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Improving mental health service: a viable alternative to gun control?

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Improvements to Mental Health System: Viable Alternative to Gun Control?
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Abstract

This paper examines whether gun control laws and mental health services are complements or substitutes in reducing gun violence in the United States. To study the relationship between these variables, I used data from the Violence Prevention Center, the Brady Campaign to Prevent Gun Violence, and the National Alliance on Mental Illness. I also examined the public hearing testimonies of gun control bills that have been proposed in specific states since the shooting at Sandy Hook to investigate the political dimensions of gun control laws versus mental health services. I found there to be significant correlation between states with stricter gun control laws and lower gun violence rates. I did not find there to be a strong correlation between states with highly rated mental health services and lower gun violence rates. In terms of actual policymaking, it seems that mental health is being used as an alternative to gun control.

Introduction

Every day an average of 86 Americans are killed by firearms. (Brady Campaign) According to the United Nations Office on Drugs and Crime, the US rate of gun-related deaths per 100,000 population is 20 times the rate of Australia, France, the United Kingdom, Israel, South Korea, Japan, Norway, Poland, and Slovenia. This means that Americans are 20 times more likely to be killed by a gun than someone from one of these other developed countries. (UN Office on Drugs and Crime) Gun deaths have become so commonplace that they are losing traction in the media despite the terrible tragedy and loss they represent. Mass shootings however continue to invoke fear and thus, media attention in the United States. Following a series of mass shootings in the
past decade perpetrated by gunmen who suffered from serious mental illness (Virginia Tech, Tucson, Aurora, Newtown) and who in many cases legally purchased the firearms they used, there has been a great deal of discussion of the role of mental health in firearm violence.

In this paper, I hope to determine what actually has an effect in reducing gun violence: mental health services, gun control, or both. I will also look into how these two variables influence actual policymaking. To examine these relationships, I analyzed data grading the states on their mental health services and the restrictiveness of their gun laws, and compared these grades with their gun violence rates. To examine the policymaking side, I researched the public hearing testimony on every significant gun bill considered in select states since the shooting at Sandy Hook and studied the arguments made on either side, specifically searching for arguments that included the importance of mental health. This systematic approach should help us better understand how mental health services and gun control legislation affect gun violence, and how these factors influence policymaking.

The National Rifle Association (NRA) is among those advocating for less restrictive gun laws. The NRA carries a great deal of political power and has been effective in swaying public opinion. As Robert Spitzer points out in “The Politics of Gun Control,” gun control opponents are more likely to engage in political action, such as letter writing, contributing money, and attending meetings, than gun control proponents. They are united by their passion for guns. (Spitzer 104) In regards to mental health, a 2013 survey found 90.7 percent of NRA members said they favored “reforming our mental health laws to help keep firearms out of the hands of people with mental illness.”
86.4 percent believe that strengthening laws this way would be more effective at preventing mass murders than banning semi-automatic rifles. (OnMessage Inc., 2013)

Days after the shooting at Sandy Hook Elementary, the NRA’s executive vice-president, Wayne Lapierre, appeared on NBC citing mental illness as the problem behind gun violence: “We have a mental health system in this country that has completely and totally collapsed.” (Gregory, 2013)

It seems many Americans agree. 48 percent of Americans blame the mental health system “a great deal” for mass shootings in the United States according to a Gallup Poll. Fewer blamed easy access to guns (40 percent) in 2013 than 2011 (46 percent), making the mental health system the perceived top cause of mass shootings. Democrats and Republicans differ most on the degree to which they blame access to guns. Fifty-seven percent of Democrats say that easy access to gun is “a great deal” to blame for gun violence, compared with 22 percent of Republicans. About half of Republicans and Democrats alike rate the mental health system as a major factor. However, mental health is the top factor for Republicans by a long shot, while it comes in second for Democrats. (Saad)

Others believe stricter gun control laws are the key to reducing gun violence. The NRA’s primary opponent is the Brady Campaign to End Gun Violence. Unlike the NRA, which was founded in 1871, the Brady Campaign is a comparatively young organization. The Brady Campaign also emerged as a coalition of over thirty national religious, educational and social organizations, including the Common Cause, the American Jewish Committee, the National Women’s Political Caucus, and the American Baptist Convention. However, all these groups have multi-issue concerns that dilute
their effectiveness on the gun control issue. In contrast, the NRA has benefited from and cultivated a single-issue mass constituency for decades. (Spitzer, 1998, pg.104) The Obama administration has also proposed a series of stricter gun control laws, including universal background checks, magazine limits, and banning military-style assault weapons. (“Now Is The Time”) Since the shooting at Newtown, several states have passed more restrictive gun laws, but even more have increased their mental health budgets. This paper attempts to assess which approach is more effective, or if a combination of the two approaches is more successful in reducing gun violence, and then how the argument that mental health is the real problem behind gun violence is shaping gun policymaking.

**Literature Review**

Public opinion on specific gun policy options varies. As of December 22, 2012, 44 percent supported a ban on semi-automatic guns: 92 percent support background checks on all gun-show gun sales, and 62 percent support a ban on “high capacity ammunition magazines that can contain more than 10 rounds.” As of April 2013, 56 percent supported reinstituting and strengthening the assault weapons ban of 1994: 83 percent supported requiring background checks for all gun purchases, and 51 percent supported limiting the sale of ammunition magazines to those with 10 rounds or less, dropping almost 10 percent from less than a year earlier. As of October 2013, 74 percent opposed civilian handgun bans. (“Guns”, 2014) Predictably, considering the American culture of individualism, public support fluctuates with concern about degree of government control.
State Legislation

With mass gridlock in Congress preventing the passage of legislation addressing the problem of gun violence, the burden falls on the states to enact effective gun policies. Policies on guns and mental health vary greatly across the different states. Overall, few states ban particular firearms, limit the number of guns that can be purchased, require a permit to purchase a gun, or have gun registration. Age restrictions, waiting periods (usually for handgun purchases), child access prevention laws, lawsuit immunity, and sentence enhancements are common policies. (Wilson 86)

After the shooting of 20 children and 6 adult educators at Sandy Hook Elementary in Newtown, Connecticut, there seemed to a new push to strengthen state gun laws. According to the Law Center to Prevent Gun Violence, at least 64 state laws have been passed in the last two years that strengthened gun regulations. However, in the same amount of time, at least 70 state laws have been passes that weakened regulation. (Scheller, 2014)
State legislators were quick to allocate more money for mental health services. However, as legislatures convene in 2015, some states have started cutting their mental health care budgets once again.

