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Kaitlin Anderson

Michigan State University, ande2018@msu.edu

Gary W. Ritter

University of Arkansas, Fayetteville

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Disparate Use of Exclusionary Discipline:
Evidence on Inequities in School Discipline from a U.S. State

Kaitlin P. Anderson

Dr. Gary W. Ritter

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Abstract

There is much discussion in the United States about exclusionary discipline (suspensions and expulsions) in schools. According to a 2014 report from the US Department of Education's Office for Civil Rights, Black students represent 15% of students, but 44% of students suspended more than once, and 36% of expelled students. This analysis uses seven years of individual infraction-level data from public schools in Arkansas. We examine whether disproportionalities exist within schools, or are instead, a function of the type of school attended. We find that marginalized students are more likely to receive exclusionary discipline, even after controlling for the nature and number of disciplinary referrals, but that most of the differences occur across schools rather than within schools.

Keywords: school discipline, exclusionary discipline, disproportionalities, race, socioeconomic status, school climate

I. BACKGROUND ON ISSUES IN SCHOOL DISCIPLINE

Since the early 1990s, many schools across the United States have adopted zero tolerance and other harsh disciplinary policies in response to fears of violence in schools. The zero tolerance philosophy is an approach that removes students from school for a variety of violations, ranging from actual serious offenses like violent behavior to dress code violations or truancy (Losen & Skiba, 2010; Skiba & Peterson, 1999; Skiba, 2014). While it is necessary for school leaders to do what is reasonable to maintain a positive learning environment and ensure the safety of the school community, these so-called zero tolerance policies have been opposed by a growing number of researchers and observers who fear that this movement has gone too far.

Opponents of harsh disciplinary practices voice numerous concerns. First, there is some evidence that these policies do not have the hoped-for deterrent effect. In fact, Curran (2016) recently found that state zero tolerance laws are not associated with decreases in problem behaviors as perceived by principals. In fact, there is evidence that school suspension predicts higher rates of misbehavior and suspensions in the future, rather than reducing misbehaviors (Costenbader & Markson, 1998; Raffaele-Mendez, 2003; Tobin, Sugai, & Colvin, 1996). Moreover, critics fear that zero tolerance might have other unintended negative consequences (Skiba, 2014). For example, zero-tolerance policies and exclusionary discipline practices, such as expulsions and suspensions, have been associated with lower academic achievement (Beck & Muschkin, 2012; Raffaele-Mendez, 2003; Raffaele-Mendez, Knoff, & Ferron, 2002; Skiba & Rausch, 2004;), school dropout (American Academy of Pediatrics, 2013; American Psychological Association, 2008; Ekstrom et al., 1986), and involvement in the juvenile justice system (American Academy of Pediatrics, 2013; Balfanz, 2003; Fabelo et al., 2011; Nicholson-Crotty, et al., 2009).

This active opposition to exclusionary discipline has made an impact and influenced some high-profile changes in school disciplinary practices. Chicago public schools enacted a policy in 2012 to reduce the length of student suspensions, and researchers from the Consortium on Chicago School Research have been analyzing the impacts (Sartain et al., 2015). In September 2014, California became the first state in the nation to enact limits of student suspension for minor misbehaviors (Public Counsel, 2014). One of the nation's largest school districts, Miami-Dade, also eliminated out-of-school suspensions (OSS) ahead of the 2015-16 school year (O'Connor, 2015). In Seattle, the School Board declared a one-year moratorium on suspensions for elementary students in September 2015 (Cornwell, 2015).

Perhaps a key reason that disciplinary policies have been revised is the concern that zero-tolerance policies and exclusionary practices have been applied disproportionately to students from marginalized backgrounds. A 2014 national report from the US Department of Education's Office for Civil Rights focused on the racial disparity in exclusionary disciplinary policies. The authors reported that although Black students represent only 15% of students across the nation, 35% of students suspended once are Black, 44% of students suspended more than once are Black, and 36% of expelled students are Black. Indeed, over the past decade (and beyond), numerous researchers have documented differences in suspension rates between White students and students of color across the nation. Given that, in light of zero tolerance policies, suspensions were often doled out for relatively minor offenses, the result is that students of color were disproportionately missing school time, often for non-violent or even trivial reasons.

In reaction to these circumstances, there is a growing, but still sparse, research base examining the racial disparities in the incidence of exclusionary discipline in schools across the country. Many studies rely on aggregate school-level data and thus do not connect the actual

student infractions to the disciplinary consequences; such studies are informative but do not shed light on whether students are being treated unfairly. Some more recent studies do utilize student-level or infraction-level datasets to ask the more important question: are particular groups of students treated differently for committing the same type of infraction? While several of these analyses move the knowledge base forward on the question, these studies are hampered by a variety of issues, from a limited sample of students (one study involved only middle schools in a single district) to an inability to control for important school level characteristics.

Thus, in this paper, we examine all disciplinary infractions and the resulting consequences for all K-12 students in a single U.S. state over a seven-year time period. We are able to connect individual student characteristics to specific infractions and to the resulting consequences. Using this rich dataset, we can carefully examine disparities in disciplinary outcomes by race and other student characteristics, while controlling for the infraction committed and for school attended. By identifying the extent to which students of different racial groups are punished more or less severely for the same offenses, even within the same schools, we will make a meaningful contribution to the growing evidence base on this important and timely issue.

The rest of this paper proceeds as follows. In Section II, we present the literature on the topic of disparities in school discipline, and articulate our research questions. In Section III, we describe our data and sample. Section IV outlines our analytic methods, Section V presents the results, and in Section VI, we conclude with some discussion of our results.

II. EVIDENCE FROM THE LITERATURE

We describe the relevant research in two sections. First, we present the evidence on the racial disparities in student discipline on a national level. Studies of this sort generally rely on school-level data and provide only an overview of the consequences levied on students of different races. While these analyses are certainly important, because they do not examine the drivers of these differences, they leave many questions unanswered. For example, if particular students are punished more heavily because they committed more serious infractions, the implication is entirely different than if they were punished more strictly for identical infractions. Thus, the second set of studies we present are interesting because they investigate the student and school characteristics that are associated with the racial disparities in discipline.

National Overviews of Disciplinary Disproportionalities

Most recently in 2015, Dan Losen and colleagues from the Civil Rights Project at UCLA, published a comprehensive report asking “Are We Closing the School Discipline Gap?” The authors focused on out-of-school suspension rates in every school district in the nation through the 2011-12 school year. The data revealed the overall increase in suspensions over the past 40 years, as well as the increasing gap between the suspension rates between White students and students of color. In 1972-73, only 6% of African American students were suspended during the year, as compared to 3% of White students (and 3% of Hispanic students). By 2011-12, 16% of African American students were suspended; this rate was more than twice as great as for Hispanic students (7%) and more than three times as great as for White students (5%). Moreover, the authors also examined rates within states and districts and found much variability, indicating that district and school policies could strongly influence exclusionary discipline outcomes.

Several years earlier, Losen teamed with noted discipline researcher Russell Skiba on a national study of suspension rates in middle school, using an earlier 2006 version of the Civil Rights Data Collection (CRDC). In this study, the authors analyzed suspension rates for students in more than 9,200 middle schools across the nation, as well as a sub-sample from 18 large urban districts, from the years 2002 to 2006 (Losen & Skiba, 2010). This analysis unsurprisingly also revealed stark racial gaps in suspensions; for example, while only 10% of White male students in middle school were suspended in 2006, 28% of African American male students were suspended in that same year. In the urban sub-sample district-level analysis, the authors found many schools in which more than one out of every three students in a particular racial group had been suspended during the year.

Overall, these and other analyses confirm that there are indeed systematic racial disparities in out-of-school suspensions. But, what factors drive these disparities? And do these differences persist with other disciplinary outcomes? In the next section, we summarize the emerging research literature reporting on these questions. While we have not conducted a full systematic review of the literature, we searched thoroughly for literature on racial disparities in school discipline, with a focus on the use of exclusionary discipline, and used a snowball search to identify additional studies to include. We do not include theoretical or philosophical arguments for or against exclusionary discipline, but rather focus on studies that quantitatively assess the number of infractions or incidences of disciplinary consequences and the demographic characteristics of the students receiving these consequences. In general, we focus on articles since the year 2000 when possible.

Studies Examining the Drivers of Racial Discipline Gaps

In Chicago, where there has been a great deal of focus on exclusionary discipline in recent years, researchers from the Consortium on Chicago School Research scanned discipline data from roughly 85,000 high school students in the districts in 2013-14 (Sartain et al., 2015). Using descriptive analyses, the authors showed that African American students were three times as likely as Hispanic students to be suspended, and four times as likely as White and Asian students. While there was some evidence of students receiving different levels of consequences within the same schools, the primary driver of the differences was the school. That is, African American students attended schools, on average, that were more likely to hand out suspensions. While this investigation did consider some factors that play a role in the disparities, the authors were unable to account for the infractions allegedly committed by the students. Moreover, suspensions were the only consequence analyzed here. Nevertheless, this study moved the field forward by putting forth the idea that differing school environments or practices may be one driver of the racial discipline gap.

