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Out-of-school suspensions in U.S. public schools: relations with chronic teacher absenteeism

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Out-of-school suspensions (OSSs) put students at risk for an array of negative social and academic outcomes. The rates of the use of OSS vary considerably from one school to another; however, school-level characteristics have not been studied extensively. The purpose of this study was to examine the degree to which chronic teacher absenteeism predicted the overall rates of OSS, as well as racial/ethnic disparities in its use. Although research has established that teachers are one of the most significant school-based factors affecting student success and learning, they need to be present in the classroom for students to derive these benefits. Using a national sample of public schools in the United States, the study's findings confirmed that schools with higher rates of chronic teacher absenteeism also had higher rates of the use of suspension. Moreover, within a school, higher proportions of chronic teacher absence were related to greater disparities in the rates of suspensions for Black students relative to white students. It was concluded that chronic absenteeism represents a significant risk factor that is related to the use of OSS with students in a school.

KEYWORDS

schooling, teacher absenteeism, school discipline, suspension, disparities

Introduction

Suspending students from school deprives them of a key element of their success, namely, that they must be present in school to be academically and social-emotionally successful. School attendance has repeatedly been shown to be a positive predictor of academic performance and achievement (Kim and Streeter, 2008), as well as a positive predictor of the mental and physical health of students (Allison and Attisha, 2019). Being suspended from school can undermine a student's ability to keep up with school work and thus disrupts a student's ability to take full advantage of their educational opportunities (Tanner-Smith and Wilson, 2013). Additionally, being suspended deprives students of contact with their classmates and negatively affects their attitudes about school and learning, which creates feelings of being disconnected from school (Graham et al., 2022).

Although the adverse outcomes for students regarding the use of out-of-school suspension (OSS) in schools are correlated with preexisting or accumulative adversities experienced by those students who are suspended, researchers have established that OSSs themselves contribute to problematic outcomes. For example, Hemphill et al. (2006) found that school suspensions significantly increased the likelihood of antisocial behavior 12 months later, even after holding constant risk and protective factors known to affect antisocial behavior. Using a quasi-experimental propensity score-weighting method,

LiCalsi et al. (2021) found that exclusionary discipline did not deter future behavioral problems and, for young students, may instead exacerbate them. Additionally, exclusionary discipline had a consistently negative effect on many long-term educational outcomes for students (e.g., absenteeism and English and math achievement). Several other research studies, also using quasi-experimental methods, support the conclusion that these associations are likely causal (Hinze-Pifer and Sartain, 2018; Hwang, 2018; Lacoë and Steinberg, 2018). As such, the adverse consequences of being removed from the classroom due to suspension can have lifelong effects on later delinquency, psychological distress, employment, and earning potential (Ford et al., 2018; Bureau of Labor Statistics, 2019; Bacher-Hicks et al., 2020).

OSS, or the temporary removal of a student from the classroom, puts the student at risk for unsuccessful schooling that affects lifelong learning and adjustment (American Academy of Pediatrics Committee on School Health, 2013; Welsh and Little, 2018). It is a severe yet fairly common form of student discipline that prohibits students from being at school or participating in school-related activities for a specified number of days. Researchers have repeatedly identified the multiple adverse social-emotional and academic consequences associated with OSS as students are separated from their peers, their teachers, and the educational environments that serve as the foundation for current and later success (e.g., Gregory et al., 2010; Skiba et al., 2014). For example, students who experience OSS are more likely to hold negative attitudes about school, experience repeat suspensions, perform poorly in school, drop out, be depressed, and be involved in the juvenile justice system than those who do not experience OSS (Arcia, 2006; Petras et al., 2011; Fissel et al., 2019).

Unfortunately, suspensions are disproportionately used with some groups of students than others. Boys, for instance, are much more likely to be suspended than girls (Fabes et al., 2021a). Additionally, students of color—particularly Black students—are subject to exclusionary discipline at rates that are disproportionate to their enrollment numbers compared to their white peers (Gregory et al., 2010). For example, in K–12 settings, Black students make up 15% of all students but represent 39% of students who receive at least one OSS. In particular, Black boys make up only 8% of the student population but represent almost 25% of all suspended students (U.S. Government Accountability Office, 2018). These patterns were found despite the fact that Black students do not have worse or more severe behavior than white students (Bradshaw et al., 2012; Anyon et al., 2018). As such, disparities in the use of OSS appear to reflect ingrained biases in the disciplinary practices used within the culture and climate of a school (Erickson and Pearson, 2022).

