping did not reduce homicides. The results of our analysis suggests that CAP laws are ineffective, which are in line with conflicting results on the effect of CAP laws available up to now." [CAP is Child Access Protection]

"By contrast, we showed that requirements for firearm locks, one of the CAP laws, to be ineffective, which was similar to the null effect reported in a study assessing the effect of firearm dealer regulations on firearm homicides."

"This burden of fatal firearm injuries varies widely between states and by race or ethnic origin, with higher firearm mortality rates occurring among black people than white people. Firearm mortality mainly occurs among young adults aged 17 to 25 years and accounts for 80% of all homicides and 45% of all suicides within this age group. *Firearms are ubiquitous in the USA, and the high level of firearm ownership has been directly associated with an increased risk of firearm-related mortality.*" [Emphasis added]

This last conclusion (*italics*) is a non sequitur, it gerrymanders the statistics again, associating the question to the conclusion by restricting the measured mortality rates with the "firearm-related" qualifier. This is just shoddy academic work, but this mistake is common in the scholarship on this topic.

This literature clearly demonstrates the effectiveness of background checks. However, Canada already has a more effective licencing regime which incorporates daily checks, firearm safety education, and safe storage and transport laws. This study in no way supports calls for the kind of confiscations and restrictions which Doctors for Protection from Guns demand. In fact, the "Figure: Association of firearm laws with firearm-related deaths in 2009"[31] associates the so called "Assault weapon ban" with slightly higher firearm mortality.

What Do We Know About the Association Between Firearm Legislation and Firearm-Related Injuries? [Literature Review]

Authors: Julian Santaella-Tenorio, Magdalena Cerdá, Andrés Villaveces, and Sandro Galea
Journal/Publication: Epidemiologic Reviews
Date/Reference: Epidemiologic Reviews; Vol. 38, FEB 10, 2016
Link: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)01026-0/fulltext

Notes: This literature review provides a great overview of the literature surrounding the relevant legislation in a large variety of jurisdictions. Note the highlighted sections addressing the Canadian experience below. The conclusions of this review mostly revolve around the need for more standardized record keeping, and more research to isolate the effects of each piece of legislation and other social factors affecting firearm violence. What is also clear from this review is that the literature has not developed a clear and standard methodology for demonstrating relationships nor a set of principals with which to guide further research. More work must be done to understand the social, political and legal pressures on firearm use.

Furthermore, the evidence shows that when all suicide statistics are included that substitution occurs despite firearm bans and restrictions.

"Caron et al., using Quebec, Canada, data (1987– 2001), found that bill C-17 was not associated with changes in firearm suicide rates; an increment in the rates of suicides by hanging was observed among females. Gagné et al. using Quebec data (1981–2006) in Joinpoint regressions found a breakpoint in 1996 indicating reductions in firearm suicides among males and individuals aged 15–34 years. Results from Poisson regressions showed reductions in suicide rates when the anticipated effect of bill C-17 was moved to 1995. Similar results were identified by Cheung and Dewa for firearm suicides after 1994. These 3 studies found that suicides due to hanging increased and that the rate of overall suicides did not change over time, which is suggestive of individuals switching to substitution methods."

AND

"In Canada, although there has been a continuous downward trend in firearm death rates over time and legislation including background checks has been associated with fewer female firearm homicides, **evidence of the association between these laws and overall homicides is mixed.** [Emphasis added] Moreover, studies from Canada, New Zealand, and Australia (at least for the first post-NFA years) show that observed reductions in firearm suicides, after the implementation of these laws, were compensated by substitution methods that resulted in no significant changes in overall suicide rates."

At a later date, the CCFR will investigate the studies reviewed in this document and systematically identify the different research methods used. Understanding which data is used, and what mechanisms are used to control for social and population factors would be helpful in promoting a high standard of scholarship in future studies.

What is clear is that despite the suggestion of our friends from Doctors for Protection from Guns, there is no direct call for significant restrictions on firearms, nor is there any strong evidence to suggest that a gun ban would be a significant catalyst for an overall reduction in violence. More and better scholarship is what is needed to better understand which policies are effective, and more research into the social causes of violence would be a welcomed addition to the literature.

