



A Review of Gun Buybacks

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Abstract

Purpose of Review This reviews the history of gun buybacks and the literature to determine their impact and efficacy, as well as highlighting salient critiques. Finally, we discuss potential avenues that would enhance our understanding of buybacks and methods to address gun violence.

Recent Findings Gun buybacks have become more prominent since their inception in the 1970s and often come in response to a tragic local event. The largest scale buyback was in the mid-1990s in Australia, which collected over 650,000 guns. Buybacks are a cost-effective method of reducing the number of weapons in the general public.

Summary Gun buybacks are a cost-effective means to reduce the number of unwanted firearms in the general public and also provide a means for education regarding injury prevention. Buybacks in conjunction with other methods have been shown to be successful in reducing the number of firearms that could lead to injury and death.

Keywords Firearm safety · Injury prevention · Gun buybacks · Community

Introduction

Background

Firearms are involved in hundreds of thousands of injuries and deaths in the United States (US) every year [1•]. Studies have demonstrated that gun ownership correlates with suicide and homicide rates [2–4]. Although gun ownership may be intended for self-defense, there are 4 unintentional shootings, 7 criminal assaults or homicides, and 11 suicide attempts or completions for every act of self-defense [5]. Beyond the physical damage gunshot wounds inflict, there are other health implications, such as psychological and societal impacts. Studies have found that being exposed to or a victim of violence is associated with hypertension and post-traumatic stress disorder (PTSD) [6, 7]. Moreover, even just being exposed to firearm violence can double the likelihood that an adolescent will perpetrate serious violence over the subsequent 2 years [8]. The economic consequences of gun violence are

enormous; in the US, it is estimated that the annual cost of gun violence is \$229 billion [9•].

The US leads the world in number of firearms per resident with 120.5 firearms for every 100 residents, followed by Yemen with 52.8 firearms for every 100 residents, and the number of firearms being purchased in the US is increasing annually [10•]. Gun access and restriction have been the topic of significant debate over the last two decades, especially in the wake of countless mass shootings. There have been a variety of proposed solutions, with varying degrees of success. One of the more prominent methods of decreasing inappropriate access to firearms has been through gun buyback programs.

History of Gun Buybacks

Buyback programs have existed as far back as 1974, with one of the first documented buybacks, named Operation PASS—People Against Senseless Shootings—occurring in Baltimore, Maryland. It was the idea of the Baltimore Police Commissioner and came in response to gun violence where a police officer was killed. Over 13,500 guns were collected over a 2-month period [11]. Despite the sentiment and success of that initial buyback, it was not until the 1990s that buybacks became more prominent. There were a number of cities across the US that began buyback programs, with Seattle conducting one in 1992, Boston in 1993, and Pittsburgh in 1994 [12–14].

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One of the largest gun buyback programs to ever have taken place was in Australia in the mid-1990s [15••]. This was in response to the Port Arthur massacre on April 28, 1996, in Tasmania, Australia, where one man used a semi-automatic rifle to kill 35 people and wound 23 others [16]. The Australian government's response was swift, decisive, and broad. Between June 1996 and August 1998, Australia's state and federal governments had put in place new laws banning rapid-fire long guns [15••]. By January 1, 1997, there were mandatory gun buyback programs of prohibited firearms at market price [15••]. The number of guns collected and destroyed in the gun buybacks by August 2001 was 659,940 [15••].

Currently, there are a number of cities that host gun buybacks on an annual basis, such as Worcester, Massachusetts, and Hartford, Connecticut [13, 17]. New Zealand held its first gun buyback in 2019; unfortunately, in response to the Christchurch shooting, where a gunman killed 51 people and wounded dozens [18].

Impact of Gun Buybacks

A number of studies have sought to determine the efficacy of gun buybacks in curtailing firearm injuries and deaths. A study of Hartford's gun buyback in 2015 compared them to guns confiscated by the police force, which showed that the vast majority of crime guns were handguns, and the majority of gun buyback guns were also handguns; however, crime guns tended to be higher caliber compared with buyback guns [19]. Most gun buyback participants return weapons out of safety concerns and generally have formal training [20–23]. One study traced buyback weapons and demonstrated that buybacks have become more effective at collecting crime guns [12].