There is, however, considerable variability and disparities in the use of OSS from one school to another (Hemphill et al., 2014; Fabes et al., 2021a). For instance, one study of statewide school suspension rates found that 10% of the schools were responsible for 50% of the suspensions (Skiba and Rausch, 2006). In a different study (Fabes et al., 2021c), schools in the top 20th percentile in the United States in rates of using OSS accounted for almost 75% of all days missed due to suspensions. Moreover, it also has been found that 25% of teachers were responsible for 66% of office

discipline referrals, often a precursor to OSS (Skiba et al., 1997). Thus, the conditions at the school contribute to differing rates of use of OSS and need to be considered when examining variations in the use of OSS. In fact, some researchers have argued that school-level characteristics may be more important predictors of OSS than individual-level characteristics (Skiba et al., 2014). To date, however, only limited research has looked at school-level qualities that reflect school climate and culture as they relate to the use of OSS in a school and the impact the use of OSS may have on student success. The present research addresses this important gap.

OSS and its relation to chronic teacher absenteeism

In this research, we focused on chronic teacher absenteeism as a school-level characteristic and examined the degree to which it predicted the use of OSS in U.S. public middle and high schools. We focused on chronic teacher absenteeism in part because it has received relatively little attention in the school discipline literature as well as on research that has clearly established that teachers are one of the most significant influences on both academic and non-academic student outcomes (Chetty et al., 2014a,b). Despite the potential positive influences of teachers, they need to be present in the classroom for students to derive these benefits. Teacher absences, even for valid reasons, present challenges to schools and the students in these schools (Miller, 2008; Clotfelter et al., 2009; Jackson, 2018). On average, the U.S. public school teacher absence rate has been found to be approximately 5.5%, which is notably higher than the average absence rate found for the U.S. workforce as a whole (about 3%; Frontline Education, 2016). When teachers are absent, substitute teachers are called in to cover the class when available. However, substitute teachers have been found to be significantly less effective in promoting student learning and social connections (Herrmann and Rockoff, 2012). Moreover, teacher absences are financially costly. Estimates of the annual costs associated with finding and hiring substitutes suggest that it costs schools between US \$4 and \$5 billion (Miller, 2012; Folger, 2019). When teachers are chronically absent—defined as 10 or more absences in a school year (U.S. Department of Education, 2016b)—the detrimental impact on student success is magnified. For example, researchers have found that teacher absenteeism had a significant negative effect on student achievement and behavior and that this effect was more pronounced when teachers were chronically absent (Biney and Howe, 2017; Conradson, 2021). Moreover, chronic teacher absence effects were larger for Black students and students from low-income backgrounds.

By some estimates (U.S. Department of Education, 2016a), more than 27% of U.S. public school teachers are chronically absent (rates are lower in private schools). Similar to the use of OSS, there is considerable variability in chronic teacher absenteeism from one public school to another. For instance, teacher absences are often concentrated in public schools that serve larger numbers of minority and low-income students (Pitkoff, 1993; Clotfelter et al., 2009). In some of these schools, more than 50% of the teachers have been found to be chronically absent, and more than 6.5

million students have faced such conditions in their schools (U.S. Department of Education, 2016a). Such data suggest that chronic teacher absenteeism may result from difficult working conditions that reflect a stressful school climate for both teachers and their students. This relation is likely bidirectional; a stressful working environment creates conditions for increased teacher absence, and this increased absenteeism, in turn, creates conditions that maintain or exacerbate the stressful work environment of the school. Thus, teacher absenteeism, especially chronic absenteeism, may be an indicator of a stressful school climate (Imants and Zoelen, 1995). Schools with high levels of teachers who are chronically absent are likely to have school climates that are not conducive to effective teaching and learning and that disrupt student behavior and effective classroom management.

Although research on the use of OSS and on teacher absenteeism has not been directly conducted, these two school-level qualities are logically connected. That is, schools that have high rates of chronic teacher absenteeism are likely to be schools that have relatively high rates of disciplinary issues that increase the likelihood of using harsh disciplinary practices, such as suspending students. Moreover, the higher rates of OSS further undermine the supportive nature of the school climate (Huang and Cornell, 2018), which increases the likelihood of chronic teacher absenteeism. In turn, schools with higher rates of chronic teacher absenteeism may undermine student success through the more frequent use of OSS with their students.

Despite the logical connections between chronic teacher absenteeism and the use of OSS in a school, to our knowledge, there is no published empirical research relating the two. Additionally, there is a lack of research examining how racial/ethnic disparities in the use of OSS are related to chronic teacher absenteeism. The present research is a first step to address these gaps by using a national sample of public middle and high schools in the United States. We focused on middle and high schools because the use of OSS in these schools generally is significantly higher and more variable than in elementary schools (Fabes et al., 2021b) as student behavior and school climates can be more challenging. Moreover, middle and high school teachers are more likely to be absent than elementary school teachers (Miller, 2012). As such, the degree to which chronic teacher absenteeism predicts the use of OSS in middle and high school teachers is of primary interest for this investigation.

