Exploring Disproportionate Discipline for Latinx Students With and Without Disabilities: A National Analysis

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Abstract

The Latinx population is the largest group of racially and ethnically diverse students in the United States. Although disproportionality in school discipline has been documented for Latinx students, findings related to such disparities have been inconsistent. We examined disciplinary exclusion practices involving students with and without disabilities who are Latinx across the United States using risk ratios (RR) and weighted mixed-effect models. We leveraged data from the Civil Rights Data Collection (CRDC) data set for the 2015 to 2016 academic school year, which included data from more than 94,000 schools. The CRDC is collected by the U.S. Department of Education's Office of Civil Rights every 2 years. All U.S. public schools are required to submit data to the CRDC. Results suggest that Latinx students with and without disabilities were statistically significantly more likely to receive exclusionary discipline than White students, but less likely than Black students. Implications for research and practice are provided.

Keywords

Latinx, special education, discipline, exclusion

Exclusionary discipline has been a persistent concern, particularly as it disproportionally affects racially and ethnically diverse students (Edelman et al., 1975; U.S. Department of Education [USDOE], Office for Civil Rights [OCR], & The U.S. Department of Justice, Civil Rights Division, 2014). In the 2015 to 2016 school year, 2.8 million students across the United States were suspended at least once (USDOE, 2018). Exclusionary discipline is linked to a higher likelihood of negative outcomes, including academic failure, grade retention, school dropout, and involvement in the juvenile justice system (American Academy of Pediatrics & Council on School Health, 2013). Regarding grade retention and dropping out, for example, students in Grades 7 to 12 who had one or more disciplinary exclusion were twice as likely to be retained (Fabelo et al., 2011; Marchbanks et al., 2015); students with a prior suspension were 68% more likely to drop out of school (Suh et al., 2007). Regarding juvenile justice involvement, 61% of incarcerated youth reported being expelled or suspended from school the year prior to entering the juvenile system (Fabelo et al., 2011; Sedlak & McPherson, 2010). These poor school outcomes and potential juvenile justice involvement carry severe financial implications. A study of a single grade cohort of California youth estimated that students who dropped out of high school because of suspensions would result in

about US$2.7 billion in costs for the state, stemming from lost wages and tax revenue, increased crime, and higher welfare and health costs (Rumberger & Losen, 2017). Given these challenges associated with exclusionary discipline and the disproportionate involvement of specific racially and ethnically diverse students and consequently the potential for civil rights violations, there is an urgency to expand preventive measures that emphasize safe environments and improved school climate (USDOE, 2014; USDOE, OCR, & the U.S. Department of Justice, Civil Rights Division, 2014), multitier systems of support such as School-wide Positive Behavioral Interventions and Supports (SWPBIS; Bradshaw et al., 2010), and culturally sensitive practices (Whitford et al., 2016) to ameliorate the problem.

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Disciplinary Exclusion for Racially and Ethnically Diverse Students

Specific racially and ethnically diverse groups are more likely to be subjected to exclusions for infractions than their White peers who commit similar violations (Bal, 2016; Losen & Gillespie, 2012; Skiba, Arredondo, & Rausch, 2014; Whitford et al., 2016). Indeed, race and ethnicity have been reported as the single most predictive characteristics for likelihood of school discipline (Finn & Servoss, 2014; Skiba, Arredondo, & Rausch, 2014; Skiba et al., 2011). The most notably overrepresented students are Black (Gage et al., 2019; Skiba et al., 2014) and American Indian students (Brown & DiTillio, 2013; Whitford et al., 2019; Whitford & Levine-Donnerstein, 2014). In contrast, White and Asian Americans are underrepresented in exclusionary discipline (Peguero et al., 2015).

Another group with increased risk for disciplinary exclusion is students with disabilities (Vincent et al., 2012). For example, although students with disabilities represented approximately 12% of all public school students, they accounted for 25.2% of out-of-school suspensions (OSSs) and 24.1% of expulsions (U.S. Government Accountability Office [USGAO], 2018). Black students with disabilities, although representing about 19% of all K–12 students with disabilities, accounted for about 36% of students with disabilities suspended in 2013 to 2014 (USGAO, 2018). Research has also examined differences by specific disability categories and disciplinary exclusion. For example, Sullivan et al. (2014) examined predictors of suspension for students with disabilities and found that students with emotional or behavioral disorders (EBDs) were nine times more likely to receive at least one suspension compared with a student receiving special education services for speech-language impairment. Fabelo and colleagues (2011) used data from Texas and found that 74.6% of students with disabilities received at least one suspension or expulsion between 7th and 12th grade, compared with 54.7% of students without disabilities. Perhaps more concerning, 90.2% of the students with EBDs received at least one suspension or expulsion, compared with 76.2% of students with learning disabilities, and 37.0% of students with other disabilities (e.g., autism, cognitive impairment). Furthermore, almost half of the students with EBDs were suspended 11 times or more.

Disciplinary Exclusion for Latinx Students

Findings regarding rates of disciplinary exclusion for Latinx (Note 1) students (26% of total enrollment in U.S. public schools, up from 16% in 2000–2001; U.S. Department of Education, 2018) have been mixed (Arcia, 2006; Gordon et al., 2000; Krezmien et al., 2006; Peguero et al., 2015; Skiba et al., 2011). For example, Cornell

et al. (2018) analyzed exclusionary discipline rates for students in the state of Virginia and found that Latinx students were twice as likely to experience exclusionary discipline than their White peers. Findings of student-level data in a diverse school district in California echoed these findings—Latinx students were twice as likely to be suspended or expelled than their White peers (Cruz & Rodl, 2018), while Brown and DiTillio (2013) found that Latinx students in Arizona have been disciplined at rates considered proportional to White peers. Similarly, an examination of disciplinary rates for students in Denver Public Schools found no significant differences between Latinx students and their White counterparts (Gregory et al., 2018).

