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An Exploratory Analysis of Primary School Suspension and Expulsion

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An Exploratory Analysis of Primary School Suspension and Expulsion

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By

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Abstract:

This study investigated the variables that might impact primary school in-school suspension (ISS) and out-of-school suspension (OSS) in a rural state in the southern region of the United States. Data for the present study were collected from the state's Department of Education's discipline database. Data was analyzed across three school years using separate multilevel growth modeling approaches: one with ISS rate as the dependent variable and another with OSS rate as the dependent variable. (Raudenbush and Bryk, 2002). Predictors in both models include the percentage of English-language learner students, percentage of low-income students, percentage of students eligible for SPED, the county profile, student population, type of institution (majority White/Black), and gender. Findings suggest that the average ISS rates significantly increased over the three years. Additionally, students who identify as black, male, low-income, English-language learners, and who receive special education are at a higher risk of ISS and OSS.

Keywords: *preschool, primary school, in-school suspension, out-of-school suspension, expulsion*

Introduction:

U.S. preschoolers, or students between the ages of three and five years old, are expelled three times more than the combined number of U.S. students in K-12, according to the Office of Civil Rights (2014). Success in preschool is achieved when students can engage in appropriate behaviors and develop a healthy relationship with their peers and teachers (Rashid, 2009, p. 352). When a student cannot manifest these skills in preschool, they set the precedent for the remainder of their academic experience. Students who have experienced out-of-school suspensions are 10 times more likely to drop out of school and to be incarcerated (Adamu & Hogan, 2015). According to Conners Edge (2018), suspending or expelling preschoolers is a missed opportunity to identify and address the needs of a high-risk group of children (p. 319).

The purpose of this research study was to explore the variables that might impact primary school suspension and expulsion. Research questions addressed in this exploratory analysis were: (1) Does suspension and expulsion vary based upon student demographics, such as county, race, disability, socioeconomic status, and language? (2) What, if any, variables predict suspension and expulsion for young children in a southern state?

Background:

Public schools implemented intense safeguards in the 1990s, like enforcing zero-tolerance discipline policies and security devices on campus. Those safety attempts were more harshly implicated on marginalized populations, specifically, "black boys and other minority, poor, and LGBTQ students who have a significant population in U.S. prisons," (Scott, 2017, p. 43). Researchers suggest a connection between the criminal justice system and America's urban education system. The U.S. is having to pay a high cost for the incarceration of adults who could

have been successful if they had received appropriate behavior-appropriate interventions in school (Comer, 2004, p. 9).

Students with Exceptionalities:

Moody (2016) suggested that all children with attention deficit hyperactivity disorder (ADHD) are more likely to exhibit punishable classroom behavior, such as bullying, aggression, and fights, and that children with ADHD are also more likely to lack impulse control. ADHD impacts their academic performance, handwriting, reading abilities, and even self-esteem. ADHD can be diagnosed as early as preschool, however, there is an underrepresentation of black students with ADHD (Moody, 2016, p. 153). According to Moody (2016), black students face stereotypes that confuse their diagnosis for delinquency, they are less likely to be diagnosed for special education and more likely to be punished at a significantly higher rate and more harshly than white students.

According to a 2001 study, high-income preschools offer more vigorous play and opportunities to engage in physical activity than in low-income schools. (Bailey & Boykin, 2001). Bailey and Boykin (2001) also concluded that black children preferred more movement with their learning, and that boys required more movement in general. According to Rashid (2009), a preschooler–especially one with ADHD– benefits academically when there are higher levels of physical activity in their curriculum. Students in low-income preschools experience lower levels of physical activity, in which 89% of their day is sedentary, 8% is light physical activity, and 3% is vigorous physical activity, (Brown, 2009). Low levels of vigorous physical activity, especially for preschool boys, is linked to higher levels of misbehavior and consequently, higher levels of extreme punishment (Rashid, 2009).

Behavior Interventions

In a 2001 study from Peisner-Feinberg and colleagues, it was determined that the relationship between quality of the preschool experience and the cognitive and socioemotional development of children from four to eight years of age had a strong correlation with the closeness in a student's relationship with teachers and their high-quality classroom practices (p. 1551). In preschools where there is a higher number of non-Caucasian students, a lack of staff motivation to create healthy relationships with their students decreases students' academic, emotional, and social performance later in life (Rashid, 2009). In a classroom study of a low-income school, the teacher reacted poorly to the behavior of the students of color. They were punished instead of being redirected or reengaged. (Barbarin & Crawford, 2006, p. 81).