Nonetheless, many states are clearly opting to improve their mental health budgets rather than strengthen their gun control laws, including many of the states that weakened their gun control laws in the last two years. What is unknown is what is driving states to increase mental health funding rather than strengthen gun control laws. I address this question later in this paper.
Mental health and violence

Despite the perception of the connection between failures in the mental health system and gun violence, much of the research on the subject says mental illness alone very rarely causes violence. A 2001 study looked specifically at 34 adolescent mass murderers, all of whom were male. Seventy percent were described as a loner. Nearly sixty-two percent had problems with substance abuse. 48 percent had preoccupations with weapons. Only 23 percent had a documented psychiatric history of any kind, meaning 3 out of 4 did not. (Meloy, 2013) Another study looked at more than ten thousand individuals, some mentally ill and some not, over the course of a year. The study found that serious mental illness alone was a risk factor for violence-from minor incidents, such as shoving, to more serious events such as armed assault- in only 4 percent of cases. So looking at all incidents of violence reported among the people in the survey, mental illness by itself could explain only 4 percent of the incidents. (Konnikova, 2014)

A 2002 study tracked eight hundred people in four states who were being treated for psychosis or a major mood disorder. Thirteen percent of those tracked committed a violent act that year. However, the likelihood of them committing a violent act was also dependent on whether they were unemployed, poor, living in disadvantaged communities, using drugs or alcohol, or had suffered from “violent victimization” in their lifetime. If all of these other factors were taken away, the risk of committing a violent act fell to 2 percent, which is the same risk found in the general population. (Konnikova, 2014) Another analysis done by the National Epidemiologic Survey on Alcohol and Related Conditions, which contained data on more than thirty-four thousand people,
found that just less than 3 percent of people suffering from severe mental illness had acted violently in the last year. (Elbogen, 2009)

Research shows that there are actually a number of other predictors of future gun violence. In an interview with The New Yorker, Dr. Jeffrey Swanson, a professor in Psychiatry and Behavioral Sciences at the Duke University School of Medicine, discussed his research on likely indicators of future gun violence. Dr. Swanson found in one of his studies on violence and mental illness that the occurrence of violence was more closely associated with whether someone was male, poor, and abusing either alcohol or drugs. If someone fit all three of those categories, their likelihood of committing a violent crime was high, even if they were not mentally ill. If someone fit none, then mental illness was very unlikely to be predictive of violence. A subsequent study of over a thousand discharged psychiatric inpatients, known as the MacArthur Violence Risk Assessment Study, found that a year after their release, patients were only more likely than the average person to be violent if they were also abusing alcohol or drugs. (Konnikova, 2014)

**Gun Ownership**

Gun ownership has also been found to be indicative of gun violence. A study from the American Journal of Public Health shows that US states with higher estimated rates of gun ownership experience a higher number of firearms-related homicides. The study, led by a Boston University researcher, Dr. Michael Siegel, is the largest study conducted to date on the correlation between gun ownership and firearms violence. The study, which spans 30 years (1981-2010) in all 50 states, found a “robust correlation” between estimated levels of gun ownership and actual gun homicides at the state level.
The authors found for each 1-percentage point increase in the prevalence of gun ownership, the state firearm homicide rate increased by 0.9 percent. (Siegel et al., 2013)

Another study by the Boston Children’s Hospital found that states with more gun laws have fewer gun-related deaths. The study examined information from all 50 states from 2007 to 2010, analyzing all firearm-related deaths reported to the Center for Disease Control and data on firearm laws compiled by the Brady Center to Prevent Gun Violence. States with the most laws have a mortality rate 42 percent lower than those states with the fewest laws. The states with the most laws also had a 40 percent lower firearm-related homicide rate and 37 percent lower firearm-related suicide rate. (Fleegler et al., 2013) A different analysis inspected the connection between restrictive and permissive gun legislations, gun violence, and gun access in the 50 states based on research done by the Legal Community Against Violence Law Center (LCAV), which produced a ranking system of 25 policy approaches that regulate firearms in each state. The study found states with more restrictive regulations tend to have lower rates of death by guns, as well as lower percentage of gun ownership in the population. (Lemieux, 2014)

The opposite was also true in that states with more permissive gun regulations tend to show higher rates of deaths by gun, as well as higher percentages of gun ownership. (Lemieux 2014) The Center for American Progress also performed a 50 state analysis of gun laws and gun violence. They found that the 10 states with the weakest gun laws collectively have a level of gun violence that is more than twice as high as the 10 states with the strongest gun laws. In their analysis, of the 10 states with
the weakest gun laws, eight are among the 25 states with the highest rates of gun violence in the country. Of the 10 states with the strongest gun laws, however, nine are among the 25 states with lowest rates of gun violence, including 6 out of the 10 with the very lowest rates. (Gerney, 2013)

As the study points out however, the strength of a state’s gun laws is just one factor in the prevalence of gun-related violence and cannot alone account for gun violence. Accordingly, I attempt to examine the factor of mental health services in relation to gun laws in reducing gun violence. It is important to look at this relationship in order to determine if there is truly a correlation between the two, or if mental health is merely being used as a scapegoat to avoid tightening gun laws. In the following sections, I attempt to determine first how the two factors affect gun violence. I also examine other potential contributors such as urbanization and political ideology. I then analyze public hearing testimony of three states to determine how gun control advocates’, such as the NRA, who claim that improving mental health services is the real solution to reducing gun violence, is affecting public policy.