Wounding Patterns Based on Firearm Type in Civilian Public Mass Shootings in the United States[32] [Empirical Study]

Authors: Babak Sarani, MD, FACS, Cheralyn Hendrix, MD, Mary Matecki, BS, Jordan Estroff, MD, FACS, Richard L. Amdur, PhD, Bryce R.H. Robinson, MS, MD, FACS, Geoff Shapiro, NREMT-P, Stephen Gondek, MD, MPH, FACS, Roger Mitchell, MD, E Reed Smith, MD
Journal/Publication: Journal of the American College of Surgeons
Date/Reference: JACS Volume 228, Issue 3, March 2019: Pg. 228–234.
Link: https://www.journalacs.org/article/S1072-7515(18)32192-6/fulltext

Notes: This study breaks down wounding patterns in mass shootings by type and lethality.

Critical Analysis: This study speaks to the lethality of particular firearms but doesn't consider the mechanics of the firearm and why certain kinds of wounds would be more likely with each type of firearm. The functional shooting range of the firearms and the likely range of use by the shooters might change the choices made while shooting. Lethality from close range might increase but would also be associated with the choice of a handgun rather than a rifle, and at a range which shots might be made more lethally in all cases.

The study's conclusions were vague at the least, suggesting a holistic approach to firearm legislation. It also included a somewhat unexpected result; "Civilian public mass shooting events with a handgun are more lethal than those associated with use of a rifle".

In a classic presentation, anesthesiologist Dr. Andreas Grabinsky compares the uses and effects of different types of rounds and different types of firearms. This presentation discusses some of these qualitative and usage-based aspects which might affect the choices made when a potential mass shooter would be acquiring a gun, and when they are engaged in the violent act itself. It also discusses the lethality of firearms of various kinds and calibers and contradicts some aspects of the cited study. The presentation is freely available on YouTube under the title "Dr Andreas Grabinsky on Gunshot Wounds"[33].

This study, in no way, supports the policy positions of the Canadian Doctors for Protection from Guns.

Firearms and Violence: A Critical Review[34] [Literature Review]

Authors: Committee to Improve Research Information and Data on Firearms. Charles F. Wellford, John V. Pepper, and Carol V. Petrie, editors.
Journal/Publication: National Research Council. Committee on Law and Justice, Division of Behavioral and Social Sciences and Education.
Date/Reference: 2005. Washington, DC: The National Academies Press.
Link: https://www.nap.edu/catalog/10881/firearms-and-violence-a-critical-review

Notes: The primary conclusions of this report focus on methodological issues in research and data gaps in the primary stages of research. At the time of its publishing in 2005 information about ownership of firearms appears to have been relatively limited and questions about illegal ownership levels remain due to obvious reporting and data collection issues.

The concerns listed in the following quotation were found in the studies surveyed in this literature review, and unsurprisingly, not one study in this review adequately addressed them:

"Case-control studies show that violence is positively associated with firearms ownership, but they have not determined whether these associations reflect causal mechanisms. Two main problems hinder inference on these questions. First and foremost, these studies fail to address the primary inferential problems that arise because ownership is not a random decision. For example, suicidal persons may, in the absence of a firearm, use other means of committing suicide. Homicide victims may possess firearms precisely because they are likely to be victimized. Second, reporting errors regarding firearms ownership may systemically bias the results of estimated associations between ownership and violence."

A significant concern is the use of proxies for firearm ownership levels in the US which may be linked to the level of violence instead of actual firearm ownership:

"Many studies conducted at aggregate levels rely on proxy measures of gun ownership; because these are so widely used, we devote special attention to discussing the pros and cons of using proxies for household gun ownership in ecological studies."

Some serious methodological issues exist in studies that fail to consider all suicides in firearm related suicidality studies. This substitution question must be considered in all discussions of suicide prevention:

"Many cross-sectional studies have reported a positive, bivariate association between gun ownership rates and **overall suicide rates** across cities, states, and regions of the United States, **but the relationship is much smaller and less precise than the association between gun ownership rates and gun suicide rates**." [Emphasis added]

Part of the skepticism toward the connection between firearms and suicide arises from international studies which demonstrate different results than most US studies:

"cross-national studies have found a consistent association between gun ownership and the fraction of suicides committed with a gun across countries; but in contrast to the U.S. studies, the cross-national surveys do not reveal a consistent association between gun ownership and overall suicide rates."