Welch and Payne (2010) further examined what drives the discipline gap by considering the “racial threat hypothesis” from criminal justice research. The authors posited that school leaders in buildings serving more African American students would be more likely to use punitive discipline and less likely to use restorative approaches. Exploiting a 1998 nationally representative survey of students and school personnel in 294 public middle schools and high schools, the authors used multivariate regression to find that principals in schools with higher proportions of African American students are more likely to report in a survey that they employ punitive disciplinary styles. The authors even attempted to consider the possibility of differential behavior by different groups of students by controlling for student survey reports of delinquency

and teacher reports of schools safety. This study suggests that students in schools serving high concentrations of African American students may well be subject to stricter discipline despite similarly safe and orderly environments. The weakness here, of course, is that the study is based on self-reports of disciplinary strategies rather than on actual disciplinary outcomes; moreover, the data are all school-level and do not indicate whether African American students themselves are punished more severely or more frequently.

The studies that best assess the drivers of actual racial disparities in discipline are conducted by Russell Skiba and a variety of colleagues. First of all, Skiba et al. (2002) used student-level data on more than 11,000 students from 19 middle schools in one of the largest school districts in the US in 1994-95 to ask what factors drive discipline disproportionalities. While this analysis did not consider the variation in disciplinary strictness between schools, the authors did pay attention to infraction type and asked whether differential bad behavior might play a role by analyzing the reasons for the disciplinary referrals. Specifically, the authors find that White students were more likely referred to office for objective infractions like smoking or vandalism while African American students were more likely to be referred for more subjective offenses such as disrespect and noise. Thus, the authors conclude that African American students were not more “disruptive”, but they also show that the disproportionalities were indeed due to greater numbers of office referrals rather than greater severity of punishment (race had no impact on the length of punishment, given the referral).

The studies discussed up to this point do not tell us much regarding the causes of the observed disproportionalities. The disproportionalities may be due to more frequent misbehavior by African American students, or a greater willingness of school staff to refer these students to the office for subjective offenses. While many of the studies described in the previous section

utilized student-level data, other researchers have advanced the field by using infraction and referral level data to further analyze the disciplinary outcomes for certain infraction types. In the following paragraphs, we review the findings from these infraction-level studies.

In 2011, Skiba and another group of colleagues dug a little deeper with student-infraction-level data from 364 elementary and middle schools across the United States using School-wide Positive Behavior Supports in 2005-06. Using LOGIT and multinomial LOGIT, the authors found that (1) African American students are more likely than White students to be referred to office for a large variety of disciplinary infractions, and that (2) for the same referred infractions, African Americans in all grades were significantly more likely to be given out-of-school suspension or even expulsion. Thus, even after accounting for stated infraction, African American students were more likely to be given exclusionary discipline. The only gap in this analysis is that there is no control for school effects; so, we do not know if the disparate strictness is occurring within school or between schools.

Next, Skiba et. al. (2014) used Hierarchical Linear Modeling to predict punishment as a function of infraction type and incorporated a third level to the model by incorporating school characteristics. Using information from all students in the disciplinary database in a single Midwestern state in 2007-08, the authors found that the odds of being suspended or expelled were predictably influenced by the severity of the infraction. Importantly, even after controlling for the infraction, African American students remained more likely to be given out of school suspensions, but were no more likely to be expelled. This analysis extends beyond the prior work due to the inclusion of level three, in which school-level characteristics, such as student race and poverty and the principal's attitude toward discipline, are incorporated into the model. In this third level analysis, the race of the individual student was no longer significant; school-level

variables, including the concentration of African American students in the school, drove the severity of the punishments allocated. Thus, these results are consistent with the “racial threat hypothesis” in schools suggested by Welch and Payne (2010). One potential weakness of this study is the setting – a single US state that serves relatively few poor students (fewer than 40%) and very few African American students (8%).

Overall, the evidence gathered thus far indicates that it is quite clear that there are racial disparities with respect to exclusionary discipline (Children’s Defense Fund, 1975; Costenbader & Markson, 1998; Skiba et al., 2002; Losen & Skiba, 2010; Raffaele-Mendez & Knoff, 2003; Losen & Gillespie, 2012; Skiba et al., 2011; Sullivan, Klingbeil, & Van Norman, 2013). Indeed, the Office for Civil Rights recently demonstrated nationwide racial disparities in rates of suspensions and expulsions, and moreover, a couple of recent studies have produced conclusions that implied that African American students have been given disproportionate consequences for the infraction committed. However, it is still not clear whether in most cases, this disparity is due to students being treated differently in the same school or to the fact that African American students attend systematically different schools where the disciplinary practices also are abnormally strict. To date, the most thorough analysis to assess the extent to which students of color have been more severely punished for similar disciplinary referrals, and to consider whether these disparities occur within schools and across schools, has been published by Skiba et al. (2014). Given that this question is critically important, and the only evidence thus far comes from a single school year in a single state serving relatively few poor and African American students, we believe it is valuable to conduct such analyses in additional settings, ideally with greater levels of student diversity. Therefore, our current study expands on previous work by accounting for specific infraction information (type, frequency, etc.) and school-level fixed

effects whenever possible, using multiple years of data within a single US state serving a student population that is approximately 60% low-income and 20% African American. This study addresses these issues with the research questions outlined below.

Research Questions Guiding this Study

1. Across the state, what disproportionalities exist in the use of exclusionary discipline for students of color, low-income students, special education students, or English language learners?
2. Within schools, what disproportionalities exist in the use of exclusionary discipline for students of color, low-income students, special education students, or English language learners?
3. What are the school characteristics that are associated with harsher (longer) disciplinary consequences?

III. DATA AND SAMPLE

Arkansas Student Sample

First, it is important to note how closely the patterns in the Arkansas data utilized in this study mirror the OCR data mentioned previously. In Table 1, we calculate percent of students of various subgroups, the percent of students who received OSS at least once who were in various subgroups, and the percent of students who were expelled in various subgroups. The odds for a given subgroup being in a consequence category (e.g. expelled) is the percent of expelled students in that group divided by the percent of total students in that group. Then, we calculate disparities (relative odds) between groups, which can be compared across different sets of subgroups. In terms of disparities for Black students, relative to White students, the Arkansas disparities are perhaps larger for OSS, but smaller for expulsion. We can also see that overall, the

Black-White disparities are much larger than any other disparities, including those for Special Education students relative to non-Special Education students. Interestingly, in both the OCR data (nationally) and in the Arkansas data, based on the odds, Hispanic students and English Language Learners are somewhat underrepresented in these types of exclusionary discipline practices, but when we compare the relative odds of Hispanic students to White students, there are still disparities, at least in the OCR data. Arkansas Hispanic students are under-represented, even relative to White students, at least in terms of expulsions. While Arkansas is only one of fifty states in the US, the similarities in these patterns indicate that many of the findings of the current study may be relevant for many other parts of the nation as well.

[TABLE 1 ABOUT HERE]

Data and Descriptive Statistics

The study uses seven years of de-identified demographic and disciplinary data from all K-12 schools in Arkansas provided by the Arkansas Department of Education (2008-09 through 2014-15). The student demographic data include race, grade, special education status, limited English proficiency-status, and free-and-reduced-lunch (FRL) eligibility. Discipline data include indicators for 19 infraction types and 13 consequences, the date of the infraction, and the length of the consequence. To simplify the analysis, we collapse infractions involving handguns, rifles, and shotguns into a single category, resulting in only 17 distinct categories. Furthermore, 13 consequence categories are collapsed into 7 (in school suspension (ISS), OSS, expulsion, referral to an alternative learning environment (ALE), corporal punishment, no action, and other).¹

The unit of analysis is the student-infraction level, so students can and often do have multiple observations within the same year. After removing duplicate entries, (same student, discipline date, infraction type, consequence type, etc.) 1,243,555 total observations remain over

the seven-year period. These observations were recorded for 240,999 individual students, which would represent about 35% of the individual students expected to attend Arkansas schools during this time period. (Thus, the other 65% of students in the state's public schools received no disciplinary referrals or consequences during this time period.) The breakdown by infraction and consequence, by year, can be seen in Tables 2 and 3. The vast majority of infractions (79.4%) are relatively subjective consequences such as disorderly conduct (29.7%), other infractions not specified in these categories (24.9%), and insubordination (24.7%).

[TABLE 2 ABOUT HERE]

[TABLE 3 ABOUT HERE]

The trend over time has been a decrease in exclusionary discipline (25% all disciplinary consequences were exclusionary in 2008-09 compared to only 19% in 2014-15), but much of this is due to large increases in the use of other non-specified infractions. While we have concerns about the uncertainty within this other non-specified category, the vast majority of these other non-specified outcomes are non-exclusionary.² Expulsions and no actions are consistently rare, and ISS was the largest category in each year, until 2014-15, in which the other (non-specified) category was the most common. The number of incidences of the other (non-specified) consequence category grew by over 300% between 2008-09 and 2014-15.

To simplify interpretation of the infraction categories, we create categories based on the type and length of consequences typically received for each infraction type. We compare the percent of incidences that result in exclusionary discipline (expulsion, out-of-school suspension, or referral to an Alternative Learning Environment), as well as the number of days of suspension or expulsion that typically result. Table 4 shows the creation of these categories.

