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## Is There a Difference Between Democrat and Republican States in the Percentage of Male High School Students Who Physically Fight on Campus?

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## I. INTRODUCTION

### School Violence

School violence is a common occurrence in American high schools (Barbour, 2006). Victims of school violence are more likely than others to become depressed, skip school, and commit suicide. In addition, intimidation, threats, sexual harassment, prejudice, gossip, and ridicule are serious threats to successful education. Overall, about 33% of students are bullied at school by other students, and bullying leads to fights (Chew, 2016). To make schools safer, zero-tolerance policies have been implemented (Mattiuzzi, 2011). However, zero-tolerance policies have shown to be ineffective. Because force alone cannot be used to eliminate the problem, the behavior of students needs to be modified through the social learning environment.

### Social Learning Theory

According to the social learning theory, pro-social and anti-social behaviors are learned through the same cognitive and behavioral mechanisms, learning is an on-going process, and people learn through experience and observation (Akers & Sellers, 2009). Personal behaviors are reinforced according to the intensity, frequency, importance, and duration of the social learning experiences. Because Democrats and Republicans create different social learning environments, what is learned in the Democrat-controlled environment may be different than what is learned in the Republican-controlled environment. Because school violence is a public health issue, it is important to know if there is a difference in the amount of high school violence in the two different social learning environments.

### Social Learning Environments

Democrats and Republicans support laws and policies that create unique social learning environments. For example, the Democrats believe that the government should promote *freedom from religion* and that marijuana use is acceptable in today's culture (Snyder, 2016). Republicans, on the other hand, believe that the government should promote *freedom of religion* and that marijuana use is unacceptable because it is harmful and leads to crime. Because the political parties influence laws, Democrats and Republicans create two different types of social learning environments that will influence the behaviors of high school students.

### Religiosity & Marijuana Use

Religiosity and the use of marijuana have been linked to personal behaviors, such as aggression and crime (Blogowska et al., 2013; Dunlap & Johnson, 1996). Because religion and marijuana use are political issues, and because the government runs society, it is important to know if one social learning environment is worse than the other in terms of violence and crime. Because the behaviors of children will be molded by the government-created environment, this study will investigate if there is a difference between political partisanship and the percentage of male high school students who physically fight on campus. 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 physically fight on campus?

Null Hypothesis: There is no difference between Democrat and Republican states in the percentage of male high school students who physically fight on campus.

## II. LITERATURE REVIEW

According to Akers' social learning theory, behaviors are reinforced over time according to the intensity, duration, importance, and frequency of social learning experiences (Akers & Sellers, 2009). However, pro-social and anti-social behaviors are simultaneously learned and modified through the same cognitive and behavioral mechanisms. Hence, it is unclear exactly what behaviors individuals will learn in a specific social learning environment. The review of the literature will focus on religiosity, marijuana use, and the learning of behaviors, which are important because the Democrats and Republicans support two different types of social learning environments that will modify the behaviors of residents within their respective jurisdictions.

### Religiosity

First, Blogowska et al. (2013) conducted a quantitative study to assess the relationship between religiosity and aggressive behaviors. The sample consisted of 130 undergraduate college students in Belgium. One hundred fifteen of the participants were female, 88 identified themselves as believers in God, and 42 identified themselves as nonbelievers. Each participant read a paper about technological progress (the control condition) and then read a paper about the social progress in the acceptance of gay rights (the experimental condition). Each participant was then led to believe that the author of each paper was participating in another study dedicated to taste preferences. Each participant was to provide hot sauce to the perceived authors of the papers. The researchers measured aggressive behaviors by measuring the amount of hot sauce the participants provided to the perceived authors (more hot sauce meant more aggression). Subsequently, the researchers used a moderated regression analysis to assess the data. As a result, the findings indicated that religiosity was positively related to aggressive behaviors when the participants were dealing with moral out-group members but not when dealing with moral in-group members. The findings for aggression were validated via the self-reported Buss-Perry Aggression Questionnaire, and the findings for explicit anti-gay prejudice were validated via the European Social Survey.