Multiple studies have assessed the efficacy of Australia's buyback and law reform. The proportion of Australian households reporting private gun ownership declined by 75% from 1988 to 2005 [24]. No mass shootings occurred in the 10 years following the enactment of Australia's 1996 gun laws and two nationwide gun buybacks [15••]. When comparing the periods before and after Australia's gun law reform and buybacks, from 1979 to 1996, there were 13 mass shootings, killing 104 and wounding 52, and from 1997 to 2016, there were no mass shootings [15••]. From 1979 to 1996, the mean annual rate of total firearm deaths was 3.6 per 100,000 people, as compared with 1997–2013, where the mean rate of total firearm deaths fell to 1.2 per 100,000 people [15••]. Similarly, firearm homicide rates fell from 0.57 per 100,000 people to 0.20 per 100,000 people [15••]. Moreover, firearm suicides in Australia declined after the gun law reform, decreasing from an annual rate of 3.0 per 100,000 people to 0.99 per 100,000 people [15••].

The cost of buyback programs is another important factor to consider. The Australian buyback program that collected and destroyed 660,959 firearms had a total compensation cost

of almost \$176 million [25]. The overall cost to run an annual program in a city and surrounding counties was \$99,250, for an average of \$53/gun [23]. However, these costs must be weighed against the costs of caring for patients who are injured by firearms. The average annual admission costs for firearm injuries in the US is \$622 million, with the cost per admission ranging from \$16,816 to \$33,462 [26•]. The highest costs by weapon type per admission were those injured by assault rifles, at \$32,237 [26•].

Beyond the original intentions of the gun buyback programs, there have also been other unanticipated consequences. Two studies have shown that buyback participants continue to own weapons even after buybacks, with up to 68% of participants reporting they had firearms remaining in their homes [22, 23]. Some have found that buyback programs are collecting weapons that differ in caliber and type from crime weapons [19, 27]. After the Australian gun buyback and law reform, there was a surge of post-law gun buying, replacing the destroyed rapid-fire weapons with single shot weapons [28].

Criticism of Gun Buybacks

Gun buybacks are criticized for not affecting those who are most likely to experience violence from firearms. The most common victims to fatal firearm injury are non-Hispanic black males, yet recent studies show that older Caucasian males are more likely to surrender weapons [20, 29]. Others state that buyback guns are dissimilar from crime guns [19, 27]. In defense of buybacks, Massachusetts State Police Superintendent Col. McKeon stated that approximately one-third of firearm-related crimes committed in Massachusetts are performed using stolen weapons [30]. Therefore, removing weapons from homes could potentially reduce the chance of these firearms being used in a crime.

Next Steps

With the upcoming presidential election, firearm violence and laws concerning firearms have been in the spotlight and heavily disputed, with buybacks being one of the methods discussed. Some propose mandatory buybacks for banned weapons, some propose voluntary buybacks, and others feel that buybacks will only hinder the efforts to ban assault weapons [31, 32]. Regardless, this complex problem will require a complex solution, particularly given the plethora of opinions and stances pertaining to firearms.

There is reason to be optimistic for the road ahead, as evidenced by Australia's successful campaign to decrease the number of rapid-fire long guns after a horrific tragedy, there can be a path towards a safer future for the US. Gun buybacks were part of Australia's success, but equally important were the numerous policies that ensured appropriate ownership of firearms. In the

same vein, multiple avenues will be necessary to address firearm injuries and deaths in the US. This includes policies that ensure firearm access to appropriate individuals, and not into the possession of those will ill-intent, injury prevention, firearm safety such as training for individuals purchasing weapons, as well as safe storage of firearms. Tangible measures to mitigate injuries may include increasing access to gun safes and gun locks. Aside from providing a way to remove firearms from the community, buybacks can offer education about firearm safety and safe storage and engage the public about firearm safety. Further studies would be beneficial to examine the effectiveness of education provided to the public during gun buybacks.

Conclusions

Firearms are the cause of innumerable deaths as well as physical and psychological injuries in the US. Additionally, gun violence has a substantial financial toll. Gun buybacks are rooted in injury prevention and have been one method of addressing the devastating impact of firearms at the local and national level since the 1970s. Buybacks are cost effective and have been successful at reducing the number of unwanted firearms at a national level, as seen in Australia in the 1990s to 2000s, in addition to the local level, as evidenced by the numerous cities that host annual buybacks. However, buybacks likely will need to be implemented with an array of other measures in order to comprehensively address this complex issue.

Compliance with Ethical Standards

Conflict of Interest Drs. Hazeltine, Green, Cleary, Aidlen, and Hirsh declare no conflicts of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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