**Methods**

I am looking to answer two questions on mental health and firearm policy. First, I want to know how mental health laws and gun laws affect gun violence across the 50 states. Second, I want to know how the argument that mental health is the problem behind gun violence is affecting gun control legislation. I drew my data from a few different sources. The National Alliance on Mental Illness (NAMI) created a scorecard in 2009 of each state’s public mental health services, which is their most recent
evaluation. The organization did so by assessing state efforts in four categories: health promotion and measurement; financing and core treatment/recovery services; consumer and family empowerment; and community integration and social inclusion. For health promotion and measurement, states were asked to provide basic information about the services they provide, demonstrate solid planning in several areas, and to provide evidence of quality data collection.

For financing and core treatment/recovery services, states were asked to report the number of people with serious mental illness served, along with information about Medicaid coverage, medication access, and the availability across the state of a variety of evidence-based practices. For consumer and family empowerment, states were asked to provide information about policies relating to consumer and family monitoring teams, mandated membership on state Pharmacy and Therapeutics committee, and support of family, peer, and provider education program. For community integration and social inclusion, states were asked to provide information about the availability of housing resources, criminal justice-related interventions, and public education efforts. (Aron & Honenburg, 2009)

For the Gun Control grades, the Law Center to Prevent Gun Violence and the Brady Campaign to Prevent Gun Violence teamed up to evaluate and compare the laws of all fifty states. They ranked the states based on thirty policy approaches to regulating guns and ammunition, such as background checks on gun sales, reporting lost or stolen firearms, and prohibiting dangerous people from purchasing weapons. States received points for having effective laws in each policy area, with stronger laws receiving more points. States lost points for measures that they evaluated to increase the likelihood of
gun violence, such as laws that allow individuals to carry loaded, concealed weapons in public without a permit. (Brady Campaign) For gun violence death rates, the Violence Policy Center drew data from the Center for Disease Control (CDC) on gun deaths in 2011, which includes homicides, suicides, and unintentional shootings. These statistics do not include injuries by firearms. ("State Firearm Deaths Rates", 2011)

The data I have drawn from is of course not perfect. Because NAMI and the Brady Campaign are advocates for their causes, their data could be a bit skewed in that each organization could have been possess a bit of bias in their assessments in that their goals as organizations are to improve mental health programs and to strength gun control laws. Nonetheless, I believe that the provided data is satisfactory for use based on their thorough descriptions of the methods used for evaluation. The National Alliance on Mental Illness is a national, non-partisan organization with no political or economic ties to any one state. They surveyed state mental health agencies for the majority of their data. They also used state-provided estimates on the number of adults living serious mental illness, the extent of shortages in the mental health workforce and hospital based inpatient psychiatric bed capacity. This clear presentation of their thorough methodology, as well as their lack of ties to any one state, stands as a testament to the reliability of their assessments.

The Brady Campaign is the most well known authority on gun control. They use a 100-point system based on several categories of gun regulations to determine the strength of a state’s gun laws. The Center for American Progress uses the Law Center to Prevent Gun Violence’s state rankings in their report “America Under the Gun.” (Gerney 2013) The Law Center teams up with the Brady Campaign to formulate their
report. I believe the combination of these two organizations provided the most comprehensive and well-researched material on the subject. The data for the rates on gun violence death by state comes from the CDC, a nonpartisan group that report on causes of death, thus preventing bias in their statistics. The disadvantage of this data is that it does not include gun-related injuries. The CDC has also since published new data on gun death rates since the writing of this paper, but the statistics remain very much the same.

My second question concerns how modern policy-making and political arguments over gun are taking place, particularly in terms of mental health. To examine the political, policy-making side of gun violence prevention in regards to gun control and mental health, I chose three states as case studies: Nebraska, Connecticut, and Maine. I chose these states because of their differences in demographics, gun restrictions, and mental health services. Nebraska is a rural, conservative state while Connecticut is a liberal, densely populated state. Maine is moderately liberal, but very rural and possesses lax gun laws. I analyzed the public testimony of every significant bill that each state has considered regarding gun control since the shooting at Sandy Hook in December of 2012. My aim was to examine the arguments in favor or opposed to the proposed bill, specifically searching to find if any arguments were made with mental health in mind.
Results

State Analysis of NAMI Mental Health Grades and Brady Campaign Gun Control

Grades

The above graph presents the evaluated grades for each state by NAMI and the Brady Campaign. Massachusetts, New York, Maryland, and Connecticut top the chart scoring very well in both categories. Notably, all of these states are wealthy, blue, Northeastern states. States that scored an “F” in both categories includes Mississippi, Kentucky, Arkansas, and West Virginia, Wyoming, and South Dakota; all conservative states. There is also a large cluster of states that received a “D” in Mental Health and a “F” in Gun Control: Louisiana, South Carolina, Texas, Alaska, Utah, Idaho, Florida, Alabama, Kansas, North Dakota, Montana, Georgia, and Nevada, all of which are also
conservative states. It seems that, generally speaking, if a state scores poorly on gun control, they are likely to also score poorly on mental health. However, there are exceptions, such as Maine and Oklahoma. Conversely, if a state scores well on gun control, they are likely to score positively in mental health, the notable outlier being Illinois. There is also a great deal of variation in the states that score between a D and a B on gun control. If a state receives between either of these two scores on gun control, there seems to be no relationship to how the state scores on mental health.

A regression of the data confirms the observed relationships.