Results have also been mixed at the national level. Skiba et al. (2011) examined data from more than 400 schools across the United States, and found significant underrepresentation of Latinx students in exclusionary discipline at the elementary level, but significant overrepresentation at the middle school level. Finn and Servoss (2014) used nationally representative data from the Education Longitudinal Study of 2002 and found that Latinx students were one and a half times more likely than their White peers to be suspended for comparable infractions. Losen et al. (2015) used data from the 2011 to 2012 CRDC and found that Black males have the highest risk for suspension (33.8%), followed by Latinx males (23.2%). Most recently, Gage et al. (2019) examined disproportionate disciplinary exclusion for Black and Latinx students with and without disabilities using the 2015 to 2016 CRDC. The authors found that Black students with and without disabilities were significantly more likely to receive disciplinary exclusion than Latinx students. Similarly, Whitford et al. (2019) examined disproportionate discipline for Native American and Latinx students using the same data and similar procedures, finding that Native American students were also significantly more likely to receive disciplinary exclusion. It is worth noting that Latinx students were (a) not the primary reference group in those studies and (b) not compared with White students.

Purpose

Given the persistent concern over exclusionary discipline, particularly in light of associated detrimental effects and the disproportionate rates of specific racially and ethnically diverse groups and the mixed research outcomes on Latinx students, the purpose of this study was to examine disciplinary exclusion practices involving students with and without disabilities who are Latinx across the United States. Indeed, the use of comprehensive national data collected by the OCR across 94,781 schools in 17,317 school districts, in all 50 states and the District of Columbia, will allow for clarity on the representation of Latinxs in disciplinary exclusion. The

study is conceptually and statistically similar to previous studies examining disproportionate discipline for Black and Native American students (Gage et al., 2019; Whitford et al., 2019), but focuses exclusively on Latinx students compared with White and Black students, estimating disproportionality statistics for unique comparisons not previously examined. Specifically, our research questions are as follows:

Research Question 1 (RQ1): At what rates have Latinx students with and without disabilities received disciplinary exclusion?

Research Question 2 (RQ2): Do Latinx students with and without disabilities receive disproportionate disciplinary exclusion compared with White and Black students?

Method

Sample

For this study, we used school discipline data from the USDOE's CRDC for the 2015 to 2016 school year. The U.S. OCR requires that all public schools to complete the CRDC survey. The survey includes a broad array of discipline-related data, including disciplinary exclusion, disaggregated by disability status and race/ethnicity. The 2015 to 2016 CRDC includes data from 94,781 schools located within 17,317 school districts from all 50 states and the District of Columbia. The majority of schools included elementary-age students (60%), followed by middle grade students (e.g., 6–8, 32%) and high school students (27%; Note 2). A small percentage of schools were considered charter schools (7%), magnet schools (4%), alternative schools (3%), special education–focused schools (2%), or juvenile justice schools (1%). The average enrollment for Latinx students was 22.5%, while average enrollment for Black and White students was 15.4% and 52.6%, respectively. The average enrollment for Latinx students with disabilities was 2.6%, while the average enrollment for Black and White students with disabilities was 2.4% and 7.3%, respectively. The distribution by gender was practically equivalent, with males representing 51% of the students. With regard to special education and limited English proficiency (LEP) services, 12% of students received special education and 10% received LEP services. No information was available for specific special education disability categories (e.g., emotional disturbance).

Measures

Disciplinary exclusion

In-school suspension (ISS). The CRDC includes school-level counts for the number of students who received an ISS disaggregated by disability status and race/ethnicity. OCR defines an ISS as

An instance in which a child is temporarily removed from his or her regular classroom(s) for at least half a day for disciplinary purposes, but remains under the direct supervision of school personnel. Direct supervision means school personnel are physically in the same location as students under their supervision. (USDOE, OCR, 2019, p. 12)

OSS. The OCR data included counts of OSSs for each school disaggregated by disability status and race/ethnicity. The OCR defined an OSS differently for students with and without disabilities.

- For students with disabilities served under the Individuals with Disabilities Education Improvement Act (IDEA): OSS is an instance in which a child is temporarily removed from his or her regular school for at least half a day for disciplinary purposes to another setting (e.g., home, behavior center)
- For students without disabilities: OSS is an instance in which a child is temporarily removed from his or her regular school for at least half a day (but less than the remainder of the school year) for disciplinary purposes to another setting (e.g., home, behavior center; USDOE, OCR, 2019, p. 16)

The CRDC included the number of students who received only one OSS and the number of students who received more than one OSS. We summed these two categories together for a total number of students who received one or more OSS for a school and for each of the subgroups of interest (disability and race/ethnicity).

Expulsions. The OCR data included the counts of student expulsions for each school disaggregated by disability status and race/ethnicity. The OCR included three different types of expulsions: (a) expulsion under zero-tolerance policies, (b) expulsion with educational services, and (c) *expulsion without educational services* (USDOE, OCR, 2019, pp. 9–10).

Due to the infrequent use of expulsions, we summed all the three types together.

Covariates. We included school-, district-, and state-level covariates. At the school level, we included the school grade level (i.e., elementary, middle, high, and other) and the type of school (i.e., traditional public school, juvenile justice center, alternative school, magnet school, or public charter school). We also included the percentage of male students; students identified as Asian, Black, Hawaiian/Pacific Islander, Latinx, Native American, and White; students receiving LEP; and students receiving special education services at all three levels (i.e., in a school, in a district, and in a state). To control for potential regional effects, we categorized each school into one of the nine census-defined U.S. regions (USDOE, 2018). After centering, which is

Table 1. Model Covariates.

