UNITED STATES MILITARY ACADEMY

FINAL–GUN CONTROL

MA490

SECTION H2

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By

CADET JOSEPH ZUCCARELLI '21, CO F1

WEST POINT, NEW YORK

11 MAY 2021

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Gun Control in America

CDT Joseph Zuccarelli

May 11, 2021

Dear President Biden,

Gun control debates are currently raging at every level of government. These debates are primarily centered around age limits, more in-depth background checks, and bans on certain types of weapons (Evans and Anthony, 2018). Given the rise in big data, policymakers must rely on science in order to make more data-driven decisions concerning who should have access to firearms, when and how they should be able to access them, and how gun-related incidents can be prevented. In order to address these issues, the following report outlines several scientific studies involving gun control in America. More specifically, these studies address the frequency with which firearms are used for self-defense, the frequency with which firearms are used to commit suicide, the effect of firearm ownership on crime rates, and the effect of firearm ownership on homicides. In addition, this report also includes a proposal for new studies that build on the current quantitative research concerning gun control. I understand that gun violence is an urgent public health problem, as indicated by the recent high-profile mass shootings. However, before you and your administration take any action concerning this behavior, I urge you to consider the following information outlined in this report.

Defensive Gun Use Estimates

Gun rights activists and gun control activists often argue over the number of defensive gun uses (DGUs) that occur in America each year. Those in favor of gun rights estimate that approximately 2.5 million Americans use a gun in self defense each year (Kleck and Gertz, 1995). Those in favor of gun control argue that this number is actually closer to 116,000 McDowall and Wiersema (1994). The following empirical studies shed light on how these estimates were obtained.

Kleck and Gertz (1995) claim that their estimates are higher than those of other surveys such as the National Crime Victimization Survey (NCVS) due to three significant survey improvements: a shorter recall period, reliance on person-based information opposed to household-based information, and information concerning the number of household DGUs that had been experienced during the recall period by survey respondents. First, the researchers argue that using a shorter recall period reduces the effects of memory loss, which thus leads to more accurate results. Second, the researchers claim that respondents are less likely to reveal an incident in which another member of their household used a gun in self-defense, and thus only including person-based information leads to more accurate results. Finally, the researchers argue that repeat DGU instances within a person or household are not uncommon, and thus collecting the exact number of DGUs experienced by a person leads to a more accurate estimate. Given these survey improvements, Kleck and Gertz claim that their estimate of 2.5 million instances of DGU in America is more accurate than those obtained from the NCVS. Therefore, they conclude that DGU is far more common than policymakers and criminologists believe to be true.

On the other hand, McDowall and Wiersema (1994) claim that the NCVS provides an accurate estimate of the annual number of DGUs for two reasons. First, NCVS interviewers ask about instances of self-defense only when respondents report a crime. Second, the NCVS screens out acts that are not illegal. Kleck interviewed a pool of registered voters; therefore, Kleck and Gertz's survey did not confine DGUs to attempted victimizations. Therefore, this aspect of their survey could certainly explain why its estimate concerning the annual number of DGUs is extraordinarily higher than that of the NCVS. McDowall and

Wiersema ultimately conclude that the estimates obtained from the NCVS are indicative of the fact that firearms should not be disregarded as a defense against crime, yet DGU is infrequent compared with the incidence of crime.

Given the discrepancy in estimates from the two surveys described above, McDowall et al. (2000) carried out a study that gauged the impact of methodological differences between the NCVS and other surveys with larger estimates of DGU such as Kleck's. Their results suggest that the NCVS and other surveys of firearm defense differ mainly due to their methods as well as their questions, yet they did not investigate how the difference in methods and questions led respondents in different directions. Ultimately, they conclude that there is uncertainty concerning measures of firearm defense, specifically which estimate is most appropriate to help inform policy. However, they reason that in an abstract sense, the annual number of DGUs in America is large, whether its 116,000 cases or 2,500,000.

Effect of Firearms on Suicide Rates

Recent estimates indicate that approximately two thirds of suicides in the U.S. are carried out with firearms (Dandurand, 1998). Gun control activists argue that if we remove a popular way that people commit suicide such as firearms, then less people will kill themselves. This concept is typically referred to as *means restriction*. On the other hand, gun rights activists claim that if we remove one way that people commit suicide, they will simply substitute another. This concept is typically referred to as *substitution*. The following quantitative studies shed light on how limiting access to firearms would effect the suicide rate in America.