[TABLE 4 ABOUT HERE]

The state only codes certain types of infractions and consequences, so some categories used at a local level are coded as “other” at the state level. As a result, a large number of cases can be coded as “other” in either the infraction committed, the consequence received, or both. In the next section, we describe the analytic methods we employ to analyze these data and examine any possible disparities in disciplinary practices.

IV. ANALYTIC METHODS

In our straightforward descriptive analyses presented in the previous section, we described how frequently students of various subgroups are cited for various types of infractions as well as how frequently students in these subgroups receive various types of consequences. Next, we use logistic regression and aggregated residuals techniques to address our three primary research questions and assess the extent, if any, certain subgroups of students are being punished more severely for the same infractions.

Research Question 1: Across the state, what disproportionalities exist in the use of exclusionary discipline for students of color, low-income students, special education students, or English language learners?

We begin by testing whether students of various subgroups are more or less likely to receive exclusionary discipline, controlling for the type of infraction committed. We first analyze these disparities at a state level. Any disparities we find at this level could be due to differences across districts or schools, within district, or within school. We utilize logistic regression to predict whether certain types of students are more likely to receive exclusionary discipline (expulsion, OSS, or referral to an ALE), rather than another consequence (ISS, corporal

punishment, no action, or other). Whether or not a student receives exclusionary discipline is defined as:

$$E_1 = \begin{cases} 1 & \text{if } E_1^* > 0 \\ 0 & \text{if } E_1^* \leq 0 \end{cases}$$

$$E_1^* = \beta_0 + \beta_1 V_{is} + \beta_2 InfCat_i + \beta_3 InfOrder_i + \beta_4 Grade_i + \beta_5 Year_i + \varepsilon_i$$

Where:

V_i is a vector of the student-level variables of interest (some combination of race, FRL-eligibility, special education status and LEP-status)

$InfCat_i$ is a vector of 7 infraction categories, grouped by severity

$InfOrder_i$ is a vector of indicators for whether the infraction was the first, second, third, etc., for that student that year (a total of 10 indicators for 1-9 and 10 or more)

$Year_i$ is a vector of school-year indicators

ε_i is the infraction-level idiosyncratic error (clustered at the student level)

In this first analysis, no school-level indicators or covariates are included, so it is considered a model of state-wide racial or other disparities in disciplinary outcomes, conditional on similar infraction types, infraction history, and grade level.

Research Question 2: Within schools, what disproportionalities exist in the use of exclusionary discipline for students of color, low-income students, special education students, or English language learners?

Next, we seek to understand what the disparities are within schools. We utilize similar logistic regressions as in Research Question 1, but with the addition of school fixed effects. This

within-school analytic strategy is motivated by work by Anderson & Ritter (forthcoming) who find that most of the disparities in the length of punishments (e.g. number of days of suspensions) at the state level diminishes when school fixed effects are included, indicating that most of the disparities are across schools rather than within schools. If, in the current study, the disparities diminish when school fixed effects are included in our models, this would indicate that a great deal of the variation exists between schools. Thus we also ask question three below, which seeks to disentangle the particular school characteristics driving these differences.

Research Question 3: What are the school characteristics that are associated with harsher (longer) disciplinary consequences?

To address whether certain types of schools are more likely to assign disproportionately long punishments for similar types of infractions, we use a two-stage residuals analysis approach. In the first stage, we predict the number of days of exclusionary discipline as a function of information related to the reported infraction that could reasonably predict the type or length of consequence receive, as well as the cumulative number of reported infractions associated with that student during the same school year. In this first stage, we do not include any student demographic information other than grade level, which could be associated with the type or severity of consequence used. Our first stage model utilizes ordinary least squares regression, with heteroskedastic-robust standard errors clustered at the student level (Huber, 1967; White, 1980; Rogers, 1993; Angrist & Pischke, 2009). The first stage model is:

$$DaysPunished_i = \beta_0 + \beta_1 InfCat_i + \beta_2 InfOrder_i + \beta_3 Year_i + \beta_4 GradeLevel_i + \varepsilon_i$$

Where:

i indexes at the infraction level

$DaysPunished_i$ is the total number of days of punishment; In our primary model, we focus on days of exclusionary discipline (expulsion, OSS, or referral to an ALE) associated with a given infraction, with all other consequence types coded as zero days

$InfCat_i$ is a vector of infraction categories, which can be defined two ways (using all 17 categories, or our 7 infraction types, grouped generally by severity)

$InfOrder_i$ is a vector of indicators for whether the infraction was the first, second, third, etc., for that student that year (a total of 10 indicators for 1-9 and 10 or more)

$Year_i$ is a vector of school-year indicators

$GradeLevel_i$ is a vector of grade-level indicators

ε_i is the infraction-level idiosyncratic error (clustered at the student level)

These residuals are then averaged at a school-by-year level to produce a measure of whether a school, on average, meted out longer punishments (residuals greater than 0) or shorter punishments (residuals less than 0), relative to the state average for a similar type of infraction for a student in the same grade with a similar number of disciplinary infractions during the previous part of the school year. We refer to this residual as the School Severity Index (SSI). The school-by-year SSI values are estimated using a school-level random effects model, which shrinks the estimates towards zero for schools with relatively few observations. Schools with positive SSI values tend to give out longer punishments, and schools with negative SSI values tend to give out shorter punishments, relative to the state average.

In the second stage, we predict the SSI as a function of school-level demographic characteristics to assess which school characteristics are associated with disciplinary practices:

$$SSI_s = \beta_0 + \beta_1 X_s + \beta_2 Year_s + \varepsilon_s$$

Where:

s indexes at the school level

X_s is a vector of school level characteristics such as the log of enrollment, an indicator for region, an indicator for open-enrollment charter schools, an indicator for the type of school (elementary, middle, high, or other) and the percent of the student population that is FRL-eligible, of a certain race, receiving special education services, limited English proficient (LEP), or gifted and talented

$Year_s$ is a vector of school-year indicators

ε_s is the school-level idiosyncratic error

Next, we present our findings, beginning with some brief descriptive statistics, and ultimately walking through the results of each of three research questions.

V. RESULTS

Initial descriptive analyses focused on the frequency of both infractions and consequence types for different subgroups of students. In Figure 1, it is easy to see that students of color are disproportionately receiving all types of consequences. On average, each year, there are 29.6 in-school suspensions for every 100 Black students, but only 9.9 in-school suspensions for every 100 White students. Each year, there are 24.6 out-of-school suspensions for every 100 Black students, but only 4.3 for every 100 White students. Thus, a ratio-based measure of the Black-White disparity in ISS indicates that Black students are about 3 times as likely to receive OSS as

White students (29.6 divided by 9.9). For other consequence types such as referrals to ALE, this ratio is about 9.5 times, or for OSS, 5.7 times.

[FIGURE 1 ABOUT HERE]

Similarly, as indicated in Figure 2, FRL-students tend to be disproportionately represented in disciplinary consequences. Looking at OSS cases per 100 students, for example, FRL students have about 11.8 incidences, and non-FRL students have about 4.1 incidences. Thus, FRL students are roughly 2.9 times as likely to be given OSS as non-FRL students (this disparity is less stark than the OSS Black-White disparity of about 5.7 times). When comparing the Black-White gap to the FRL-non-FRL gap, for all seven types of consequences *except for* corporal punishment, the Black-White gap was larger than the FRL-non-FRL gap.

[FIGURE 2 ABOUT HERE]

Looking just at the disparities, particularly in Figures 1 and 2, it is easy to conclude that students are being treated unfairly, but it is also important for us to consider whether there are disparate rates of referrals for certain types of infractions, and indeed, we see that there are disproportionalities at this level. This does not, however, rule out the possibility that disparities may still exist *within each* on infraction type, which we address with Research Questions 1 and 2.

First, a key take-away point from Figure 3 is that the vast majority (almost 80%) of incidences are minor, non-violent offenses (disorderly conduct, insubordination, and other). A second point is that Black students are three times more likely than White students to be referred for misbehavior but are nearly six times more likely to be given out-of-school suspensions (24.6 versus 4.3 incidences per 100 students, in Figure 1). These data do indicate that Black students

are being referred for discipline more often, but this only accounts for about half the difference in the rate of out-of-school suspensions. Similarly, Figure 4 graphically represents the number of different infraction types recorded for FRL and non-FRL students. Our analyses in the next section, using multiple regressions to examine incident-level data, will help us sort through these fuzzy results.

[FIGURE 3 ABOUT HERE]

[FIGURE 4 ABOUT HERE]

Research Question 1: Across the state, what disproportionalities exist in the use of exclusionary discipline for students of color, low-income students, special education students, or English language learners?

Logistic regression was used to determine the disparities in the likelihood of exclusionary discipline, controlling for the type of infraction committed, the infraction history of the student, and the student's grade level. No school-level factors are taken into account, so this model indicates the extent to which students across the state are disproportionately exposed to exclusionary practices. Any differences by subgroup we find at this level could be due to differences at a variety of levels (across districts or schools, within district, or within school).

Relative risk ratios from several logistic regressions are indicated in Table 5. It is important to note that all models in Table 5, using infraction-level disciplinary data, are conditional on a student being referred for some infraction, so even without controlling for infraction, we can see that, holding constant that a student was referred for any misbehavior, we get a better picture of disciplinary disparities than with just comparing raw numbers of suspensions and expulsions as in Table 1 and Figures 1 and 2. In columns 1-3 of Table 5, we

present the results of relatively naïve models that are contingent only upon the student being referred for some disciplinary infraction. The primary results, based on models in which we control for the type of infraction committed and for the number of infractions committed by the student during the school year, are presented in columns 4-8.

