Political Partisanship and Male High School Students Who Carry Handguns

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I. INTRODUCTION

Handguns play a significant role in criminal activity (Siegel, 2018). About 66% of all murders and 40% of robberies involve firearms. Because there are about than 470 residents for each full-time police officer in America, the police cannot effectively protect individual citizens (Duffin, 2020; United States Census Bureau, 2020). In 2016, for example, there were 56,347 deaths due to gun violence (Gun Violence Achieve, 2020). In 2017, there were 59,289 deaths due to gun violence. In 2018, there were 55,192 deaths due to gun violence. International criminologists have argued that the high rate of lethal violence caused with handguns clearly separates the U.S. from other developed countries in a bad way. In short, it is risky to depend on the police to protect a person’s life.

There is an on-going debate over the possession of handguns in America. On the one hand, some individuals believe that self-protection is the best way to defend oneself against criminal attacks (Siegel, 2018). Each year, tens of thousands of victims use guns for self-defense (Kleck & Gertz, 1995). Indeed, a study of 27,000 crime cases has indicated that the possession of handguns was better in reducing the likelihood of property loss and injury when compared to nonresistance, without contributing to injury in any meaningful way. Furthermore, most of 1,615 felons who were interviewed in a survey stated that they were more afraid of armed victims than of police (Wright & Rossi, 1985). On the other hand, some individuals argue that as the number of guns increases, so does the number of gun-related crimes (Siegel, 2018). In other words, if guns are available, they will be used. Surveys of high school students indicate that six to ten percent of students have carried handguns in the past, and when individuals carry handguns, the seriousness of their crimes increases. Handguns are dangerous weapons when they fall into the hands of irresponsible individuals, such as youths, and, as a result, schoolyard fights may turn into homicides.

When police officers were surveyed and asked whether they believed banning the ownership of all firearms would reduce and prevent gun-related crime, 97% of the officers stated that they felt criminals would still obtain guns for criminal use (Thobaben et al., 1991). Because there are so many guns in the U.S., it would be very difficult, if not impossible, to keep the guns out of private hands, whether the individuals were criminals or not. It is estimated that about 33% of American households contain guns (Siegel, 2018). Even Sweden, which has some of the strictest gun laws in the world, still experiences significant gun-related violence (Khoshnood, 2019).

Democrats and Republicans have different views on gun-control policies, and each political party creates its own unique ambience (Pearson-Merkowitz & Dyck, 2017; Snyder, 2016). According to the differential association theory, criminality is a product of shared values, motives, drives, rationalizations, and attitudes that can be influenced by perceptions of the legal code (Siegel, 2018; Williams & McShane, 2018). By interacting and communicating with other people, an individual will learn the definitions of acceptable behaviors, which can be reinforced by the frequency, duration, priority, and intensity of the experiences. Democrats support gun control laws that restrict gun ownership because they feel that the availability of guns will lead to gun violence (Snyder, 2016). The Republicans, on the other hand, feel that law-abiding individuals have the right to possess handguns to protect themselves and their families. In
addition, gun ownership provides some protection against the government from completely taking over their lives. Because gun-related research is essential for public safety, and because funding for gun violence research comprises less than 0.1% of the Centers for Disease Control and Prevention’s annual budget, additional research is important for better understanding the issue (Rajan et al., 2018). Indeed, because each political party believes that its gun-control platform is best, it is important to know how children are responding to the issue in each political partisanship jurisdiction. The research question and the null hypothesis are listed below.

Research Question: Is there a difference between Democrat and Republican states in the percentage of male high school students who carry handguns?

Null Hypothesis: There is no difference between Democrat and Republican states in the percentage of male high school students who carry handguns.