School level	District level	State level
School level: Elementary	District enrollment: % Black	State enrollment: % White
School level: Middle	District enrollment: % White	State enrollment: % Native American
School level High	District enrollment: % Native American	State enrollment: % Latinx
School type: Special education	District enrollment: % Latinx	State enrollment: % Asian
School type: Magnet	District enrollment: % Asian	State enrollment: % Hawaiian/Pacific Islander
School type: Charter	District enrollment: % Hawaiian/Pacific Islander	State enrollment: % Two or more races
School type: Alternative	District enrollment: % Two or more races	State enrollment: % Male
School type: Juvenile justice	District enrollment: % Male	State enrollment: % LEP
Enrollment: % Latinx	District enrollment: % LEP	State enrollment: % Special education
Enrollment: % Native American	District enrollment: % Special education	East South Central
Enrollment: % Asian		Pacific
Enrollment: % Hawaiian/Pacific Islander		Mountain
Enrollment: % Black		West South Central
Enrollment: % White		New England
Enrollment: % Two or more races		South Atlantic
Enrollment: % Male		East North Central
Enrollment: % LEP		West North Central
Enrollment: % Special education		Middle Atlantic

Note. All categorical variables were dummy coded and dichotomous. All enrollment values were the percentage of students within schools. LEP = limited English proficiency.

described below, we included a total of 49 covariates (see Table 1).

Data Analysis

Disproportionality. We calculated risk ratios (RR) for every school as the indicator of disproportionality of disciplinary exclusion for Latinx students with and without a disability compared with White and Black students with and without a disability. A RR is calculated using a 2 × 2 table. For example, the calculation for a RR for OSS between Latinx and White students was performed by following procedures outlined by Borenstein et al. (2009):

$$RR = \frac{\left(\dfrac{\#\,of\,Hispanic\,students\,with\,OSS}{Total\,\#\,of\,Hispanic\,students} \right)}{\left(\dfrac{\#\,of\,White\,students\,with\,OSS}{Total\,\#\,of\,White\,students} \right)}.$$

The RR has an approximate variance of:

$$V_{LogRiskRatio} = \frac{1}{\#\,of\,Hispanic\,students\,with\,OSS} - \frac{1}{Total\,\#\,of\,Hispanic\,students} + \frac{1}{\#\,of\,White\,students\,with\,OSS} - \frac{1}{Total\,\#\,of\,White\,students}.$$

The variance is computed using the log of a RR. In fact, all models (described below) were estimated using log(RR) because the log RR's sampling distribution is approximately normal (Borenstein et al., 2009), and thus are used in all modeling and then converted to *RR*. We calculated RR for each of the outcomes (i.e., ISS, one OSS, more than one OSS, one or more OSS, and expulsion) for Latinx students compared with White and Black students with and without disabilities. Log RR and their respective variances were calculated in the *metafor* package in R (Viechtbauer, 2010) and then converted to RR in Excel. We calculated RR comparing Latinx students with White and Black students based on prior research identifying unique differences among each of the ethnicity groups (Gage et al., 2019).

For reference, a RR of 1.0 indicates that Latinx students are no more or less likely than students from the comparison racial/ethnic groups to experience the disciplinary outcome. A RR of 2.0 would indicate that Latinx students are twice as likely as the comparison group to experience the disciplinary outcome. A RR of 0.5 would indicate that Latinx students are half as likely as the comparison group to experience the disciplinary outcome.

Weighted mixed-effect models. We estimated a series of three-level weighted mixed-effect, or multilevel, models. The goal of the models is to identify a covariate-adjusted mean RR for Latinx students with and without disabilities relative to the two other ethnic groups, and identify school, district, and state predictors of school-level RR.

Table 2. Percentage of Students With and Without IEPs Receiving Disciplinary exclusion.

Ethnic group	IEP status	ISS (%)	1 OSS (%)	>1 OSS (%)	All OSS (%)	Expulsion (%)
Latinx						
	No IEP ([a]n = 136.8)	4.0	2.3	1.1	3.4	0.2
	IEP (n = 15.7)	7.8	5.5	3.9	9.3	0.5
White						
	No IEP (n = 259.2)	3.3	1.7	0.8	2.5	0.2
	IEP (n = 32.6)	7.8	4.9	3.6	8.5	0.4
Black						
	No IEP (n = 81.9)	9.0	6.1	4.3	10.4	0.4
	IEP (n = 11.7)	16.1	11.7	11.3	23.0	1.0

Note. The average number of schools reporting data across disciplinary exclusion outcomes was 94,414 schools. ISS = in-school suspension; OSS = out-of-school suspension; IEPs = Individualized Education Programs.
[a]This is the average within-school sample size.

Centering covariates. As we were interested in identifying a covariate-adjusted RR, we centered all the covariates so that zero represented the grand mean at the school, district, and state level. By centering all covariates, the intercept became the average RR at the mean (0) of all covariates. At the school level, all covariates, including dichotomous variables, were grand mean centered. To do this, we converted all categorical variables to dichotomous variables and centered them. For example, each school level (e.g., high school) became a single, unique covariate. For the district and state levels, we used the average of the total number of students in each descriptive category (e.g., Latinx students) within each cluster and then used grand mean centering of the cluster-level totals so that zero represents the average district- and state-level characteristic. The centering approach is recommended for interpreting the coefficients and does not appear to affect multicollinearity concerns in mixed-effect models (Brauer & Curtin, 2018; Gelman & Hill, 2007; McClelland et al., 2017).

Mixed-effect models. Next, we estimated three three-level models with school-level RR nested in districts and states. This approach replicates prior disproportionality studies (Gage et al., 2019; Whitford et al., 2019), but estimated the effects with covariates as proportions and previously unexplored RR. First, we estimated an empty model with no predictors to estimate the variance components at each level and calculated the intraclass correlation coefficient (ICC). Next, we calculated a school-level covariate-only model, followed by a full model with covariates at the school, district, and state levels. The school-level and full models were compared using a log-likelihood test to determine whether the addition of district- and state-level covariates improved the models. The full models were estimated as follows:

$$y_{ijt} = \gamma_0 + \sum_{c=1}^{49} \gamma_c Z_{cijt} + u_{0j} + u_{0t} + \varepsilon_{ijt},$$

$$\varepsilon_{ijt} \sim N\left(0, \sigma^2\right),$$

$$u_{0j} \sim N\left(0, \tau\right), u_{0t},$$

where y_{ijt} was RR for school i, in district j, in state t, and γ_0 was the intercept, representing the covariate-adjusted average RR. Each model included 49 covariates that were represented in the model above by Z_{cijt}, which were related to the outcome through the γ_c coefficients (see Table 1). The model had two random effects: u_{0j} was the random intercept of district j with variance τ, u_{0t} was the random intercept for state t, and ε_{ijt} was an individual-level residual with variance σ^2. We also included a school-level sampling weight using the inverse of the $V_{LogRiskRatio}$ (Borenstein et al., 2009) to adjust the model estimates for the number of Latinx and comparison racial/ethnic group students in each school. We used this modeling approach so that schools with fewer Latinx students had less influence, or weight, on the model parameters than schools with larger populations of Latinx students. All weighted mixed-effect models were estimated using restricted maximum likelihood (REML) and were conducted in *lmer4* (Bates et al., 2015) in R (R Core Team, 2016).