We hypothesized that higher rates of chronic teacher absenteeism in a school would significantly predict the greater use of OSS in that school above and beyond covariates that account for demographic differences between schools (e.g., poverty, percentage of boys and Black students enrolled, etc.). We also expected that higher rates of chronic teacher absenteeism would be related to greater racial/ethnic disparities in the use of OSS relative to white students, particularly for Black students.

Methods

Sample

The data used in this study were obtained from the 2017–2018 Civil Rights Data Collection (CRDC;

U.S. Department of Education., 2020). As the most comprehensive and up-to-date data measuring the use of OSS and chronic teacher absenteeism in U.S. public schools (released in October 2020), the CRDC is a biennial survey that gathers information on key education and civil rights issues from all public schools in the United States, including school enrollment, student discipline, and teacher characteristics that include teacher absences. In the 2017–2018 CRDC, there was a total record of 97,122 public schools, of which 30,627 schools were identified as either middle schools (including students enrolled from 6th to 9th grades only) or high schools (including students enrolled from 9th to 12th grades only) that were regular schools (e.g., not in juvenile justice settings or alternative or online schools). Due to a lack of usable data on the variables of interest in the present study [i.e., total enrollment, teacher absenteeism, reported suspensions, free or reduced-price lunch (FRPL), etc.], 1,335 schools (4.4%) were not included in the final sample. Thus, the final maximum sample for analysis included 29,292 schools, with a total enrollment of 21,195,558 students: 8,359,100 middle school students from 13,861 public middle schools and 12,836,458 high school students from 15,431 public high schools. Comparisons of the demographics and rates of use of OSS for the 29,292 schools that were included relative to the 1,335 schools that were not revealed that the schools in the final sample were significantly less likely to be designated as charter schools (7 and 12%, respectively) and to have proportionally more middle schools (47 and 21%, respectively); $\chi^2_s(1) = 54.05$ and 344.4 , $p < 0.001$, respectively. Additionally, the included schools were found to enroll a significantly smaller proportion of boys than schools that were excluded ($M_s = 0.53$ and 0.52 , respectively), $t_{(30,623)} = 2.34$, $p < 0.05$.

OSS suspension rates

The number of OSSs in each school was calculated as the sum of the reported number of single OSSs plus the reported number of multiple out-of-school suspensions for students without disabilities. Similarly, the number of OSSs was also calculated for four student cohorts: male, Black, Hispanic, and white students.

Because schools with larger enrollments are likely to report greater numbers of OSSs, we accounted for this by calculating rates based on each school's total enrollment. Specifically, rates of OSS were calculated for each school by dividing the total number of OSSs in a particular school (or for a particular group of students) by the total student enrollment of that school (or for a particular group). We then multiplied that number by 100 to create a standardized OSS rate that reflected the use of OSS in that school per 100 students enrolled.

Racial/ethnic disparity in OSS ratio

The second goal of this research was to examine the degree to which chronic teacher absence predicted racial/ethnic disparities in the use of OSS. To accomplish this, we created disparity ratio scores in which the rates of OSS for Black and Hispanic students were divided by rates of OSS for white students. Thus, we created

disparity ratio scores for Black and Hispanic students in which a score >1 indicated a disparity with greater OSS rates for Black or Hispanic students relative to white students. A score <1 indicated a greater rate of OSS for white students relative to either Black or Hispanic students. A score equal to 1 reflected equal rates of OSS for both groups of students. Disparity ratios could only be computed for those schools that enrolled at least one Black or Hispanic student and at least one white student. Thus, for these data, 21,334 schools had an OSS disparity ratio for Black students and 22,642 for Hispanic students.

Proportion of teachers chronically absent for more than 10 days

In the CRDC data, each school reported the number of teachers who were chronically absent, that is, more than 10 days, during the school year. To account for differences in the size of schools and personnel, we calculated the proportion of teachers chronically absent, that is, more than 10 days, by dividing the count of full-time equivalent (FTE) teachers chronically absent in school by the total teacher FTE for that school. This proportion variable had a minimum of 0 and a maximum of 1.

Covariates

In addition to controlling for the size of a school, several key variables were included as covariates in the analyses, including the following.

