



Access to firearms and adolescent suicide

Age limits on purchasing won't protect the many young people already living with firearms

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Policies that effectively reduce access to lethal means of suicide save lives.¹ We know, for example, that a ban on the most highly toxic pesticides in Sri Lanka was associated with noticeably lower overall suicide rates in the 1990s because studies observed a post-ban decline in pesticide related and overall suicide rates consistent with substantial declines in availability.^{2,3} The story of coal gas in the UK similarly illustrates the promise of reducing exposure to highly lethal means of suicide: carbon monoxide related (and overall) suicide rates in the UK declined in the 1960s as more and more households switched from coal gas to detoxified gas.^{4,5}

The linked study by Raifman and colleagues (doi:10.1136/bmj.m2436) assesses the impact of means restriction by looking at how suicide rates change in relation to changes in laws governing the minimum age at which adolescents in the US can legally buy handguns from unlicensed sellers (such as friends or family).⁶ But Raifman and colleagues are up against serious challenges not faced by researchers studying pesticide bans or a wholesale switch to cheaper and safer household gas. The laws they analyse are unlikely to drive large changes in overall exposure to firearms among young people, making it difficult to observe and therefore estimate the true effect of these laws on suicide rates.

The authors estimate that hundreds of suicides could be prevented annually in the US if the 33 states where 18 year olds can still buy handguns raised the age limit to 21 years. However, for several reasons, policy makers and suicide prevention advocates should be wary of expecting this extent of life saving benefits: laws governing age of purchase can only affect exposure to firearms among 18-20 year olds who do not already have access to a firearm. Firstly, 18-20 year olds who could not purchase a handgun because of age restrictions would still be able to buy long guns of the kind used in one third to one half of all suicides among young people.⁷ Secondly, most firearms used by people who die from suicide have been in their homes for years: many young people have access to firearms in the household without having to purchase one. In the US, one in three homes with children contain firearms⁸ and in half of these homes, the firearms are not locked up.⁸ Moreover, 40% of adolescents in homes with firearms report that they can easily access these guns.⁹

With these considerations in mind, even Raifman and colleagues' more conservative estimate (that 35% of all firearm related suicides would be prevented by enactment of age restricting handgun laws) seems overly optimistic. Notably, the estimate of lives saved by raising the age limit is based on the extra suicides observed in the two states that decreased the legal

age of gun sales, not the null effect observed in the two states that actually raised the age threshold to 21 years.

National registry

Raifman and colleagues were unable to report how exposure to firearms changed as a result of the legislation studied. This is not their fault—the data do not exist. Unlike other high income countries, the US does not maintain a national firearms registry with information about who owns guns and how many. Indeed, California is the only state that routinely collects these data.¹⁰

A national registry would allow researchers to measure, rather than assume, changes in firearms availability related to legislative policies. Registries would also help researchers to quantify changes in exposure to firearms after secular shocks—such as the covid-19 pandemic and Black Lives Matter protests—both of which have been associated with spikes in firearm purchases.^{11,12}

Knowing that firearm sales have spiked is a poor substitute for knowing how many firearm purchases were made by people who already owned firearms and how many by those who did not (ie, newly exposed). Accurate registry data would allow quantification of this aetiologically pertinent change in relation to exposure. As such, registry data would help put in perspective the magnitude of benefit or harm that reasonably can be expected from policies that restrict or expand access to firearms.

Whether or not the magnitude of benefit Raifman and colleagues suggest can be expected, legislation that increases the age at which handguns can be acquired will likely prevent at least some suicides in young people. This might well be a good enough argument to pass legislation that enjoys popular support.¹³ However, without accompanying efforts to substantially reduce young people's access to household firearms (both long guns and handguns), sales laws alone might make us feel better but are unlikely to save many lives.

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