II. LITERATURE REVIEW

First, Lemieux (2014) conducted a quantitative study to examine if gun violence and mass shootings are a cultural artifact and if gun violence and mass shootings are more prevalent due to lax gun control regulations. The researcher used a three-level, cross-sectional approach. The *macro* level compared 25 developed countries based on military expenditures and movies that glorified the use of guns; the *meso* level compared all 50 states in America by using data collected from the Uniform Crime Report; and the *micro* level compared 73 public mass shootings that occurred in the U.S. from 1983 to 2013. The researcher used multivariate analysis to assess the data, and the findings indicated that gun control legislation reduced overall fatalities related to firearms for both national and international territories. In other words, the best predictor of firearm deaths was the number of guns owned by civilians. However, except for the Southern region of the U.S., there was no correlation between the gun culture and the occurrence of mass shootings. In addition, 71% of the guns used in the mass shootings were legally and directly accessible to the killers, and 56% of the shooters had been diagnosed with a mental illness.

However, there were several limitations in the Lemieux (2014) study. Due to the low number of mass shootings in countries other than the U.S., there is an insufficient amount of data in the other countries for effective quantitative analysis. Second, the data analysis failed to capture the evaluation of state laws over time and did not take into account the gun laws that were in place at the times of the shootings. Finally, because of the variables’ ambiguous temporal precedence, the findings cannot indicate causal relationships.

Second, Jehan et al. (2018) conducted a quantitative study to determine the relationship between firearm laws and firearm-related injuries across the United States. Data were collected from the 2011 Nationwide Inpatient Sample database on 2,583 firearm-related victims from 44 states. States were placed into one of two groups based on whether the state had strict firearm laws or non-strict firearm laws based on the Brady Center score. Ten states were classified as having strict firearm laws and 34 states were classified as having non-strict firearm laws. The
researchers conducted linear regression and correlation analysis on the data, and the findings indicated that states with non-strict firearm laws had a greater number of firearm victims.

However, there were several limitations in the Jehan et al. (2018) study. First, the 2011 Nationwide Inpatient Sample dataset represented a 20% sample of all inpatient discharges, which were weighted to represent national estimates and not state estimates. Second, the data did not consider victims who died due to firearm injuries before they reached the hospital. Finally, the differences in the implementation of firearm-related laws across the states were not considered.

Third, Ludwig and Cook (2000) conducted a study to determine if the Brady Act is related to a reduction in gun-related homicides and gun-related suicides. The Brady Act requires licensed firearm dealers to observe a waiting period and to perform background checks on potential customers before the dealers sell firearms. The researchers collected data on homicides, gun-related homicides, suicides, and gun-related suicides from the National Center for Health Statistics from 1985 to 1997. The researchers used weighted linear regression and negative binomial regression to assess the data. The findings indicated that the implementation of the Brady Act had no effect on the number of homicides, gun-related homicides, or overall suicide rates. However, the implementation of the Brady Act did reduce firearm suicides for persons 55 years of age or older.

However, there were several limitations in the Ludwig and Cook (2000) study. First, the reliability of the study’s findings is questionable because it is unclear how many guns moved into secondary markets due to the Brady Act. Second, because the data used in the study were secondary data, the data values cannot be more clearly defined. Finally, because the study was quantitative in nature, it investigated how variables were numerically related but not why the variables were related.

Fourth, Siegel and Boine (2019) conducted a quantitative study to determine if there was a relationship between eight major types of firearms laws and firearm-related homicide rates. The eight types of firearm laws in four categories included laws that regulated 1) who may purchase and possess firearms, 2) the types of firearms and ammunition allowed, 3) when firearms may be used, and 4) the reasons why firearms may be purchased. Data were collected over a 20-year period from 1997 to 2016 for all 50 states for a total of 1,000 observations. The researchers used a panel regression model to evaluate the change in the overall homicide rate in a given state in a given year in relation to changes in the presence of a state law. The findings indicated that laws that regulated the types of guns and ammunition that individuals may possess did not affect the overall homicide rate. However, the number of laws that regulated who may possess such firearms was inversely related to the number of firearm homicides. In short, regulating who may possess firearms had a greater impact on homicide rates than regulating the types of firearms that were allowed in society.