Barber and Miller (2014) argue that means restriction is an empirically based strategy to substantially reduce the number of suicide deaths. They cite several population-level experiments and interventions in other countries that reduced the availability of highly lethal and commonly used suicide methods. These studies indicate that means restriction been associated with a 30% - 50% decline in suicide rates. Several characteristics of firearms make them appealing targets as a means to commit suicide. Firearms certainly qualify as highly lethal, as they have the highest case fatality ratio in the U.S. Not only are they lethal, but they are both accessible and cognitively acceptable in U.S. culture. Given these findings, Barber and Miller argue that reducing a suicidal person's access to firearms will reduce suicide deaths in the U.S.

On the other hand, Kleck et al. (1992) claim that it is impossible to say whether or not the availability of firearms impacts the number of suicide attempts in America. More specifically, they claim that there is no evidence that guns precipitate suicidal thoughts, and suicide attempts with firearms are only marginally more frequently fatal than other common methods of carrying out a suicide, as the fatality rate is 85% for shooting, 80% for hanging, and 75% for drowning. Given that these other methods of suicide involve even more widely available resources then firearms, Kleck et al. attest that substitution would be easy. Basically, if guns were scarce, Kleck et al. claim that individuals with the desire to commit suicide would substitute these other widely available methods with similarly frequent fatal outcomes.

A more recent study carried out by Vitt et al. (2018) involves measuring the causal impact of gun ownership on suicide. Using data from the federal criminal background check system, these researchers investigate the effect of firearm ownership on firearm suicide rates. They found that an increase in firearm ownership has a sizeable and statistically significant impact on firearm suicide rates. More specifically, a 10% increase in firearm ownership increases firearm suicide rates by approximately 3%. In order to show that these suicide deaths were truly suicides that would not have occurred otherwise, the researchers also demonstrate that increased firearm access does not induce substitution across the other methods in which individuals can commit suicide. Although this study ultimately does not comment on the direct effect of gun ownership on the overall suicide rate in America, it does indicate that an increase in the number of firearms means increased opportunities for costly decisions such as suicide by firearm.

Effect of Firearms on Crime Rates

Gun rights activists often argue that if law-abiding citizens are armed, then criminals will be deterred from carrying out crimes. On the other hand, gun control activists argue against this claim, citing that

the research that supports it is flawed. The following studies highlight empirical arguments for and against allowing people to carry concealed weapons in order to reduce crime.

Lott and Mustard (1997) claim that there exists statistical evidence that state laws allowing citizens to carry concealed handguns deters violent crimes and appears to produce no increase in accidental deaths. This claim follows from analysis that the researchers performed on cross-sectional time-series data for U.S. counties from 1992 to 1997. Specifically, Lott and Mustard found that if states which prohibited concealed carry of weapons had allowed it in 1992, then approximately 1,570 murders, 4,177 rapes, and over 60,000 aggravated assaults would have been avoided on a yearly basis. Not only did Lott and Mustard find that allowing concealed carry of handguns deters crime, they also report that allowing those without criminal records or a history of mental illness to carry concealed handguns only produces a small and statistically insignificant change in accidental deaths. Based on these findings, Lott and Mustard conclude that we can expect that allowing people to carry concealed weapons will reduce crime on a varying basis dependent upon location.

A year later, Webster et al. (1997) published a report outlining flaws in the study described in the previous section carried out by Lott and Mustard. They list several substantial flaws in Lott and Mustard's study that invalidate their conclusions. According to Webster, these flaws include misclassification of gun-carrying laws, omission of confounding variables, endogeneity of predictor variables, and failure to adjust for the cyclical nature of crime trends. Given these flaws, they claim that Lott and Mustard's results concerning the crime-reducing effects of laws that make it easier to carry concealed firearms are overestimated. Given these findings, Webster et al. suggest that policymakers do not use Lott and Mustard's study to inform their decisions concerning gun laws.