However, there were several limitations in the Blogowska et al. (2018) study. First, hot sauce allocation may not be the best way to measure aggression, and the technique does not measure covert aggression. Second, it is unclear if the hot sauce was given to the perceived authors because they were believed to be gay or because they were believed to be advocates of gay rights. Third, although regression analysis is effective for determining linear relationships, it is not good for determining nonlinear relationships. Fourth, because the participants resided in Belgium, the findings may not necessarily apply to American students. Finally, quantitative studies do not provide an in-depth understanding of the meanings that the participants associated with their lived experiences (Berg, 2007).

Second, Davis (2018) conducted a study to assess the relationship between religiosity and verbal aggression. The sample was comprised of 255 African American females who had graduated from high school and who were from 21 to 40 years of age. Data for aggression were collected via the Aggression Questionnaire, and data for religiosity were collected via the Religious Emphasis Scale. Data on personal, family, and social risk factors were also collected and assessed. The researcher used multiple regression to assess the data, and the findings indicated that childhood religiosity was positively related to verbal aggression.

However, there were several limitations in Davis (2018) study. First, the sample was comprised of African American female adults, who may not necessarily reflect the participants in the current study (i.e., male high school students). Second, because the sample was convenient, purposive, and non-random, there is a possibility that the individuals who chose to participate in the study were different in a meaningful way from the individuals who chose not to participate. Third, the study had a correlational design and cannot determine causal relationships. Finally, because the study had a quantitative design, it cannot provide the meanings and motivations behind the participants' behaviors.

Third, Baier and Wright (2001) conducted a meta-analysis to assess the relationship between religiosity and crime. The researchers identified 60 studies on religiosity that were produced from 1969 to 1998. Behavioral measures included items such as attending church, watching religious television shows, listening to religious radio stations, praying, and having family discussions. Attitudinal measures included strength of religious beliefs and importance of religion. The researchers used Pearson's  $r$  to assess the data, and the findings indicated that religiosity was inversely related to criminal behaviors.

However, there were several limitations in the Baier and Wright (2001) study. First, journals often fail to publish studies that report non-significant results. Consequently, studies that have been performed, which have produced non-significant findings, may not have been available for the researchers to examine. Second, because the meta-analysis study did not allow for the manipulation of the independent variables, causal relationships cannot be determined. Finally, because the study had a quantitative design, it failed to explain *why* people did or did not commit crimes.

Finally, Jang and Johnson (2001) conducted a five-year longitudinal study to determine whether personal commitments to religiosity and religious networks buffer children against anti-social behaviors. The researchers used self-reported data collected by the National Youth Survey from 1,087 children who were 11 to 17 years of age. The sample was representative of children living in the continental U.S. The researchers applied hierarchical linear models to analyze the data, and the findings indicated that there was an inverse relationship between religiosity and anti-social behaviors and that the effect became stronger as the children matured.

However, there were several limitations in the Jang and Johnson (2001) study. First, religiosity was measured solely by church attendance. This could be problematic because some children may feel that they are religious even though they may not have attended church. Second, because the data were collected using self-reports, some children may have been less than truthful in disclosing their deviant behaviors, especially in highly religious environments.

Finally, because the study had a quantitative design, it does not explain the reasons *why* the participants engaged in deviant behaviors (Berg, 2007).

## Drug Environment

First, Dunlap and Johnson (1996) conducted an in-depth ethnographic case study to assess whether children who were exposed to a drug environment had learned to be aggressive. The researchers developed relationships with crack sellers and their families through the Natural History of Crack Distribution/Abuse project, which was funded by the National Institute for Drug Abuse. The researchers recruited the Jones and Smith family and collected data through personal interviews, observations, and field notes for three years. The researchers recorded what was done, what was not done, how the individuals spoke, what they said, and how they had expressed themselves using body language. The researchers organized and coded the data, and then they assessed the data via content analysis. Subsequently, themes and patterns were identified. The findings indicated that the children who were continually exposed to the drug environment had learned to be aggressive.

However, there were some limitations in the Dunlap and Johnson (1996) study. First, the study was unique to specific individuals and settings. As a result, the findings cannot necessarily be generalized to other populations and environments. Second, the interpretation of the findings is subjective and is influenced by the personal experiences and expertise of the researchers. To improve the study's credibility, an accumulation of similar case studies will be required. Finally, because the study had a qualitative design, it cannot make numeric predictions.