However, there were several limitations in the Siegel and Boine (2019) study. First, although the researchers took steps to help establish evidence for causal relationships, the study can only claim to show correlational relationships. Second, there was inadequate power to evaluate several of the laws in several of the states because the laws were not enacted before the data were collected. Finally, because the study only considered broad, population-based outcomes, the
study may not have adequate power to detect narrowly crafted laws expected to affect certain subpopulations.

Fifth, Loftin and McDowall (1984) conducted a study to determine the impact of a mandatory sentence gun law on violent crimes, such as battery, robbery, and homicide. The researchers used an interrupted time-series design, which was applied to Miami, Jacksonville, and Tampa. These cities were chosen because they were three of the largest cities in the state, they were geographically separated and demographically distinct, and they accounted for at least 33% of the total number of violent crimes in Florida. To enhance the study’s validity, the researchers used a control series for each analysis to reduce historical threats and an Autoregressive Integrated Moving Average noise model to control for the effects of nonstationarity and autocorrelation. In addition, the researchers employed an intervention model to represent the effects of the gun law. For each series, three types of intervention models were considered, which were an abrupt permanent change model, a gradual permanent change model, and an abrupt temporary change model. The findings of the intervention analysis indicated that the Florida gun law did not reduce violent crime.

However, there were several limitations in the Loftin and McDowall (1984) study. First, it is possible that other events, which occurred at about the same time as the intervention, were actually responsible for the observed changes. Second, the study was conducted in Florida, which may not necessarily represent other state populations. Finally, because the study was quantitative in nature, it does not provide an in-depth understanding of the motives behind the participants’ actions (Berg, 2007).

Finally, Lott and Whitley (2001) conducted a study on state level data to assess the relationship between safe-storage gun laws and the number of violent crimes, the number of accidental gun deaths, and the number of suicides committed with guns. The data for the crime rates were collected from 1977 to 1996, and the data for the accidental deaths and suicides were collected from 1979 to 1996. The researchers employed regressions with weighted tobits to adjust for each state’s population. The findings indicated that there was a positive relationship between safe-storage gun laws and the number of rapes, robberies, and burglaries. The findings seem to indicate that the safe-storage gun laws impaired people’s ability to access their guns when they were needed for self-defense. The study’s findings also indicated that there was no relationship between safe-storage gun laws and reduced juvenile accidental gun deaths or suicides. It appears that the accidental shootings involved gun owners who disregarded safe-storage laws. In addition, when guns were not available, juveniles found other means to commit suicide.

However, there were several limitations in the Lott and Whitley (2001) study. First, it is possible that safe-storage gun laws have no effect on people’s behaviors in storing guns. It is assumed that the laws modified people’s behaviors. Second, if safe-gun storage laws did alter people’s behaviors, they may have affected only those individuals who were already at a low risk of accidental shootings or suicides. Because these individuals were already at a low risk, the laws may not have affected this particular group. Finally, because the study was quantitative in nature, it cannot provide a deep understanding of experiences that is needed to uncover hidden phenomena (Hatch, 2002).
In sum, the studies are mixed. Some studies indicate that strict gun-control policies may reduce social harm, and other studies indicate that strict gun-control policies may increase social harm. It is difficult to say how the social learning environment, as created by the political parties, may impact the behaviors of male high school students.

III. METHODOLOGY

Political Partisanship Definition

A state was considered either Democrat or Republican based on U.S. Presidential elections in 2012 and 2016 (“Presidential Voting History by State,” n.d.). If a state’s electoral college voted for the Democrat U.S. Presidential candidate, then that state was considered a Democrat state. If a state’s electoral college voted for the Republican U.S. Presidential candidate, then that state was considered a Republican state. To be considered in this study, a state had to be consistently Democrat or Republican during the years of data collection, which were 2013, 2015, and 2017.

