

Corporal Punishment as a Discipline Alternative to In-School and Out of School Suspensions in
Public Schools in the United States

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Abstract

Some public schools in the United States defend corporal punishment as an alternative to suspensions, a practice that carries a variety of detriments to students. Despite this claim, demographic predictors for higher rates of corporal are the same for higher suspension rates. Examining this contradiction contributes to understanding school discipline practices. The data comes from the Office of Civil Rights and the United States Census Bureau. Since all of the variables, corporal punishment, in-school suspension and out of school suspension rates, and the control variable, Black population, are recorded at an interval level this study utilizes correlation and regression tests to determine their relationship. This study finds that on the state level across the United States, states with higher corporal punishment rates are correlated with higher suspension rates. However, in-school suspension rates are best predicted by the combination of the state's corporal punishment rates and Black population. Out of school suspension is best predicted by the state's Black population. This raises doubt about the justification of school corporal punishment as an alternative to suspension. It further supports existing literature that raises doubt about harsh discipline policies due to the damage inflicted and ineffectiveness as deterrents of misbehavior.

Introduction

The effectiveness and impacts of school discipline practices is an important issue within the education policy. Scholars have suggested that school punishment systems that emphasize preventative measures are more effective at addressing misbehavior. Despite this punitive discipline practices, like detention, suspension and corporal punishment, are much more common

(Knoff 2000, “What Is PBIS?”). Therefore, it is important to examine current practices, their impacts on students, and school discipline culture overall. Some of the most common discipline practices are suspensions and corporal punishment.

The time period and form of suspensions vary by school district standards, but there are nationally recognized general understandings of the two main types, out of school suspension and in-school suspension. Out of school suspension is “excluding a student from school for disciplinary reasons for one school day or longer” and in-school suspension is time when a student is removed from the classroom but “remains under the direct supervision of school personnel” (“Suspension”). Alternatively, corporal punishment is the “intentional application of physical pain as a method of changing behavior,” and paddling is most common in schools (Greydanus et al. 2003). Many studies indicate that although both punishment forms are ineffective, suspensions may be more damaging (Hemphill et al. 2006), which could serve to justify corporal punishment usage if it is used as a punishment alternative. The hypothesis of this study is that in comparing states in the United States those with higher rates of corporal punishment in public schools will have higher in and out of school suspension rates compared to states with no/ lower rates of corporal punishment in public schools. To disprove the null hypothesis, regression and correlation tests were run for each of the dependent variables, in-school and out of school suspension rates. The results of these tests allow the null hypothesis to be rejected. Higher in-school and out of school suspension rates are correlated with higher corporal punishment rates. Further, the regression tests show that states with higher corporal punishment usage and a greater Black population percentage are predictors of higher in-school suspension rates. Additionally, within states, a greater Black population percentage is a predictor

of higher out of school suspension rates. Thus, there is reason to doubt the claim that corporal punishment acts as an alternative to suspensions and keeps children in schools. Further, instead of acting as a viable alternative to suspension, it contributes to school discipline cultures that punish more frequently to no positive end.

School Discipline Alternatives: Effectiveness of Corporal Punishment and Suspensions

As far as discipline alternatives, suspension is much more common across the United States. The percentage of students that receive in school and out of school suspension each school year has consistently stayed around five percent for each. Corporal punishment is far less common and declining, most recent data suggests that the percent of students each school year that receive corporal punishment is 0.2 percent (“2013-14 State and National Estimations”). This is because 31 states have banned corporal punishment due to *Ingraham v. Wright* (1977), which left legality to the discretion of the states (Gershoff and Font 2016). Alternatively, most school districts opt for detention and suspension. Although suspension is less physically damaging, it does not address the causes of misbehavior and removes students from the positive influences of a classroom setting (Chu and Ready 2018).

Scholars examining school punishment alternatives seek to understand the reasons states opt for each practice and the impacts on students. This includes analysis of demographic predictors, public opinion studies, and studies about the effectiveness and consequences of each. Although there is significant research that indicates that suspension may be more harmful overall than corporal punishment, there is less analysis as to whether it is used as an alternative to suspension that keeps children in school as supporters of corporal punishment claim. Further,

similar predictors for suspension and corporal punishment suggest that it is more likely that states with higher corporal punishment rates are related to higher suspension rates.