Recently, Barati (2016) carried out a similar quantitative study concerning the effect of concealed carry laws on crime rates. In order to investigate this effect, Barati studies crime data from 1991-2008, a period in which many states had already passed laws enabling citizens to carry concealed firearms that are licensed. Using difference-in-difference methodology, she found that considerations of the type of regulations that states had prior to passing laws in favor of concealed carry matters. More specifically, she found that these laws do have a deterrence effect, yet only under certain circumstances, specifically when states had previously explicitly forbade concealed carry of weapons.

Effect of Firearms on Homicide Rates

Several researchers have investigated the relationship between gun ownership and crime; however, previous researchers have often failed to analyze a reliable data set concerning gun ownership. Duggan (2001) uses a unique data set to more reliably estimate annual rates of gun ownership at both the state and county levels during the period between 1980-2000. The data set that Duggan studies is unique in that he measures the level and change in gun ownership within an area using one of the nation's largest gun magazines as opposed to national-level data. Using this data set, Duggan found that changes in gun ownership are significantly positively related to changes in the homicide rate, specifically with this relationship driven in large part by an impact of gun ownership on murders in which a gun is used. He did not find as extreme of a relationship between gun ownership and all other common crime categories.

More recently, Siegel and Rothman (2016) carried out a similar study concerning the relationship between gun ownership; however, their study specifically investigates the relationship between gun ownership and the female homicide rate. Initially, the researchers confirm the findings of previous studies, as they too found that in states where a greater proportion of the public owns firearms, there are more homicides, more firearm related homicides, and more nonstranger firearm homicides. However, expanding upon this initial analysis, the researchers also found that there is a specific risk of nonstranger, firearm related female homicide associated with the prevalence of firearm ownership in a state. More specifically, Siegel and Rothman found that for each 10 percentage point increase in firearm ownership within a state, the female firearm related homicide rate increases by 10.2%, the female nonstranger homicide rate increases by 7.8%, and the overall female homicide rate increases by 7.3%. Although the researchers adjust for numerous potential confounders in their analysis, their study lacks statistical power given the severe lack of data concerning gun ownership and female homicides. Therefore, policymakers should be cautious in using the conclusions from this study

to inform decision-making, and perhaps wait until more studies investigate this topic further to make key decisions.

Study Proposal

Given the long-standing controversy concerning gun rights, there are numerous quantitative studies concerning gun use in America. However, in order to more effectively address the topics included in this report, our government must consider providing more funding towards data collection studies (Weiner et al., 2007). With respect to defensive gun use estimates, the government must sponsor a large scale survey by a federal agency. This survey should be specific in defining what is considered defensive gun use and ask about defensive gun use relative to other crime deterrence strategies. With respect to the relationship between firearms and suicide, there is a need for more longitudinal data, as it would be beneficial to follow children from a young age in order to better analyze long-term exposure to firearms and suicide. With respect to the relationship between concealed carry laws and crime, we must conduct a deeper exploration of the effects of laws allowing concealed carry on social norms and behavior. Understanding where, by whom, and how much these laws actually prompt individuals to concealed carry firearms will enable us to more effectively understand this relationship. Finally, with respect to the relationship between firearms and homicide, there is a need for more aggregate level data concerning the profiles of gun owners. It would be useful to know where gun owners are located, their economic background, and various other demographic information about them.

Conclusion

Overall, the quantitative studies highlighted throughout this report address several key questions that can help inform gun control policy in America. Although several studies offer conflicting estimates of defensive gun use estimates in America, they all indicate that the annual number of instances is large. Similarly, despite conflicting estimates concerning the effect of firearm access on the overall suicide rate, it is clear that increased access to firearms leads to increased opportunities for costly decisions such as suicide by firearm. While the effect of firearm ownership on crime rate is less clear, it appears that the effect of gun ownership on crime deterrence is dependent on the previous gun laws enforced upon citizens of the state. Similarly, the effect of gun ownership on homicide rate also appears to be dependent upon gender, although a study involving more data is necessary to back this claim. In general, larger and more reliable data sets are necessary to more effectively study the uses and effects of guns in America. However, the current research in the field still offers valuable findings that can certainly help government officials make more informed decisions concerning gun policy in America.

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