Overpoliced? A Descriptive Portrait of School-Based Targeted Police Interventions in New York City[§]

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Abstract

This study provides a descriptive analysis of police intervention as a response to student behavior in New York City public schools. We find that between the 2016/17 and 2021/22 academic years, arrests and juvenile referrals decreased while non-detainment-based and psychiatric police interventions increased. However, Black students, especially those enrolled in schools located in predominantly White police precincts experiencing a shrinking White student population, experienced disproportionate rates of arrests, juvenile referrals, and police-involved psychiatric interventions. Schools serving more Black students experienced higher rates of interventions relative to schools with fewer Black students, but these higher rates of intervention are not explained by differences in observable student behavior and characteristics. Instead, differences in teacher characteristics and resources contribute to the excess use of police interventions in predominantly Black schools.

Keywords: police interventions, K-12 schools, racial disproportionalities, teacher characteristics

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Introduction

In the 2017-18 academic year, schools referred over 220,000 students nationwide to law enforcement (CRDC, 2018). In New York City alone, police intervened in public schools over 11,000 times in 2019, and, in 2022, intervened over 13,000 times (Pendharkar, 2023). Despite their prevalence, police intervention in schools is a highly contested phenomenon. In 2020, the "Defund the Police" movement gained traction in implementing reforms targeted at removing and lessening police presence in schools. Yet, school staff's reports of difficulties managing student behavior in the post-COVID era have incited movements to return to zero-tolerance disciplinary practices and reinstate those school resource officers (SROs) who were removed in 2020 (Arango, 2023).

SROs are the most common and arguably the most studied form of police presence in public schools in the U.S., with upwards of 58 percent of U.S. schools deploying SROs and Congress proposing an additional \$500 million annually in addition to the over \$2 billion currently spent per year on SROs (Avila-Acosta & Sorensen, 2023). SROs are described as a "first defense" against violent acts (Sorensen et al., 2023); however, there is little credibly causal evidence to suggest that police in schools do indeed reduce the threat of violence in schools (Fisher et al., 2023; Sorensen et al., 2023), although they may increase detection of and arrests for drug crimes and other minor offenses (Owens, 2017; Sorensen et al., 2021; Sorensen et al., 2023).

Outside of schools, there is a breadth of literature that documents the effects of traditional policing on youth on average, as well as its disproportionate impact on marginalized groups. Prior studies have found that interactions with police, or simply witnessing a police stop, increases school disengagement, emotional distress, depressive symptoms and likelihood of repeated delinquency and drug use (Del Toro et al., 2022; Jackson et al., 2019; Jindal et al.,

2021; Perryman et al., 2022). Juvenile justice involvement more broadly also has exceptionally negative consequences, reducing the likelihood of graduation, lowering academic achievement, increasing absenteeism, and increasing the probability of recidivism (Aizer & Doyle, 2015; Sorensen et al., 2024).

Drawing on the research base documenting the inequitable use and effects of SROs on public school students and the role of police broadly in juvenile outcomes, we explore the degree to which certain students and schools are subjected to police interventions. We are, to our knowledge, the first to explicitly examine the prevalence of traditional police interventions in school. We leverage unique data on police interventions in schools from the New York Police Department (NYPD) pursuant to the 2011 Student Safety Act (SSA), which requires the NYPD to report all police interventions in NYCPS. We combine these data with aggregated school-level data on suspensions and infractions, student and staff demographic characteristics, and the School Safety and Educational Climate (SSEC) school violence index, which measures a school's prevalence of violent behavior.

We find that, on average, arrests, summons, and juvenile reports occurring in schools decreased over time; however, NYPD substantially increased their use of less legally severe interventions in schools (i.e., psychiatric and non-detainment-based interventions), despite declines in district-wide student enrollment. Results also show police interventions disproportionately involve Black students for all intervention types, especially in schools with fewer Black students. Predominantly Black schools experience the most interventions per student. Differences in reported student behavior and other observable characteristics fail to explain these higher rates of intervention. However, teacher characteristics, especially the percent of teachers who are Black within a school, explain the disproportionate rates of police

intervention. Principal and other support staff characteristics fail to provide additional explanatory power indicating the importance of teachers in determining police involvement in schools. We suggest that addressing inequities in staff capacity and training across schools may be a promising recourse to reduce racial disparities in police involvement in schools. We provide recommendations for programmatic and policy reform that may assist in achieving this objective.

Related Empirical Literature on the Policing of Youth

A mounting body of research has focused on examining the role of SROs in schools. SROs function as a "third administrator" within schools (Viano et al., 2023) and assume a variety of roles as a law enforcer, counselor, mentor, and teacher (Finn & McDevitt, 2005; Holloway, 2021; Kupchik et al., 2020; Travis III & Coon, 2005). However, prior studies have found that SROs predominantly spend their time on law enforcement (Travis III & Coon, 2005), with their role extending into the area of counseling, mentoring, and teaching depending on various factors such as the size of the school (Finn & McDevitt, 2005).

School-based police have become increasingly prevalent in public schools throughout the U.S., but their prevalence is not equally distributed, nor are their roles consistent, across schools. At the national level, school-based police are more commonly found in schools with higher shares of White students, especially at the elementary level (Gleit, 2022). Yet, school-based police in schools with higher shares of students of color tend to intervene more regularly than schools with lower shares of students of color, and more frequently carry out punitive and exclusionary forms of discipline (Gleit, 2022).

Examination of the effectiveness of SROs has also been a focal point in the literature, yielding mixed results. Scholars have utilized various methodological approaches, with some finding that the presence of SROs is associated with significant reduction in criminal activity

taking place at the school (Jennings et al., 2011; Johnson, 1999; Theriot, 2009, 2016; Owens, 2017) while others found no reduction in crime or even an increase in the recording and reporting of crimes and use of exclusionary discipline (Brady et al., 2007; Devlin & Gottfredson, 2018; Jackson, 2002; Javdani, 2019; Na & Gottfredson, 2013; Sorensen et al., 2023; Sorensen et al., 2021; Zhang, 2019).

The link between school-based police officers, delinquency reporting, and the racial makeup of schools is inconsistent in the literature, with some finding weaker delinquency reporting in contexts with more Black and Hispanic students (Owens, 2017; Na & Gottfredson, 2013) and others finding that police presence in schools and arrest rates was stronger for Black students (Homer & Fisher, 2020; Weisburst, 2019). However, a recent nationally representative study by Sorensen et al. (2023) presented evidence from a fuzzy regression discontinuity design that the effect of SROs on criminal activity in schools varies based on the form of infraction, as SROs effectively reduced some forms of violence in schools but did not prevent gun-related incidents. They also found that SROs increased the use of suspension, expulsion, police referral, and arrest, particularly for Black students, male students, and students with disabilities.