Data

This study analyzed secondary data, which were collected by the Centers for Disease Control and Prevention (Kann et al., 2014; Kann et al., 2016; Kann et al., 2018). The Centers for Disease Control and Prevention provided Youth Risk Behavior Surveillance System questionnaires in 2013, 2015, and 2017 to high school students in grades 9-12, who attended public and private schools across America. The standard questionnaire in 2013 included 86 questions, and the standard questionnaires in 2015 and 2017 included 89 questions. A three-stage cluster sample design was used, which helped produce a nationally representative sample of American high school students.

Statistical Analysis

Because data were collected in 2013, 2015, and 2017 from the same states, there is the possibility that the same students may have responded to more than one survey during their four years of high school attendance (Kann et al., 2014; Kann et al., 2016; Kann et al., 2018). Therefore, a certain amount of correlation among the data values was expected (Su, 2020). This could be problematic if researchers decided to use a parametric statistic to assess the data. Indeed, a prior study that used Poisson regression to assess data collected from the same surveys ran into a huge overdispersion problem (Davis, 2020). To address this overdispersion problem, the current study used generalized estimating equations (GEE), a nonparametric statistic, to assess the data. However, relative to the use of a parametric statistic, the use of a nonparametric statistic may result in some loss of efficiency for estimation of the coefficients (Fitzmaurice et al., 2004; Su, 2020).
IV. RESULTS

Data were collected from 24 states in 2013, 15 states in 2015, and 17 states in 2017 for a total of 56 observations (see Table 1). Of all the states considered, 60.7% were Republican and 39.3% were Democrat. The mean numbers of male high school students who carried handguns for the Republican states were 109.53 (SD = 83.71), 122.13 (SD = 84.15), and 81.73 (SD = 49.44) in 2013, 2015, and 2017, respectively (see Table 2). The mean numbers of male high school students who carried handguns for the Democrat states were 129.44 (SD = 97.28), 125.57 (SD = 124.66), and 381.00 (SD = 568.80) in 2013, 2015, and 2017, respectively. The mean rates of male high school students who carried handguns for the Republican states were 0.140 (SD = 0.035), 0.145 (SD = 0.022), and 0.113 (SD = 0.031) in 2013, 2015, and 2017, respectively. The mean rates of male high school students who carried handguns for the Democrat states were 0.082 (SD = 0.023), 0.075 (SD = 0.026), and 0.080 (SD = 0.034) in 2013, 2015, and 2017, respectively.

Table 1. Sample Size Overview

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total number of observations</th>
<th>Republican</th>
<th>Democrat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males who carried handguns</td>
<td>56</td>
<td>34 (60.7)</td>
<td>22 (39.3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of states (%) per political party</th>
<th>Number of states per year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Republican</td>
<td>Democrat</td>
</tr>
<tr>
<td>Males who carried handguns</td>
<td>34 (60.7)</td>
<td>22 (39.3)</td>
</tr>
</tbody>
</table>

Table 2. Descriptive Statistics for the Variables of Interest

<table>
<thead>
<tr>
<th>Variable</th>
<th>Year</th>
<th>Party</th>
<th>Number of states</th>
<th>Events</th>
<th>Trials</th>
<th>Events/Trials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Males who carried handguns</td>
<td>2013</td>
<td>R</td>
<td>15</td>
<td>109.53</td>
<td>83.71</td>
<td>760.67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D</td>
<td>9</td>
<td>129.44</td>
<td>97.28</td>
<td>1469.11</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>R</td>
<td>8</td>
<td>122.13</td>
<td>84.15</td>
<td>806.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D</td>
<td>7</td>
<td>125.57</td>
<td>124.66</td>
<td>1537.29</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>R</td>
<td>11</td>
<td>81.73</td>
<td>49.44</td>
<td>737.09</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D</td>
<td>6</td>
<td>381.00</td>
<td>568.80</td>
<td>4894.83</td>
</tr>
<tr>
<td>Overall</td>
<td>R</td>
<td>34</td>
<td>103.50</td>
<td>73.99</td>
<td>763.85</td>
<td>434.57</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>22</td>
<td>196.82</td>
<td>313.70</td>
<td>2425.09</td>
<td>4079.49</td>
</tr>
</tbody>
</table>