Suspension is universally practiced throughout the United States, but demographic analyses reveal that corporal punishment usage is scattered and inconsistent (Skiba et al. 2014, Gershoff and Font 2016). One of the state-level predictors for higher corporal punishment usage is location in the Southeast of the United States which is supported by regional attitudes favoring discipline, even if through violence (Gershoff and Font 2016, Nisbitt and Cohen 1996). Additionally, smaller, rural school districts with high proportions of low-income students and minority populations have higher rates of corporal punishment and suspension (Han 2011, Romney 2020). Higher corporal punishment rates are also related to higher child mortality rates, lower graduation rates (Gershoff and Font 2016), and greater Evangelical Christian populations (Owen and Wagner 2006).

Individuals' characteristics also serve as predictors for both suspension and corporal punishment. While studies are inconclusive about suspension, corporal punishment is used more frequently on elementary-aged students. Minority students and specifically Black students are more likely to receive corporal punishment and suspension (Gershoff and Font 2016, Morrison 2019). Black students are three times more likely to be suspended ("2013-14 State and National Estimations") and 51 percent more likely to receive corporal punishment (Gershoff and Font 2016). Males are also more likely than females to receive corporal punishment and suspensions (Farmer and Neier 2008). Additionally, students with disabilities are 50 percent more likely to experience corporal punishment (Gershoff and Font 2016) and anywhere from two to five times, depending on the state, more likely to receive suspensions (Sullivan 2014). In both cases,

students are often punished for things out of their control, including behaviors associated with autism, Tourette syndrome, or obsessive-compulsive disorder (Gershoff and Font 2016).

Ultimately both punishment types face similar criticism due to disproportionate and biased usage, thus it becomes important to differentiate between them based on the impact on students.

In the United States, suspension exists in all states while corporal punishment exists only in states where it has the highest support (Gershoff and Font 2016). Unlike school suspension, corporal punishment is an internationally recognized human rights violation (Bitensky 2006). In the United States support for school corporal punishment has declined, since it was supported by 46 percent of parents nationally in the 1980s. But there remain significant regional differences where parental support in Southern states is 30 percent higher than the rest of the country (Crandell 2008). There are no comparable suspension public opinion studies since it is not as widely criticized beyond youth advocates and education policy scholars (Noltemeyer et al. 2015).

Additional studies help to explain the reasoning of students and parents in cases where they have a choice about the punishment they receive. School districts that use corporal punishment often give students the option of an alternative punishment type, losing recess for elementary-aged students and suspensions for high schoolers. High schoolers interviewed often express that they chose corporal punishment with academic concerns because they did not want to miss classes. Another societal factor impacting student attitudes is gender. Males are more likely to receive corporal punishment partially because they are more likely to opt for corporal punishment due to expectations of masculinity and taking punishment “like a man” (Farmer and Neier 2008). Another component of public opinion is parents’/ guardians’ views on corporal

punishment since school districts usually obtain parental permission to use corporal punishment. Parents that support corporal punishment reference “traditional values” and often received corporal punishment when they were in school (Clark 2017). Other parents compel their children to choose corporal punishment because they do not want them to miss school (Sparks and Harwin 2019). Some parents support corporal punishments over suspensions due to inflexible work schedules, which makes staying home with their child difficult. Support for corporal punishment in regions where it is used stems from the belief that it keeps students in the classroom, allowing for more productive learning time (Farmer and Neier 2008). Although studies have neither supported nor disproved this belief, if there is truth to this, corporal punishment, although ethically questionable, could carry a benefit over suspensions in this area.

School corporal punishment supporters often suggest the physical nature of the punishment serves as a deterrent to continued misbehavior (Wilson 2002) and supporters of suspension claim that the social isolation of suspensions acts as a deterrent (Jones 2019). Despite these claims, child psychology studies indicate no evidence of positive change from either punishment alternative (Regev et al. 2012). Neurological research has indicated that social isolation and physical punishment have similar stress-inducing effects in the brain (Eisenberger 2012). The implication is that the social isolation of suspensions is similarly damaging to the physical pain of corporal punishment. Additionally, suspensions are criticized based on studies that show they act as predictors of future suspensions, antisocial behaviors, and poorer academic performance by removing students from the classroom setting (Hemphill et al. 2006, Lacoé and Steinberg 2019). Other studies indicate that suspensions triple the likelihood a student comes into contact with juvenile justice within the year (Fabelo et al. 2011).