Second, Freisthler et al. (2017) conducted a quantitative study to determine if there is a relationship between the density of marijuana outlets and violent, property, and marijuana-specific crime. The researchers collected crime data from 481 Census Block Groups over 34 months for both medical and recreational marijuana outlets in Denver, Colorado. The researchers then employed a Bayesian Poisson space-time model to assess the data. As a result, the findings indicated that there is no relationship between marijuana outlets and violent and property crimes in local areas. However, property crimes were displaced to spatially adjacent areas. In addition, the findings indicated that the density of marijuana outlets was related to marijuana-specific crimes in both local and spatially adjacent areas.

However, there were several limitations in the Freisthler et al. (2017) study. First, because the study was an ecological population-level study, the exact social mechanisms related to crime cannot be determined. The sales amount of each marijuana outlet was not considered, and the amount of street marijuana was unavailable. Second, because crime data were provided by the Denver police department, it is possible that the officers manipulated the number of crimes by filing multiple charges for a single event as a way to advocate for more departmental resources. Finally, although the study included spatially-lagged variables, it did not include temporally-lagged variables, which may have affected the model fit.

Finally, Bottorff et al. (2009) conducted an ethnography study to describe the health concerns and problems that motivate some adolescents to consume marijuana for therapeutic reasons and to describe the participants' beliefs about the risks and benefits of using marijuana for

therapeutic reasons. The participants included 20 teens who were 13 to 18 years of age who self-identified as using marijuana for therapeutic purposes on a regular basis. The participants lived in British Columbia, Canada, where marijuana was readily available to youths. Thirteen of the participants were male and seven were female. Data were collected via semi-structured interviews, which lasted one to two hours each. A field guide conducted the interviews, the interviews were tape recorded, and field notes, which described the impressions of the participants' responses to the interview questions, were recorded. The field notes were later analyzed by a research team, the interviews were transcribed, and the researchers employed thematic analysis to assess the data. The findings revealed that the teens differentiated themselves from recreational marijuana users because their purpose for using marijuana was to gain relief from difficult feelings (e.g., depression, anxiety, stress, insomnia, physical pain), and they could not find any other way to deal with their problems. In addition, the participants were not concerned about the risks because they believed the amount of marijuana that they consumed was considered normal by social standards.

However, there were several limitations in the Bottorff et al. (2009) study. First, the participants resided in Canada and the findings may not necessarily be generalized to the American population. Second, content analysis is inherently reductive, which may be problematic when dealing with complex texts. Third, qualitative research is dependent upon the experience of the researchers, relevant data must be recognized by the researchers, and the researchers must be able to form bonds with the participants to ensure the participants provide accurate data. Fourth, data analysis for qualitative research depends on the researchers' personal biases and are almost impossible to duplicate. Finally, qualitative analysis does not provide patterns of relationships through numerical representations.

In sum, research studies show that there is a link between environmental factors and personal behaviors. Furthermore, according to the social learning theory, behaviors can be modified via the social environment (Akers & Sellers, 2009). Because public safety is an important social issue, it is important to know if there is a difference between Democrat and Republican jurisdictions and aggressive behaviors of high school students.

### **III. METHODOLOGY**

#### **Political Partisanship Definition**

A state was considered either Democrat or Republican based on the U.S. Presidential elections for 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.

## Sample

This study examined electronic second-hand data collected via the Youth Risk Behavior Surveillance System (YRBSS) in 2013, 2015, and 2017 (Kann et al., 2014; Kann et al., 2016; Kann et al., 2018). The data were collected by the Centers for Disease Control and Prevention, which is devoted to the public's safety and health. A three-stage cluster sample design produced a nationally representative sample of high school students in grades 9–12 who attended public and private schools. The standard questionnaire in 2013 included 86 questions, and the standard questionnaires in 2015 and 2017 included 89 questions.

## Statistical Analysis

Because data were collected from the same states for three different times, a certain amount of dependence was expected (Su, 2020). Indeed, a prior study that used the same data source has indicated that the data values are not independent (Davis, 2020). To address this parametric assumption violation, a logistic regression model for repeated measures was fit using generalized estimating equations (GEE) to answer the research question (Agresti, 2002; Fitzmaurice et al., 2004). In addition, odds ratios (OR) and the 95% confidence interval (CI) were computed to quantify the strength of association between the response variables and the predictor (i.e., political party). A *p*-value less than 0.05 indicates significance. However, it should be noted that 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; Su, 2020).