Additionally, the low-income preschool environments lacked academic readiness in language scores, math scores, positive behavior intervention supports (PBIS), and healthy adult-to-child relationship skills (Rashid, 2009, p. 351). Teachers typically have lower expectations for students who come from low-income backgrounds, are less willing to take responsibility for their learning, have lower expectations for their minority students, and–especially for young black students–teachers are less likely to engage in proactive racial socialization that does not stereotype their students (Rist, 2000).

Method

Data and Sample

The focus of this study was on primary schools in a rural state in the southern region of the United States. Data for the present study were gathered online through the Arkansas Department of Education (ADE) website (https://adedata.arkansas.gov). The website provides information on ISS and OSS suspension rates. There were 81 schools in our sample. We collected annual school-level disciplinary data across three academic years: 2014/2015, 2017/2018, and 2018/2019. These data were retrieved from the website for each school across

the three time points. In addition, we gathered information on the characteristics of the schools, including the district where the schools were located, county name, percentage of low-income students, percentage of students who are English language learners (ELL), the population of students in the school, and percentage of students eligible for special education (SPED).

One of the aims of the current study is to compare ISS and OSS rates between predominantly White and predominantly Black schools. The ADE website contains information on enrollments of students by race. Using the student population across race, we classified the schools as (1) majority White schools and (2) majority Black schools.

Data Analyses

All the analyses for this study were conducted using SAS (version 9.4) software package. Descriptive statistics of ISS and OSS were computed at each time point. In addition, we reported the descriptive statistics of ISS and OSS for each demographic variable that we assessed. Furthermore, we computed the risk rate and risk ratio across different subgroups. Risk rate was computed as the percentage of students from a particular group that experienced a type of suspension (IDEA Data Center, 2014). For example, the risk rate of ISS for children eligible for special education was computed as:

$$Risk\ Rate = \frac{Number\ of\ children\ with\ special\ education\ that\ received\ ISS}{Total\ number\ of\ children\ with\ special\ education}.$$

Risk ratio compares the risk rate of one subgroup to the risk rate of a comparison group (IDEA Data Center, 2014). Risk ratio provides information on how likely one group is to receive suspension compared to the comparison group.

To understand the growth trajectories of different factors on ISS and OSS rates, we analyzed the data using multilevel growth modeling approaches (Raudenbush and Bryk, 2002). Separate models were run: one with ISS rate as the dependent variable and another with OSS rate

as the dependent variable. Predictors in both models include the percentage of ELL students,

percentage of low-income students, percentage of students eligible for SPED, the county profile,

student population, type of institution (majority White/Black), and gender. The state is classified

into red, yellow, and green counties based on life expectancy. Green counties have higher

average life expectancy (76.0-79.0 years) compared to yellow (74-.0-75.9 years) and red (<74.0)

counties (Biddle, 2018).

Results

Descriptive Statistics

The average enrollment of the 81 schools ranged from 385 to 404 students across the

three school years. On average, the percent of students eligible for SPED at the first time point

was 13% and increased to 15% in the third time point. The schools comprised a high percentage

of low-income students. On average, 74% of the students in the schools were students from low-

income households. ELL students made up about 10-11% of the student population, on average.

The percentage of female students in each school across the three years was around 49%, on

average. Furthermore, the average percentage of Black students in each school was around 30%.

Table 1. School-level descriptive statistics

Variables	2014/2015		2017/2018		2018/2019	
	M	*SD*	*M*	*SD*	*M*	*SD*
Total enrollment	385.35	138.37	393.06	144.18	404.08	135.44
Percent of SPED	13.01	4.31	13.86	3.86	15.14	3.85
Percent of low-income	74.20	19.31	73.30	17.88	73.76	18.63
Percent of ELL	10.76	15.91	9.59	13.53	10.52	13.60
Percent of female	48.55	4.28	48.70	3.91	48.38	3.02
Percent of black	30.28	30.86	30.57	29.81	29.61	30.12

In-School Suspension and Out-of-School Suspension Rates

Table 2 presents the ISS and OSS rates across the three school years measured in this

study. On average, the OSS rate across the three years remained steady with means of 5.21 (*SD* =

4.91), 5.39 (*SD* = 5.59), and 5.13 (*SD* = 5.65) per 100 students in 2014/2015, 2017/2018, and

2018/2019, respectively. The results of the repeated-measures ANOVA suggest that there was no

significant effect of time on the average OSS per 100 students $F(2, 114) = 0.49, p = 0.6089$.