The glaring and largely ignored issue in questions of suicidality and firearm violence, especially suicide, remains the frequent use of the FS/S proxy for firearm ownership, which is itself based on the number of suicides in a state. FS/S is likely an excellent proxy for firearm ownership but inherently fails to isolate suicide as a factor in US studies of firearm suicides. This is a grievous methodological error and calls into question the seriousness of academic work which uses it in studies of suicide.

"As Duggan points out, the most obvious statistical problems concern the circularity of using FS/S as a proxy in a study of suicide, but the properties of FS/S in other kinds of studies (e.g., homicide) have also not yet been well described."

A further limitation is that:

"In the case of firearms, individuals who own guns might have unobserved attributes that are associated with increased suicide risk, or, just as important, some individuals may seek to purchase guns because of a specific plan to commit suicide."

AND

"The risk of suicide is highest immediately after the purchase of a handgun, suggesting that some firearms are specifically purchased for the purpose of committing suicide."

AND THAT

"Some gun control policies may reduce the number of gun suicides, but they have not yet been shown to reduce the overall risk of suicide in any population."

What remains clear from the in-depth reading of this report is that the literature on firearms in the US and Internationally does not support a clear direction for policy makers but does support the need for more accurate and better controlled research. The elimination of some serious errors in methodology is necessary. The calls for radical gun-control measures are not supported by the literature, but more work certainly needs to be done to understand the social problems we face.

#ThisIsOurLane — Firearm Safety as Health Care's Highway[35] [Editoral]

Authors: Megan L. Ranney, M.D., M.P.H., Marian E. Betz, M.D., M.P.H., and Cedric Dark, M.D., M.P.H.
Journal/Publication: The New England Journal of Medicine
Date/Reference: NEJM. 380;5. January 31, 2019
Link: https://www.nejm.org/doi/10.1056/NEJMp1815462

Notes: This editorial makes the case that medical professionals have a stake in firearm research and should be given a voice in the debate over legislation.

Critical Analysis: There is no doubt that everyone has a right to weigh into the discussion on firearm rights and reasonable restrictions to improve public safety.

However, uninformed, poorly researched editorials are not the answer, and cherry-picked studies, biased data, emotional pleas, and radical policies are not helpful. The public deserve the best scholarship, the most honest and clear debates, methodologically sound research, and a respect for the informed perspectives of all stakeholders. This author certainly expresses this sentiment and we agree.

The following statement illustrates a good attitude which we can appreciate:

"Moving forward will also require recognition that firearm injury prevention is not the same thing as gun control. The distinction may be difficult for many people to grasp, but it is essential. Many physicians, including some of us, own firearms. As a movement, we are not anti-gun; our focus is on stopping shootings before they happen and on saving human lives."

No doubt here too, our friends at the Doctors for Protection from Guns also saw a call for strong action on firearm violence through the specific and direct call for a full ban on handguns and so-called assault weapons. Yet we dear reader do not, in fact much to the contrary, we concur, as required, "that firearm injury prevention is not the same thing as gun-control."

Conclusion

If the reader has consumed this work in its entirety it should be apparent that the selection of articles referenced, in no way supports the specific call to action which the Canadian Doctors for Protection from Guns have made. None of this work supports the measures in Bill C-71 nor a ban on handguns and so-called assault weapons. The arrogant assumption that no one would read the few hundred pages of straight-forward academic work, and instead would gloss over them in favour of the few dozen pages of straight-forward editorial content provided, was a bold miscalculation.

The CCFR is committed to accurate and truthful reporting of the academic work as well as the skillful application of common-sense and wisdom to the social, political and practical problems facing Canadians, policy makers, and law-abiding firearm owners. To this end we can not abide such a blatant misrepresentation of the literature; an open flaunting of the principals of good scholarship. Neither should the Canadian public trust the analysis of sources provided by people who seemingly cannot even take the time to read them.

The compiling of this list of nineteen citations appears to have been achieved by finding appropriate sounding titles and a few editorials which the authors *skimmed* [even these seem not to have all been thoroughly read] rather than engaging in any serious personal or professional study. Anyone taking the time to read a small set of the papers selected must come to this sad conclusion when the literature is compared to the outlandish and extreme claims and calls for action. A handgun ban, or a ban on modern sporting rifles is entirely unjustified in the Canadian context, and other restrictions called for in U.S. studies are already in place in Canada.

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