Results

Descriptive Statistics

Table 2 provides description statistics for the disciplinary exclusion by disability status and race/ethnicity (see Table 2). Approximately 6.8% of Latinx students received a suspension (ISS and OSS combined), compared with 6.2% for White students and 12.4% for Black students. Approximately 14.8% of Latinx students with disabilities received a suspension, compared with 13.4% for White students with

Table 3. Weighted Mixed-Effect Model-Based Covariate-Adjusted Mean RR for Latinx Students With and Without Disabilities Compared With White and Black Students Across Disciplinary Exclusion Outcomes.

| | Without disabilities | | | | With disabilities | | | |
| | Latinx and White | | Latinx and Black | | Latinx and White | | Latinx and Black | |
Exclusion	Adjusted	Raw	Adjusted	Raw	Adjusted	Raw	Adjusted	Raw
ISS[a]								
RR	1.54	1.72	0.45	0.46	1.69	1.91	0.65	0.46
SE	0.06		0.05		0.03		0.04	
1 OSS[a]								
RR	1.75	1.83	0.46	0.43	1.89	2.01	0.67	0.43
SE	0.05		0.06		0.03		0.04	
>1 OSS[a]								
RR	2.02	2.13	0.40	0.39	2.00	2.15	0.62	0.39
SE	0.05		0.06		0.03		0.04	
All OSS[a]								
RR	1.63	1.70	0.44	0.41	1.67	1.78	0.64	0.41
SE	0.05		0.05		0.02		0.03	
Expulsion[a]								
RR	2.57	2.67	0.48	0.48	2.76	2.81	0.70	0.48
SE	0.06		0.07		0.05		0.04	

Note. Adjusted RR were estimated from the weighted mixed-effect models. Raw RR were the unweighted average RR. ISS = in-school suspension; OSS = out-of-school suspension.
[a]All RR statistically significant at $p < .001$.

disabilities and 34.7% for Black students with disabilities. Expulsion was a very rare occurrence, with less than 1% of students receiving an expulsion across all racial/ethnic groups, except Black students with disabilities, with exactly 1% receiving an expulsion.

Weighted Mixed-Effect Models

Three weighted mixed-effect models were estimated for all comparisons, an empty model to calculate ICC, a model of only school-level covariates, and a full model with 49 school-, district-, and state-level covariates. Overall, we estimated 60 three-level mixed-effect models (see Supplemental Tables for full model results). First, we examined the ICC to examine how much of the variance was attributable to the school, district, and state levels. The average ICC at the district level was .24, suggesting that 24% of the variance in RR was attributable to districts. The largest district-level ICC (.38) was in the expulsion model for Latinx and White students with disabilities, whereas the smallest district-level ICC (.10) was in the all OSS model for Black and Latinx students with disabilities. The average ICC at the state level was .27, suggesting that 27% of the variance in RR was attributable to states. The largest state-level ICC (.52) was in the expulsion model for Black and Latinx students, whereas the smallest state-level ICC (.13) was in the all OSS model for Black and Latinx students.

Log-likelihood statistics between the school-level covariate model and school-, district-, and state-level covariate models suggested that the full models fit best for all outcomes. Furthermore, most school-level predictors were statistically significantly ($p < .001$) associated with RR, whereas few district- and state-level predictors were significantly associated. Furthermore, the RR tended to be significantly higher in elementary schools.

Table 3 presents the covariate adjusted, weighted RR from the full models (i.e., estimate controlling for all 49 covariates) and the raw mean RR (unadjusted). All covariates were grand mean centered so that the intercept in the model was the average RR in the average school, district, and state. Results suggest that Latinx students with and without disabilities disproportionately receive statistically significantly more disciplinary exclusion than White students. The largest RR were for expulsions (~2.6) and OSS (~2.0). When compared with Black students though, Latinx students receive statistically significantly fewer disciplinary exclusions.

As a robustness check on the significant results, we reestimated all models comparing Latinx students with White students, but subtracted 1 from the RR so that 0 represented no disproportionality to confirm that the intercept was not 0. The intercept in all models remained statistically significant and greater than 0, supporting the adjusted RR findings.

It is worth noting that for all RR comparing Latinx with White students, the adjusted RR were consistently smaller than the raw RR. The largest difference was for the RR for Latinx and White students with disabilities on ISS. The RR decreased by 0.22 points. The adjusted RR for Latinx and Black students increased, or moved closer to 0, suggesting less disproportionate discipline. The largest difference was for the RR for Latinx and Black students with disabilities and one OSS. The RR increased by 0.24 points.

Discussion

This study examined nearly 95,000 schools with a focus on disciplinary exclusion of Latinx students. Overall, we found that Latinx students with and without disabilities received statistically significantly more disciplinary exclusion than White students. The RR suggest that Latinx students are, on average, twice as likely to receive a disciplinary exclusion than a White student. When comparing Latinx and Black students, we found the opposite. Black students appear to receive disproportionately more disciplinary exclusion, including ISS and OSS, than Latinx students, replicating the results found by Gage et al. (2019).