The average ISS rate in 2014/2015 was about 4 students per 100 students. This increased to

around 6 per 100 students in 2017/2018 and 2018/2019. The ISS rates across the three years

were statistically different, $F(2,112) = 3.56, p = 0.0466$.

Table 2. Summary of in-school and out-of-school suspension rates across school year

School Year	In-school suspension			Out-of-school suspension		
	N	M	SD	N	M	SD
2014/2015	80	3.61	5.29	80	5.21	4.91
2017/2018	81	5.98	8.59	81	5.39	5.59
2018/2019	71	5.45	6.56	71	5.13	5.65

Note. N = number of schools, M = mean, SD = standard deviation

Suspension Rates by Demographic Characteristics

Special Education. The schools in our sample have varying percentages of students

eligible for SPED. To further understand how the suspension rates compare across different

levels of SPED eligible students in the schools, we classified the schools into three groups. The

first group comprised of schools that reported less than 10% of SPED students, while the second

group comprised of schools that reported having between 10% and 15% of SPED students.

Finally, the third group comprised of schools that reported having over 15% of SPED students.

Figure 1 presents the ISS and OSS rates across these three classifications. As shown in Figure 1,

schools with over 15% SPED students had the highest ISS and OSS rates overall. Interestingly,

the ISS for schools with less than 10% SPED students more than tripled between 2014/2015 and

2018/2019 from 2.38 per 100 students in 2014/2015 to 7.5 per 100 students in 2018/2019.
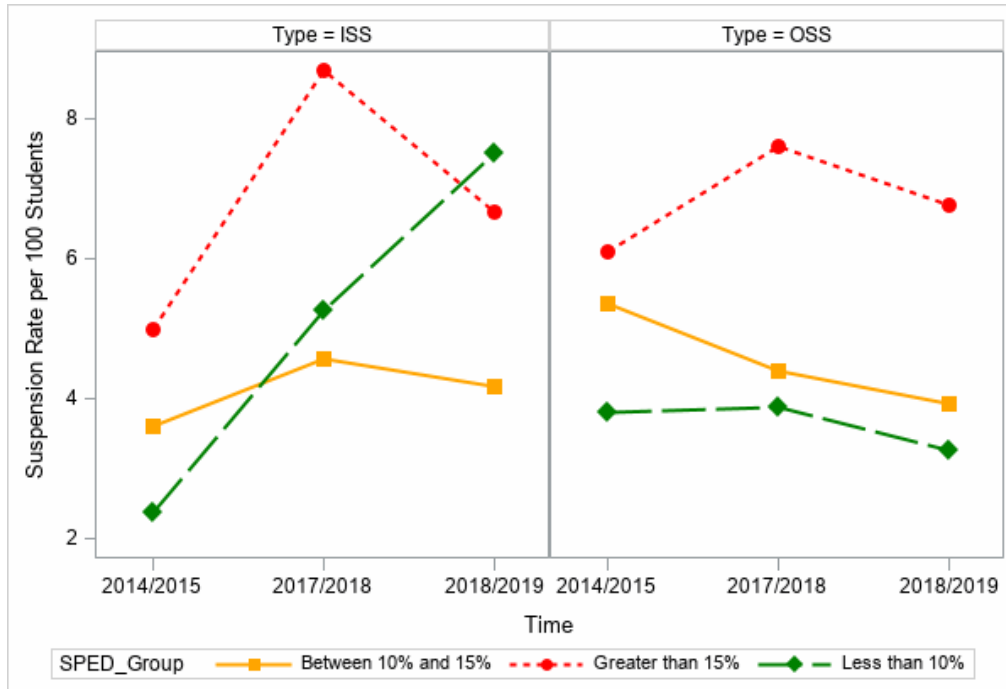
Figure 1. ISS and OSS rates across SPED classifications