[TABLE 5 ABOUT HERE]

If disciplinary consequences were handed out evenly across various subgroups of students, we would expect to see relative risk ratios for each indicator (e.g. Black) equal to one. The results in Table 5, column 4 indicate that Black students are more than twice as likely to receive exclusionary discipline as their White peers in the same grade for similar types of infractions, with a similar number of previous infractions that year. Hispanic students and students of other minority groups are somewhat less likely than their White peers to receive exclusionary discipline.

Looking at columns 5, 6, and 7 of Table 5, instead of testing disproportionalities in exclusionary discipline using race indicators, we use other indicators of a student's disadvantaged status (FRL-eligibility, Special Education status, or English proficiency). FRL-eligible students are about 1.5 times as likely as their non FRL-eligible peers in the state to receive exclusionary discipline. Students with Limited English Proficiency are about half as likely to receive exclusionary discipline. The model in Column 8 includes the full combination of control variables.

It is interesting that the racial disparities, indicated by the relative risk ratios on Black, Hispanic, and Other Minority, are quite similar between columns 1 and 4 and columns 3 and 8. The disparities based on FRL-status, indicated by the relative risk ratios on FRL-Eligible are also

similar between columns 2 and 5. This result indicates that even though the specific type of infraction, controlled for in columns 4-8, does predict whether a student receives exclusionary discipline, the disparities are somewhat similar even without doing so. Still, the results in columns 1-3 should be interpreted with caution, as the Pseudo R-squared values are low (0.012 to 0.037).

The results for research question 1, discussed above, are only representative of disparities in disciplinary outcomes across the state. It could be that most of these disparities only occur across schools, or it could be, instead, that disparities also exist within schools. In the next section, we utilize school fixed effects to assess what disproportionalities exist, if any, in disciplinary outcomes for students within the same schools.

Research Question 2: Within schools, what disproportionalities exist in the use of exclusionary discipline for students of color, low-income students, special education students, or English language learners?

In this section, logistic regression was again used to assess whether student demographic factors are associated with higher rates of exclusionary discipline, this time for students within the same schools. Relative risk ratios from several logistic regressions, all including school fixed effects, are indicated in Table 6. The results in column 1 indicate that Black students are only slightly more likely to receive exclusionary discipline, relative to their White peers within the same schools. Larger disparities can be seen based on whether the student is FRL-eligible (column 2) or receiving Special Education services (column 3). The coefficients on the indicator for Black students is smaller in the school fixed effects models, relative to the models without school fixed effects, indicating that much of the disproportionality in outcomes occurs across schools rather than within schools. In the next section, we test which characteristics of schools drive these differences.

[TABLE 6 ABOUT HERE]

Research Question 3: What are the school characteristics that are associated with harsher (longer) disciplinary consequences?

Since there are larger racial disparities across the state than specifically within schools, it could be that there are differences in the disciplinary policies and practices at the types of schools that tend to serve large proportions of minority students. We test this by creating a School Severity Index (SSI) for each school using the residuals from a model predicting the length of exclusionary punishments of various types. In this model, consequences other than exclusionary discipline are coded as zero days of punishment, but are not removed from the model. A positive SSI indicates that a school tends to give out longer (more exclusionary) punishments for similar types of infractions. A negative SSI indicates shorter (less exclusionary) punishments. These SSIs were created using school random effects to account for the noisy measures within schools with fewer disciplinary incidences.

The SSI for each school was then regressed on a variety of school level characteristics. The results are in Table 7 are based on SSIs that were created in the first-stage using the days of exclusionary punishment. Other types of consequences are included as zero days. Across several different models, in general, there are school characteristics (notably the percent Black and the percent Other Minority) that are associated with longer punishments. Importantly, the R-squared values in the models with the race percentage variables (columns 2, 3, 5, and 6) have about 2.5 times the predictive power of those without the race percentage variables (columns 1 and 4). Therefore, the racial breakdown of schools appears to be an important factor in explaining disciplinary outcomes within schools.

[TABLE 7 ABOUT HERE]

Robustness checks

As a robustness check, we also ran models excluding the log of school enrollment. We do not present these results here, but in all cases, in the model without school size accounted for, the disparities are similar but slightly higher. In addition, we also conduct robustness checks using days of *any* type of punishment (not just exclusionary). The results for the primary variable of interest (School percent Black) are generally similar. There are some differences, however, in terms of the coefficients on the School percent Hispanic, which has a significantly negative relationship with SSI when created using only exclusionary discipline, but a non-significant relationship in terms of days of any type of consequence. This indicates that, all else equal, schools with a greater proportion of Hispanic students generally give out shorter exclusionary type punishments, but give out similar length of punishment ignoring whether it is exclusionary or not.

There is a surprising result from the models that include a measure of the percent of students who are FRL-eligible as well as percent Black. The negative coefficients on the school percent FRL are negative, which is unexpected, but largely due to the high degree of collinearity between the school percentage of students who are FRL-eligible and the school percentage of students who are Black. To further understand what is happening within schools in terms of both minority breakdown and the general income level of the students served, we created indicators for four types of schools (Low-Income Mostly White, Low-Income Mostly Minority, Higher-Income Mostly White, and Higher-Income Mostly Minority). These four categories are based on the whether a school is above or below the state average on two separate indicators (percent White and percent FRL). The state averages during the study period were about 65% White and

about 60% FRL. The uneven distribution of observations across these groups, as in Table 8, reflects the true demographics of the state, in the sense that there are relatively few schools that are mostly-minority and higher-income, relative to the other three types.

[TABLE 8 ABOUT HERE]

Interestingly, according to the results in Table 9, it seems that the schools with more minority students (regardless of whether those schools tend to be higher income or lower income), tend to administer harsher (longer) punishments than the Rich White schools. Rich Minority schools tend to give out an extra half a day of punishment, relative to Rich White schools, and Poor Minority schools tend to give out an extra 0.6 days, on average. There was generally little difference between the length of punishments in Poor White and Rich White schools, again indicating that racial factors are probably more important than income factors for predicting the severity of disciplinary consequences. This seems consistent with our earlier models (Table 7); the magnitude and sign on the race variable is mostly unchanged by the inclusion of the poverty variable in the model. On the other hand, the poverty result is very sensitive to the inclusion of the race variable.

As an additional robustness check, if the SSI is created using days of any kind of punishment, rather than only the days of exclusionary discipline, the coefficients for the school types, Rich Minority, Poor White, and Poor Minority are quite similar.

[TABLE 9 ABOUT HERE]

VI. DISCUSSION AND CONCLUSIONS

Overall, the results from this study, utilizing all infraction-level disciplinary data for every public school in Arkansas for seven years, we find disproportionate use of exclusionary

discipline for Black students, but that these disparities are primarily due to differences in discipline practices across schools, rather than within schools. This result supports the important work of Skiba et al., (2014), and builds upon that work by providing analysis of an entire state over seven school years, rather than just one school year.

When school fixed effects are not included, Black students are about 2.4 times as likely as their White peers in the state (in the same grade and with similar numbers of previous infractions) to receive exclusionary discipline for similar infraction types. Hispanic students are slightly less likely than their similar White peers in the state to receive exclusionary discipline. Importantly, the disparities are not only based on race. Depending on whether or not race is also controlled for, our results indicate that FRL students in the state are about 1.2 to 1.5 times as likely to receive exclusionary discipline as their non-FRL peers.

We conclude that most of the racial differences in rates of exclusionary discipline are across schools, however, because these racial disparities diminish greatly when school fixed effects are included. Within schools, Black students are only slightly more likely than White students to receive exclusionary discipline (relative risk ratio of 1.04, significant at the 99% confidence level). Interestingly, within schools, there still appear to be persistent gaps in the use of exclusionary discipline for FRL students and special education students (relative risk ratios of about 1.2).

These results indicate that the large racial disparities tend to be across schools, and therefore a function of the types of schools that students of color are likely to attend, whereas within schools, there may be larger concerns about disparities based on socio-economic status and special education status. Since the results indicate that the state-level racial disparities are likely a function of the school attended, we also test which school level factors are associated

with a measure of school disciplinary severity (SSI), and find that the percent of the school that is Black or the percent of the school that is of another non-Black non-Hispanic minority are both significant predictors of harsher (longer) consequences, which supports the idea that most of the racial disparities occur due to different disciplinary practices being used in districts/schools serving different racial compositions of students.

In fact, when schools are split into four categories (Rich White, Rich Minority, Poor White, Poor Minority), we see that Rich Minority and Poor Minority schools administered longer punishments than Rich White schools, but that Poor White schools were actually quite similar to Rich White schools, again indicating that differences in exclusionary practices across schools appear to be more driven by racial demographics than by income or poverty.