Research suggests that racially and ethnically diverse students, including Latinx and Black students, are more likely to be subjected to disciplinary exclusion than their White peers who commit similar violations (e.g., Bal, 2016; Losen & Gillespie, 2012). As noted though, prior research has been mixed for Latinx students when compared with White students. For example, studies in Arizona and Denver Public Schools found no significant differences between Latinx and White students and their White counterparts (Brown & DiTillio, 2013; Gregory et al., 2018), whereas prior studies including more states have found evidence of disproportionality (e.g., Finn & Servoss, 2014).

Unlike those prior studies, we were able to leverage more up-to-date national data and, importantly, adjust the RR for many of the potential confounds in the literature, including the noted differences between elementary and middle school Latinx students (Skiba et al., 2011). Based on our results, Latinx students receive significantly more disciplinary exclusion than White students, and that those differences are consistent and robust for students with and without disabilities, even with the addition of a number of covariates. These findings are important as they highlight concerns about potential bias in the use of disciplinary exclusion for racially and ethnically diverse students. Much research has focused on concerns about biases toward Black students (Welsh & Little, 2018), but little has focused on discipline biases for Latinx students.

When comparing Latinx and Black students, a clear pattern emerges. Black students receive significantly more disciplinary exclusion than Latinx students. This finding is consistent with and replicates prior research (e.g., Gage et al., 2019) and highlights the need to compare individual ethnicity groups among each other when possible. Certainly, evidence supports that racially and ethnically diverse students receive more negative feedback (Scott et al., 2019) and discipline than their White peers, but there also appears to be important differences between racially and ethnically diverse groups. We will not attempt to hypothesize why Latinx students receive fewer exclusions than Black students here, but we see the findings as an important area for future research.

With regard to Latinx students with disabilities, the results were consistent with those found for students without disabilities, but clearer. Latinx students with disabilities are two times more likely to receive a suspension than White students with disabilities and almost three times more likely to be expelled. Given the noted underrepresentation of Latinx students receiving Individualized Education Program (IEP) services for EBDs (Gage et al., 2013), and the evidence suggesting that students with EBDs receive significantly more exclusions than students receiving IEP services for other disabilities, the implications are concerning. More research is needed to understand and address the discrepancy between receipt of IEP services, particularly for EBDs, and disciplinary exclusion for Latinx students.

An additional interesting finding was the differences between the adjusted and raw RR. The purpose of this study was not to make recommendations about adjusted RR, yet the differences that emerged are important and noteworthy. Based on the results, the weighted, covariate-adjusted RR were consistently closer to zero for all students and outcomes. Thus, we believe, and the data appear to support, that the adjusted RR provides a more precise estimate of potential disproportionate discipline. Therefore, we would advocate for all research efforts to evaluate disproportionality of discipline outcomes by student race be weighted and covariate adjusted.

Implications for Practice

Given the deleterious outcomes associated with disciplinary exclusion for all students, efforts are needed to reduce use of exclusions, especially—given our findings—for Latinx students with and without disabilities. Several practices not only have been proven to effectively support students and reduce the reliance on exclusionary disciplinary practices to address problem behavior, but they are also consistent with requirements under the IDEA (2014). Specifically, the IDEA requires that the "IEP team shall in the case of a child whose behavior impedes the child's learning or that of others, consider the use of positive behavioral interventions and supports, and other strategies, to address that behavior"—Section 1414 (d)(3)(B) (i). In such cases, the IEP team must include a statement regarding the particular

device or service—including an intervention, accommodation, or other program modification—to be provided to address the behavior—34 C.F.R. § 300.346(a)(2)(c). The USDOE and the OCR (USDOE, OCR, 2014) recommended several practices to minimize discriminatory discipline, including clear policies and procedures to minimize inequitable consequences, the use of compensatory educational services for those excluded, and an increased focus on reinforcing positive behavior support. Similarly, Peterson (2005) suggested numerous alternatives to exclusionary measures, including problem-solving or contracting, alternative programming, and behavior intervention plans. Finally, the elimination or reduction of zero-tolerance policies, particularly with regard to what constitutes a punishable offense, should be a focus for schools moving forward (Katsiyannis et al., 2017; Losinski et al., 2014). Data suggest zero-tolerance policies increase racial disproportionality (Curran, 2016).

One system-wide approach with evidence of reducing disciplinary exclusion, including for Latinx students (Grasley-Boy et al., 2019), is Positive Behavioral Interventions and Supports (PBIS). PBIS is a proactive approach that is based on a three-tiered public health model that includes school-wide, targeted, and individual support systems (Sugai & Horner, 2009). Long-term outcomes of implementing PBIS in schools include reduction in the need for serious disciplinary measures, such as suspension and expulsion, and improvements in behavioral and academic outcomes for all students, including those students with disabilities (Childs et al., 2016; Lee & Gage, 2020). Incorporating evidence-based practices targeting Latinx students, such as Familias Unidas (Pantin et al., 2009), into PBIS systems may further increase the likelihood of reducing disciplinary exclusion for Latinx students. Furthermore, through PBIS systems, schools can identify vulnerable decision points (Smolkowski et al., 2016), which are specific situations where disproportionality occurs, and target professional development and behavioral interventions to those specific situations.

School-based professionals should also be trained, mentored, and coached on culturally responsive practices, including behavioral assessments and subsequent culturally responsive behavioral interventions and supports (Moreno & Gaytan, 2013). By culturally responsive, we mean "using the cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively" (Gay, 2002, p. 106). Bal (2018) outlined a model for developing culturally responsive PBIS, which is designed to address disproportionate discipline. In addition to implementing long-term culturally responsive professional development for all teachers, school administrators should systematically analyze academic and behavioral data with a particular emphasis on underrepresented groups, including those in special education, hire culturally responsive teachers, and organize regularly scheduled culturally

responsive professional development to improvement student outcomes (Khalifa et al., 2016).