School poverty

Despite some concern about its use (Fazlul et al., 2023), in the United States, the percentage of students eligible for FRPL under the National School Lunch Program provides a proxy measure for the concentration of low-income students within a school. When available, we also included the proportion of students eligible for FRPL in 2017–2018 (National Center for Education Statistics, 2020). School poverty was calculated for each school by taking the total number of eligible students for FRPL and dividing that by the total enrollment for that school. Public schools were then placed into school poverty categories based on the percentage of students eligible for FRPL. Low-poverty schools are defined as public schools where 25.0% or less of the students are eligible for FRPL, mid-low-poverty schools are those where 25.1%–50.0% of the students are eligible for FRPL, mid-high-poverty schools are those where 50.1%–75.0% of the students are eligible for FRPL, and high-poverty schools are those where more than 75.0% of the students are eligible for FRPL (U.S. Department of Education, 2021). Thus, based on the percentage of students eligible for FRPL, each school was assigned a school poverty level that ranged from 1 (low poverty) to 4 (high poverty).

Proportion of students enrolled

Because schools varied in the demographic makeup of their students, and because these variations have been found to be related to chronic teacher absence and use of OSS (e.g., Okilwa and Robert, 2017), we controlled for these differences by calculating the proportions of Black, Hispanic, white, and male students enrolled in each school. We did this by taking the reported enrollment of each student cohort and dividing it by the total reported enrollment of the school. As a proportion, these variables range from 0 to 1, with 0 reflecting that there were no enrolled students in the respective demographic cohort and 1 indicating that all enrolled students were in the respective demographic cohort.

Level of school

Finally, we controlled for the level of school (high vs. middle school). Because of differences between these levels (e.g., ages of students, size of campuses, etc.), we included the level of school as a control in the analyses.

Analytic plan

Our first step in analyzing the data was to present descriptive analyses of the characteristics of the schools. Because so little research has focused on chronic teacher absenteeism, we next used a multiple linear regression analysis to explore the degree to which our control variables predicted chronic teacher absenteeism. We followed this with the main analyses that focused on the degree to which the use of OSS was predicted by chronic teacher absenteeism above and beyond the control variables using another set of multiple linear regressions. In these analyses, we entered the covariates in the first step followed by the proportion of teachers absent in the second. Total R^2 and R^2 changes are reported for each analysis. We conducted these regressions for the overall rates of OSS, as well as for disparities in the use of OSS for Black and Hispanic students separately.

Because the OSS data were highly positively skewed (skewness for the rate of OSS and for risk ratios for Black and Hispanic students = 7.79, 11.68, and 10.92, respectively), it may thus represent a potential problem regarding the normality of the distribution of these data (Tabachnick and Fidell, 2013). To address this concern, we computed a square root transformation on each of these variables and used these transformed data as outcomes in the analyses (Judd et al., 1995). For the descriptive presentation of these data, we report the untransformed means.

Finally, although schools are clustered with districts, we did not compute multilevel models for two main reasons. First, for many schools, the school and district were the same, as in some areas (particularly those in rural or small population centers), there are only one school within the district. Second, the intraclass correlation for the clustering of schools (Level 1) within districts (Level 2) was small (interclass correlations generally <0.05), suggesting that only a small percentage of the variance can be explained by the multilevel structure and the variance of the outcome variable (Goldstein et al., 2002).

TABLE 1 Characteristics of U.S. public schools.

	All schools (N = 29,292)
Poverty level^a	
Proportion low	0.18
Proportion mid-low	0.32
Proportion mid-high	0.27
Proportion high	0.24
Mean enrollment per school	723.60 (630.52)
Mean proportion of Black students	0.14 (0.22)
Mean proportion of Hispanic students	0.24 (0.27)
Mean proportion of white students	0.52 (0.33)
Mean proportion of boys	0.52 (0.07)
Mean proportion of chronic teacher absenteeism	0.29 (0.22)
Out-of-school suspension rate per 100 students	7.84 (11.26)
Out-of-school suspension disparity ratio	
Black/white	2.86** (5.97) ^b
Hispanic/white	1.48** (2.74) ^c

Standard deviations are in parentheses.

**Means differed at $p < 0.001$.

^aDue to rounding, the proportions do not total to 1.0.

^b $n = 21,334$.

^c $n = 10,518$.

Results

School-level characteristics

Table 1 presents descriptive information for school-level characteristics. A chi-square analysis revealed that the distribution of schools within each of the four poverty categories was significantly different than what would be expected from chance, $\chi^2_{(3)} = 1,346.50$, $p < 0.0001$. Additionally, within schools, the disparity ratio for Black students was significantly greater than the ratio for Hispanic students, *paired* $t_{(21,056)} = 35.28$, $p < 0.001$ (see Table 1).