Low-Income. Our sample is comprised of schools with high low-income students. We created three categories based on the percentage of low-income students in the schools: (1) schools with less than 50% low-income students; (2) schools with between 50% and 75% low-income students; and (3) schools with more than 75% low-income students. The ISS and OSS rates across these groups are presented in Figure 2. The results show that ISS rates were highest among schools with the highest percentage of low-income students (Group 3), while ISS rates were lowest among schools with the lowest percentage of low-income students (Group 1). We also observed similar trends in the OSS rates, with high low-income schools reporting the most OSS compared to schools with fewer percentages of low-income students.
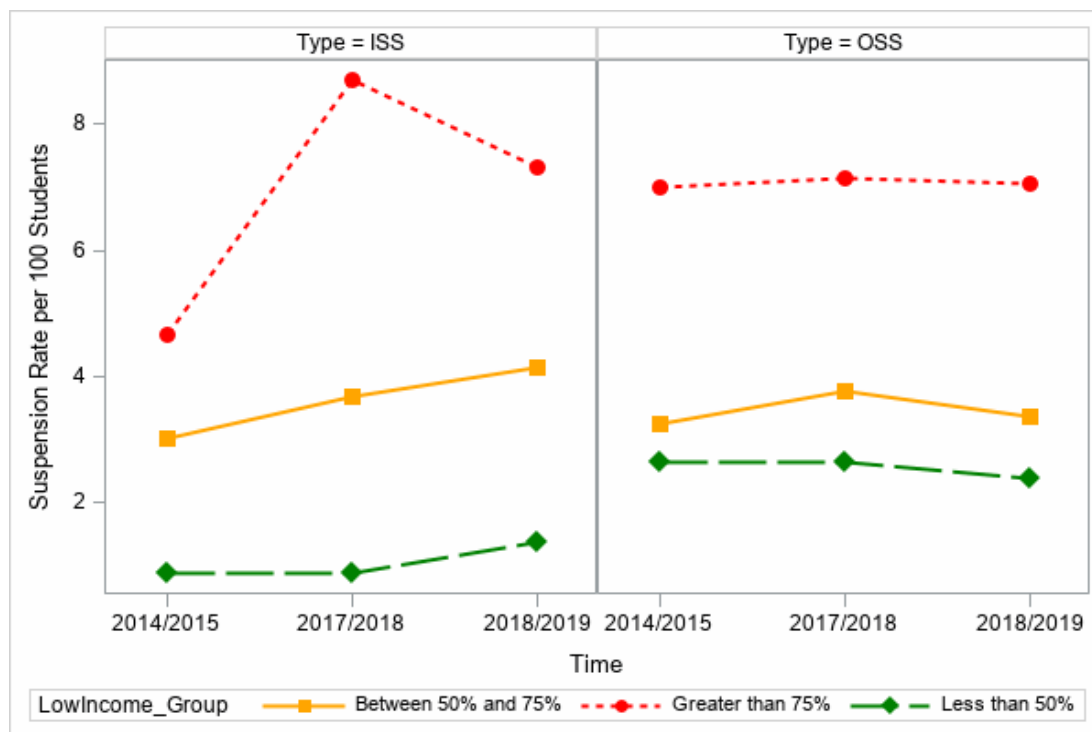
Figure 2. ISS and OSS rates across low-income classifications