In conclusion, the picture of disciplinary disparities in the state of Arkansas is not a homogeneous one. At the state level, there are racial disparities in the occurrence of exclusionary discipline, but within school, disparities by socioeconomic status or special education status may be more salient. Ultimately, most of the differences occur across schools rather than within schools, so perhaps state policy should focus on identifying target schools within which to implement change in the overall rates of exclusionary discipline, which is associated with a host of negative outcomes such as lower academic achievement (Beck & Muschkin, 2012; Raffaele-Mendez, 2003; Raffaele-Mendez, Knoff, & Ferron, 2002; Skiba & Rausch, 2004;), school dropout (American Academy of Pediatrics, 2013; American Psychological Association, 2008; Ekstrom et al., 1986), and involvement in the juvenile justice system (American Academy of Pediatrics, 2013; Balfanz, 2003; Fabelo et al., 2011; Nicholson-Crotty, et al., 2009).

END NOTES

1. The original 13 consequence categories were In-School Suspension, Out-of-School Suspension (when the incident did not result in physical injury), Out-of-School Suspension (when the incident did result in physical injury), Expelled, Expelled for Weapons (as defined by Federal, State, and Student Discipline Policy), Expelled for Drugs (does not include alcohol or tobacco), Expelled for dangerousness (the incident did not result in physical injury), Expelled for dangerousness (the incident resulted in physical injury), Alternative Learning Environment (full year), Alternative Learning Environment (less than one year), Corporal Punishment, No Action, and Other.
2. Conversations with the Arkansas Department of Education Assistant Commissioner for Research and Technology, Eric Saunders, indicates that the majority of these other consequences are detentions, bus suspensions, parent/guardian conferences, Saturday school, or warnings.

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Table 1: Comparison of Arkansas Disciplinary Data and Office of Civil Rights National Data

| | | White | | Black | | | White | | Hispanic | | |
|--------------------------------------|-----------------------------|------------------|------|--------------------------|------|-----------------------|---------------------|------|-----------------------|------|---------------------------|
| | | % of Group | Odds | % of Group | Odds | Black-White Disparity | % of Group | Odds | % of Group | Odds | Hispanic-White Disparity |
| Arkansas (2008-09 to 2014-15) | % Enrollment | 65% | | 21% | | | 65% | | 10% | | |
| | % of Students Receiving OSS | 38% | 0.58 | 54% | 2.53 | 4.32 | 38% | 0.58 | 6% | 0.61 | 1.05 |
| | % of Expelled Students | 48% | 0.75 | 44% | 2.06 | 2.75 | 48% | 0.75 | 6% | 0.57 | 0.76 |
| OCR (2011-12)* | % Enrollment | 52% | | 16% | | | 52% | | 24% | | |
| | % of Students Receiving OSS | 35% | 0.67 | 38% | 2.38 | 3.56 | 35% | 0.67 | 22% | 0.91 | 1.37 |
| | % of Expelled Students | 36% | 0.70 | 36% | 2.25 | 3.20 | 36% | 0.70 | 22% | 0.90 | 1.28 |
| | | Language Learner | | English Language Learner | | | Special Education** | | Non-Special Education | | |
| | | % of Group | Odds | % of Group | Odds | Non-ELL Disparity | % of Group | Odds | % of Group | Odds | SpEd - Non-Sped Disparity |
| Arkansas (2008-09 to 2014-15) | % Enrollment | 93% | | 7% | | | 11% | | 89% | | |
| | % of Students Receiving OSS | 96% | 1.03 | 4% | 0.57 | 0.55 | 19% | 1.69 | 81% | 0.91 | 0.54 |
| | % of Expelled Students | 96% | 1.03 | 4% | 0.55 | 0.53 | 19% | 1.76 | 81% | 0.91 | 0.52 |
| OCR (2011-12)* | % Enrollment | 90% | | 10% | | | 12% | | 88% | | |
| | % of Students Receiving OSS | 94% | 1.04 | 6% | 0.60 | 0.57 | 22% | 1.83 | 78% | 0.89 | 0.48 |
| | % of Expelled Students | 95% | 1.06 | 5% | 0.50 | 0.47 | 19% | 1.58 | 81% | 0.92 | 0.58 |

Table 2: Infraction Types, By Year (Arkansas) from 2008-09 to 2014-15

| | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | Total | % of Total |
|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|-------------------|
| Disorderly Conduct | 54,641 | 51,027 | 48,765 | 51,539 | 42,575 | 57,750 | 63,533 | 369,830 | 29.7% |
| Other | 31,871 | 28,639 | 26,481 | 31,858 | 35,024 | 60,600 | 95,733 | 310,206 | 24.9% |
| Insubordination | 47,273 | 46,151 | 45,765 | 38,798 | 34,759 | 43,068 | 51,200 | 307,014 | 24.7% |
| Fighting | 12,378 | 12,456 | 12,471 | 12,136 | 12,434 | 13,128 | 14,576 | 89,579 | 7.2% |
| Truancy | 9,968 | 11,834 | 11,734 | 10,465 | 9,407 | 12,914 | 14,987 | 81,309 | 6.5% |
| Bullying | 3,455 | 4,099 | 4,363 | 4,483 | 4,515 | 5,496 | 5,856 | 32,267 | 2.6% |
| Tobacco | 2,218 | 2,253 | 1,973 | 1,920 | 1,977 | 2,482 | 2,837 | 15,660 | 1.3% |
| Student Assault | 1,856 | 1,820 | 1,615 | 1,645 | 2,007 | 2,153 | 2,232 | 13,328 | 1.1% |
| Drugs | 944 | 996 | 954 | 1,146 | 1,259 | 1,295 | 1,511 | 8,105 | 0.7% |
| Vandalism | 962 | 833 | 909 | 689 | 736 | 1,084 | 1,087 | 6,300 | 0.5% |
| Knife | 401 | 419 | 384 | 396 | 443 | 532 | 497 | 3,072 | 0.2% |
| Staff Assault | 292 | 312 | 277 | 314 | 354 | 350 | 487 | 2,386 | 0.2% |
| Alcohol | 294 | 299 | 325 | 289 | 309 | 353 | 416 | 2,285 | 0.2% |
| Gangs | 361 | 339 | 177 | 107 | 131 | 103 | 113 | 1,331 | 0.1% |
| Explosives | 49 | 57 | 60 | 50 | 42 | 53 | 40 | 351 | 0.0% |
| Club | 21 | 21 | 49 | 45 | 42 | 53 | 57 | 288 | 0.0% |
| Guns | 38 | 18 | 32 | 26 | 35 | 33 | 62 | 244 | 0.0% |
| Total | 167,022 | 161,573 | 156,334 | 155,906 | 146,049 | 201,447 | 255,224 | 1,243,555 | 100.0% |
| % of Total | 13% | 13% | 13% | 13% | 12% | 16% | 21% | 100% | |

Table 3: Consequence Types, By Year (Arkansas) from 2008-09 to 2014-15

| | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | Total | % of Total |
|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|---------------|
| Exclusionary Discipline | | | | | | | | | |
| Out-of-School Suspension | 41,348 | 39,613 | 36,780 | 37,791 | 40,233 | 42,290 | 47,853 | 285,908 | 23.0% |
| ALE | 918 | 794 | 621 | 253 | 317 | 586 | 538 | 4,027 | 0.3% |
| Expulsion | 135 | 322 | 193 | 95 | 200 | 249 | 165 | 1,359 | 0.1% |
| Total Exclusionary | 42,401 | 40,729 | 37,594 | 38,139 | 40,750 | 43,125 | 48,556 | 291,294 | 23.4% |
| % of Annual Total | 25% | 25% | 24% | 24% | 28% | 21% | 19% | 23% | 23.4% |
| Non-Exclusionary Discipline | | | | | | | | | |
| In-School Suspension | 63,018 | 64,760 | 60,052 | 62,532 | 63,019 | 74,169 | 92,084 | 479,634 | 38.6% |
| Other | 23,120 | 23,858 | 27,600 | 26,482 | 21,850 | 62,972 | 92,865 | 278,747 | 22.4% |
| Corporal Punishment | 36,484 | 30,732 | 29,311 | 27,760 | 19,142 | 19,746 | 19,571 | 182,746 | 14.7% |
| No Action | 1,999 | 1,494 | 1,777 | 993 | 1,288 | 1,435 | 2,148 | 11,134 | 0.9% |
| Total Non-Exclusionary | 124,621 | 120,844 | 118,740 | 117,767 | 105,299 | 158,322 | 206,668 | 952,261 | 76.6% |
| % of Annual Total | 75% | 75% | 76% | 76% | 72% | 79% | 81% | 77% | 77% |
| Total | 167,022 | 161,573 | 156,334 | 155,906 | 146,049 | 201,447 | 255,224 | 1,243,555 | 100.0% |
| % of Seven Year Total | 13% | 13% | 13% | 13% | 12% | 16% | 21% | 100% | |

Table 4: Category Groups (Based on Percent Exclusionary and Number of Days)

| | % Resulting in Exclusionary Discipline | Typical Number of Days of Exclusion |
|-------------------------------|---|--|
| Guns | 77.5 | 11.8 |
| Drugs and Alcohol | 87.8 | 8.8 |
| Drugs | 88.2 | 9.0 |
| Alcohol | 86.4 | 8.0 |
| Major Violence/Weapons | 75.1 | 5.2 |
| Club | 83.0 | 4.0 |
| Knife | 74.9 | 5.8 |
| Staff Assault | 74.4 | 4.7 |
| Minor Violence/Weapons | 59.3 | 3.6 |
| Gangs | 63.6 | 5.4 |
| Fighting | 60.8 | 3.5 |
| Student Assault | 49.2 | 3.9 |
| Explosives | 47.6 | 4.5 |
| Major Non-Violent | 30.3 | 3.1 |
| Tobacco | 35.4 | 3.3 |
| Vandalism | 32.1 | 4.1 |
| Bullying | 27.5 | 2.8 |
| Minor Non-Violent | 19.2 | 3.2 |
| Disorderly Conduct | 20.4 | 3.6 |
| Insubordination | 18.7 | 2.7 |
| Other | 18.2 | 3.2 |
| Truancy | 12.0 | 2.9 |