<table>
<thead>
<tr>
<th></th>
<th>Coefficients and P values</th>
</tr>
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<tbody>
<tr>
<td>Gun control grades</td>
<td>b = .342</td>
</tr>
<tr>
<td></td>
<td>P= 0.00**</td>
</tr>
<tr>
<td></td>
<td>b = .076</td>
</tr>
<tr>
<td></td>
<td>P= 0.484</td>
</tr>
<tr>
<td></td>
<td>b = .060</td>
</tr>
<tr>
<td></td>
<td>P= 0.589</td>
</tr>
<tr>
<td>% voted for Obama in 2012</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>b = .045</td>
</tr>
<tr>
<td></td>
<td>P= 0.002**</td>
</tr>
<tr>
<td></td>
<td>b = .090</td>
</tr>
<tr>
<td></td>
<td>P= 0.002**</td>
</tr>
<tr>
<td>Median income</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>b = 4.95e-06</td>
</tr>
<tr>
<td></td>
<td>P= 0.435</td>
</tr>
</tbody>
</table>

I first ran a regression using the grades on mental health as the dependent variable, and the grades on gun control as the independent variable as it seems that there is a definite correlation between the states that choose to enact strong gun control laws and have comprehensive mental health services. The grades for gun control and mental health were both originally on a letter grade scale. For the sake of statistical analysis, I numerated each letter grade according to a 4.0 scale. For example, an “A” would be renumbered as a 4, an “A-” would receive a 3.7, and so forth. The regression
shows that the correlation between a state’s gun control grade and its mental health grade hold a positive coefficient of .342. As a positive number, it indicates states with strong gun control tend to also have strong mental health, while states with weak gun control tend to also have weak mental health services. Thus, for each increase in one value on gun control grades, there is a .342 average increase in the grades on mental health. The P value is zero meaning the relationship is significant.

I then ran the same regression, but included the percent of each state the voted for President Obama in 2012 as a control to measure how liberal, or “blue” a state was. I chose this variable because I expected states might be more likely to have strong gun control and/or stronger mental health services if they were a more liberal state. The relationship between gun control grades and mental health grades becomes insignificant controlling for liberal ideology, as the P value becomes 0.484. The coefficient for the “blue” control is positive at .045, signifying there is a stronger correlation between blue states with strong gun control than between states with strong gun control and strong mental health. For one increase in the grades on gun control grades, there is a .045 average increase in percent that voted for President Obama in 2012, indicating perhaps a stronger tendency towards liberal ideology. Its P value was 0.002, indicating the relationship was significant. I then ran the regression a third time but with the additional control of median income. I expected wealthier states might be more likely to have stronger gun control and mental health services, considering their likely increased budget for spending. However, its P value was 0.435, indicating that median income does not have a significant effect on the relationship.
This first regression shows that strong mental health services and strong gun control are strongly associated. Once ideology is included however, this relationship essentially disappears. Wealth, or median income, however has no demonstrated effect on this relationship. It seems that how liberal a state is may be the strongest indicator of stronger gun control, rather than whether a state is enacting strong mental health services or how wealthy the state is. This relationship does make sense, as those who identify on the more leftist side of the political spectrum are also more likely to favor stricter gun control, and therefore, more liberal states are legislating stronger gun control laws.

_Brady Campaign Gun Control Grades and Gun Violence Death Rates by State_
The above graph compares the states’ Brady Campaign Gun Control with their Gun Violence Death Rates. There is a significant cluster of states that score an “F” and have high gun violence rates such as Louisiana, Mississippi, Alaska, Montana, Wyoming, Alabama, Arizona, South Carolina, and West Virginia, all of which also are conservative red states, mostly in the South. There is a smaller clustering of states that scored a “C” and possess near average rates of gun violence including Oregon, Pennsylvania, Colorado, Michigan, Washington, Wisconsin, Iowa, and Minnesota. There is a great deal of variation among these states. Some are from the Northwest, others from the Midwest, and Pennsylvania resides in the Northeast. Most lean liberal on the political spectrum. There is then another clustering of states that scored above average and have low gun violence rates: Rhode Island, Massachusetts, New York, New Jersey, and Connecticut, which are all Northeastern, liberal, wealthy states.
The above graph compares the states' NAMI Mental Health grades with their Gun Violence Death rates. Almost all of the states that received an “F” from NAMI have high gun violence rates, including West Virginia, Wyoming, Arizona, and Mississippi, all of which are conservative states. There is a strong clustering of states that received a “D” who have fairly high gun violence rates, at about 12 percent or above, including Arkansas, Montana, Tennessee, Louisiana, Nevada, Georgia, Florida, Indiana, North Carolina, Michigan, and Kansas, the majority of which are conservative, Southern states, with the outliers being Michigan, Indiana, Florida, and Nevada. The states with some of the best mental health grades have some of the lowest gun violence rates including New York, Connecticut, Massachusetts, all liberal, wealthy, Northeastern
states. However, there are several states that score between a “D” and “C” and have low gun violence rates including South Dakota, North Dakota, Illinois, Iowa, Nebraska, Delaware, New Jersey, Hawaii, Rhode Island, Minnesota, Wisconsin, and California. There is where the true variation lies. These states vary in political ideology and geographic location. There are also a few states that score well but have higher rates of gun violence such as Maryland, Maine, and Oklahoma. Maine and Maryland are both liberal Northeastern states but Oklahoma is a conservative, Southern state.

To further analyze the relationship between mental health and gun control and gun violence, I performed a regression using Stata on the relationship between gun violence and gun control laws, as well as mental health services, using the percentage of the population living in urbanized areas and the average median income of each state as controls. I retrieved this data from the United State Census Bureau.