English Language Learners. The demographic make-up of students in the schools included ELL students. We explored how suspension rates compare across different percentages of ELL students in the schools. We classified the schools using three groups: (1) schools with less than 5% ELL students; (2) schools with between 5% and 10% ELL students; and (3) schools with more than 10% ELL students. The ISS and OSS rates for the three groups are presented in Figure 3. We observed that the ISS and OSS rates for schools with less than 5% ELL students were highest in 2017/2018. There were no discernable patterns in the ISS and OSS rates of these three groups across the three time points, suggesting that the percentage of ELL students may not be associated with suspension rates.
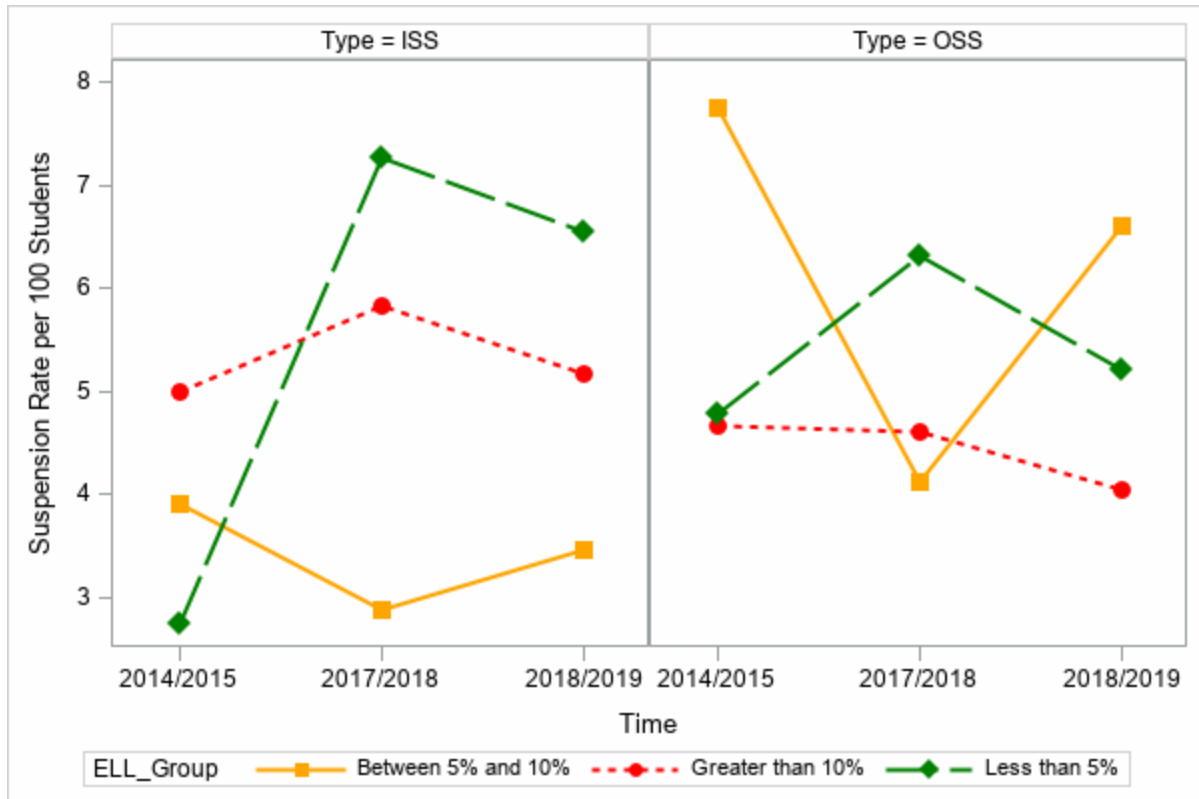
Figure 3. ISS and OSS rates across ELL classifications

County Profile. We further explored the ISS and OSS rates across county profiles. Life expectancy could be seen as an indicator of the total health of a population. The expectation is that wealthy counties are more likely to have a higher life expectancy. Figure 4 illustrates the ISS and OSS rates across the county profiles. ISS rates were highest in red counties. The ISS rate in the red county was as high as 10.40 per 100 students in 2017/2018. This implies that students in red counties were more likely to receive ISS compared to those in green and yellow counties. The OSS suggests that students in green counties were more likely to receive OSS compared to those in yellow and red counties.
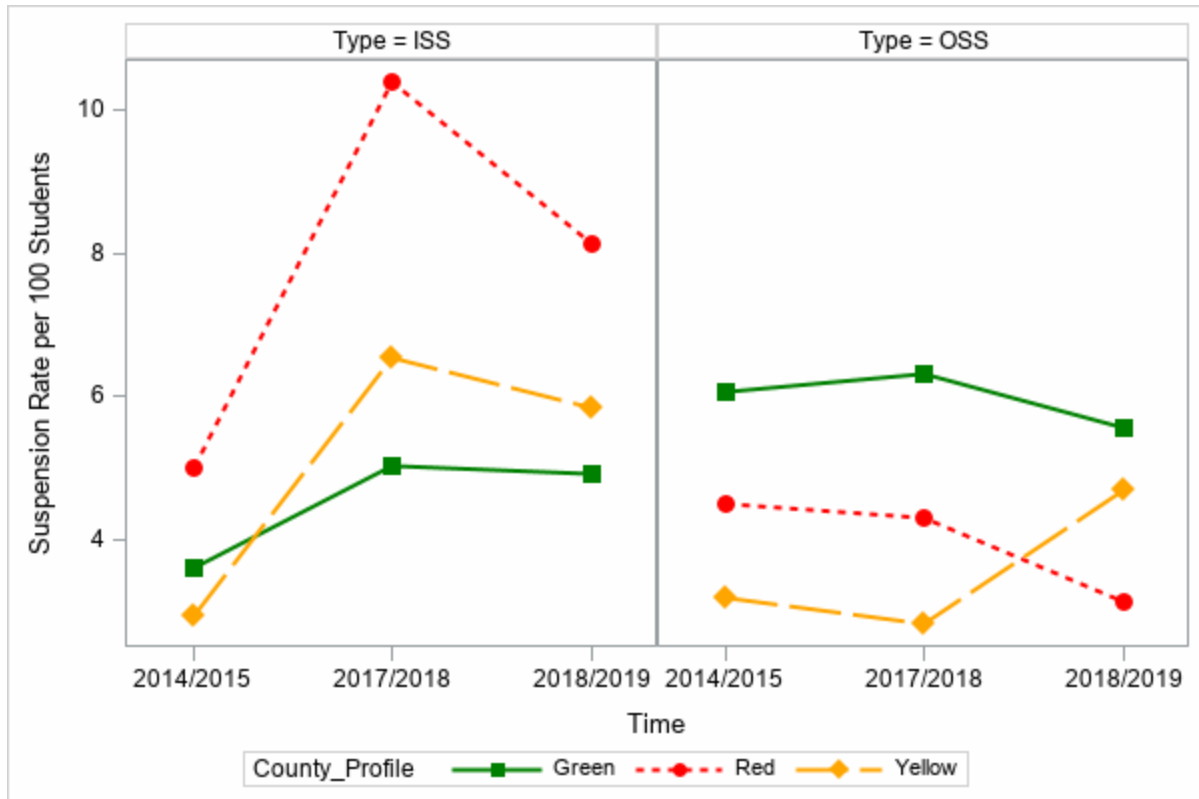
Figure 4. ISS and OSS rates across county profile classifications