Table 5: Logistic Regression of Exclusionary Discipline (Arkansas State, 2008-09 to 2014-15)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|-------------------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Black | 2.215*** (0.0206) | | 2.132*** (0.0202) | 2.471*** (0.0238) | | | | 2.378*** (0.0233) |
| Hispanic | 0.795*** (0.0159) | | 0.838*** (0.0217) | 0.888*** (0.0173) | | | | 0.897*** (0.0231) |
| Other Minority | 0.854*** (0.0329) | | 0.878*** (0.0346) | 0.912** (0.0345) | | | | 0.920** (0.0356) |
| FRL-Eligible | | 1.475*** (0.0135) | 1.224*** (0.0115) | | 1.518*** (0.0145) | | | 1.232*** (0.0120) |
| Special Education | | | 1.106*** (0.0130) | | | 1.068*** (0.0126) | | 1.090*** (0.0129) |
| LEP | | | 0.860*** (0.0292) | | | | 0.534*** (0.0134) | 0.922** (0.0307) |
| Guns | | | | 16.99*** (2.854) | 16.27*** (2.621) | 15.67*** (2.485) | 15.76*** (2.502) | 17.22*** (2.908) |
| Drugs & Alcohol | | | | 38.23*** (1.164) | 29.20*** (0.885) | 27.88*** (0.838) | 28.61*** (0.866) | 38.73*** (1.183) |
| Truancy | | | | 0.570*** (0.00793) | 0.517*** (0.00725) | 0.512*** (0.00718) | 0.524*** (0.00734) | 0.572*** (0.00795) |
| Major Violence/Weapons | | | | 17.50*** (0.587) | 14.81*** (0.487) | 14.44*** (0.472) | 14.51*** (0.477) | 17.33*** (0.584) |
| Minor Violence/Weapons | | | | 6.545*** (0.0581) | 6.489*** (0.0563) | 6.500*** (0.0562) | 6.490*** (0.0563) | 6.521*** (0.0579) |
| Major Non-Violent | | | | 2.175*** (0.0247) | 1.898*** (0.0211) | 1.870*** (0.0207) | 1.859*** (0.0206) | 2.167*** (0.0246) |
| Grade Level Indicators | Y | Y | Y | Y | Y | Y | Y | Y |
| Infraction Order Indicators | | | | Y | Y | Y | Y | Y |
| School Year Indicators | Y | Y | Y | Y | Y | Y | Y | Y |
| Constant | 0.351*** (0.0720) | 0.363*** (0.0732) | 0.297*** (0.0611) | 0.226*** (0.0498) | 0.240*** (0.0526) | 0.347*** (0.0752) | 0.348*** (0.0753) | 0.191*** (0.0423) |
| Observations | 1,243,555 | 1,243,555 | 1,243,555 | 1,243,555 | 1,243,555 | 1,243,555 | 1,243,555 | 1,243,555 |
| Wald Chi-Squared | 11,571.2 | 5,644.7 | 12,146.3 | 76,215.3 | 73,372.3 | 72,321.2 | 71,778.4 | 76,398.0 |
| Number of Clusters (Students) | 240,999 | 240,999 | 240,999 | 240,999 | 240,999 | 240,999 | 240,999 | 240,999 |
| Pseudo R-Squared | 0.0360 | 0.0117 | 0.0373 | 0.1182 | 0.0923 | 0.0885 | 0.0908 | 0.1193 |

Table 6: Logistic Regression of Exclusionary Discipline within Schools (Arkansas, 2008-09 to 2014-15)

| | (1) | (2) | (3) | (4) | (5) |
|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Black | 1.035*** (0.0109) | | | | 1.007 (0.0108) |
| Hispanic | 0.935*** (0.0156) | | | | 0.949** (0.0205) |
| Other Minority | 1.011 (0.0325) | | | | 1.023 (0.0332) |
| FRL-Eligible | | 1.165*** (0.0104) | | | 1.157*** (0.0105) |
| Special Education | | | 1.191*** (0.0115) | | 1.180*** (0.0115) |
| Limited English Proficient | | | | 0.910*** (0.0180) | 0.935*** (0.0243) |
| Guns | 22.06*** (4.415) | 22.35*** (4.500) | 22.10*** (4.437) | 22.05*** (4.412) | 22.30*** (4.495) |
| Drugs & Alcohol | 53.70*** (1.927) | 53.92*** (1.939) | 53.97*** (1.939) | 53.56*** (1.923) | 54.29*** (1.952) |
| Truancy | 0.579*** (0.00830) | 0.577*** (0.00829) | 0.577*** (0.00828) | 0.577*** (0.00829) | 0.579*** (0.00831) |
| Major Violence/Weapons | 23.24*** (0.920) | 23.23*** (0.919) | 22.85*** (0.907) | 23.17*** (0.917) | 22.90*** (0.908) |
| Minor Violence/Weapons | 9.323*** (0.0980) | 9.316*** (0.0979) | 9.307*** (0.0980) | 9.323*** (0.0980) | 9.300*** (0.0979) |
| Major Non-Violent | 2.388*** (0.0306) | 2.389*** (0.0306) | 2.378*** (0.0304) | 2.385*** (0.0305) | 2.378*** (0.0305) |
| Grade Level Indicators | Y | Y | Y | Y | Y |
| Infraction Order Indicators | Y | Y | Y | Y | Y |
| School Fixed Effects | Y | Y | Y | Y | Y |
| School Year Fixed Effects | Y | Y | Y | Y | Y |
| Constant | 0.0812*** (0.0234) | 0.0706*** (0.0205) | 0.0818*** (0.0239) | 0.0820*** (0.0237) | 0.0703*** (0.0205) |
| Observations | 1,236,401 | 1,236,401 | 1,236,401 | 1,236,401 | 1,236,401 |
| Number of Students (Clusters) | 239,202 | 239,202 | 239,202 | 239,202 | 239,202 |
| Pseudo R ² | 0.3242 | 0.3245 | 0.3246 | 0.3242 | 0.325 |
| Model X ² | 132,531.4 | 132,473.0 | 131,941.3 | 132,506.8 | 132,333.3 |

Table 7: School Characteristics Associated with Harsher Punishments (Dep Var = School Severity Index based on days of exclusionary discipline, units= number of days)

| | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------------|-----------------------|------------------------|------------------------|-----------------------|------------------------|------------------------|
| Log (School Enrollment) | 0.144*** (0.0192) | -0.0202 (0.0166) | -0.0785*** (0.0187) | 0.144*** (0.0191) | -0.0209 (0.0166) | -0.0730*** (0.0187) |
| School % Black | | 1.392*** (0.0355) | 1.586*** (0.0449) | | 1.377*** (0.0355) | 1.552*** (0.0450) |
| School % Hispanic | | -0.800*** (0.266) | -0.658** (0.265) | | -0.887*** (0.266) | -0.761*** (0.266) |
| School % Other Minority | | 1.716*** (0.274) | 1.444*** (0.275) | | 1.762*** (0.274) | 1.518*** (0.276) |
| School % FRL | 1.106*** (0.0642) | | -0.554*** (0.0775) | 1.118*** (0.0641) | | -0.499*** (0.0777) |
| School % Gifted and Talented | 2.934*** (0.185) | 2.093*** (0.170) | 1.908*** (0.172) | 2.925*** (0.185) | 2.083*** (0.170) | 1.919*** (0.173) |
| School % Special Education | -0.144 (0.168) | -0.112 (0.155) | -0.0269 (0.154) | -0.178 (0.168) | -0.143 (0.155) | -0.0636 (0.155) |
| School % LEP | 0.410*** (0.117) | 1.901*** (0.308) | 2.116*** (0.308) | 0.433*** (0.116) | 2.012*** (0.308) | 2.207*** (0.309) |
| Open-Enrollment Charter School | 1.294*** (0.0884) | 0.541*** (0.0825) | 0.389*** (0.0859) | 1.292*** (0.0883) | 0.542*** (0.0826) | 0.408*** (0.0860) |
| Middle School | -0.148*** (0.0306) | -0.0846*** (0.0283) | -0.0978*** (0.0282) | -0.145*** (0.0306) | -0.0817*** (0.0283) | -0.0944*** (0.0283) |
| High School | -0.115*** (0.0272) | -0.0567** (0.0250) | -0.0801*** (0.0251) | -0.115*** (0.0271) | -0.0578** (0.0250) | -0.0788*** (0.0251) |
| Other School Type | 0.680*** (0.0980) | 0.487*** (0.0905) | 0.431*** (0.0903) | 0.690*** (0.0978) | 0.500*** (0.0906) | 0.449*** (0.0905) |
| School Year Indicators | Y | Y | Y | Y | Y | Y |
| Constant | -1.771*** (0.140) | -0.446*** (0.106) | 0.195 (0.141) | -1.777*** (0.140) | -0.434*** (0.106) | 0.141 (0.141) |
| Observations | 6,871 | 6,891 | 6,871 | 6,871 | 6,891 | 6,871 |
| R-squared | 0.096 | 0.236 | 0.241 | 0.098 | 0.233 | 0.238 |