<table>
<thead>
<tr>
<th></th>
<th>Coefficients and P values</th>
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<tbody>
<tr>
<td><strong>Gun Control</strong></td>
<td></td>
</tr>
<tr>
<td>$b = -2.294^{**}$</td>
<td>$N/A$</td>
</tr>
<tr>
<td>$P = 0.000^{**}$</td>
<td>$b = -2.139^{**}$</td>
</tr>
<tr>
<td></td>
<td>$P = 0.000$</td>
</tr>
<tr>
<td><strong>Mental Health</strong></td>
<td></td>
</tr>
<tr>
<td>$b$ = N/A</td>
<td>$b = -1.714^{**}$</td>
</tr>
<tr>
<td>$P = 0.008^{**}$</td>
<td>$b$ = -0.516</td>
</tr>
<tr>
<td></td>
<td>$P$ = 0.330</td>
</tr>
<tr>
<td><strong>Urbanization</strong></td>
<td></td>
</tr>
<tr>
<td>$b = -0.002$</td>
<td>$b = -0.087$</td>
</tr>
<tr>
<td>$P = 0.942$</td>
<td>$b = .0003$</td>
</tr>
<tr>
<td></td>
<td>$P = 0.991$</td>
</tr>
<tr>
<td><strong>Median Income</strong></td>
<td></td>
</tr>
<tr>
<td>$b = -0.00002$</td>
<td>$b = -0.00002$</td>
</tr>
<tr>
<td>$P = 0.529$</td>
<td>$b = -0.00001$</td>
</tr>
<tr>
<td></td>
<td>$P = 0.353$</td>
</tr>
<tr>
<td></td>
<td>$P = 0.577$</td>
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</tbody>
</table>
I used the rate of gun violence by state as my dependent variable because I expect the other variables to cause changes in the rate of gun violence. In my first regression, I used gun control grades as my independent variable. I used the percentage of people leaving in an urban area in each state and each state’s median income as controls, predicting that there is more gun violence in cities and in less wealthy areas. As seen in the table, when controlling for urbanization and median income, gun control has a negative coefficient of -2.294 with a P value of 0.000. This output means that when the state scores well and receives a high number on gun control, the gun violence tends to be low, and vice versa. For each one value of increase in gun control grades, there is a 2.294 average decrease in gun violence rates. There is definite correlation between strict gun laws and lower gun violence rates. Both of the variables of urbanization and median income seem to have little effect on this relationship. Both variables have high P values, signifying that their impact on gun violence is likely insignificant.

Mental health also seems to have a significant correlation in reduced gun violence rates with a negative coefficient and a very small P value of 0.008. Again, the variables of urbanization seem to have very little effect with negative coefficients of -0.087 for urbanization and -0.00002 for median income. Both have large P values again of 0.016 and 0.353, respectively. Strong mental health seems to have a weaker correlation with reduced gun violence when regressed with gun control. When the two variables of mental health grades and gun control grades are regressed together, gun control continue to hold a significant correlation with a negative coefficient of -2.139 and a P value of 0.000. However, mental health drops in significance in combination with gun control with a smaller, negative coefficient of -0.516 and an insignificant P value of
0.330. The variables of urbanization and median income continue to be insignificant with coefficients of .0003 and -0.00001 respectively. They also have large and therefore, insignificant P value of 0.991 and 0.557 respectively.

There are a number of conclusions that can be drawn from this regression. First, it seems that urbanization and wealth have limited effect on reducing gun violence. This is significant as many cite these two variables as substantial factors in gun violence, but this regression shows otherwise. Furthermore, it seems that both strong mental health services and strong gun control laws are significantly correlated with reduced gun violence. However, when the two are regressed together, the correlation between strong mental health services and reduced gun violence loses its significance. This shows that mental health services and gun control laws are not complements in reducing gun violence, but instead alternatives. Nonetheless, gun control seems to have a strong influence on reducing gun violence than strong mental health services.

While one can see clearly the correlations between mental health and gun control, and gun violence rates, a quantitative analysis of what states are choosing what policies in terms of mental health and gun control (as seen in the scatter plot and subsequent regression) provides us with only limited information. For this reason, more detailed case studies of states are needed. What discussion is taking place regarding mental health and gun control with the states and how is this affecting policy? I hope to answer this question in the next section.
Policymaking

To examine what is happening in terms of state politics, I have chosen three states, Nebraska, Connecticut, and Maine, and studied their proposed legislation on gun control since the Newtown shooting. These three states have the public hearing testimony of all their legislation available on their state legislatures’ websites. I searched through all of the legislation that had been proposed in each state regarding firearms since the Newtown shooting, and read through each of the bill's public testimony. This qualitative analysis serves to investigate what is happening on the policymaking side of state gun control laws. I looked for mentions of mental health in terms of gun control to see how it is affecting the policymaking of gun control in these select states. I looked for bills following the Newtown shooting because this was a time when the gun control debate was reignited and, more frequently discussed than before the tragic shooting.

Nebraska

Nebraska, a rural conservative state, has proposed three significant changes to tighten their state gun legislation since Sandy Hook. The first of which, LB50, was introduced January 10, 2013 as was discussed by the Judiciary Committee January 23, 2013. The bill sought to hold adults liable for leaving unsecured firearms accessible to a minor or a mentally incompetent person who cannot legally possess a gun. The state senator who introduced the bill, Senator Brad Ashford mentions in introducing the bill that he had spoken with a number of gun store owners and that they had expressed their support of his work on mental health in regards to gun control. This is the first indication that gun advocates are concerned with mental health. (Nebraska Legislature, Speaker Senator Brad Ashford)
However, the bill is met with wide opposition in committee. The first person to testify against the bill, Dr. Bryan Van Deun, came from the Nebraska Firearms Owners Association (NFOA). He proposed that instead of punishing people for failing to secure their firearms, to incentivize it. The NFOA proposes a tax holiday for those buying secure devices such as gun safes, lock boxes, and gun locks where the gun owner would pay no sales tax during the holiday. (Nebraska Legislature, Speaker Dr. Bryan Van Deun) The next opposing testifier was a lobbyist from the NRA who also proposes incentives over punishment. The NRA lobbyist does mention that the NRA supports Nebraska’s compliance with the National Instant Criminal Background Check System “with particular reference to mental persons who have been adjudicated or committed not being able to buy or possess a firearm.” (Nebraska Legislature, Ron Jensen) A third opponent suggested a youth gun education or gun safe program instead. Debate was then ended. (Nebraska Legislature, Speaker Jeremy Cady) The bill was indefinitely postponed as of April 17, 2013. Although some gun advocates may be concerned about mental health in Nebraska, it does not seem to be an argument that held traction for this bill. They are more concerned about being punished in terms of gun use.