School Race Majority. The OSS and ISS rates based on whether the schools were majority White or majority Black schools were examined. Across the three time periods, the average ISS rate was 4.40 per 100 students in majority White schools compared to 4.06 per 100 students in majority Black schools. However, the OSS rate was twice as high in majority Black (6.57 per 100 students) schools compared to majority White schools (3.19 per 100 students), on average. Figure 5 shows the trend between the majority Black and White schools across the three time periods.

Risks of In-School and Out-of-School Suspensions

This study employed risk rate to evaluate whether one group is disproportionately suspended over other groups. Table 3 presents the risk rates across demographic variables combined for all three years.

Race. The risk rates associated with race suggest that the risk for ISS is 5.03% for Black students compared to 1.93% for White students. Similarly, the risk for OSS is 5.35% for Black students in comparison to 1.88% for White students. The results suggest that Black students are more at risk of being suspended compared to their White counterparts. The risk ratios in Table 4 indicate that Black students are 2.61 times and 2.85 times more likely to receive ISS and OSS, respectively than White students.

*Gender***.** The results presented in Table 3 suggest that the risk of receiving ISS is higher for male students (3.01%) than for female students (1.16%). This indicates that male students are 2.59 times more likely to receive ISS compared to female students. Male students were also found to have a higher risk (3.22%) of receiving OSS than female students (1.10%), indicating that male students are 2.93 times more likely to receive OSS than female students.

Special Education. We computed the risk rates for each level of SPED classification. The risk rates across the three groups ranged from 7.48% to 9.14%. The risk of SPED students receiving ISS in schools with less than 10% of students who are eligible for SPED was 9.14% compared to 7.48% and 8.48% in schools with higher percentage of students eligible for SPED. Also, we found that SPED students were at higher risk of being sent home on suspension (12.64%) in schools with fewer SPED students compared to schools with more SPED students. The comparisons between the three groups are presented in Table 4. Overall, the risk ratios suggest that SPED students in schools with higher percentages of students eligible for SPED were less likely to receive ISS and OSS than those in schools with lower percentage of students eligible for SPED.

Low-income. We also assessed whether the percentage of low-income students in the schools was associated with the risk of a low-income student being suspended. The results

suggest that low-income students in schools with more than 75% low-income students were at higher risk of being suspended (ISS=1.77% and OSS=1.83%). It is important to note that the risk rates across the three low-income classifications did not appear to differ by a lot.