For corporal punishment, teachers in school districts that use corporal punishment claim it is necessary to maintain control of their classrooms (Scutti 2018), but behavioral studies indicate that it is also ineffective at promoting short term compliance or classroom control (Gershoff and Grogan-Kaylor 2016). In addition to ineffectiveness, studies have found that corporal punishment, especially for young children, is damaging to cognitive development (Berlin et al. 2009), is linked to a higher frequency of depressive symptoms (McLoyd 2007) and puts children at high risk for physical abuse, as normalized violence goes unreported (Zolotor 2008). School districts with corporal punishment suggest a shift away from corporal punishment would increase misbehavior and juvenile delinquency (Gershoff and Font 2016). However, none of the states that have banned corporal punishment have experienced a rise in juvenile delinquency (Gershoff and Font 2016).

A final argument made by some school districts is that it keeps children in school and functions as an alternative to suspensions (Gershoff and Font 2016). At times students have a choice about punishment type, overall the demographic predictors suggest that the same factors that relate to higher corporal punishment rates also suggest higher suspension rates. Therefore there is doubt about the punishment alternative argument on the broader state level. This is further supported by studies that suggest that schools with “zero-tolerance” and other harsh discipline practices do not deter student misbehavior, and higher punishment rates overall (Noguera 2003, Martinez 2009).

Although scholars support school discipline systems that focus on preventative measures and expanded support services, punitive measures remain more common. Corporal punishment remains legal in the United States, but more often school districts opt to suspend students since it

is less controversial and many believe it is less harmful (Knoff 2000, Bitensky 2006). However, despite this belief, suspension and corporal punishment are similarly damaging according to neurological studies about stress (Eisenberger 2012). Beyond this, other studies suggest that suspension may carry additional harm by removing students from the classroom for an extended period of time (Hemphill et al. 2006). There is substantial research into the effectiveness of corporal punishment and suspension, but there is less literature about the claim that corporal punishment is used as an alternative to suspensions. Analysis of suspensions rates could reveal whether it is truly used as an alternative or if punishment rates are universally higher in schools with corporal punishment, as demographic predictors and school discipline research suggests. Investigation into this claim could determine if this is a justifiable defense of corporal punishment.

Methodology: Theory and Expectations

This study will examine the relationship between corporal punishment in public schools and in and out of school suspension rates. Both corporal punishment and suspension face criticism due to studies that suggest both practices are ineffective at improving behavior and damaging to academic performance (Gershoff and Font 2016, Noltemeyer et al. 2015). Scholars have increasingly begun to suggest that schools adopt punishment systems emphasizing preventative measures, but punitive approaches remain more common (Knoff 2000, “What Is PBIS?”). Since this shift will require time, it is important to examine the impact of current practices that utilize physical punishment and social isolation.

Although corporal punishment is used less frequently, it is more vocally criticized than suspensions (Farmer and Neier 2008). At the same time, neurological research shows that the social isolation of suspensions is similarly damaging to the physical pain of corporal punishment (Eisenberger 2012). The theory that best relates to the logic behind this study is Eisenberger's (2012) "shared representation" theory of pain. This suggests a natural and universal need for social connection, and a lack of this need generates rejection and distress (Eisenberger 2012). This theory provides the basis for understanding how suspensions are potentially more damaging.

Studies built on this theory show that social isolation in childhood relates to lower educational attainment and higher psychological distress in adulthood (Lacey et al. 2014). This shows that although suspensions and corporal punishment are both associated with pain, suspensions are additionally damaging academically, and due to the impacts of social isolation. Although there are no studies to confirm this thinking, supporters of corporal punishment claim that it is used as a punishment alternative to suspensions and keeps kids in school (Farmer and Neier 2008). If it is used as an alternative, this implies an inverse relationship where higher corporal punishment rates would suggest lower suspension rates. If there is merit to this claim, corporal punishment could potentially carry some benefits if it allows students to spend more time constructively in the classroom. However existing literature about school discipline suggests that schools with harsher punishment practices, punish more frequently (Noguera 2003, Martinez 2009). This implies that higher corporal punishment rates are related to higher suspension rates, which would further discredit arguments supporting corporal punishment in schools.

The hypothesis of this study is that in comparison states in the United States with higher rates of corporal punishment in public schools will have higher in and out of school suspension rates compared to states with no/ lower rates of corporal punishment in public schools. The null hypothesis of this study is that in comparing states in the United States, those with higher rates of corporal punishment in public schools will have the same in and out of school suspension rates compared to states with no/ lower rates of corporal punishment in public schools.