Table 8: Distribution of Four School Types

| | | Higher-Income | Low-Income |
|------------------------|----------------------|--------------------------------|--------------------------------|
| | | <60% FRL | ≥60% FRL |
| Mostly-Minority | <65% White | 585 School Year Combinations | 2,185 School-Year Combinations |
| Mostly-White | ≥65% White | 2,237 School-Year Combinations | 1,886 School-Year Combinations |

Table 9: School Characteristics Associated with Harsher Punishments (Dep Var = School Severity Index based on days of exclusionary discipline, units= number of days)

| | (1) | (2) | (3) | (4) |
|---|-----------------------|----------------------|-----------------------|----------------------|
| Log (School Enrollment) | 0.00191 (0.0187) | -0.00369 (0.0181) | 0.00370 (0.0187) | 5.22e-05 (0.0181) |
| Rich Minority (<60%FRL, <65% White) | 0.479*** (0.0406) | 0.544*** (0.0404) | 0.471*** (0.0407) | 0.537*** (0.0404) |
| Poor White (\geq 60%FRL, \geq 65% White) | 0.0325 (0.0283) | 0.00902 (0.0284) | 0.0421 (0.0283) | 0.0189 (0.0285) |
| Poor Minority (\geq 60%FRL, <65% White) | 0.624*** (0.0276) | 0.611*** (0.0264) | 0.619*** (0.0276) | 0.609*** (0.0264) |
| School % Gifted and Talented | 2.235*** (0.182) | | 2.235*** (0.182) | |
| School % Special Education | -0.270 (0.165) | | -0.301* (0.165) | |
| School % LEP | -0.0615 (0.116) | | -0.0184 (0.116) | |
| Open-Enrollment Charter School | 0.782*** (0.0875) | 0.599*** (0.0845) | 0.785*** (0.0876) | 0.604*** (0.0845) |
| Middle School | -0.125*** (0.0299) | 0.0145 (0.0279) | -0.122*** (0.0299) | 0.0170 (0.0280) |
| High School | -0.111*** (0.0265) | 0.0128 (0.0247) | -0.112*** (0.0265) | 0.0110 (0.0247) |
| Other School Type | 0.563*** (0.0958) | 0.526*** (0.0953) | 0.575*** (0.0958) | 0.534*** (0.0953) |
| School Year Indicators | Y | Y | Y | Y |
| Constant | -0.396*** (0.123) | -0.252** (0.113) | -0.404*** (0.123) | -0.274** (0.113) |
| Observations | 6,891 | 6,892 | 6,891 | 6,892 |
| R-squared | 0.142 | 0.122 | 0.140 | 0.120 |

Figure 1: Disciplinary Consequences by Racial Subgroup (Annual Incidences per 100 Students, 2008-09 to 2014-15)

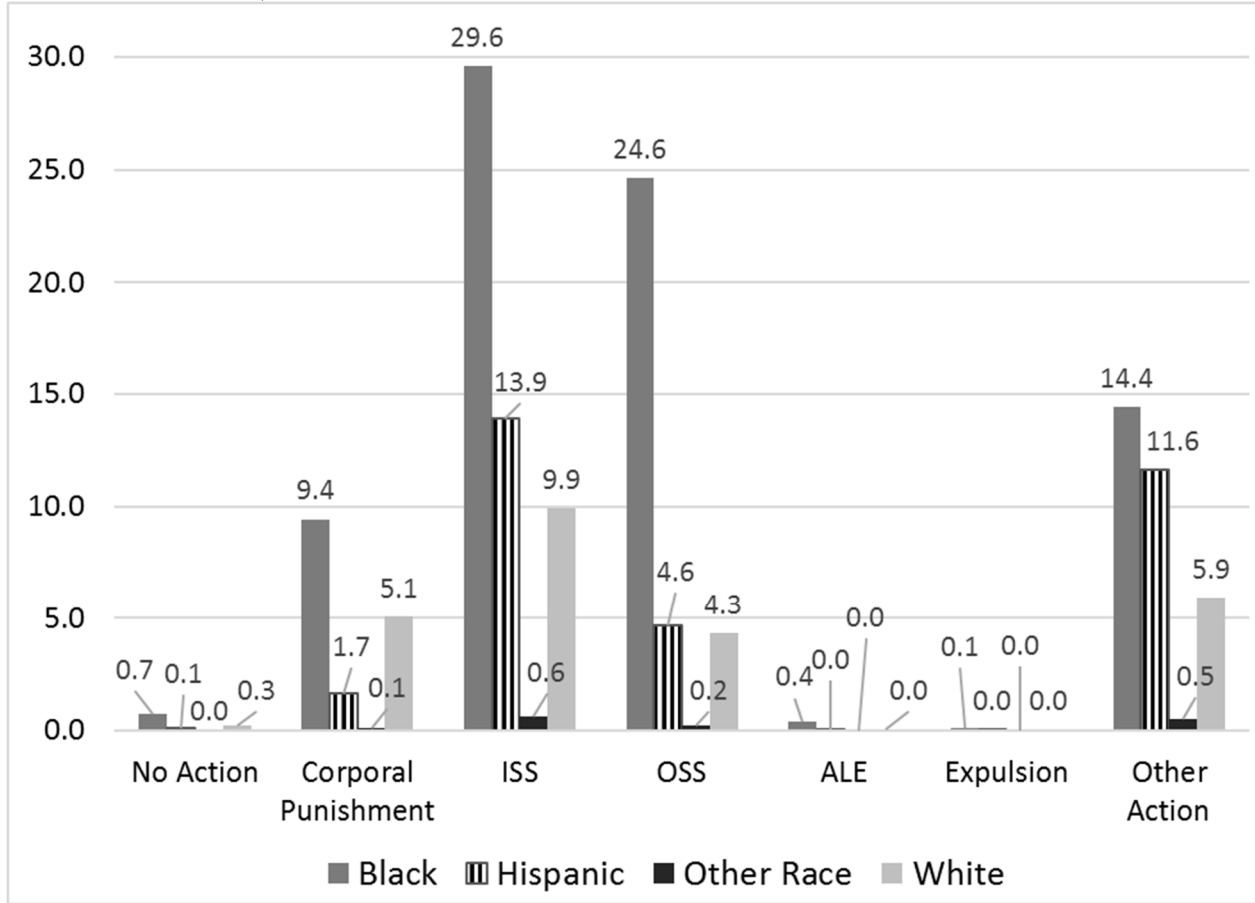


Figure 2: Disciplinary Consequences by FRL Eligibility (Annual Incidences per 100 Students, 2008-09 to 2014-15)

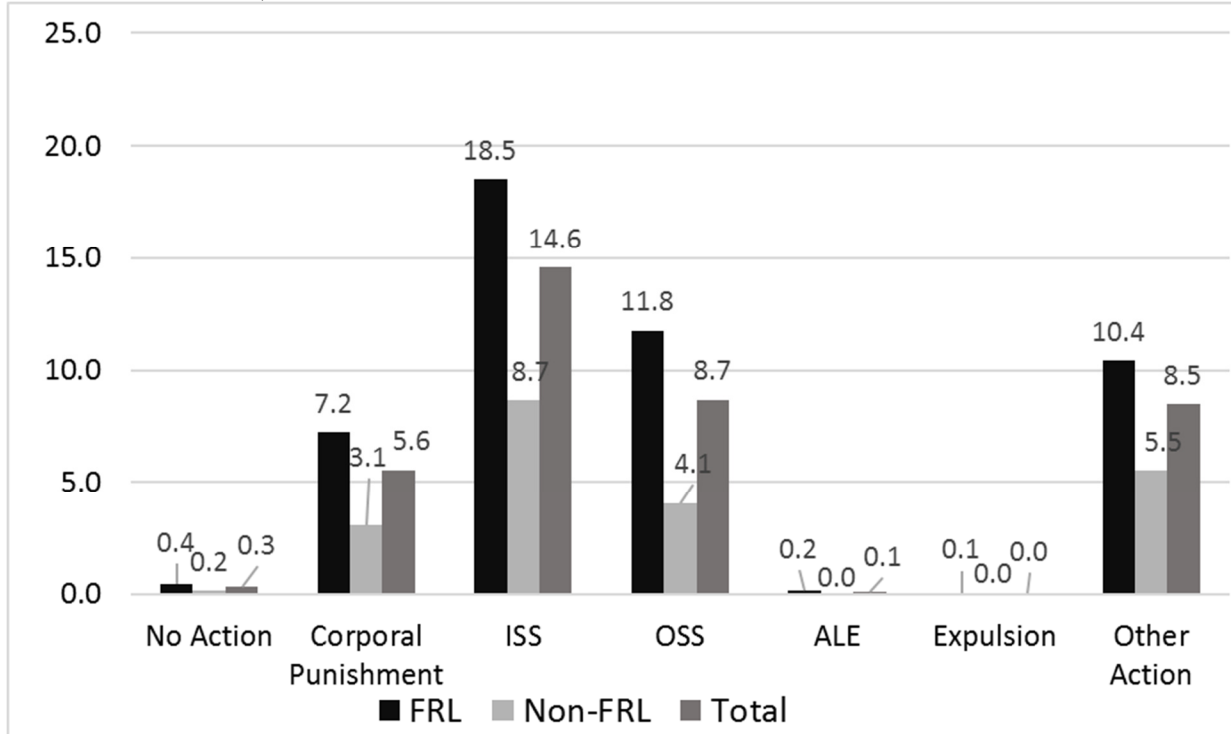


Figure 3: Referrals by Infraction Type and Race (Annual Incidences per 100 Students, 2008-09 to 2014-15)