English language learner. The risks of receiving ISS and OSS were computed for each level of ELL classification. Overall, the results show that the risk of ELL students being suspended increases as the percentage of ELL students in the school decreases. As shown in Table 3, we found that the risk of ELL students receiving ISS was significantly higher in schools with less than 5% ELL students than when the ELL students were enrolled in schools with more ELL students. For example, ELL students in Group 1 (less than 5%) schools were 4.85 times and 5.47 more likely to receive ISS and OSS, than ELL students in Group 3 (more than 10% ELL students) schools.

Table 3. ISS and OSS risk rates across demographic variables

Variables	Risk Rates (%)	
	ISS	OSS
Race		
Black	5.03	5.35
White	1.93	1.88
Gender		
Female	1.16	1.10
Male	3.01	3.22
Special Education		
Less than 10%	9.14	12.64
Between 10% and 15%	7.48	9.59
Greater than 15%	8.48	8.76
Low-income		
Less than 50%	0.93	1.76
Between 50% and 75%	1.49	1.47
Greater than 75%	1.77	1.83
ELL		
Less than 5%	10.27	8.09
Between 5% and 10%	3.60	4.04
Greater than 10%	2.10	1.48

Note. ISS = in-school suspension; OSS = out-of-school suspension; ELL = English language learner

Table 4. ISS and OSS risk ratios across demographic variables

Variables	Risk Ratio	
	ISS	OSS
Race		
Black vs White	2.61	2.85
Gender		
Male vs Female	2.59	2.93
Special Education		
Group 1 vs. Group 2	1.22	1.32
Group 1 vs. Group 3	1.08	1.44
Group 2 vs. Group 3	0.88	1.09
Low-income		
Group 1 vs. Group 2	0.62	1.20
Group 1 vs. Group 3	0.53	0.96
Group 2 vs. Group 3	0.84	0.80
ELL		
Group 1 vs. Group 2	2.85	2.00
Group 1 vs. Group 3	4.89	5.47
Group 2 vs. Group 3	1.71	2.73

Note. ISS = in-school suspension; OSS = out-of-school suspension; ELL = English language learner; For special education, the classifications are: Group 1 = less than 10%, Group 2 = between 10% and 15%, Group 3 = greater than 15%; for low-income, the classifications are: Group 1 = less than 10%, Group 2 = between 50% and 75%, Group 3 = greater than 75%; For ELL, the classifications are Group 1 = less than 5%, Group 2 = between 5% and 10%, Group 3 = greater than 15%.

Predictors of Suspension Rates

      The results of the growth model are presented in Table 5 for both the ISS model (with

ISS rate as the dependent variable) and the OSS model (with OSS rate as the dependent

variable). In the present model, the percentage of ELL students, percentage of students eligible

for SPED, percentage of SPED students, and student enrollment population were all treated as

continuous predictor variables. The county profile and the majority of the schools in terms of

race and gender were treated as categorical predictor variables.

      The results suggest that percentage of low-income students was the only significant

predictor of ISS. The result suggests that the ISS is expected to increase by 0.14 for each

additional percentage increase in low-income students ($\beta_{low\ income} = 0.14, p < 0.0001$), after controlling for other variables. For example, a 100% increase in low-income students in the schools will results in a predicted ISS of 14 students per 100 students.

As seen for the OSS model in Table 5, the percent of ELL students, percent of low-income students, county profile, student population, and whether or not white students were the majority were all significant predictors of OSS. The results indicate that, after controlling for other variables, schools with predominantly Black students had a statistically significantly higher OSS compared to schools with predominantly White students ($\beta_{Black} = 3.10, p = 0.0002$). After controlling for other variables, the results indicate that each additional percentage increase in low-income students is predicted to result in a 0.06 increase in the OSS ($\beta_{low\ income} = 0.06, p = 0.0084$). Also, we found that the OSS is expected to increase by 0.22 for each additional percentage increase in students eligible for SPED ($\beta_{SPED} = 0.22, p = 0.0093$), after controlling for other effects. The findings also showed that an additional percentage increase in ELL students was associated with a decrease in OSS ($\beta_{ELL} = -0.08, p = 0.0054$).

Interestingly, we found that increasing student enrollment was associated with a decrease in OSS ($\beta_{Pop} = -0.01, p = 0.0155$). After controlling for other variables, the difference in the OSS rates between green and red counties was found to be statistically significant ($\beta_{Green} = 4.16, p = 0.0006$).