Implications for Further Research

With regard to research, we believe that our findings prompt future research to increase understanding of our findings. First, examining contextual factors and levels of intersectionality may facilitate understanding of the potential biases and/or concerns of disproportionate exclusionary discipline practices for Latinx students with disabilities (Nunez, 2014). For example, studies examining school-level policies and practices, or teacher behaviors that predict increased exclusionary discipline for Latinx students with and without disabilities could provide insight into why these students are more frequently excluded than their White peers. Second, understanding risk and protective factors that predict the likelihood of suspension for Latinx students would assist with understanding potential mechanisms for change. Identifying risk and protective factors could lead to intervention and support approaches that will ultimately result in healthier climates and communities for all students in all schools. Finally, future research should replicate and extend our findings at different levels (e.g., school, district). By doing so, differences by districts or states with more or less Latinx students could emerge, leading to targeted intervention and professional development studies in those identified areas.

Limitations

Although all efforts were made to address conceptual and methodological limitations, a number of limitations necessitate discussion. First, all data originate from the CRDC and cannot be independently verified by the researchers. The data are reported to the OCR by district and state personnel, and the accuracy of the entered data is contingent on accurate local reporting. Second, some outcomes by ethnicity and disability groups have small numbers, which will affect the reliability of the RR estimation. Schools with no data were not included in the models, resulting in different numbers of schools across the different models. However, schools with few exclusions, particularly expulsions, were included. Therefore, expulsion results should be interpreted with caution, given the rare use of expulsions in many schools. Relatedly, we did not include other discipline outcomes, such as school-based arrests, because they are very infrequently reported in the data set. Third, we only examined the number of students who received disciplinary exclusion and not the number of exclusions; therefore, the results may not capture nuances for students with extreme behaviors resulting in repeated disciplinary exclusion. Fourth, all the data and models are correlational; therefore, causality cannot be inferred. Fifth, we only examined differences by race and disability status. We did not examine

differences by gender or by specific disability categories for Latinx students. Finally, we included all available covariates, but there are other, unmeasured school- and district-level characteristics that may influence use of disciplinary exclusion. For example, district policies or initiatives targeting reductions in suspensions would affect the RR, but we are unable to account for such policies in this study. We should note that the CRDC does include an indicator of a school having a school resource officer. However, we excluded this from the analyses because of noted concerns about the accuracy of the indicator (https://ocrdata.ed.gov/Downloads/Data-Notes-2015-16-CRDC.pdf).

Conclusion

The use of exclusionary discipline often fails to provide teachable opportunities, does not generally prevent future problem behavior, and disproportionally affects racially and ethnically diverse students. The results of this study suggest that Latinx students are significantly more likely to receive disciplinary exclusion than their White peers, highlighting the need to find alternatives to discipline exclusions. This is true for students with and without disabilities. Overall, we believe that these results, more than anything, prompt further research into possible reasons for and prevention of disciplinary exclusion of Latinx students.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Supplemental Material

Supplemental material for this article is available on the *Behavioral Disorders* website along with the online version of this article.

Notes

1. *Latinx* is used generally as a gender-neutral term for Latin Americans and includes students identifying as Latino, Latina, and Hispanic (Salinas & Lozano, 2017).

2. Some schools served students in multiple grade spans. For example, some schools served students in 6th to 12th grades, while some served students in K–12th grades.

References

American Academy of Pediatrics & Council on School Health. (2013). Policy statement: Out-of-school suspension and expulsion. *Pediatrics*, *131*, e1000–e1007. https://doi.org/10.1542/peds.2012-3932

Arcia, E. (2006). Achievement and enrollment status of suspended students: Outcomes in a large, multicultural district. *Education and Urban Society*, *38*, 359–369. https://doi.org/10.1177/0013124506286947

Bal, A. (2016). From intervention to innovation: A cultural-historical approach to the racialization of school discipline. *Interchange*, *47*, 409–427. https://doi.org/10.1007/s10780-016-9280-z

Bal, A. (2018). Culturally responsive positive behavioral interventions and supports: A process-oriented framework for systematic transformation. *Review of Education, Pedagogy, and Cultural Studies*, *40*, 144–174. https://doi.org/10.1080/10714413.2017.1417579

Bates, D., Maechler, M., Bolker B., & Walke, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, *67*(1), 1–48. https://doi.org/10.18637/jss.v067.i01

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. John Wiley & Sons.

Bradshaw, C. P., Mitchell, M. M., & Leaf, P. J. (2010). Examining the effects of schoolwide positive behavioral interventions and supports on student outcomes: Results from a randomized controlled effectiveness trial in elementary schools. *Journal of Positive Behavior Interventions*, *12*, 133–148. https://doi.org/10.1177/1098300709334798

Brauer, M., & Curtin, J. J. (2018). Linear mixed-effects models and the analysis of nonindependent data: A unified framework to analyze categorical and continuous independent variables that vary within-subjects and/or within-items. *Psychological Methods*, *23*, 389–411. https://doi.org/10.1037/met0000159

Brown, C. A., & DiTillio, C. (2013). Discipline disproportionality among Hispanic and American Indian students: Expanding the discourse in U.S. research. *Journal of Education and Learning*, *2*, 47–59. https://doi.org/10.5539/jel.v2n4p47

Childs, K. E., Kincaid, D., George, H. P., & Gage, N. A. (2016). The relationship between school-wide implementation of positive behavior intervention and supports and student discipline outcomes. *Journal of Positive Behavior Interventions*, *18*(2), 89–99. https://doi.org/10.1177/1098300715590398

Cornell, D., Maeng, J., Huang, F., Kathan, S., & Konold, T. (2018). Racial/ethnic parity in disciplinary consequences using student threat assessment. *School Psychology Review*, *47*, 183–195. https://doi.org/10.17105/SPR-2017-0030.V47-2

Cruz, R. A., & Rodl, J. E. (2018). Crime and punishment: An examination of school context and student characteristics that predict out-of-school suspension. *Children and Youth Services Review*, *95*, 226–234. https://doi.org/10.1016/j.childyouth.2018.11.007

Curran, F. C. (2016). Estimating the effect of state zero tolerance laws on exclusionary discipline, racial discipline gaps, and student behavior. *Educational Evaluation and Policy Analysis*, *38*, 647–668. https://doi.org/10.1177/0895904817691840

Edelman, M. W., Beck, R., & Smith, P. V. (1975). *School suspensions: Are they helping children?* Children's Defense Fund Washington Research Project.