Operationalization and Measurement of Concepts

The independent variable is the corporal punishment usage in the states. States have some variation in the types of permissible physical punishment, the Office of Civil Rights data includes any form of physical punishment used in a public school setting. This variable relies on school records and describes the number of students within the state that received corporal punishment in the 2013-14 school year. To address the hypothesis the “Receiving Corporal Punishment” variable will be used to quantify the relationship to suspension. Since it’s recorded numerically for each state, the operationalization of this variable requires calculating percentages to compare states. This can be done by dividing the “Receiving Corporal Punishment” values by the “Student Population” for each state to create “Percent Corporal Punishment.”

The dependent variables are the suspension rates, derived from the variables “One or More Out of School Suspensions” and “One or More In School Suspensions.” The values represent how many students in each state received at least one out of school or in-school suspension, respectively, during the 2013-14 school year. These variables are recorded numerically based on school records, similar to the corporal punishment values. They will be considered separately since combining these has a high possibility of counting students twice.

Similar to the independent variable, these values will be converted to percentages by dividing the suspension variables by the “Student Population” values for each state to compare. Then these variables will be called “Percent In School Suspen” and “Percent Out School Suspen.”

Another important component of this study is controlling for race. Previous research suggests that states with greater Black populations use corporal punishment and suspensions more frequently overall (Han 2011, Gershoff and Font 2016). Controlling for this difference will help ensure this factor isn’t disrupting the relationship between the suspension and corporal punishment. This control variable will use 2013 state-level data from the United States Census Bureau. This data is recorded as a percentage of the population in each state that identifies as “Black or African American.” Although there is room for error since it relies on self-identification, this data is also more likely representative of the population since it is based on a census and not a sample. To operationalize this aspect, the percentage values will be matched with the corresponding state in a variable called “Percent Black State Pop.”

Research Design

This study will merge 2013-14 data from the Office of Civil Rights and the United States Census Bureau. The Office of Civil Rights data focuses on public schools and is based on 16,500 school districts and 96,500 schools. The data is collected and reported for each United States state and the District of Columbia. As a result, this data set has 51 observations/ rows. This data set features many subcategories about public schools including enrollment, college readiness, staff, and discipline, but this study will focus on discipline. Data from the United States Census Bureau dataset is from the same year and is also collected at the same unit of analysis, the state level. This dataset has 52 observations/ rows since it includes Puerto Rico, but this will be

dropped in the combined dataset. This dataset contains demographic information including age, sex, and race. The only information from this dataset that will be used in the study is the percentage of the total population of each state that is identified as “Black or African American.” This control is an interval level variable since the percentages convey precise differences between the units (Pollock 2016).

Additionally, the independent variable, corporal punishment usage, is also an interval level variable since observations are also percentages that convey the precise differences between units (Pollock 2016). This study will treat the dependent variables, in-school and out of school suspensions, as interval level variables. In-school and out of school suspensions are recorded separately by the Office of Civil Rights as the number of students that received at least one suspension during the school year for each of the suspension types. Using the student population for each state, the percent for each state can be derived. Since the resulting variable conveys precise differences between each unit as a percentage this is interval level data (Pollock 2016).

Based on the level of measurement for each of the variables, correlation will be calculated and regression analysis will be conducted in this study to assess the relationship between corporal punishment usage and the in-school and out of school suspension rates. Since in this study both corporal punishment and suspension are interval level, correlation and regression are appropriate since it is used when both the independent variable and the dependent variable are interval variables. A result suggesting that higher corporal punishment rates are related to lower suspensions rates will support the hypothesis of the study.

By the existing literature about school discipline policies, I expect to see suspension rates related to corporal punishment usage. The hypothesis will be supported if corporal punishment usage and suspension rates are positively related, meaning that higher corporal punishment usage corresponds to lower suspension rates. If the results point to this conclusion, there will be less justification for corporal punishment, even though neither corporal punishment nor suspensions are supported by education scholars as optimal ways to manage student behavior. Alternatively, if the results do not suggest a positive relationship then it is possible that corporal punishment is used as an alternative to suspension as corporal punishment supporters claim. This outcome would raise further questions about school discipline best practices.