Table 5. Factors that predict ISS and OSS among pre-K students

Effect	ISS Model			OSS Model		
	Estimate	SE	p	Estimate	SE	p
Intercept	-7.66	4.08	0.0640	-2.70	2.65	0.3097
Time	0.82	0.41	0.0477	-0.30	0.33	0.3619
Percent of ELL students	-0.05	0.04	0.2438	-0.08	0.03	0.0054
Percent of low-income students	0.14	0.03	<.0001	0.06	0.02	0.0084
Percent of SPED students	0.13	0.12	0.3026	0.22	0.08	0.0093
County profile						

Green	-1.77	1.97	0.3694	4.16	1.19	0.0006
Yellow	-2.79	2.16	0.1989	1.83	1.29	0.1595
Student population	0.01	0.00	0.1887	-0.01	0.00	0.0155
Majority (Black/White)						
Black majority	-2.19	1.24	0.0801	3.10	0.82	0.0002
Majority (Female/Male)						
Female majority	-0.98	0.87	0.2604	-0.38	0.64	0.5512

Discussion

The purpose of this study was to explore the variables the might impact ISS and OSS rates of primary students in a southern state. We suspected that rates vary based upon student demographics, such as county profile, race, disability, socioeconomic status, and language, where students from marginalized populations would face higher rates of suspension and expulsion. The findings of this study suggest that the average ISS rates significantly increased over the three years. The average OSS rates were roughly the same across the three years. The findings are discussed across the research questions guiding the exploratory analysis.

First, out-of-school and in-school suspension rates across demographic characteristics were analyzed. Students in red counties (life expectancy <74.0) were more likely to receive ISS compared to those in green (life expectancy 76.0-79.0) and yellow counties (life expectancy 74.0-75.9) (Biddle, 2018). The OSS suggests that students in green counties were more likely to receive OSS compared to those in yellow and red counties. The ISS rates were slightly higher for black-student majority schools than white-majority schools, but the OSS rate was twice as high in schools with a black-student majority compared to a white-student majority. Schools with over 15% SPED students had the highest ISS and OSS rates overall. The ISS rates tripled for the schools with less than 10% SPED students over the three years, surpassing the rate of schools with over 15%. OSS and ISS rates were highest among schools with more than 75% of low-income students, and lowest for schools with less than 50% of low-income students. There were no discernable patterns in the ISS and OSS rates of these three groups across the three time

points, suggesting that the percentage of ELL students may not be associated with ISS or OSS rates.

Second, variables predicting suspension of young children were investigated. The findings indicate that schools with higher percentages of students served under special education and low-income students. Black students are at a higher risk of being suspended compared to white students; and male students are at a higher risk of being suspended than female students. The percent of low-income students in a school was the only significant predictor of ISS, whereas the population of low-income students increases, the amount of ISS increases. The percent of ELL students, percent of low-income students, county profile, student population, and whether white students were the majority were all significant predictors of OSS. English-language learners are at a higher risk of being suspended as the population of English-language learners in the school decreases. Based on the data, the following was determined about the relationship between student demographics and suspension risk factors: black students are at a higher risk than white students; male students are at a higher risk than female students; English-language learners are at a higher risk than a fluent English-speakers; students with low-income backgrounds are at a higher risk than affluent students; and students who receive special education services are at a higher risk than students who do not.

Implications & Future Research

The results from this study suggest there are certain demographics that are at a higher risk of primary school suspension than others in this southern state. This correlates with the research that suggests the underlying truth behind a very close connection between the criminal justice system and America's urban education system is the result of a system that targets specific demographics: the country's poor, uneducated, and minority groups (Meiners, 2011). Based on

the findings, identifying the variables that influence higher rates of ISS and OSS–like race, gender, socioeconomic status, language, and county profile–is significant in developing unbiased intervention strategies for primary school settings. Rashid (2009) noted that in the critical age of preschool, where children are experiencing the "most cognitive, social, and emotional growth," excessive punishment sets students up for failure (p. 349). Thus, identifying these variables can help educators better-understand the development of interventions to model better classroom settings and develop successful outcomes for all students.

Limitations

Expulsion data was considered to support this study, but the data from this southern state did not reveal significant expulsion rates that could be compared in this study. The intention of this study was to analyze preschool suspension and expulsion rates. However, the study's data sample only includes the public schools that contained a preschool during each school year. This study did not include data from private preschools, nor did it isolate the data by grade level.

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