Prediction of chronic teacher absence

Because there is such limited research on chronic teacher absenteeism, we focused our next analysis on the predictors of the proportion of teachers chronically absent, that is, for more than 10 days. We computed a multiple linear regression in which chronic teacher absence as an outcome was regressed on the following predictors: proportions of Hispanic, Black, white, and male students, school poverty level, school enrollment, and school type. The results of this regression analysis revealed that the proportion of teachers chronically absent, that is, for more than 10 days, was greater for schools that enrolled proportionally more Black, Hispanic, and male students; had larger enrollments; had

TABLE 2 Prediction of the proportion of teachers chronically absent (more than 10 days).

	B	Beta	t	CI
Proportion of Black students enrolled	0.05 (0.01)	0.05	4.09***	0.025/0.070
Proportion of Hispanic students enrolled	0.06 (0.01)	0.07	5.09***	0.035/0.078
Proportion of white students enrolled	0.01 (0.01)	0.02	0.94	-0.011/0.031
Proportion of boys enrolled	0.05 (0.02)	0.02	2.69**	0.013/0.085
Poverty level	0.01 (0.002)	0.03	4.14***	0.004/0.010
School type	-0.04 (0.003)	-0.09	-15.54***	-0.046/-0.035
Total enrollment	0.00004 (0.0001)	0.13	19.74***	0.000039/0.000048

Standard errors are in parentheses. $R^2 = 0.028$. CI = 95% confidence upper/lower interval boundaries. For school type, 0 = middle school and 1 = high school.

** $p < 0.01$.

*** $p < 0.001$.

higher poverty levels; and were more likely to be middle than high schools (see Table 2).

Chronic teacher absenteeism predicting OSS rates

Our next step was to analyze data related to the primary goal of this research, namely, the degree to which the proportion of teachers was chronically absent, that is, for more than 10 days, predicted the use of OSS with students. To achieve this, we conducted a multiple linear regression in which the covariates (percentage of Black, Hispanic, white, and male students; poverty level; and school type) were entered first, followed by chronic teacher absence as predictors of the transformed rate of OSS. This analysis confirmed that chronic teacher absenteeism positively predicted greater rates of use of OSS above and beyond these covariates, ($R^2 = 0.21$, R^2 change for Steps 1 and 2 = 0.20 and 0.01, $ps < 0.001$, respectively). As can be observed in Table 3, chronic teacher absenteeism was significantly and positively related to the use of OSS after entering the covariates. Thus, schools with higher rates of teacher absenteeism were also likely to have higher rates of OSS. Examining the covariates revealed that schools with proportionately lower Hispanic student enrollment, higher Black and male student enrollment, higher poverty rates, and middle schools (relative to high schools) suspended students at higher rates (see Table 3).

Chronic teacher absenteeism predicting racial/ethnic disparities in OSS rates

The second primary goal of this research was to examine the degree to which chronic teacher absence predicted racial/ethnic

TABLE 3 Prediction of rate of use of out-of-school suspension.

	<i>B</i>	<i>Beta</i>	<i>t</i>	CI
Proportion of teachers absent > 10 days	0.45 (0.04)	0.07	12.49***	0.38/0.52
Proportion of Black students enrolled	1.70 (0.07)	0.25	23.56***	1.55/1.83
Proportion of Hispanic students enrolled	-0.68 (0.69)	-0.12	-9.89***	-0.82/-0.54
Proportion of white students enrolled	-0.01 (0.07)	-0.002	-0.17	-0.14/0.12
Proportion of boys enrolled	2.55 (0.11)	0.12	22.54***	2.33/2.77
School type	-0.13 (0.02)	-0.04	-8.18***	-0.16/-0.10
Poverty level	0.41 (0.01)	0.28	40.57***	0.39/0.43

To control for skewness, the square root of the rate of OSS was used in the analysis. Standard errors are in parentheses. Results are from the last step in the multiple regression. $R^2 = 0.21$. CI = 95% confidence upper/lower interval boundaries. For school type, 0 = middle school and 1 = high school.

*** $p < 0.001$.

disparities in the use of OSS. To accomplish this goal, we conducted two separate multiple linear regressions predicting the transformed disparity ratios for Black and Hispanic students (relative to white students) from chronic teacher absence (entered in the second step) above and beyond the covariates (entered in the first step).

For the disparity ratio for Black students, greater chronic teacher absenteeism positively predicted higher disparities in the use of OSS with Black students (see Table 4). This analysis confirmed that chronic teacher absenteeism positively predicted disparities in the rates of use of OSS for Black students relative to their white peers above and beyond these covariates ($R^2 = 0.05$, R^2 change for Steps 1 and 2 = 0.04 and 0.01, $ps < 0.001$, respectively). Examining the covariates revealed that schools with proportionately higher Black and lower male student enrollment, higher poverty rates, and middle schools (relative to high schools) had greater disparity ratios for Black students relative to white students (see Table 4).