Results and Analysis

To disprove the null hypothesis that there is no relationship between corporal punishment rates and suspension rates, regression and correlation tests were run for each of the dependent variables, In-School and Out of School Suspension rates, with and without the control for Black Population. The operationalized independent variable, Corporal Punishment, contains values that reflect the percentage of students that received corporal punishment in each state in the 2013-2014 school year. Since a majority of states have banned or do not use corporal punishment, most of these values (30) are 0. The remaining 21 states have percentages that range up to 5.03 percent of students. The dependent variables are similarly operationalized, and In-School Suspension contains percentages ranging from 0.83 percent to 12.09 percent of students. Out of School Suspension, the other dependent variable has percentage values from 1.70 percent to 12.44 percent.

In-School Suspension

Partial correlation was run for the independent variable and control variable with each of the dependent variables to analyze the level of correlation and statistical significance. The results of correlation and statistical significance tests for the dependent variable, In-School Suspension, are displayed below in Table 1.

| Table 1: Results of Correlation Analysis of In-School Suspension Rates (Y) by Corporal Punishment Rates (X) Controlling for Black Population (Z) by U.S. States | |
|--|-----------------------------|
| | Partial Correlation Results |
| Pearson Correlation [for X and Y] | 0.562 |
| p-value [for X and Y] | 0.000 |
| Pearson Correlation [for X and Z] | 0.421 |
| p-value [for X and Z] | 0.002 |
| Pearson Correlation [for Y and Z] | 0.487 |
| p-value [for Y and Z] | 0.000 |
| Pearson Correlation [for X and Y, controlling for Z] | 0.450 |
| p-value [for X and Y, controlling for Z] | 0.000 |
| N | 51 |

As the data in Table 1 shows there are statistically significant links in all correlation tests. The Pearson's correlation coefficients are positive for all tests. The correlation between Corporal Punishment and In-School Suspension is 0.562, for Black Population and Corporal Punishment it is 0.421 and for In-School Suspension and Black Population, it is 0.487. All correlation tests suggest moderate positive associations. When controlling for Black Population, the correlation between Corporal Punishment and In-School Suspension is 0.450, also a moderate positive association. Each correlation is significant and Pearson's correlation coefficient is greatest between the Corporal Punishment rates and In-School Suspension rates. This means that higher Corporal Punishment rates are associated with higher rates of In-School Suspension.

To test for magnitude and causation between In-School Suspension, Corporal Punishment and Black Population regression tests were run and the results are shown in Table 2.

| Table 2: Results of Regression Analysis of In-School Suspension Rates (Y) by Corporal Punishment Rates (X) Controlling for Black Population (Z) by U.S. States | | | |
|---|-------------------------------------|----------------------|------------------------|
| | Model 1a (uncontrolled [X on Y]) | Model 1b (Z on Y) | Model 1c (X+Z on Y) |
| Constant | 4.689 | 3.681 | 3.867 |
| Coefficient for X | 1.752 | | 1.352 |
| t-score [for X] | 4.752 | | 3.494 |
| p-value [for X] | 0.000 | | 0.001 |
| Coefficient for Z | | 0.121 | 0.076 |
| t-score [for Z] | | 3.904 | 2.456 |
| p-value [for Z] | | 0.000 | 0.018 |
| Adjusted R ² | 0.302 | 0.222 | 0.367 |
| N | 51 | 51 | 51 |

Model 1a tests the uncontrolled relationship between the Corporal Punishment rate and the In-School Suspension rate and produces the following function: In-School Suspension rate = $4.689 + 1.752 * (\text{Corporal Punishment rate})$. The y-intercept suggests that when the rate of Corporal Punishment is a state in 0 percent, the In-School Suspension rate for the state is 4.689 percent. Additionally, there is a 1.752 percent increase in students that receive In-School Suspension for each percentage increase in students that receive Corporal Punishment. The adjusted R-square value is a strong measure and means that 30.2 percent of the variation in in-school suspension rates is explained by corporal punishment rates. The p-value of the relationship is 0.000 for the $p < 0.05$ significance level. Thus, assuming that the null hypothesis is correct we could get a regression coefficient of 1.752 a negligible (but possibly above 0) percent of the time. This model allows us to reject the null hypothesis that there is no relationship

between Corporal Punishment and In-School Suspension. Using the correlation and regression test results, this suggests that in comparing states, as the rate of Corporal Punishment increases the In-School Suspension rate increases.