Fabelo, T., Thompson, M. D., Plotkin, M., Carmichael, D., Marchbanks, M. P., & Booth, E. A. (2011). *Breaking schools' rules: A statewide study of how school discipline relates to students' success and juvenile justice involvement*. Council of State Governments Justice Center.

Finn, J. D., & Servoss, T. J. (2014). Misbehavior, suspensions, and security measures in high school: Racial/ethnic and gender differences. *Journal of Applied Research on Children: Informing Policy for Children at Risk*, *5*, 1–11. http://digitalcommons.library.tmc.edu/childrenatrisk/vol5/iss2/11

Gage, N. A., Gersten, R., Sugai, G., & Newman-Gonchar, R. (2013). Disproportionality of English learners with emotional and/or behavioral disorders: A comparative meta-analysis with English learners with learning disabilities. *Behavioral Disorders*, *38*, 123–136. https://doi.org/10.1177/019874291303800302

Gage, N. A., Whitford, D. K., Katsiyannis, A., Adams, S., & Jasper, A. (2019). National analysis of the disciplinary exclusion of black students with and without disabilities. *Journal of Child and Family Studies*, *28*, 1754–1764. https://doi.org/10.1007/s10826-019-01407-7

Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education*, *53*, 106–116. https://doi.org/10.1177/0022487102053002003

Gelman, A., & Hill, J. (2007). *Data analysis using regression and multilevel/hierarchical models*. Cambridge University Press.

Gordon, R., Piana, L. D., & Keleher, T. (2000). *Facing the consequences: An examination of racial discrimination in U.S. public schools*. Applied Research Center. https://files.eric.ed.gov/fulltext/ED454323.pdf

Grasley-Boy, N. M., Gage, N. A., & Lombardo, M. (2019). Effect of SWPBIS on disciplinary exclusions for students with and without disabilities. *Exceptional Children*, *86*, 25–39. https://doi.org/10.1177/0014402919854196

Gregory, A., Huang, F. L., Yolanda, A., Eldridge, G., & Downing, B. (2018). An examination of restorative interventions and racial equity in out-of-school suspensions. *School Psychology Review*, *47*, 167–182. https://doi.org/10.17105/SPR-2017-0073.V47-2

Individuals with Disabilities Education Improvement Act. 20 U.S.C. § 1400 et seq. (2004).

Katsiyannis, A., Losinski, M., Whitford, D., & Counts, J. (2017). The use of aversives in special education: Legal and practice considerations for school principals. *National Association of Secondary School Principals Bulletin*, *101*, 315–330. https://doi.org/10.1177/0192636517741189

Khalifa, M. A., Gooden, M. A., & Davis, J. E. (2016). Culturally responsive school leadership: A synthesis of the literature. *Review of Educational Research*, *86*, 1272–1311. https://doi.org/10.3102/0034654316630383

Krezmien, M. P., Leone, P. E., & Achilles, G. M. (2006). Suspension, race, and disability: Analysis of statewide practices and reporting. *Journal of Emotional and Behavioral Disorders*, *14*, 217–226. https://doi.org/10.1177/10634266060140040501

Lee, A., & Gage, N. A. (2020). Updating and expanding systematic reviews and meta-analyses on the effects of school-wide positive behavior interventions and supports. *Psychology in the Schools*, *57*(5), 783–804.

Losen, D. J., & Gillespie, J. (2012). *Opportunities suspended: The disparate impact of disciplinary exclusion from school*. The Civil Rights Project. https://www.civilrightsproject.ucla.edu/resources/projects/center-for-civil-rights-remedies/school-to-prison-folder/federal-reports/upcoming-ccrr-research/losen-gillespie-opportunity-suspended-2012.pdf

Losen, D. J., Hodson, C. L., Keith, M. A., Morrison, K., & Belway, S. (2015). *Are we closing the school discipline gap?* The Civil Rights Project. http://escholarship.org/uc/item/2t36g571

Losinski, M., Katsiyannis, A., Ryan, J. B., & Baughan, C. (2014). Weapons in schools and zero tolerance: Implications for special educators. *NASSP Bulletin*, *98*(1), 1–16. https://doi.org/10.1177/0192636514528747

Marchbanks, I. I. I. M. P., Blake, J. J., Booth, E. A., Carmichael, D., Seibert, A. L., & Fabelo, T. (2015). The economic effects of exclusionary discipline on grade retention and high school dropout. In D. J. Losen (Ed.), *Closing the school discipline gap: Equitable remedies for excessive exclusion* (pp. 59–74). Teachers College Press.

McClelland, G. H., Irwin, J. R., Disatnik, D., & Sivan, L. (2017). Multicollinearity is a red herring in the search for moderator variables: A guide to interpreting moderated multiple regression models and a critique of Iacobucci, Schneider, Popovich, and Bakamitsos (2016). *Behavior Research Methods*, *49*, 394–402. https://doi.org/10.3758/s13428-016-0785-2

Moreno, G., & Gaytan, F. X. (2013). Focus on Latino learners: Developing a foundational understanding of Latino cultures to cultivate student success. *Preventing School Failure*, *57*(1), 7–16. https://doi.org/10.1080/1045988X.2013.731271

Nunez, A. (2014). Employing multilevel intersectionality in educational research: Latino identities, contexts, and college access. *Educational Researcher*, *43*, 85–92. https://doi.org/10.3102/0013189X14522320

Pantin, H., Prado, G., Lopez, B., Huang, S., Tapia, M. I., Schwartz, S. J., Sabillon, E., Brown, C. H., & Branchini, J. (2009). A randomized controlled trial of Familias Unidas for Hispanic adolescents with behavior problems. *Psychosomatic Medicine*, *71*, 987–995. https://doi.org/10.1097/PSY.0b013e3181bb2913