## IV. RESULTS

Data were collected from 29 states in 2013, 26 states in 2015, and 25 states in 2017 for a total of 80 observations (see Table 1). Of all the states considered, 61.2% were Republican and 38.8% were Democrat. The mean numbers of males who physically fought at school for the Republican states were 87.95 (SD = 42.62), 88.07 (SD = 59.12), and 69.00 (SD = 31.10) in 2013, 2015, and 2017, respectively (see Table 2). The mean numbers of males who physically fought at school for the Democrat states were 524.10 (SD = 1199.57), 481.09 (SD = 1009.33), and 411.50 (SD = 894.43) in 2013, 2015, and 2017, respectively. The mean rates of males who physically fought at school for the Republican states were 0.118 (SD = 0.027), 0.105 (SD = 0.026), and 0.099 (SD = 0.020) in 2013, 2015, and 2017, respectively. The mean rates of males who physically fought at school for the Democrat states were 0.107 (SD = 0.033), 0.098 (SD = 0.022), and 0.100 (SD = 0.025) in 2013, 2015, and 2017, respectively.

Table 1. Sample Size Overview

Variable	Total number of observations	Number of states (%) per political party		Number of states per year		
		Republican	Democrat	2013	2015	2017
Males who physically fought	80	49 (61.2)	31 (38.8)	29	26	25

Table 2. Descriptive Statistics for the Variables of Interest

Variable	Year	Party	Number of states	Events		Trials		Events/Trials			
				M	SD	M	SD	M	SD	Min	Max
Males who physically fought	2013	R	19	87.95	42.62	765.84	404.93	0.118	0.027	0.075	0.168
		D	10	524.10	1199.57	3511.64	6652.88	0.107	0.033	0.064	0.176
	2015	R	15	88.07	59.12	817.15	437.37	0.105	0.026	0.073	0.169
		D	11	481.09	1009.33	3865.30	6568.23	0.098	0.022	0.071	0.151
	2017	R	15	69.00	31.10	717.63	376.13	0.099	0.020	0.069	0.147
		D	10	411.50	894.43	3251.77	5957.95	0.100	0.025	0.070	0.147
Overall		R	49	82.18	45.40	766.79	400.11	0.108	0.025	0.069	0.169
		D	31	472.52	1006.69	3553.30	6194.72	0.101	0.026	0.064	0.176

Note: R = Republican; D = Democrat; M = mean; SD = standard deviation; Min = minimum; Max = maximum. Events represent the number of males who physically fought at school. Trials represent the male sample size. Events/Trials represent the rate of males who physically fought at school.