A wider body of literature has examined the broader impacts of policing on youth, particularly outside of schooling contexts. Previous studies found that youth stopped by police were more likely to report school disengagement, psychological and emotional distress, and post-traumatic stress symptoms (Del Toro et al., 2022; Jackson et al., 2019; Jindal et al., 2021), with more adverse emotional and mental health responses manifesting if youth were stopped by police in school (Jackson et al., 2019). Simply witnessing a police stop as a bystander has been found to be associated with higher levels of depression and anxiety among youth (Jackson et al., 2022). The effects of police stops may also extend to child performance in school—police stops are

associated with lower school grades, attendance, and test scores as well as higher probability of high school dropout (Gottlieb & Wilson, 2019; Legewie & Fagan, 2019; Tebes & Fagan, 2022). Youth stopped by police are also more prone to engage in subsequent delinquent behavior and drug use (Del Toro et al., 2019; Dong & Krohn, 2018; McGlynn-Wright et al., 2022; Wiley & Esbensen, 2016; Wiley et al., 2013).

In addition to police stops, exposure of youth to the juvenile justice system may have collateral consequences for the juvenile including negative impacts on education and long-term life outcomes. Sorensen et al. (2024) found that, even for similar forms of offenses, relative to students only punished within a school, students referred to the juvenile justice system experienced lower academic achievement, increased absenteeism, and were more likely to encounter the juvenile system in the future. Aizer & Doyle (2015) find similar results using quasi-experimental randomization in judge assignment, with being assigned a more punitive judge substantially reducing high school completion rates and increasing rates of adult recidivism, including for violent offenses.

Juvenile diversion initiatives have emerged as a method to reduce youths' involvement in the justice system. However, diversion initiatives can be designed in various ways—the simplest form being "warn and release" policies that occur before arrest. More structured programs target youth post-arrest, but prior to adjudication, that require further action and monitoring of compliance over time (Hoge, 2016; Schlesinger, 2018). Further, eligibility criteria often vary across diversion programs (Cocozza et al., 2005). Research investigating the efficacy of juvenile diversion programs has produced mixed results (Hoge, 2016; Schwalbe et al., 2012; Wilson & Hoge, 2013), likely due, in part, to across and within-program sources of heterogeneity.

Importantly, our study is primarily concerned with less legally severe interventions, referred to as "mitigated" or "child in crisis" interventions. Any evidence regarding the impact of these practices on youth or students and by police is next to non-existent. Mitigated interventions are perhaps closest to 'warn-and-release' interventions but are unique in that they do not simply release a student without consequence. Instead, the student is released from police custody, but still punished by a different entity (the school). Child-in-crisis interventions are perhaps most like mental health interventions or a 5-1-5-0 involuntary hold process. There is limited research on the impacts of these interventions on youth generally, and that which does exist is limited to qualitative evidence suggesting that most youth who experienced involuntary holds from police viewed the experience as "criminalizing," "dehumanizing," and "shameful" (Jones et al., 2022).

Other literature focuses on redefining the police's role in responding to individuals in mental health crisis. Specifically, the use of Crisis Intervention Teams (CITs) has become more common, including in New York City, and holds promise in training officers to respond in less severe ways to individuals in crisis (Kane et al., 2018). However, there is limited evidence as to whether these programs do indeed reduce arrests, the use of force, or safety of those involved in the intervention (Rogers et al., 2019; Taheri, 2016). There is also limited evidence regarding their impact on youth, although one study suggests that officer's efficacy at responding to youth in crisis improved (Kubiak et al., 2019).

Conceptual Framework

We draw upon four primary theories to understand how the use of police may differentially occur in schools: racially territorial policing (Boddie, 2022), racialized institutions (Ray, 2019), racial threat (Blalock, 1967), and vulnerable decision points (McIntosh et al., 2014). Racially territorial policing and racial threat originate within the crime and legal literature, the theory of vulnerable decision points has been employed within the education literature, and

racialized institutions within theories of organization. Through combining theories from a variety of fields, we arrive at a more nuanced understanding of where, why, and how policing manifests in school settings.

We understand *which* schools rely on police for behavioral management in the context of Boddie (2022)'s theory of racially territorial policing, which suggests that space itself determines the use of police in a neighborhood. We apply this theory to the environment of schools, observing the schooling space as subject to similar biases, constructs, and constraints as the broader neighborhoods in which policing is often examined. Racially territorial policing defines two primary actors within a common space: police and the policed (e.g., individuals) within a neighborhood. Police's perceptions of an individual in a space are defined by the composition of the space itself—Boddie suggests that a neighborhood that is composed of primarily Black residents is perceived as a "Black neighborhood," allowing for racial stereotypes to become salient when a space becomes racialized. In the case of policing, a Black neighborhood may be stereotyped as disorderly, giving police a seemingly viable reason to overpolice the area—
"conscious or unconscious assumptions about who is *supposed* to be in a particular space leads those with power to create and maintain boundaries that control access to it or micromanage movement within it" (Boddie, 2022, p. 479).

A similar logic may be applied to schools. In the case of a school where students are predominantly Black, that school may be seen as a "Black school." Adults in these schools may thus be more susceptible to unconscious or conscious biases when interacting with students in these schools that are presumed to be "disorderly" due to biases surrounding the demographics of the space. Put simply, "police not only criminalize Black people, but also criminalize Black *spaces*" (Boddie, 2022, p. 477) in our case, Black schools.

Racially territorial policing helps us understand across school disparities in policing (i.e., which types of schools experience more police interventions), whereas we understand within-school racial disparities (i.e., which schools experience greater within-school disproportionality in police interventions) through a racial threat lens (Blalock, 1967). The use of racial threat theory in education often centers on understanding the disparate use of exclusionary disciplinary practices (Welch & Payne, 2010).

Racial threat theory facilitates an understanding of how within-school racial disparities may arise depending upon the demographic context of a school. For example, in a majority White school, especially one in which there is a shrinking White population, Black students may be perceived as a threat or "out of place" (Ferrandino, 2014; Gelman et al., 2007), thus creating a greater need to control these students. Indeed, numerous empirical studies have found that when Black students are in the minority or amidst a shrinking White population, schools suspend students more often (Chin, 2021), and have disproportionate rates of special education classification (Stiefel et al., 2023; Chin, 2021; Elder et al., 2021; Fish, 2019). Insofar as police interventions in schools serve a similar purpose of control, we would expect similar results: Black students in schools predominantly serving White students will experience disproportionate police interventions relative to Black students in schools predominantly serving Black students.

While Boddie (2022) and Blalock (1967) allow us to understand *where* prevalence and disproportionality in police interventions are most likely to occur, these theories do not provide explanations other than implicit bias as to *why* police interventions may occur. Ray (2019)'s theory of racialized institutions provides potential explanations. Put simply, structural manifestations of under-resource in predominantly Black and Brown schools result in unequal outcomes— "Organizations help launder racial domination by obscuring or legitimating unequal

process" (Ray, 2019, p. 35). In our case, under-resource in tools to manage complex student behavior results in unequal reliance upon police in schools in which under-resource is most pronounced, that is, predominantly minority-serving schools.