The next bill heard in the same Judiciary Committee meeting was LB148. This bill, also introduced by Sen. Ashford, sought to clarify that not only are firearms prohibited from being in the hands of juveniles and convicted felons, but that ammunition is also prohibited. An attorney testified in favor of the bill, claiming that it mirrored federal law and would make it easier to prosecute on the state level. An opposing attorney testified against the bill claiming that it is too harsh on felons, and cited the costs of incarceration as a reason to oppose it. He also suggested that it would
be easy for police to place ammunition in a crime scene in order to falsely convict a person. (Nebraska Legislature, Speaker Don Kleine) An opposing attorney stated that the bill was too harsh on felons, citing the costs of incarceration. (Nebraska Legislature, Jerry Soucie) Debate was then ended and the bill was indefinitely postponed April 17, 2013. Because there were only two testifiers for this bill, it is difficult to draw many conclusions. Mental health was not mentioned. However, it is interesting to note that a law that already exists on the federal level could not be passed in Nebraska, perhaps suggesting that Nebraska is more wary of more restrictive gun control legislation on average than the rest of the country.

Senator Russ Karpisek introduced the third significant gun bill, LB1027, to the Nebraska Legislature to the Judiciary Committee February 26, 2014. He prefaced his statement by saying that the Committee had heard the bill is a “gun grab,” and he refuted this claim. LB1027 would allow persons who had been taken into protective custody or in voluntary treatment to get their firearm returned, as long as they are not prohibited from doing so under state or federal law, and deemed mentally fit by court order. The bill would change the current law, which does not require a person needing to be judged mentally fit by a judge to get their firearms returned to them after being taken into protective custody or voluntary treatment. (Nebraska Legislature, Senator Russ Karpisek) A lieutenant spoke in favor of the bill, claiming that it would help ensure that “the return of the firearms is in the best interests of the owner and community.” The lieutenant also said that the bill would release liability from solely law enforcement. He also noted that when Nebraskan citizens apply for gun permits, background checks are completed. If a citizen has Emergency Protective Custody or the Board of Mental Health
on his or her record, he or she is denied a permit. (Nebraska Legislature, Mark Gentile)
The other person to testify represented the NFOA in opposition to the bill, but only in terms of how the bill is worded. (Nebraska Legislature, Rod Moeller) Nonetheless, the bill is indefinitely postponed as of April 17, 2014.

Interestingly, two of the three significant gun control bills considered concern mental health in some regard. The first tries to keep guns out of the hands of mentally ill while the second tries to return them, yet neither bill passes. Although mental health is largely not mentioned as a complement or alternative to gun control, the importance of mental health does seem to be shaping what bills are being brought forward. However, the lack of bills that were heard in Nebraska following the shooting at Sandy Hook suggests that Nebraskans are not all that concerned with gun control. Indeed, the state had the tenth lowest gun death rate in the country in 2011. So perhaps because of their gun violence rate, Nebraskans are less concerned with addressing the problem.

Connecticut

On the other side of the spectrum, Connecticut, a liberal and densely populated state, as well as the site of the Newtown shooting, recently passed one of the toughest gun control laws in the country. In the year following the shooting, the Connecticut General Assembly considered over 84 bills concerning specifically “firearms.” So many bills were under consideration that many constituent and organizations would send in their support or opposition, listing several of the bills rather than discussing only one. Senate Bill 897 sought to “make revisions concerning carrying a firearm and hunting while under the influence, the information required on a receipt for the delivery of a firearm, the fees for and issuance of a handgun eligibility certificate and the officials
required to be notified of a gun show. Close to 60 individuals testified in response to the bill at its Public Safety Committee hearing. The bill was met with mass opposition at the public hearing testimony. Notably, mental health service changes were proposed as an alternative solution to the gun control laws much more frequently than in Nebraska.

Cristy Jones, a Connecticut resident, noted that among other things that mental health is “the common thread in gun tragedies.” Daniel Wade, also a Connecticut resident, opposed several of the proposed bills restricting firearms, but support instead “fixing our broken mental system.” Dominick Argon also opposed the bills saying that we as a nation must acknowledge, “that we have a failed mental health system.” Another Connecticut citizen in opposition to SB897 among others stated that the “real issues” are “school safety and mental health.” Judy Aron declared, “I will wager the only thing that will prevent this tragedy from happening again is not restricting gun ownership, but fixing this incredibly broken Mental Health Delivery System in this state…. " (Connecticut General Assembly, Speaker Judy Aron) Richard Clavet wanted the legislature to recognize that “mental health issues were primarily at the root cause of the Newtown tragedy” and that “our mental health system has been rendered impotent.” For this bill, mental health was clearly argued as an alternative to gun control. This argument may have worked as it remained in the Public Safety Committee and was never passed. (Connecticut General Assembly, Speaker Richard Clavet)

Another bill that aimed to strength gun restrictions was also met with opposition at its hearing. House Bill 625 was an “Act Requiring Fingerprinting and Criminal Background Checks prior to the Sale, Delivery, and Transfer of all Long Guns.” One Connecticut citizen, Barry Miller, stated “Blaming firearms for the violence we witness in
our communities will solve nothing, and fails to address the underlying causes for the violence; namely the lack of mental health support…” Another suggested that the legislature seek out “common sense” laws that would “approach the causes of gangs and drug use, and mental health. (Connecticut General assembly, Speaker Dale Bennet) The Connecticut Liaison for the NRA spoke in opposition to bill and stated “Redirecting the debate towards fixing our broken mental health system and securing our schools is the appropriate response.” (Connecticut General Assembly, Speaker Anna Kopperud and John Hohenwarter) HB 6251 also never made it out of committee. Again, it seems mental health trumped gun control as the primary target for changes needed to combat gun violence.