Additionally, Model 1b tests the relationship between the Black Population of a state and the In-School Suspension rate. The function is $\text{In-School Suspension rate} = 3.681 + 0.121 * (\text{Black Population percentage})$. This model is a weaker measure than Model 1a since the adjusted R-square value is 0.222. The p-value of 0.000, still allows us to reject the null hypothesis. Since both variables are significant individually, Model 1c tests the combined effect of the Corporal Punishment rate and Black Population. The function model is $\text{In-School Suspension rate} = 3.867 + 1.352 * (\text{Corporal Punishment rate}) + 0.076 * (\text{Black Population percentage})$. In this model when the rate of Corporal Punishment and Black Population in a state are both 0 percent, the rate In-School Suspension rate would theoretically be 3.867 percent. Since the p-values for Black Population and Corporal Punishment are 0.018 and 0.001 respectively, both are significant in the model. Since both variables are significant in the model this demonstrates an additive relationship. Model 1c accounts for more variation than Model 1a and 1b since the adjusted R-square value is 0.367 and thus best describes the relationship.

Out of School Suspension

The same correlation and regression tests were run with the independent variable and control variable with the other dependent variable, Out of School Suspension, and the results of the correlation tests are displayed below in Table 3.

| Table 3: Results of Correlation Analysis of Out of School Suspension Rates (Y) by Corporal Punishment Rates (X) Controlling for Black Population (Z) by U.S. States | |
|--|-----------------------------|
| | Partial Correlation Results |
| Pearson Correlation [for X and Y] | 0.392 |

| | |
|--|-------|
| p-value [for X and Y] | 0.004 |
| Pearson Correlation [for X and Z] | 0.421 |
| p-value [for X and Z] | 0.002 |
| Pearson Correlation [for Y and Z] | 0.808 |
| p-value [for Y and Z] | 0.000 |
| Pearson Correlation [for X and Y, controlling for Z] | 0.098 |
| p-value [for X and Y, controlling for Z] | 0.496 |
| N | 51 |

Data in Table 3 shows that similar to the In-School Suspension rates, all tests suggest positive correlations. The correlation between Corporal Punishment and Out of School Suspension is 0.392, for Black Population and Corporal Punishment it is 0.421 and for Black Population and Out of School Suspension, it is 0.808. All of these correlation tests are significant according to the p-values. When controlling for Black Population, the correlation between Corporal Punishment and In-School Suspension is 0.098 and is insignificant with a p-value of 0.496. Pearson's correlation coefficient is greatest between the control, Black Population, and the dependent variable, Out of School Suspension rates. This correlation can be interpreted to mean that higher percentages of a Black Population are related to higher Out of School Suspension.

The results of the regression tests describe magnitude and causation for the relationships between Out of School Suspension, Corporal Punishment, and Black Population and are shown in Table 4.

| Table 4: Results of Regression Analysis of Out of School Suspension Rates (Y) by Corporal Punishment Rates (X) Controlling for Black Population (Z) by U.S. States | | | |
|---|-------------------------------------|----------------------|------------------------|
| | Model 2a (uncontrolled [X on Y]) | Model 2b (Z on Y) | Model 2c (X+Z on Y) |
| Constant | 5.086 | 3.407 | 3.429 |
| Coefficient for X | 0.964 | | 0.157 |
| t-score [for X] | 2.987 | | 0.686 |

| | | | |
|-------------------------|-------|-------|-------|
| p-value [for X] | 0.004 | | 0.496 |
| Coefficient for Z | | 0.158 | 0.153 |
| t-score [for Z] | | 9.588 | 8.362 |
| p-value [for Z] | | 0.000 | 0.000 |
| Adjusted R ² | 0.137 | 0.645 | 0.641 |
| N | 51 | 51 | 51 |

Model 2a tests the uncontrolled relationship between the Corporal Punishment rate and the Out of School Suspension rate and produces the following function: Out of School Suspension rate = $5.086 + 0.964 * (\text{Corporal Punishment rate})$. This suggests that when the rate of Corporal Punishment is a state in 0 percent, the Out of School Suspension rate for the state is 5.086 percent. Additionally, there is a 0.964 percent increase in students that receive Out of School Suspension for each percentage increase in students that receive Corporal Punishment. The adjusted R-square value is a moderate measure and means that 13.7 percent of the variation in out of school suspension rates is explained by corporal punishment rates. The p-value of the relationship is 0.004 for the $p < 0.05$ significance level. Thus, assuming that the null hypothesis is correct we could get a regression coefficient of 0.964 about 0.4 percent of the time. Therefore, we can safely reject the null hypothesis that there is no relationship between Corporal Punishment and Out of School Suspension. With the correlation results, this suggests that in comparing states, as the rate of Corporal Punishment increases the Out of School Suspension rate increases.