We further incorporate Mcintosh et al. (2014)'s theory of vulnerable decision points to shed light on how these intervention disparities may occur. These decision points are made "vulnerable" in contexts that allow for implicit bias to influence the decision of whether and how a student should be punished. Regardless of whether an individual's perception of a racialized space is conscious or unconscious, we would expect that this perception would affect how adults respond to students when they misbehave.

Put simply, stereotypes arising from defining a school that serves predominantly Black students as "Black" may create increasingly vulnerable decision points for teachers or staff that have the power to involve police and, further, the severity of the interventions that are employed by police upon being called. We also expect that the under-resource in predominantly Black schools may further exacerbate staff's susceptibility to vulnerable decision points—when a space is defined as "disorderly" and, further, there are less resources to deal with this perceived disorder, these vulnerable decision points become even more likely to occur. Indeed, the phenomenon of a positive relationship between the demographic composition of a school and stigmatizing labels and exclusion for Black students (e.g., suspension, office referrals, special education classification) has been well-documented in the quantitative empirical literature (Owens, 2022; Chin, 2021; Fish, 2019). As such, we expect that predominantly Black schools would experience the most interventions, driven primarily by under-resource, whereas

¹ Mcintosh et al. (2014) concern themselves with decision points to suspend or refer a student, but in our case we view these points to be salient in the decision to call the police.

predominantly White schools would experience the greatest disproportionalities in police interventions.

NYC Context

New York City Public Schools (NYCPS) is the largest school district in the United States, serving approximately 1 million students each year and deploying approximately 4,400 "school safety agents," hereafter referred to as SROs (Donaldson, 2021). Similarly, the NYPD is the largest police department in the US, employing approximately 34,000 sworn officers (NYPD, 2024). During our period of analysis (2016/17-2021/22), NYCPS underwent a variety of discipline reforms, and the NYPD began quarterly reporting of all forms of police interventions occurring within any school in NYCPS. These interventions include both those from NYPD-employed school-based police, as well as police that are not stationed at school but called onto and entering school grounds.

The use of SROs fell under the purview of the NYPD until 2020, when Mayor Bill de Blasio began to transfer the oversight of SROs to NYCPS. This, however, did not eliminate non-SROs from intervening in schools (Donaldson, 2021) and, eventually, this decision was reversed by Mayor Eric Adams in February of 2022 (Martin, 2023). Further, the presence of SROs has decreased by over 1,000 positions between 2020 and 2023 (Martin, 2023). NYCPS recommends that police only be called in "the most extreme of situations, when kids pose an "imminent and substantial risk of serious injury" to themselves or others" (Kramer, 2023). However, there are instances in which police are called to address students in emotional distress (child in crisis interventions), which can result in students being restrained before being transferred to a hospital for psychological evaluation. Other interventions are used when students commit an arrestable or

² NYCPS does not record or report public or restricted-use data that report the presence of SROs at a more granular level.

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citable offense, but instead of producing an official police record, are returned to the purview of the school (mitigated offenses). These actions may be taken by SROs or by patrol officers who are called by school staff or SROs (Zimmerman, 2017). Mitigated and child in crisis interventions are less legally severe than other police responses of arrest, juvenile referral, or summonses.³ In 2021, the NYPD also launched precinct-level pilots to implement the use of Mental Health Teams, which would exclusively respond to mental health crises (NYC Office of the Mayor, 2020).

Other forms of discipline and control in NYCPS include the use of suspension and office discipline referrals. The use of these options follows a similar pathway as the use of police in schools: a disciplinarian observes a student's behavior and must decide whether to handle the behavior in class (and administer a non-exclusionary response) or refer the student to the office, where the student will likely receive exclusionary disciplinary consequences (Rodriguez & Welsh, 2022). In NYC, reliance on exclusionary discipline has become less common, pursuant to the 2012 ban on suspension as a response to low-level misbehavior, a De Blasio-era push for restorative justice programming and mental health supports, and restrictions on the length of suspensions (Rodriguez & Welsh, 2022). Many of these reforms were already implemented prior to when our study begins (2016/17 academic year).

Data

We draw on unique data from the NYPD, NYCPS (via the Research Alliance for New York City Schools (RANYCS)), and the SSEC to probe the relationship on average and across time between traditional police interventions in schools and a school's racial demographic composition, viewing schools as sites of racially territorial policing. We use publicly available

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 $^{\rm 3}$ See appendix for full NYPD definitions of intervention types.

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data from the NYPD that reports on distinct categories of police interventions in schools on a quarterly basis beginning in the 2016 calendar year. We aggregate this quarterly data to the academic year level, defining an academic year as beginning in July of year t-1 to June of year t. We refer to an academic year by the spring semester, e.g., the 2016-17 academic year is 2017. Incidents are reported in two ways: at the school-level or the precinct-level. The precinct-level data provide information on the age group, race, and sex of the offender as well as the intervention type (e.g., arrest, summons, mitigation). We use precinct data to establish the number of students by age, race/ethnicity, and sex who were subjected to different types of interventions. We also use this data to examine disproportionalities in interventions by race.

We use police interventions that are reported at the school level and aggregated to academic years to determine the total number of interventions by type from 2016/17 through 2021/22 academic years. We exclude the pandemic year of 2020/21 when most schools were completely remote, resulting in near zero instances of police interventions in this year. The school-level data does not provide demographic information and only the name of the school and type of intervention that took place. We use a school name to school identification number crosswalk from The City—a non-profit news organization focused on accountability reporting in NYC—to match interventions to school-level characteristics constructed from student-level data provided by RANYCS and school-level data from the SSEC, which contains information on

⁴ Although the quarterly data begins in January of 2016, we begin estimation in the 2016/17 academic year such that we observe a full academic year of interventions. We also exclude the 2020/21 pandemic year in which most schools were virtual, meaning that police interventions were nearly zero.

⁵ When using the precinct-level data, we include all offenders less than 21 years of age (New York State's cutoff age for school attendance) to narrow to offenders that are more likely students. We also conduct a robustness check to lower the cutoff age to 18 and find our results unchanged (Figures A1 and A3). We aggregate Black Hispanic and White Hispanic students into the "Hispanic" category. "Other" consists of American Indian, Arab, Asian/Pacific Islander, East Indian, and Unknown. Approximately 10 interventions do not record sex. These interventions are dropped.

violent incidents and student enrollment.⁶ See Appendix A for a detailed description of the data matching process for both school and precinct-level files.

We proxy for characteristics of the context in which an intervention occurred by examining differences in student characteristics, teacher characteristics, and principal and support staff characteristics. Specifically, we proxy perceived student behavior and responses to this behavior through student suspension rates, office discipline referrals (ODRs), and a school violence index. It should be noted that these measures are imperfect insofar as they do not capture the "true" behavior of a student—instead, ODRs represent reported student behavior, meaning that some behavior is likely not captured by ODRs. We proxy staff (either teacher, principal, or support staff) under-resource through staff to student ratios, average years of experience, percent that are new to a school, and the percent that are Black. We consider the percent of staff that are Black as a proxy for under-resource given the proposition that predominantly Black institutions often-times receive fewer resources. Further, we understand that Black teachers oftentimes take alternative pathways to certification that have fewer opportunities for student teaching (Carver-Thomas & Darling-Hammond, 2017), which may influence their ability to manage behavior in the classroom. We do not have access to data regarding teacher preparation.