However, the Connecticut legislature did pass what some call the “toughest gun control law in the country.” The Act Concerning Gun Violence Prevention and Children’s Safety, Senate Bill 1160, contained a number of provisions, including limiting magazine capacities to ten rounds, expanding the list of state-banned assault weapons, and required all gun sales to include a mental and physical background check. The bill was not passed under normal pretenses however. SB1160 was passed by means of emergency certification, meaning the usual proceedings of public hearings and floor debate were avoided, and the bill was taken to an immediate vote. It seems that even in the liberal state of Connecticut unusual measures need to be taken in order to pass restrictive gun control laws. (SB1160)

Maine

The policymaking of gun control in Connecticut is much different from that of the State of Maine. Maine is a rural, moderate state with a strong hunting culture. The
Brady Campaign gave Maine an “F” for its gun laws. (Brady Campaign) Their gun laws currently do no require a background check for firearm sales. Maine had a gun death rate for 2011 just under the national death rate at 10.24, the 30th highest in the nation. (Violence Policy Center) The state also scores well in the National Alliance on Mental Illness’s rankings. (NAMI) This environment certainly seems to carry over to their policymaking. The public testimony for one of the most restrictive proposed gun control bills in 2013 was met with division.

Representatives from the National Rifle Association, the Maine Gun Owners Association, and the Sportsman’s Alliance of Maine all opposed LD 1240, “An Act to Promote the Safe Use and Sale of Firearms.” The bill included an outline of a firearm safety course and a requirement to complete the course to obtain a firearm license, prohibits a person from possessing a firearm who has been admitted to a psychiatric hospital on an emergency basis, increasing the minimum age to obtain a concealed handgun permit from 18 to 21 years old, and requires background checks of firearm buyers. Notably, mental health is largely left out of the discussion. John Hohenwarter, the Maine State Liaison for the NRA, stated that the bill will not reduce crime and will “only affect law-abiding gun owners.” He cited Maine as having “one of the lowest crime rates in the nation.” (Maine Legislature, Speaker John Hohenwarter) The Maine Gun Owners Association President argued that the bill was bureaucratic citing the successfulness of the NRA training courses already in existence. (Maine Legislature, Speaker Jeff Weinstein) The only mention of mental health came from a representative for the Sportsman’s Alliance of Maine who held that the provision of the bill related to mental health “could hold promise.” However, he went on to say, “Many of our citizens
have suffered from mental health problems and have led very productive lives and have never been a threat to public safety." (Maine Legislature, Jeff Zimba) Thus, it seems that mental health is not a big concern in relation to gun control in Maine, perhaps due to their reputation as having competent mental health services.

In another highly controversial bill, select legislators attempted to restrict ammunition magazines to 10 rounds. LD 997 heard 28 testimonies, and the issue of violence and mental illness is referenced more frequently than LD 1240. A resident of Portland stated that the bill in combination with other measures to address violence and mental illness is an opportunity to prevent tragedy in Maine. (Maine Legislature, Cathy Whittenburg) A member of the Capitol City Rifle and Pistol Club said the bill “demonizes inanimate objects while ignoring failures in our mental health system.” (Maine Legislature, Dennis Crowell) A member of Moms Demand Action for Gun Sense in America, and a supporter of the bill referenced improving the mental health system as one of a number of measures to take to prevent an event like the Newtown shooting. (Maine Legislature, Jennifer Reck) However, mental illness is not mentioned in any of the other 25 public testimonies of the bill, nor the 20 other proposed bills that were proposed in regards to firearms. Based off these testimonies, it seems that mental health is mentioned more so in response to gun control in Maine if the bill is more controversial. Perhaps this relationship is in part due to Maine’s already competent mental health services and lack of particularly newsworthy gun tragedies. Furthermore, no new gun control bills were passed in Maine.
Discussion

There are several points worth noting when comparing state mental health services and gun control policies in reducing gun violence rates. The first is that the correlation between NAMI scores and gun violence rates is unclear. Five of the states that received an “F” have high gun violence rates and two of the states with the lowest gun violence rates received a “B.” However, most states received a “D” or a “C” including states with some of the lowest gun violence rates, like Hawaii, Rhode Island, and New Jersey. Gun violence rates among the states that received a “D” or a “C” vary all the way from a 3.14 to 18.91. Furthermore, not a single state scored an “A.” With such a high variability and a lack of high-scoring states, it is difficult to pin down a correlation between the level of mental health services a state provides and a reduction in gun violence.

However, there is a stronger correlation between Brady Campaign scores and gun violence rates. All of the states with the highest gun violence rates received an “F” from the Brady Campaign, with the three highest being Louisiana, Alaska, and Mississippi. The states with the lowest gun violence rates also all scored above average, the lowest three being Massachusetts, Hawaii, and Rhode Island. There seems to be a relationship between liberal blue states with low gun violence and conservative red states and higher gun violence. Louisiana, Alaska, Mississippi are all red states while Massachusetts, Hawaii, and Rhode Island are all blue state.