Chronic teacher absenteeism did not significantly predict disparities for Hispanic students relative to their white peers ($R^2 = 0.04$, R^2 change for Steps 1 and 2 = 0.038 and 0.002, $ps < 0.001$ and 0.15, respectively). For the covariates, schools with proportionately more Hispanic and white students and lower poverty levels had significantly greater disparities in the rates of OSS for Hispanic students (see Table 5).

Discussion

The findings of this research confirmed our predictions that OSSs with students are related to the level of chronic teacher absenteeism in a school. Specifically, the greater the proportion of teachers in a school who were chronically absent, the greater the rates of use of OSS in that school. Moreover, higher proportions of chronic teacher absence in

TABLE 4 Prediction of disparity ratio in out-of-school suspension use rate for Black students.

	<i>B</i>	<i>Beta</i>	<i>t</i>	CI
Proportion of teachers absent > 10 days	0.30 (0.04)	0.05	7.81***	0.23/0.38
Proportion of Black students enrolled	0.68 (0.08)	0.12	8.18***	0.52/0.85
Proportion of Hispanic students enrolled	-0.12 (0.08)	-0.02	-1.42	-0.28/0.04
Proportion of white students enrolled	-0.65 (0.07)	-0.17	-8.83***	-0.80/-0.51
Proportion of boys enrolled	-0.48 (0.17)	-0.02	-2.86**	-0.81/-0.15
School type	-0.06 (0.02)	-0.03	-3.85***	-0.09/-0.03
Poverty level	-0.14 (0.01)	-0.12	-13.79***	-0.16/-0.12

To control for skewness, the square root of the rate of the disparity ratio was used in the analysis. Standard errors are in parentheses. $R^2 = 0.05$. CI = 95% confidence upper/lower interval boundaries. For school type, 0 = middle school and 1 = high school.

** $p < 0.01$.

*** $p < 0.001$.

TABLE 5 Prediction of disparity ratio in rate of out-of-school suspension use rate for Hispanic students.

	<i>B</i>	<i>Beta</i>	<i>t</i>	CI
Proportion of teachers absent > 10 days	0.04 (0.03)	0.01	1.45	-0.01/0.08
Proportion of Black students enrolled	-0.10 (0.05)	-0.03	-1.89	-0.20/0.03
Proportion of Hispanic students enrolled	0.11 (0.05)	0.03	2.09*	0.01/0.21
Proportion of white students enrolled	-0.54 (0.05)	-0.21	-11.32***	-0.64/-0.45
Proportion of boys enrolled	0.09 (0.10)	0.01	0.84	-0.12/0.30
School type	-0.02 (0.01)	-0.01	-1.45	-0.01/0.08
Poverty level	-0.16 (0.01)	-0.20	-23.51***	-0.17/-0.14

To control for skewness, the square root of the rate of the disparity ratio was used in the analysis. Standard errors are in parentheses. $R^2 = 0.04$. CI = 95% confidence upper/lower interval boundaries. For school type, 1 = middle school and 2 = high school.

* $p < 0.05$.

*** $p < 0.001$.

a school were related to greater disparities for Black relative to white students. These findings held above and beyond the covariates that accounted for differences between schools in the demographic makeup of the student population, for the level of school poverty in the percentage of students who qualified for FRPL, and for differences between middle and high schools.

OSS and chronic teacher absenteeism

That school-level chronic teacher absenteeism was related to school-level OSSs supports the conclusion that chronic teacher absenteeism may be a reflection of a stressful and negative school climate that relates to conditions that increase the likelihood of OSS use. When teachers are absent, particularly if they are chronically absent, there is a negative effect on instructional quality and consistency, student achievement, and on the fiscal and social resources available that result in a poor school climate and culture (Imants and Zoelen, 1995; Miller, 2008; Ronfeldt et al., 2013). Moreover, when there is high teacher absence, it tends to lower the morale of other teachers, resulting in greater teacher absence and turnover. In turn, these conditions make it more difficult to recruit and retain committed teachers given the stress posed by working in schools with low teacher morale (Collie et al., 2012).