Descriptives

As shown in Figure 1, the number of police interventions occurring within NYCPS has increased regularly since the 2017 academic year. July through September (Q1) experienced the least number of interventions within each academic year. During the first pandemic year in which schools were closed, all interventions fell to nearly zero and began to increase beginning

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⁶ These interventions may include adults. To limit the degree to which adults are included in this data, we exclude GED programs, adult programs, prison programs, and young adult borough centers (YABCs).

in the Spring (Q3) of 2021. During the first full year back, mitigated interventions rapidly increased to nearly 2500 within the months of October-December, well beyond pre-pandemic levels. The increases in these interventions arose despite declines in enrollment post-pandemic.

Figure 2 depicts the total number of interventions by student age group, race, and sex and Table A1 reports corresponding counts. Across all years, most interventions (out of 51,873 total interventions) are for children 12 years old or older (typically middle school or high school aged students), but police still intervene over 8,000 times with students under 12 years old. Most interventions for elementary aged children are mitigated (2,635) or child in crisis interventions (5,509) and are concentrated among Black and Hispanic male students. Female students under 12, regardless of race, have lower rates of intervention than male students.

For those students older than 12 years old, Black girls and Black boys experience similar levels of child in crisis and mitigated interventions, but Black boys were nearly 3 times as likely as Black girls to experience an arrest. These patterns were similar for Hispanic boys relative to Hispanic girls. White boys experience 5 times the number of arrests, nearly 3 times the number of juvenile referrals, and over 2 times the number of mitigated interventions relative to White girls. Black students, regardless of gender or age, persistently dominate the number of police interventions. Black students comprise 53.3 percent of interventions, despite comprising only 28.7 percent of student enrollment. White students comprise 13.0 percent of student enrollment, but only experience 5.6 percent of interventions. Hispanic students make up 43.3 percent of enrollment, but only 35.5 percent of interventions.

Table A2 presents summary statistics for all variables included in our analyses by whether a school is in the top quartile of Black, Hispanic, or White enrollment. Notably, schools in the top quartile of Black enrollment experience approximately 6 times the number of

interventions per 100 students than those schools in the top quartile of White enrollment; schools in the top quartile of Hispanic enrollment experience about 2 times the number of interventions. Schools in the top quartile of White enrollment, have higher attendance rates, lower suspension rates, fewer free and reduced-price lunch (FRPL) eligible students, and fewer transfer students. Schools in the top quartile of Hispanic enrollment and Black enrollment are largely similar in these characteristics.

Teachers and principals in schools in the top quartile of Black or Hispanic enrollment had similar years of experience to schools in the top quartile of White enrollment, but predominantly Black or Hispanic schools have more teachers and principals that are new to a school within a given year. Teachers, principals, and support staff at predominantly Black or Hispanic schools are also more likely to be Black relative to schools in the top quartile of White enrollment.

Figure 3 displays density plots of the percent of students in a school who are either Hispanic, Black, or White. There are no schools that exclusively serve White or Black students, but there are schools that serve exclusively Hispanic students. Most schools in our sample serve very few White students, whereas there is a relatively even distribution in terms of the percent of students in a school that are either Black or Hispanic.

Across School Differences in Police Interventions

We begin by documenting raw patterns in rates of police intervention in relation to the racial composition of a school. Figure 4 displays the number of interventions per 100 students enrolled across the distribution of the percent of a school that is Black or Hispanic as predicted by local polynomial estimation. We observe that the prevalence of interventions is highest in schools serving greater percentages of Black students. Notably, we observe a slight kink in the distribution when Black students comprise approximately 50 percent of students within a

school—there is a marked increase in the rate at which incident prevalence increases as schools serve greater percentages of Black students.

Regardless of the percent of Hispanic students, interventions per 100 students remain relatively stable, apart from mitigated interventions, which are less prevalent in those schools serving the highest proportion of Hispanic students. In NYCPS, Hispanic students are the dominant group—43 percent of NYCPS students are Hispanic.

We also observe heterogeneity by a school's grade structure (Figure 5). We observe that the majority of mitigated police interventions occur in high schools (grades 9-12) and the fewest occur in elementary schools (grades K-5). Notably, regardless of a school's grade structure, more interventions occur in predominantly Black schools relative to schools with a lower proportion of Black students.

We also examine heterogeneity across time (Figure 6). Given that we observe a major increase in interventions upon returns to in-person learning (Figure 1, Panel A), we examine how interventions in 2022 compared to interventions prior to the beginning of the COVID-19 pandemic. The growth in interventions that we observe in Figure 1 is driven almost entirely by schools with above average proportions of Black students. Again, the general pattern holds in both time periods: as the proportion of Black students within a school increases, so does the incidence of mitigated interventions. It should be emphasized that these patterns are based on only one year of data.

Within Precinct Disparities in Interventions

Having established that intervention prevalence is most common in predominantly Black schools, we turn to examine how within school disparities vary across school racial composition. Given our data, we are unable to directly observe interventions disaggregated by race at the

school level. Consequently, we rely on precinct-level data and precinct-aggregated school characteristics—our estimates therefore better reflect within precinct disparities in police interventions in schools. From this data, we construct adjusted risk differences (ARDs) for arrests, juvenile referrals, child in crisis, and mitigated interventions between Black and White offenders at the precinct level, where:

$$ARD_{npt} = \left(\frac{Inverventions_{black,npt}}{Enrollment_{black,pt}} - \frac{Inverventions_{white,npt}}{Enrollment_{white,pt}}\right).$$

A positive ARD indicates that Black students in a given precinct-year (pt) had a higher risk of receiving an intervention of type n than White students.

As shown in Figure 7, Panel A we find that racial disproportionality in arrests, juvenile referrals, and child in crisis interventions is concentrated primarily in precinct areas with schools that serve a lower percentage of Black students. In precinct areas with schools serving the fewest Black students, Black students are 2 percentage points (pp) more likely than White students to experience a child in crisis intervention, and approximately 0.5pp more likely than White students to experience an arrest or juvenile referral. Notably, these disparities are approximately 3 times smaller in precincts that serve an above average percentage of Black students. However, there are minimal differences in the risk difference between Black and White students for mitigated interventions—regardless of the student racial composition in a precinct, Black students are approximately 1pp more likely than White students to experience a mitigated intervention.

We also provide an explicit test of the racial threat hypothesis, examining how changes in the White population of a precinct's students are related to Black-White ARDs in interventions.