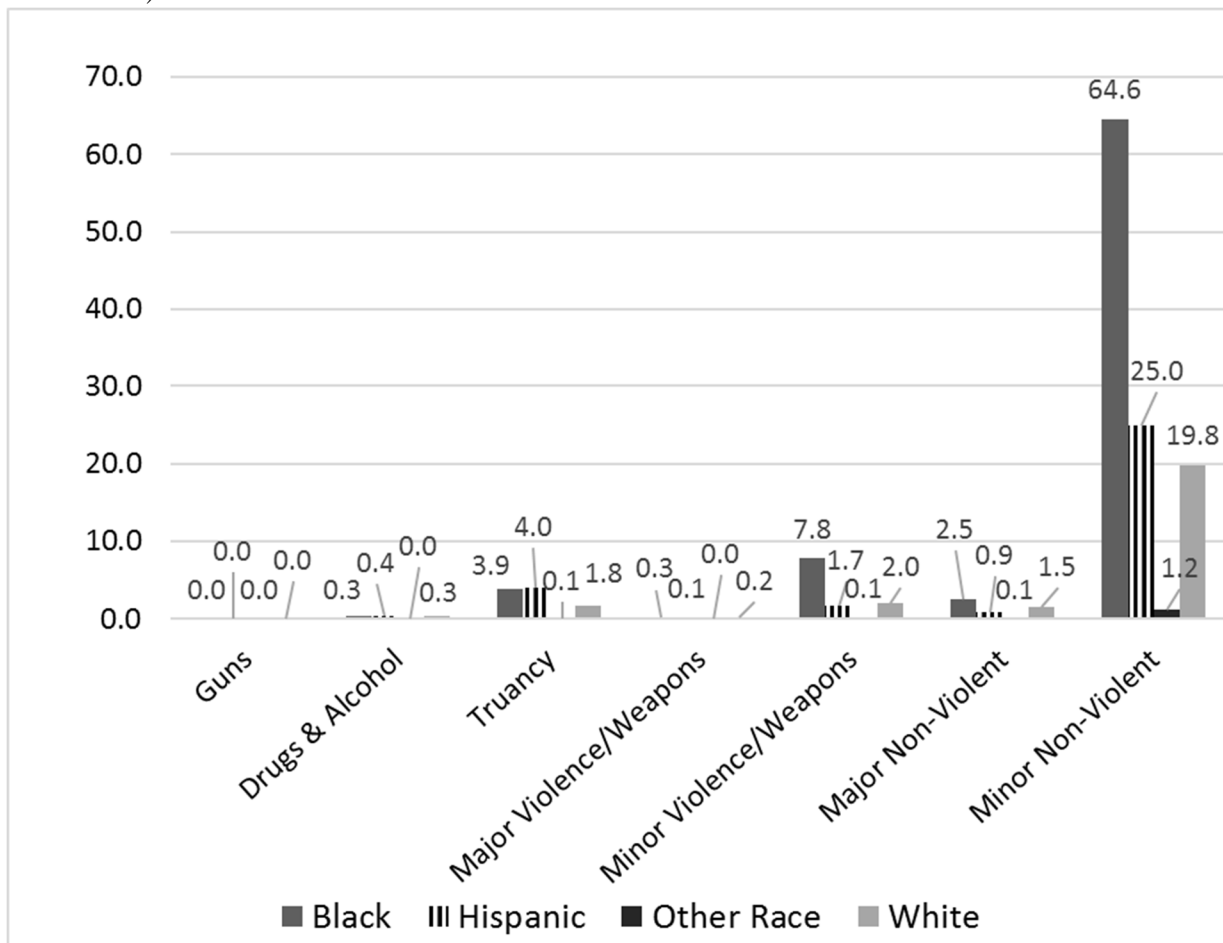


Figure 4: Referrals by Infraction Type and FRL Eligibility (Annual Incidences per 100 Students, 2008-09 to 2014-15)

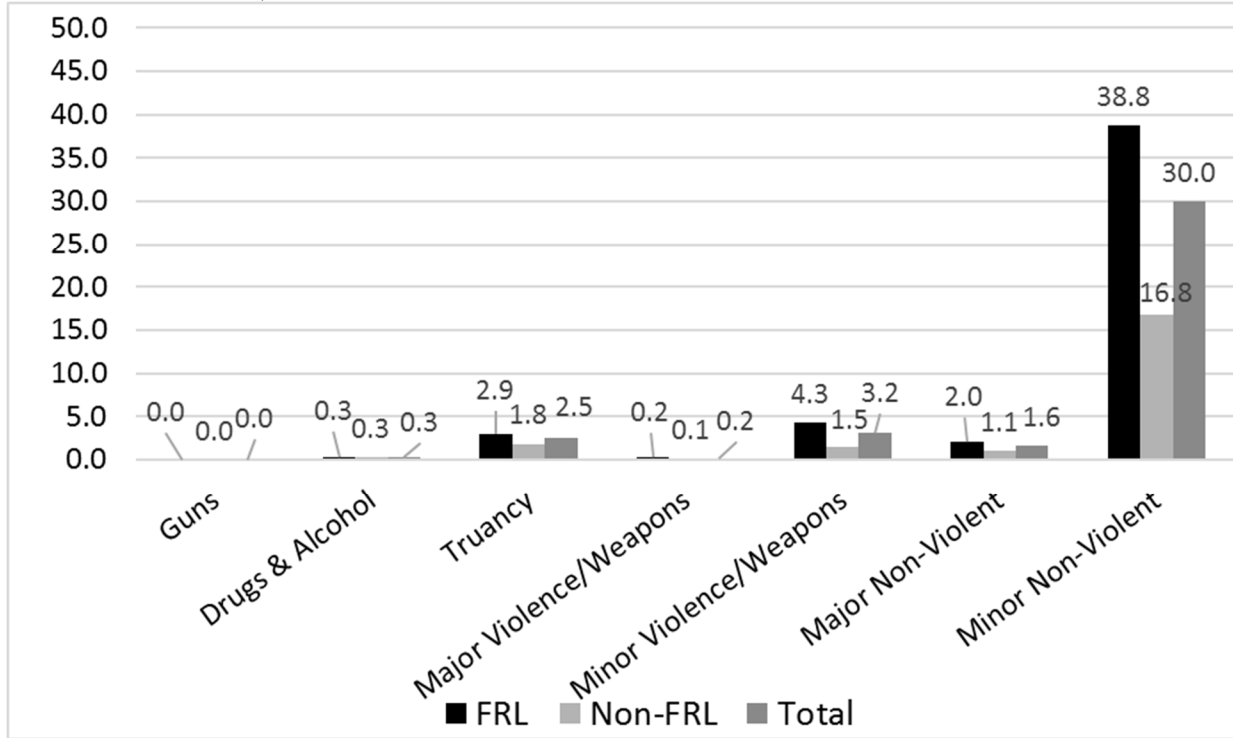


TABLE CAPTIONS

Table 1:

Notes: All percentages reflect the number of students receiving either OSS or expulsion at least once in a given school year that are within a certain subgroup. Odds for white students are the percent of students suspended or expelled divided by the percent of enrollment. Values over one indicate over-representation. Disparities (relative odds) are calculated as the odds for one group divided by the odds for another group. These indicate whether a subgroup is over-represented relative to another subgroup. Values greater than 1 indicate over-representation. Values less than 1 indicate under-representation.

*Office for Civil Rights race breakdowns reflect the race/ethnic composition of students without disabilities and students with disabilities served under IDEA.

**Special-education students only include those with an IEP, under the IDEA. Does not include handicapped students under Section 504.

Table 5:

Notes: Heteroskedastic-robust standard errors in parentheses, clustered at the student level.

Baseline infraction category is Minor Non-Violent Infractions.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6:

Notes: Heteroskedastic-robust standard errors in parentheses, clustered at the student level.

Baseline infraction category is Minor Non-Violent Infractions.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 7:

Notes: Standard errors in parentheses. Models 1-3 use SSI created with all 17 infraction categories in the first stage. Models 4-6 use SSI created with the 7 infraction groups in the first stage. In the first stage, SSI were created using school random effects. Baseline school type is Elementary.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 9:

Notes: Standard errors in parentheses. Models 1-3 use SSI created with all 17 infraction categories in the first stage. Models 4-6 use SSI created with the 7 infraction groups in the first stage. In the first stage, SSI were created using school random effects. Baseline school type is Elementary. Baseline school type is Rich White (<60% FRL,

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$