Note: R = Republican; D = Democrat; M = mean; SD = standard deviation; Min = minimum; Max = maximum. Events represent the number of male high school students who carried handguns. Trials represent the male high school sample size. Events/Trials represent the rate of male high school students who carried handguns.
Figure 1 shows the bar chart of mean rates of males who carried handguns by year and political party, which provides a direct comparison of the mean rates of male high school students who carried handguns between the two political parties. Based on Figure 1, Republican states seem to have higher mean rates of males who carried handguns than Democrat states. Indeed, the results of the logistic regression for repeated measures indicate that there is a statistically significant relationship between males who carry handguns and political party ($\chi^2(1) = 25.037, p < 0.001$, Table 3). In particular, males were 77.4% more likely to carry handguns in Republican states than in Democrat states (OR = 1.774, 95% CI = [1.417, 2.221], Table 4).

![Figure 1. Bar chart of mean rates of male high school students who carried handguns by year and political party.](image)

### Table 3. Tests of Model Effects

<table>
<thead>
<tr>
<th>Model</th>
<th>Wald $\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males who carried handguns</td>
<td>25.037</td>
<td>1</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

Note: Wald $\chi^2$ = Wald chi-square statistic; df = degrees of freedom; p = p-value.
Table 4. Parameter Estimates and Odds Ratios

<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>95% CI of B Lower</th>
<th>Upper</th>
<th>OR</th>
<th>95% CI of OR Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males who carried handguns</td>
<td>Intercept</td>
<td>-2.427</td>
<td>0.096</td>
<td>-2.614</td>
<td>-2.240</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Political party</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Republican</td>
<td>0.573</td>
<td>0.115</td>
<td>0.349</td>
<td>0.798</td>
<td>1.774</td>
<td>1.417</td>
<td>2.221</td>
</tr>
<tr>
<td></td>
<td>Democrat</td>
<td>Ref</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: B = parameter estimate; SE = standard error; CI = confidence interval; lower = lower bound; upper = upper bound; OR = odds ratio; ref = reference group. OR was computed as exp(B).

V. DISCUSSION

The results indicate that there is a statistically significant relationship between male high school students who carry handguns and political party. Male high school students were 77.4% more likely to carry handguns in Republican states than in Democrat states. Therefore, the null hypothesis is rejected. The results of this study are important because they may indicate that the social learning environment created by Republicans is more likely to encourage male high school students to carry handguns when compared to the social learning environment created by Democrats. Therefore, the problem of carrying handguns by high school students may be addressed through appropriate laws that create the proper social learning environment.

Limitations

There were several limitations in the current study. First, the extent of underreporting or overreporting of behaviors by the participants cannot be determined (Kann et al., 2016). Second, because the sample is limited to male high school students in the U.S., the findings cannot be generalized to other populations. Third, as stated earlier, the use of a nonparametric statistic may result in some loss of efficiency for estimation of the coefficients relative to the use of a parametric statistic (Fitzmaurice et al., 2004). Fourth, the differential association theory does not indicate whether pro-social or anti-social behaviors will be learned in any given environment (Siegel, 2018). In other words, two individuals exposed to the same social environment may learn two different behaviors. Fifth, because the study was quantitative in design, it does not explain why male high school students carry handguns (Berg, 2007). Sixth, social learning theorists dismiss biological factors and place too much emphasis on situational factors (Durkin, 1995). For example, social learning theorists fail to address the nature of human emotions. Indeed, they dismiss the notion that personality traits may be a major feature of social behavior. Finally, there are different ways to define political partisanship, which may provide different results. For example, a state’s political partisanship may be determined by the party affiliation associated with a majority of the registered voters within its jurisdiction.
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Presidential voting history by state (n.d.). https://ballotpedia.org/Presidential_voting_history_by_state