We construct a three-year moving average of the year over year change in the proportion of White students within a precinct and plot these compositional changes against Black-White

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ARDs, disaggregated by whether a precinct's composition of White students is above or below average.⁷ Figure 7, Panel B, presents these relationships. We find that in precincts in which the White student population is shrinking that ARDs in mitigated interventions are larger. This finding is exceptionally pronounced in areas that have above average White student enrollment and less so in areas with below average White student enrollment.⁸

We also conduct a supplementary analysis to examine interventions across terciles of the percent of a precinct's schools that are White. Table 1 presents mean Black-White ARDs for each tercile and intervention type and p-values for differences across terciles and Figure A2 provides a visual representation. We observe that precincts in the third tercile of White student enrollment experience the largest ARDs in all intervention types, and all differences in ARDs between low- and high-percent White precincts are statistically significant at the 5 percent level. For all interventions except child in crisis, we observe a monotonically increasing relationship between ARDs and tercile, again, in line with the prediction of the racial threat hypothesis that Black students may be disproportionately intervened upon in predominantly White schools where they may be deemed a threat.

Adjusted Differences in Reported Police Intervention Patterns

These patterns of racially concentrated interventions may be explained by at least three hypotheses. First, and in line with the concept of racialized institutions, it may be the case that

⁷ We use above average instead of above 50 percent due to the fact that precincts serving over 50 percent White students are in the 99th percentile of schools.

⁸ Our primary analyses use data from offenders who are 21 years of age or younger. Figure A1 presents results when changing our inclusion criteria to include only offenders who are 18 years of age or younger. Our results are unchanged.

⁹ We use terciles instead of a continuous measure of percent White as there are extreme gaps in the distribution of the percent of a precinct's students that are White—there are no schools that serve between a ~60-75 percent White student body.

¹⁰ Figure A3 and Table A2 presents sensitivity analyses to changing the cutoff age from 21 years of age or younger to 18 years of age or younger.

schools with high levels of interventions have lower staff capacity, forcing a reliance on other actors (i.e., police) for behavioral management. This concentrated under-resource is especially prevalent in NYCPS, where schools are still racially and socio-economically segregated and efforts to integrate have been largely stymied (Shapiro, 2019). Second---and in line with the concept of vulnerable decision points and racial threat---racial biases of police in schools, teachers, or other administrators may manifest as a greater reliance on traditional police to manage the behavior of students of color, which is often times perceived as more severe relative to the same behavior of White students (Liu et al., 2022; Barrett et al., 2021; Okonofua and Eberhardt, 2015). Moreover, while predominantly Black schools on average experience greater rates of exclusionary interventions (Welsh and Little, 2018), within-school racial disproportionalities in severe disciplinary actions are higher in predominantly White schools in the context of integration (Chin, 2021) as well as in our data as outlined in the prior section. Lastly, it may be the case that Black students engage in more misbehavior than White students, which leads to a greater incidence of police intervention, dominated by predominantly Black schools.

We are unable to directly test the second hypothesis, but we aim to test hypotheses one and three. To do this, we turn to the school-level NYPD files merged with RANYCS data to explore the characteristics of schools that have above or below expected rates of interventions conditional on other characteristics. Given that child in crisis and mitigated interventions experience the most variation in prevalence across schools, we focus on these interventions for the remainder of our analyses. We use a two-stage residuals analysis, first estimating the following equation:

Intervention Rate_{st} =
$$X_{st}\phi + \gamma_t + \epsilon_{st}$$
,

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where γ_t is a year fixed effect, X_{st} is a vector of school level student or staff characteristics and an indicator for the grade structure of a school. We construct 4 models. The first aims to test the extent to which student behavior contributes to more police interventions in schools. While we do not observe true student behavior, we used data on school-level infraction and suspension rates on average and by racial group, the percent of students that are mobile, average attendance rate, and the school violence index, which measures violent and disruptive incidents that occur within a school. We also include controls for the percent of students that are free and reduced-price lunch eligible.

To test hypotheses regarding under-resource, we specify three additional models. The first model includes the aforementioned student characteristics and adds in teacher characteristics (pupil-teacher ratio, percent of teachers new to a school, average years of teacher experience, percent of teachers who are Black). The second includes student characteristics and the number of principals per student and assistant principals per student and relevant principal and assistant principal characteristics (percent new to a school, average years of experience, percent who are Black). The third includes student characteristics and the number of social workers, school psychologists, and guidance counselors per student as well as relevant characteristics for each support staff type (percent new to a school, average years of experience, percent who are Black).

For each model, we use predicted values to then construct residuals as:

 $\epsilon_{st}^* = Intervention Rate_{st} - X_{st} \hat{\phi} - \gamma_t$ then use local polynomial regression to plot ϵ_{st}^* across the distribution of given school characteristics: percent Hispanic and percent Black. If we observe non-random patterns in the values of residuals across the distribution of school racial composition, that would indicate that

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the characteristics of interest (i.e., X_{st}) do not explain the use of police interventions in schools. ¹¹ This method is advantageous over traditional OLS regression as it allows us to more flexibly model across the distribution of a characteristic rather than make assumptions about the functional form of the relationship between interventions and school racial composition. ¹²

The Role of Student Behavior

We find that differences in reported student behavior and observable characteristics fail to explain differential rates of intervention across schools (**Figure 8**). Despite controlling for key student behavioral measures, schools with a higher percent of Black students still experience greater than predicted rates of mitigated interventions. These higher than predicted rates dissipate at the schools with the most Black students. The slight over-representation of child in crisis interventions in predominantly Black schools is, however, explained by differences in student characteristics and behavior proxies.

Schools with a below average share of Hispanic students tend to have more than expected interventions, conditional on student characteristics and proxies for student behavior. However, schools with above average shares of Hispanic enrollment tend to have less than predicted rates of police intervention. This may be attributable to the fact that Hispanic students are the largest share of students within New York City, meaning that theories regarding the distribution of exclusionary and harsh interventions within schools (e.g., racial threat hypothesis) may not apply within this context.

The Role of Teachers, Principals, and Support Staff

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¹¹ Ideally, we would also want to estimate models of racial disparities in interventions. However, this would require us to use precinct-level files, which are the only data available that contain the demographic characteristics necessary to construct ARDs. This means that these models would be estimated on 380 observations (76 precincts contain schools with 5 years of data) with nearly 40 control variables in our most complex model. Further, this would require us to aggregate all variables to the precinct level, washing out much of the variation that occurs primarily at the school level. As such, we do not estimate models with racial disparities as the outcome.

¹² Nonetheless, we conduct a robustness check using OLS and find our results are corroborated (Table A4).

Upon controlling for a variety of teacher characteristics, we find that expected and predicted values of both mitigated and child in crisis interventions are roughly equal across the distribution of the percent of Black students and the percent of Hispanic students in a school (**Figure 8**). We find that teacher characteristics are singular in this regard—the explanatory power of principal or support staff characteristics on their own only slightly reduce, but do not eliminate the disparate use of police interventions in predominantly Black schools. More specifically, analyses of individual teacher covariates suggest that the percent of teachers in a school that are Black uniquely drives the reduction in the over-representation of police interventions in predominantly Black schools.