For example, the states of Maine and Oklahoma performed well on NAMI’s scorecard, but scored poorly by the Brady Campaign’s standards. Both received a “B” from NAMI, but “F”s from the Brady Campaign.Interestingly, the two states have
significantly different firearm death rates, with Oklahoma having a rate of 16.6 per 100,000, and Maine’s at 10.63 per 100,000. (Violence Policy Center) In fact, according to the Institute for Economics and Peace, Maine is the safest state in the union. (Huffington Post) Maine is a sparsely populated state, with a population density of 41.3 people per square mile according to the 2010 US Census Bureau, making it the least densely populated state east of the Mississippi River. Its biggest city is Portland with a population of 66,194 people. The Greater Portland metropolitan area is the most densely populated with nearly 40% of Maine’s population. By contrast Oklahoma has four cities over 100,000 in population and 43 over 10,000. Two of the fifty largest cities in the United States are located in Oklahoma, Oklahoma City and Tulsa, with respective populations of 599,199 and 393,987. Sixty-five percent of Oklahomans live within their metropolitan areas. (US Census Bureau, 2010)

It appears that a state can maintain lower levels of gun violence without comprehensive mental health services and/or gun control laws if a state does not contain many large cities, where violence is more prevalent. As seen in the case of Maine and Oklahoma, who both scored poorly under the Brady Campaign, Oklahoma has several large cities, whereas Maine’s largest city has fewer than 70,000 residents. States like North Dakota, South Dakota, New Hampshire, and Nebraska also exemplify this tendency, all of which possess fairly low gun violence rates even with below average scores for both mental health and gun control. Conversely, states that do well in both mental health and gun control, but have many large cities, can end up with higher gun violence rates, such as Maryland and California.
However, as seen from the regression, urbanization does not seem to have a significant effect on reducing gun violence. So this tendency of rural areas to possess lower gun violence really only speaks to the outliers. A state is much more likely to possess lower gun violence if they are liberal, and therefore likely also stricter gun control laws. The coinciding of liberal states with strict gun control having low gun violence is not necessarily cause and effect. For instance, liberals may be less likely to own or use a gun. Nonetheless, there is a clear correlation between liberal states with strict gun control and lower gun violence.

On the political side, it seems the argument of mental health versus gun control varies dependent on the environment of the state. Nebraska is a conservative, pro-gun state. Their legislature has not even proposed many significant changes to their gun legislation, and therefore mental health has not so much as entered the conversation. Connecticut faces an entirely different set of circumstances, having recently endured a tragic mass shooting. Thus, the people of Connecticut were much more engaged in the process of making changed to their gun laws. Notably, mental health was offered as an alternative solution numerous times by pro-gun advocates in the discussion of their firearm laws, and the legislature was not able to pass the bills. They were able to pass a bill (SB1160) however when they utilized the emergency certification process and skipped over public hearings and floor debates. Maine lies in between Nebraska and Connecticut, proposing many more gun control bills than Nebraska, but none of which were very restrictive. Gun control advocates brought mental illness into the conversation when the proposed bill was particularly restrictive. Notably, no new gun laws were
passed in Maine either. It seems that the pro-gun advocates are successfully using mental health as a means to thwart new gun control legislation.

**Policy Recommendations**

Based on my findings and the research already done on the subject, I have compiled some basic policy recommendations for reducing gun violence. Previous research done concludes that the chances an individual who is mentally ill will commit a violent act against another person or persons with a firearm are very low. My research alludes to the fact that the strength of a state’s mental health program has little correlation to a reduction in gun violence. Therefore, in terms of reducing gun violence, it seems that the problem does not lie with failures in the mental health system, contrary to popular opinion. (That is not to say there are not problems in the mental health system.)

It seems that efforts to reduce gun violence need to be made elsewhere. My research and others’ suggests that stricter gun control legislation is associated with lower gun violence rates. Both the Consortium for Risk-Based Firearm Policy and the Center for Gun Policy Research have made policy recommendations that coincide with my research and previous research. Both groups recommend placing restriction on high-risk individuals from purchasing guns. High-risk individuals would include persons convicted of a violent misdemeanor from purchasing, persons convicted of two or more crimes involving drugs or alcohol within a three-year period, persons under the age of 21 for handgun purchase or possession, person who have violated a restraining order issued due to the threat of violence, persons with temporary restraining orders due to
threats of violence, and persons who have been convicted of misdemeanor stalking. (Center for Gun Policy Research, 2013)

Reforming the current background check system could also potentially mitigate gun violence. Reforms to the system could include establishing a universal background check system. In some states, no background check is performed, allowing potentially former criminals who are high-risk to commit a violent act, to purchase a gun. Facilitating all sales through a federal licensed gun dealer would have the effect of mandating the same record keeping for all firearm transfers, making it easier to keep track of which persons possess firearms. Lastly, banning the future sale and possession of ammunition magazines with a capacity of greater than 10 could help reduce gun violence, in that mass shootings would be more difficult with a smaller magazine limit. (Center for Gun Policy Research, 2013)

**Conclusion**

Strong gun control is clearly correlated with reduced gun violence. Although many gun control advocates say the real problem is mental health, many of the states that are passing stricter gun control are the same liberal states that possess adequate or better mental health services. When looking at the arguments made against gun control legislation since Newton, mental health is being used as an alternative to enact gun control. Nonetheless, both my research and the research of others shows that mental health services, or lack thereof, are not strongly correlated with gun violence. With an average of 300 shootings a day and the US possessing one of the highest gun violence rates among other modern nations, the need to curb gun violence in the United States is urgent. Some our nation’s most esteemed leaders have died because of gun
violence, including President John F. Kennedy and Martin Luther King Jr. If we as a nation are ever to stop the tragedies, the government, whether it is on the federal or state level, must pass stricter gun control regulations and stop using shortcomings in mental health systems as a scapegoat for gun violence and as a reason not to enact stronger gun control.
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