Peguero, A. A., Shekerkhar, Z., Pop, A. M., & Koo, D. J. (2015). Pushing the children of immigrants: Race, ethnicity, generational status, student misbehavior and school discipline. *Journal of Immigrant and Refugee Studies*, *13*, 200–220. https://doi.org/10.1080/15562948.2014.951136

Peterson, R. L. (2005). Ten alternatives to suspension. *Impact, Quarterly Publication of the Institute on Community Integration*, *18*, 10–11. https://ici.umn.edu/products/impact/182/over5.html

R Core Team. (2016). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. https://www.r-project.org/

Rumberger, R. W., & Losen, D. J. (2017). *The hidden costs of California's harsh school discipline: And the localized economic benefits from suspending fewer high school students*. The Center for Civil Rights Remedies. https://www.

civilrightsproject.ucla.edu/resources/projects/center-for-civil-rights-remedies/school-to-prison-folder/summary-reports/the-hidden-cost-of-californias-harsh-discipline/CostofSuspensionReportFinal-corrected-030917.pdf

Salinas, C., & Lozano, A. (2019). Mapping and recontextualizing the evolution of the term Latinx: An environmental scanning higher education. *Journal of Latinos and Education*, *18*, 302–315. https://doi.org/10.1080/15348431.2017.1390464

Scott, T. M., Gage, N., Hirn, R., & Han, H. (2019). Teacher and student race as a predictor for negative feedback during instruction. *School Psychology*, *34*, 22–31. http://dx.doi.org/10.1037/spq0000251

Sedlak, A. J., & McPherson, K. (2010). *Survey of youth in residential placement: Youth's needs and services*. Westat.

Skiba, R. J., Arredondo, M. I., & Rausch, M. K. (2014). *New and developing research on disparities in discipline*. http://www.njjn.org/uploads/digital-library/OSF_Discipline-Disparities_Disparity_NewResearch_3.18.14.pdf

Skiba, R. J., Horner, R. H., Chung, C. G., Rausch, M. K., May, S. L., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review*, *40*, 85–107. https://psycnet.apa.org/record/2011-07091-006

Smolkowski, K., Girvan, E. J., Mcintosh, K., Nese, R. N. T., & Horner, R. H. (2016). Vulnerable decision points for disproportionate office discipline referrals: Comparisons of discipline for African American and White elementary school students. *Behavioral Disorders*, *41*, 178–195. https://doi.org/10.17988/bedi-41-04-178-195.1

Sugai, G., & Horner, R. H. (2009). Responsiveness-to-intervention and school-wide positive behavior supports: Integration of multi-tiered systems approaches. *Exceptionality*, *17*, 223–237. https://doi.org/10.1080/09362830903235375

Suh, S., Suh, J., & Houston, I. (2007). Predictors of categorical at-risk high school dropouts. *Journal of Counseling and Development*, *85*, 196–203. https://doi.org/10.1002/j.1556-6678.2007.tb00463.x

Sullivan, A. L., Van Norman, E. R., & Klingbeil, D. A. (2014). Exclusionary discipline of students with disabilities: Student and school characteristics predicting suspension. *Remedial and Special Education*, *35*(4), 199–210. https://doi.org/10.1177/0741932513519825

U.S. Department of Education, Office for Civil Rights. (2019). *Master list of 2015-2016 CRDC definitions*. https://ocrdata.ed.gov/Downloads/Master-List-of-CRDC-Definitions.pdf

U.S. Department of Education. (2014). *Guiding principles: A resource guide for improving school climate and discipline*. http://www2.ed.gov/policy/gen/guid/schooldiscipline/guiding-principles.pdf

U.S. Department of Education (USDOE). (2018). *2015-2016 civil rights data collection: School climate and safety*. U.S. Department of Education Office for Civil Rights. https://www2.ed.gov/about/offices/list/ocr/docs/school-climate-and-safety.pdf

U.S. Department of Education, Office of Civil Rights. (2014). *Civil rights data collection Data Snapshot: School Discipline*. U.S. Department of Education Office for Civil Rights. https://ocrdata.ed.gov/Downloads/CRDC-School-Discipline-Snapshot.pdf

U.S. Department of Education, Office for Civil Rights, & The U.S. Department of Justice, Civil Rights Division. (2014). *Joint "dear colleague" letter*. https://www.justice.gov/sites/default/files/crt/legacy/2014/01/08/dcl.pdf

U.S. Government Accountability Office. (2018). *K-12 education: Discipline disparities for black students, boys, and students with disabilities* (GAO-18-258). https://www.gao.gov/products/GAO-18-258

Viechtbauer, W. (2010). Conducting meta-analyses in R with the metafor package. *Journal of Statistical Software*, *36*(3), 1–48. https://www.jstatsoft.org/v36/i03/

Vincent, C. G., Sprague, J. R., & Tobin, T. J. (2012). Exclusionary discipline practices across students' racial/ethnic backgrounds and disability status: Findings from the Pacific Northwest. *Education and Treatment of Children*, *35*, 585–601. https://doi.org/10.1353/etc.2012.0025

Welsh, R. O., & Little, S. (2018). The school discipline dilemma: A comprehensive review of disparities and alternative approaches. *Review of Educational Research*, *88*(5), 752–794. https://doi.org/10.3102/0034654318791582

Whitford, D. K., Gage, N. A., Katsiyannis, A., Counts, J., Rapa, L. J., & McWhorter, A. (2019). The exclusionary discipline of American Indian and Alaska Native (AI/NA) students with and without disabilities: A Civil Rights Data Collection (CRDC) national analysis. *Journal of Child and Family Studies*, *28*, 3327–3337. https://doi.org/10.1007/s10826-019-01511-8

Whitford, D. K., & Levine-Donnerstein, D. (2014). Office disciplinary referral patterns of American Indian student from elementary school through high school. *Behavioral Disorders*, *39*, 78–88. https://doi.org/10.1177/019874291303900204

Whitford, D. K., Katsiyannis, A., & Counts, J. (2016). Discriminatory discipline: Trends and issues. *NASSP Bulletin*, *100*(2), 117–135.