Lastly, we also conduct a robustness check, modeling intervention rates nonparametrically as a function of indicators for quartiles of school demographic composition and observe how these coefficients of interest change when controlling for student, teacher, principal, and support staff characteristics. Specifically, we estimate the following model:

Intervention
$$Rate_{st} = \sum_{i \neq 1}^{4} \rho_i [1(q = i)] + X_{st} \phi + \gamma_t + \epsilon_{st}$$

where the coefficients of interest are ρ_i and indicate the difference in intervention rates for schools in the second, third, or fourth quartile of Black student enrollment relative to those schools in the first quartile of enrollment conditional on characteristics X_{st} and year fixed effects (γ_t) . We estimate the same four models as above and find the same patterns: the overrepresentation of mitigated police interventions is uniquely explained by differences in teacher characteristics—specifically the percent of teachers within a school who are Black (Table A4).

Heterogeneity Analyses

We examine heterogeneity by a school's grade structure and time period. We re-estimate all models on our sub-samples of interest (i.e., grades K-5, K-8, 6-8, 9-12, pre-pandemic, post-

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pandemic). We detect slight heterogeneity by the grade structure of a school (Figure A4) as well as the time period (Figure A5). Student characteristics and composition matter more so for schools that serve grades 6-8, but less so for high school and elementary schools.¹³ This is perhaps consistent with the fact that disciplinary incidents or office referrals are most common at the middle school level in New York City. Despite this phenomenon, teacher characteristics still hold additional explanatory power regardless of the grade structure of a school.

Next, we examine heterogeneity by time period (Figure A5). We find similar patterns, with teacher characteristics being uniquely salient in the period prior to the pandemic's onset. Post-pandemic, student characteristics carry more explanatory power relative to pre-2020, yet teacher characteristics, as well as principal and support staff characteristics, mediate the concentration of mitigated interventions in predominantly Black schools. ¹⁴ Importantly, these estimates are much less precise given the single year of data on which we are estimating (2021/22 academic year) and we interpret these estimates with caution.

Discussion

We provide evidence of disproportionate representation of Black students and schools in police interventions in New York City. We find little evidence to support the hypothesis that differential student behavior or characteristics explain these disproportionalities. Consequently, attempting to change student behavior—through suspension or policing—is unlikely to affect these higher rates of intervention. Instead, we find evidence that differences in teacher characteristics, specifically the racial/ethnic composition of a school's teaching staff, help to explain the disproportionate use of police in predominantly Black schools.

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¹³ Additional analyses suggest that it is primarily average student attendance rate that explains these differences in grades 6-8, *not* metrics that are perhaps closer proxies for behavior (ODR rates, SVI measures, suspension rates). ¹⁴ In contrast to our other analyses, we do not find evidence of one single variable mediating these relationships. Instead, it is a combination of student characteristics that mediate the relationship between interventions and the proportion of a school's students who are Black.

While several prior studies have provided evidence that increased exposure to same-race teachers is associated with reduced suspension of Black students (e.g., Blake et al., 2016; Lindsay & Hart, 2017; Shirrell et al., 2023), our study reveals a puzzling finding that calls into question whether similar patterns translate to more extreme disciplinary outcomes such as police intervention. While our study's finding that a higher presence of Black teachers is associated with greater disproportionality in police interventions in predominantly Black schools runs in contrast with the bulk of the empirical literature on student-teacher race match and school discipline, some literature suggests that Black teachers, particularly Black male teachers, are often relegated to disciplinary roles and responsibilities (Bristol & Mentor, 2018; Brockenbrough, 2015) or may be more inclined to apply more punitive discipline practices to Black youth as a way to enforce conformity with White middle class behavioral standards (Blake et al., 2022). We believe our study underscores the importance of further research, especially given that police intervention, while less frequent than suspensions, represents a much more severe consequence for students.

Further research into understanding this phenomenon is essential given that disproportionate police presence may indeed *harm* not only students, but also staff and families who are subjected to—or simply tangential to—these practices. Prior research suggests that exposure to police broadly especially harms Black youth and exposure to SROs harms student academic and health outcomes broadly, especially Black students' outcomes (Aizer & Doyle, 2015; Del Toro et al., 2022; Jackson et al., 2019; Jindal et al., 2021; Perryman et al., 2022; Sorensen et al., 2024). We can expect that these effects may also spillover to families and staff, further exacerbating the vicious cycle of discipline and criminalization of Black youth and spaces. Indeed, the relationship between schools and families are salient in the school

disciplinary process (Rodriguez & Welsh, 2024), which may replicate and extend to the case of police interventions in schools. It may indeed be the case that the documented negative effects of police generally and SROs may extend to traditional police in schools, even if they arise through different mechanisms.

Implications for Policy, Practice, and Research

Given that student characteristics or within-school responses to student behavior do not explain the over-policing of predominantly Black schools, we suggest that it may be efficacious to address structural factors that likely affect a teacher's decision to call police. For example, ensuring that Black teachers have sufficient support from administrators and equitable resources commensurate with the higher need population that predominantly Black schools tend to serve may prove fruitful. As shown in Table A2, predominantly Black schools in NYC have higher rates of violent incidences, above-average share of students who are FRPL eligible, and have a more mobile student population. The relationships between these characteristics may arise potentially through NYC's history of "de facto education redlining" (Holzman, 2012) in which neighborhood characteristics, disinvestment, and segregation may largely coincide with differences in educational opportunity and resource (Aaronson et al., 2023), despite the choicerich environment of NYCPS. Despite having a higher needs population, the resources that these schools are provided (e.g., as measured by pupil-teacher ratios; principals, teachers, and support staff mobility; and years of teacher, principal, and support staff experience) are the same or less than schools on average and markedly less than predominantly White schools. Equal distribution of resources amidst inequal needs prohibits equitable outcomes from being realized. Given the emergence of rollbacks to suspension and police reforms across the US (Sparks, 2023; Pendharkar, 2022) and the NYC context of budget cuts to education yet maintenance of funds to

police (Beeferman and Touré, 2023), the evidence provided in this study suggests that these funding changes are likely not an optimal strategy to promote student (or teacher) success.

Functionally, increasing supports could occur at a variety of stages throughout a teacher's career beginning from pre-service training through employment. It could be of interest to address differences in teacher preparation programs. Some quantitative evidence suggests that Black teachers often enter the workforce without any student-teacher experience, have less access to mentorship, and are more likely to express concerns regarding lack of resources (Carver-Thomas & Darling-Hammond, 2017). Indeed, Black teachers "give more, receive less, and burn out sooner" (Mobley, 1992, 20 via Samuels et al., 2021). Broadly, we suggest that policy could focus on improving teachers' capacity—especially Black teachers' capacity—to address student behavior without relying upon other agents such as police.

Ensuring pre-service training and sufficient resources could also be accompanied by incorporating explicit training in classroom management and relationship building (Welsh, 2023), which many teacher preparation programs lack (Perera & Diliberti, 2023). These efforts may be especially salient for Black teachers who disproportionately serve predominantly Black schools that may be under-resourced. The compounded under-resource and potential over-work that Black teachers in predominantly Black schools experience highlights the importance of targeting capacity-building not only to specific schools, but to teachers within specific schools.