Such school conditions and environments support and reinforce the use of punitive exclusionary disciplinary practices such as OSS and suggest that they are likely important school-level factors that contribute to the positive relation between teacher absenteeism and the use of OSS in a school. Because schools represent an ecology of interrelated systems (Pianta and Rimm-Kaufman, 2006; Eccles and Roeser, 2010), the climate of the school has been found to be related to the use of OSS. For instance, schools that rely more on the use of OSS also have been found to have poorer climates for learning, including being less safe and orderly (Perry and Morris, 2014; Sartain et al., 2015). Additionally, chronic teacher absenteeism means that schools have to rely more on substitute teachers who generally do not possess the skill set of the certified teacher nor do they have knowledge of their students, both of which make it extremely difficult for them to meet the needs of students (Miller, 2008). Such classroom conditions can lead to a breakdown in the structure of the classroom and in student behavior, which increases the likelihood that students are suspended (Woods and Montagno, 1997).

The results confirmed that both the use of OSS and teacher absences were more concentrated in schools that served children of color and low-income students. Our analyses revealed, for instance, that schools classified as those with higher levels of poverty also had higher levels of chronic teacher absenteeism (see Table 3). Similarly, chronic teacher absenteeism was relatively high in schools that enrolled higher proportions of Black and Hispanic students and higher proportions of boys (see Table 2). These findings suggest that the students who have the greatest need for instruction from a qualified teacher are likely to receive instruction from a substitute teacher, thereby exacerbating the impact that chronic teacher absenteeism has on these underserved, low-resource schools and their students (Pitkoff, 1993).

Similar to other research (e.g., Skiba et al., 2011), our findings also confirmed that the rates of OSS were higher in schools that enrolled more low-income, male, and Black students. Importantly, our analyses also revealed that chronic teacher absenteeism positively predicted the use of OSS, even after controlling for many of the factors that predicted the use of OSS. In our data, the total number of cases of OSS accounted for more than 7.5 million days of school missed due to OSSs. Given the connection between being suspended and poor academic achievement, the negative impact

of chronic teacher absenteeism on academic achievement may likely be due, in part, to the increased number of days missed by students who have been suspended—a topic that needs testing in future research.

Race/ethnic disparities in the use of OSS and chronic teacher absenteeism

One of the primary purposes of this article was to examine the extent to which racial/ethnic disparities in the use of OSS with students were related to chronic teacher absenteeism. Our findings partially supported our hypothesis that disparities in the use of OSS would be greater in schools with greater teacher absenteeism. Specifically, teacher absenteeism positively predicted the disparity ratios (e.g., OSS rate for Black students/OSS rate for white students) for Black but not Hispanic students. For Black students, the greater the proportion of teachers in a school who were chronically absent, the greater the OSS disparity ratio, indicating an increase in the disproportional use of OSS relative to white students above and beyond the controls included in the regression analysis.

Such findings support the notion that chronic teacher absenteeism is related to disparities in the use of OSS for Black relative to white students. Although we do not have data to test the precise mechanisms through which chronic teacher absenteeism disproportionately relates to Black students' risk of being suspended, this relation may be a reflection of the more stressful climates found in schools with high rates of chronic teacher absenteeism. As noted, stressful working environments for teachers increase teacher absenteeism, leading to an increase in the use of substitute teachers and a more challenging school climate. When the school climate is negative and unsupportive, even regular teachers are more stressed, as are students. Under these conditions, it is likely that teachers' abilities to regulate themselves and their students are undermined. Importantly, such conditions also increase the likelihood that teachers' implicit and explicit biases in managing students in their classrooms are exacerbated, thereby leading to a greater likelihood of using OSS with Black students in their classrooms. This may be even more likely to be the case for substitute teachers who do not know their students as well and rely on stereotypes and biases to respond to perceived challenges in the classroom, an issue that deserves more research.

That the relation of teacher absenteeism to disparities in the use of OSS was found for Black but not Hispanic students is an important finding that needs additional research and explication. Such a finding is consistent with other research that has found greater disparities in the use of OSS with Black but not necessarily Hispanic students (Fabes et al., 2021c). Moreover, such a finding suggests that racial/ethnic disparities are not uniform and that there are structural and historical issues that contribute to the non-uniformity of disparities in the use of OSS with different groups of students. Black students, especially Black boys, are more likely to be surveilled and punished for their behavior, even when that behavior is similar to that of white peers who are not monitored or punished (Girvan et al., 2019). Skiba et al. (2002), for instance, found that Black students were more likely to be disciplined in school for

subjective reasons (e.g., being disrespectful, excessive noise, etc.) whereas their white peers were more likely to be disciplined for less subjective reasons (e.g., smoking, obscene language, etc.).