Additionally, Model 2b tests the relationship between the Black Population of a state and the Out School Suspension rate. The function is In-School Suspension rate = $3.407 + 0.158 * (\text{Black Population percentage})$. Thus, the model suggests when the Black population in a

state is 0, the In-School Suspension rate is 3.407. This model is a much stronger measure than Model 2a since the adjusted R-square value is 0.645. The p-value, 0.000, allows us to reject the null hypothesis that there is no relationship between Black Population in a state and the Out of School Suspension rates. Since both variables are significant on their own, Model 2c tests the combined effect. The function model is Out of School Suspension rate = 3.429 + 0.157*(Corporal Punishment rate) + 0.153*(Black Population percentage). Although the p-value for Black Population is 0.000 and significant, the Corporal Punishment p-value is 0.496 and is insignificant in the model. Since the independent variable becomes insignificant in the presence of the control variable, this indicates a spurious relationship, where the Black Population is actually explaining the Out of School Suspension rate. This model accounts for more variation than Model 2a and less than 2b since the adjusted R-square value is 0.641. Based on the spurious nature of the relationship and the adjusted R-square value, Model 2b best describes the relationship.

Conclusion

Higher In-School Suspensions and Out of School Suspensions are associated with high Corporal Punishment rates according to correlation tests. However, regression tests revealed that the independent variable is not the best predictor for both dependent variables. The model that best describes In-School Suspensions rates demonstrates an additive relationship, where the combination of Corporal Punishment and Black Population serve as predictors. The Out of School Suspension rate, however, is best described and predicted by the control variable, Black Population which is a spurious relationship. This outcome supports existing literature about the

relationship between punishment rates and the racial composition of states (Han 2011, Gershoff and Font 2016).

The significance levels in the regression tests for both dependent variables allow the null hypotheses to be rejected. The results of this study support the hypotheses of this study. The correlation and regression tests suggest a positive relationship between Corporal Punishment and In-School and Out of School Suspension rates (although the Out of School Suspension rate is better predicted by the state's Black Population). Thus this study's results are consistent with the hypotheses that higher suspensions rates are positively related to higher corporal punishment rates. This outcome is not consistent with the claims of corporal punishment supporters that it is used as a punishment alternative and decreases suspension rates (Farmer and Neier 2008). As a result, this casts doubts on the punishment alternative image of corporal punishment and instead could support the arguments of those who claim that this form of punishment is ineffective (Noltemeyer et al. 2015). Although research on this topic is limited, other studies related to school punishment have suggested the schools with "zero-tolerance policies" and other harsh discipline practices do not deter student misbehavior, and these schools often have higher punishment rates overall (Noguera 2003, Martinez 2009). This research is related to the outcome of this study and serves to extend the research into the impacts and effectiveness of school discipline policies.

The results of this study begin to fill the gap in knowledge about how punishment practices relate to each other, however, it has limitations based on the data and structure. One of the first limitations is based on the collection of the data and the nature of the issue. Since corporal punishment is a controversial issue, it is possible the schools reporting punishment

statistics to the Office of Civil Rights underrepresent or do not have complete records for each time a student receives corporal punishment (especially in minor instances) (“2013-14 State and National Estimations”). Suspension statistics likely do not face this same issue since the practice is universally more accepted and requires school administrative involvement, where corporal punishment is often left to teachers’ discretion (Knoff 2000, Farmer and Neier 2008). Another challenge is the small dataset since observations are reported at the state level which makes it more difficult to draw conclusions. Further, this study is limited since the only control used was the states’ Black population.

Although underreporting will likely remain a challenge, future studies could benefit from data collected and reported at the school district level which would yield a more robust sample size. Another potential area of research could introduce other controls like income, population density, and other demographic factors to determine if this changes the relationship or creates an interaction effect among the variables. Another unanswered question is how other types of punishment relate to corporal punishment and suspensions. Since corporal punishment is used as a minor and more severe punishment, this isn’t necessary perfectly matched to suspensions which are traditionally a more severe punishment (Farmer and Neier 2008). A way to examine this in the future could be to include detention rates. Although this change would adjust the focus more generally to punishment alternative practices. Regardless, future studies in the area of school discipline are necessary as policymakers and interest groups evaluate existing practices and examine new preventative focused systems of school discipline.

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