Addressing Antiblackness in Schools

Our finding of greater racial disproportionality in child in crisis, arrests, and juvenile referrals within predominantly non-Black schools is in line with the racial threat hypothesis (Blalock, 1967) and notions of antiblackness in disciplinary proceedings, especially as demonstrated by high disproportionality in interventions within predominantly White schools.

Combined with the fact that schools in the top quartile of Hispanic or White enrollment have approximately one-third the proportion of teachers, principals, and support staff who are Black relative to those schools in the top quartile of Black enrollment, these schools are ripe for stark disproportionalities to emerge. As such, policy could focus on accountability and training in alternative management practices (e.g., restorative justice), especially in schools where Black students may be singled out. Improving teacher capacity to address behavior within schools may complement the implementation of these alternative programs, which require high levels of staff buy-in that are unlikely to be achieved without sufficient support.

Further, schools with a predominantly Black teaching staff, are still likely to place the onus of punishment and behavioral management for "troublemakers" on Black teaching staff, especially Black male teachers (Bristol & Mentor, 2018). In addition, qualitative research documents the extensive roles that teachers of color play in diversity, equity, and inclusion initiatives, which creates additional burdens for these teachers (Villavicencio et al., 2024). As such, even if material resources are provided to predominantly Black schools and to Black teachers, we may still expect additional pressures and responsibilities for Black teachers resulting in lower capacity to manage difficult student behavior in classrooms.

Sobti and Welsh (2023) also argue that internalized anti-Blackness at least partially explains instances in which Black teachers and principals may over-refer Black students—"[t]he experience of double consciousness among Black educators is central to the application of internalized racism to school discipline." In this way, schools with greater percentages of Black teachers or diversity generally does not necessitate more equitable outcomes for Black students in these contexts. In addition to this internalized anti-Blackness directly impacting the relationship between teachers and their students, the cognitive load of the "Double

Consciousness," as posited by Du Bois, may further impact Black teachers' ability to manage behavior within the classroom and avoid vulnerable decision points in the referral process.

Indeed, "[p]olicymakers ought to focus not only on diversifying the educator pipeline but also providing support to these educators" (Welsh and Sobti, 2023).

The Role of Policy

While we propose that improving teacher capacity is a potential strategy by which reliance on police in schools may be reduced, we also suggest that alternative policies regarding the management of student misbehavior, such as 'warn and release,' may be beneficial. NYPD's use of mitigated interventions represents a unique form of "warn and release" interventions in which the student is released back to school staff for the administration of consequences instead of receiving a juvenile referral or arrest. These programs are helpful in that they eliminate the creation of a legal record for students, yet, as we show, they do not eliminate the disproportionate representation of Black students and schools in these interventions.

Schools may thus wish to focus on adjudicating between behavior that is indicative of a juvenile referral or arrest, which *requires* police intervention, versus what would eventually be a mitigated intervention, in which school staff ultimately determine consequences. This may come in the form of implementing processes and policies like threat assessment. While threat assessment has been used primarily to determine threats of major violence (e.g., school shootings or protection of public figures), these strategies may be helpful in the prevention of student behavior that could ultimately result in the use of police in schools and other "reactive practices" (Maeng et al., 2020).

Directions for Future Research

While we have provided potential directions for policy, we are limited in that our data is unable to account for omitted variables that may simultaneously be correlated with the racial/ethnic composition of a school's teaching staff and with police interventions. We suggest a role for qualitative research in addressing these potential mechanisms. Regardless, the fact that the racial composition of teachers in a school holds explanatory power is contradictory to the race-match literature. This puzzling phenomenon suggests that teachers may be using police interventions in a unique way. As such, conceptualizing reliance on police interventions in schools in the same way as suspension, SRO interventions, or other disciplinary measures is unlikely to paint a full picture. Further research is needed to understand this process, especially when these officers are primarily responding with mitigation. This understanding comes at a critical point in the return to in-person learning that was accompanied by an explosion of police interventions in schools and the COVID-19 pandemic's exacerbation of already prevalent inequities (Supovitz & Manghani, 2022; Supovitz et al., 2023).

Lastly, efforts should be made to coordinate between school districts and police departments to provide comprehensive reporting on external police interventions in schools. To our knowledge, the NYPD is singular in this regard. This reporting requirement was only made possible through the passage of the School Safety Act, which was a result of nearly 4 years of advocacy (NYCLU, 2008). To allow for future research on the use of external police in schools, this data is essential. We suggest that legislation like NYC's School Safety Act would be beneficial to encouraging coordination between departments of education and local police departments to gather this data.

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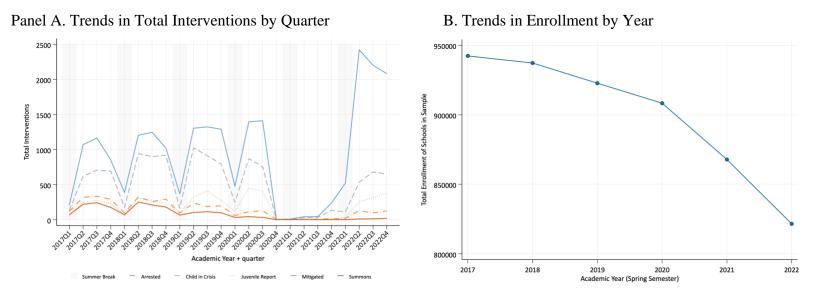
Tables

Table 1. Differences in Intervention ARDs by Tercile of White Enrollment

Intervention	Group 1 - Group 2	Group 1 ARD	Group 2 ARD	P-value
Arrest	Medium-High	0.194	0.346	0.027
	Low-Medium	0.123	0.194	0.010
	Low-High	0.123	0.346	0.001
Child in Crisis	Medium-High	0.357	1.314	0.000
	Low-Medium	0.374	0.357	0.732
	Low-High	0.374	1.314	0.000
Juvenile Referral	Medium-High	0.223	0.399	0.047
	Low-Medium	0.199	0.223	0.380
	Low-High	0.199	0.399	0.022
Mitigated	Medium-High	0.948	1.417	0.021
	Low-Medium	0.861	0.948	0.521
	Low-High	0.861	1.417	0.005

Notes. Estimates represent the adjusted risk differences for each intervention type by the tercile of White enrollment. "Low" indicates the first tercile, "Medium" indicates the second tercile, and "High" indicates the third tercile. P-values for the difference between each tercile and intervention type are provided.