Given that these trends have been present for decades, it raises concerns about the need to specifically address school discipline for Black students if we are going to change these disparities and reduce the “school-to-prison pipeline.” Although it is clear that teachers’ attitudes, behaviors, and biases, including racist anti-Black biases, practices, and policies, contribute to these disparities in the use of OSS, it is also clear that factors at the school level contribute to the disparities. Additionally, it is also clear that there are systematic anti-Black racist processes at work in schools that may be exacerbated when teachers are chronically absent. Such findings highlight the ongoing inequities in the use of OSS with Black students, even when committing the same infractions for which their peers do not receive OSS. As such, it is critical to recognize that there are historical systemic legacies of racism and bias that relate to the use of OSS (and other forms of discipline) in U.S. schools (Skiba et al., 2011).

Implications and considerations

The findings of this study present the first evidence that chronic teacher absenteeism is related to the use of OSS in U.S. public middle and high schools. Given the large body of research documenting the detrimental effects of OSS on students’ educational achievement and economic productivity across the life span (e.g., Gregory et al., 2010), teacher absences can also be considered a risk factor for the students enrolled in schools where teacher absences are chronic and extended.

This research has important implications for educational policy and practices. Although state and district policies can play a role in affecting teacher absenteeism, there is considerable variation from one school to another even within the same state and district. In fact, when Miller (2012) examined variation in teacher absence, one-third of the variation was found to occur within districts. Support for this conclusion can be found in a study of schools in Australia where workplace policies are highly standardized (Bradley et al., 2007). Even under these conditions, considerable differences in teacher attendance were found from one school to another. Moreover, when teachers moved from schools with relatively good or average absenteeism records to those with poor absenteeism records, absenteeism for those teachers increased. As such, it appears that the relationships and management climate *within* the school affect the degree to which teachers are absent and the degree to which suspensions are used to manage its students.

Importantly, our findings suggest that policies that reduce chronic teacher absenteeism also have the potential to reduce the use of OSS with students. Additionally, given that low-income and Black students are likely to be suspended at disproportional rates, addressing the working conditions for teachers and establishing policies that reduce their absences, especially chronic absences, would likely help address disparities in the use of OSS.

Finally, it is important to note that we found consistent differences between middle and high schools in both the use of OSS and chronic teacher absenteeism. In both cases, rates were higher in U.S. public middle schools than they were in high schools.

Such findings are consistent with previous research that has found that middle school is a particularly challenging climate for teachers and students. For students, middle school is a period that is associated with psychological and emotional stress, changes in peer relationships, and a larger and more demanding environment than elementary school (Lerner et al., 2012). There also is an accompanying decrease in students’ academic and social concepts during middle school (Molloy et al., 2011). Together, these factors produce a more stressful and challenging teaching and classroom management climate that contributes to an increase in teacher absences and in the use of OSS during middle school relative to high school.

As with all studies, there are important limitations to consider regarding the data and findings of this study. Although we relied on the latest data available, these data are still several years old. The CRDC data set is the largest database available regarding the use of OSS in public schools, but the data are collected only at the school level and disaggregated by the student group (e.g., race/ethnicity, gender). Thus, the CRDC data are not reported at the teacher or child level and thus do not provide any information on individual teachers or students. Given this, we cannot use these data to detail how individual qualities of teachers or students may be related to teacher absences and rates of OSS.

The data also are correlational, and causal conclusions are not warranted. Although chronic teacher absenteeism and the use of OSS were found to be related, the precise mechanisms are unknown and could be the result of a related variable not measured in this study. Moreover, the direction of effect cannot be determined, and it is likely that the relations are bidirectional. As such, there is a need for longitudinal data that track chronic teacher absenteeism and the use of OSS with specific children as well as research examining the longitudinal predictions. Such research may help identify the direction of effects in the relation between the use of OSS and chronic teacher absenteeism.

Despite these limitations, the findings of this study advance our understanding of how the climate of the school may impact the use of OSS with students. That chronic teacher absenteeism positively predicted OSS use suggests addressing this absenteeism through school or district policies and practices will have benefits for students resulting from reductions in the use of OSS. Additionally, the finding that chronic teacher absenteeism positively predicted disproportionality in rates of OSS with Black students suggests that there may be additional benefits to addressing such absenteeism for Black students who have been the historical targets of disparities in the use of OSS.

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found here: <https://www2.ed.gov/about/offices/list/ocr/docs/2017-18-crdc-data.zip>.

Ethics statement

The studies involving human participants were reviewed and approved by Arizona State University. Written informed consent

for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Author contributions

RF was involved in all aspects of the manuscript. HO'R helped guide the data analyses and read all drafts of the analyses. ZS and AM provided conceptual background and read drafts of the manuscript. All authors contributed to the article and approved the submitted version.

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