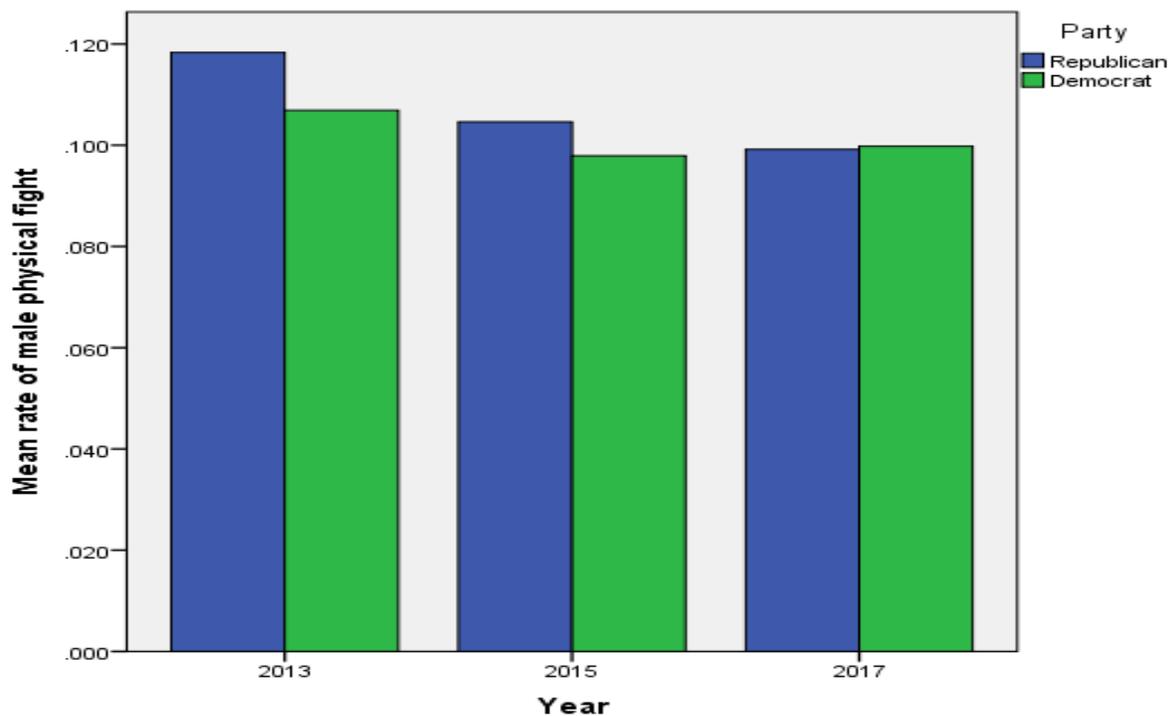


Figure 1. Bar chart of mean rates of males who physically fought on campus by year and political party.

Figure 1 provides a direct comparison of the mean rates of male high school students who physically fought on campus for the two political parties. Based on Figure 1, except for 2017, the mean rates of males who physically fight on campus seem to be higher in the Republican states. However, the results of the logistic regression for repeated measures indicate that there is no statistically significant relationship between male high school students who physically fight on campus and political party ( $\chi^2(1) = 2.728$ ,  $p = 0.099$ , Table 3; OR = 0.783, 95% CI = [0.585, 1.047], Table 4).

Table 3. Tests of Model Effects

Model	Wald $\chi^2$	df	p
Males who physically fight on campus	2.728	1	0.099

Note: Wald  $\chi^2$  = Wald chi-square statistic; df = degrees of freedom; p = p-value.

Table 4. Parameter Estimates and Odds Ratios

Model	Variable	B	SE	95% CI of B		OR	95% CI of OR	
				Lower	Upper		Lower	Upper
Males who physically fight on campus	Intercept	-1.875	0.141	-2.151	-1.598			
	Political party							
	Republican	-0.025	0.148	-0.536	0.046	0.783	0.585	1.047
	Democrat	Ref						

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 of the logistic regression for repeated measures indicate that there is no statistically significant relationship between male high school students who physically fight on campus and political party. The results are important because they indicate that neither political party is better than the other when it comes to creating a social learning environment to reduce fights among high school students. Because the review of the literature indicates that the social learning environment can modify a person's behavior, both political parties may need to consider other ways to modify the social learning environment to achieve the desired results.

## Limitations

There were several limitations in this study. First, data were collected only from youth who attended high school and, therefore, are not representative of all persons in this age group (Kann et al., 2016). Second, because the study had a quantitative design, it does not provide an in-depth understanding of the reasons *why* students fight on campus (Berg, 2007). Third, it is not possible to know the actual number of fights on campus because many high school students who are victimized never officially report it to authorities (Loveless, 2020). Fourth, rewards, punishments, and reinforcement, which are central to the social learning theory, are poorly defined (Durkin, 1995). In fact, they are tautological. For example, a person may define something as reinforcing simply because the person finds it reinforcing. Thus, the social learning theory does not provide a true explanation of behavior (Bordens & Abbott, 2008). Fifth, although parametric statistical tests have been systematized, and different tests are simply variations on a central theme, an objection to using nonparametric statistical tests is that they are not systematic (Disha, n.d.). Sixth, when Likert-type scales are used, there is a possibility that the participants may engage in central tendency bias by simply selecting the middle option rather than the best option (Antonovich, 2008). Seventh, participants may alter their behavior if they know that they are being studied. Finally, there are different ways to define political partisanship, which may provide different results. For example, political partisanship may be defined by the political party affiliation of a state's governor or a state's Senate.

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