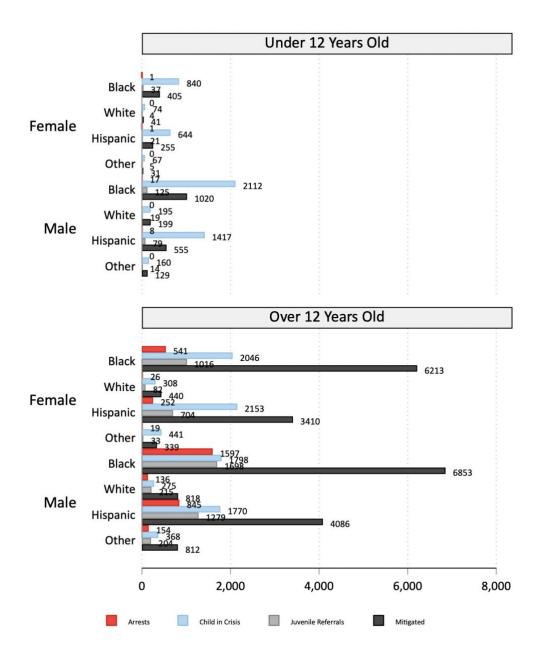
Figure 1. Trends in Enrollment and Intervention by Type from 2016/17-2021/2022



Notes. This figure depicts the change over time for the primary interventions that NYPD uses in schools that are found in the data provided by the Research Alliance for New York City Schools (RANYCS). Quarter refers to academic quarter, where Q1 is July-September, Q2 is October-December, Q3 is January-March, and Q4 is April-June. Both panels only include interventions or students that match to data provided by RANCYS and only include students in NYCPS schools, grades K-12, and in non-charter schools.

Source: Authors' calculations. We derive the total number of interventions from the school-level files provided by the NYPD and total district enrollment from the student level files provided by RANYCS.

Figure 2. Total Interventions by Student Age Group, Race, and Sex—Pooled (2016/17-2021/2022)



Notes. This figure depicts the aggregate number of interventions by race, sex, and age of all offenders less than 21 years of age. We aggregate Black Hispanic and White Hispanic students into the "Hispanic" category. "Other" consists of American Indian, Arab, Asian/Pacific Islander, East Indian, and Unknown. Approximately 10 interventions out of 67,290 do not record sex. These interventions are dropped.

Source: Authors' calculations. We derive the total number of interventions from the precinct-level files provided by the NYPD.

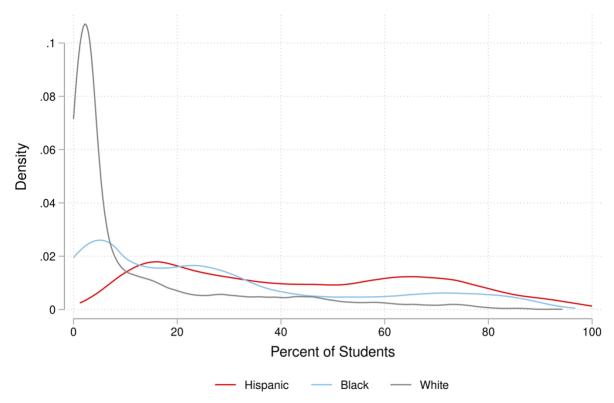
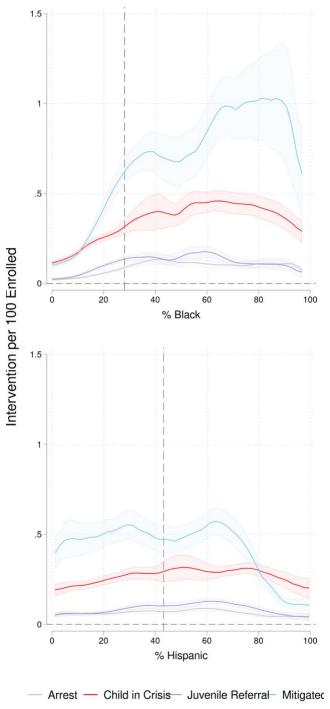


Figure 3. Kernel Density Plots of School-Level Student Demographic Characteristics

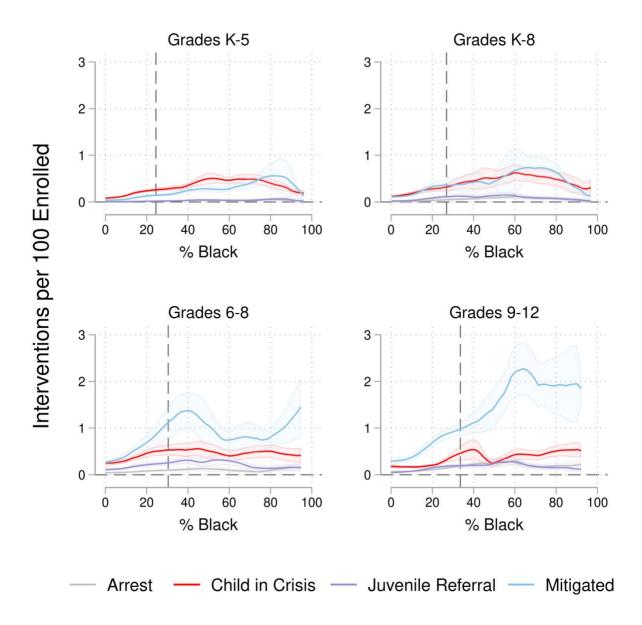
Notes. This figure depicts density plots of the percent of students who are either Hispanic, Black, or White in New York City Public Schools, which are our primary moderators of interest. The data includes all years and schools. *Source:* Authors' calculations. calculate a school's student composition by aggregating student-level data provided by RANYCS to the school level.

Figure 4. Interventions per Total School Enrollment by School Demographic Composition



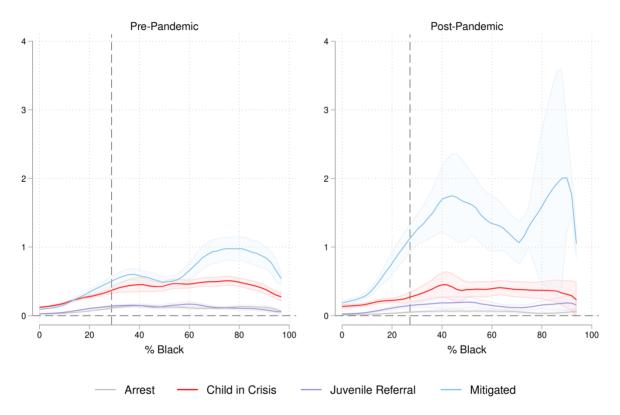
Notes. This figure depicts the number of interventions per total enrollment by the percent of a school that is Hispanic, Black, or White. We fit local polynomials to data across all years and schools. Vertical dashed lines indicate the district-level average demographic composition.

Figure 5. Interventions per Total School Enrollment by School Demographic Composition: Heterogeneity by School Grade Level



Notes. This figure depicts the number of interventions per total enrollment by the percent of a school that is Black, disaggregated by the grade structure of a school. Other combined schools (i.e., 6-12s or K-12s) are excluded. K-5s, K-8s, and 6-8s are mutually exclusive. We fit local polynomials to data across all years and schools. Vertical dashed lines indicate the district-level average demographic composition.

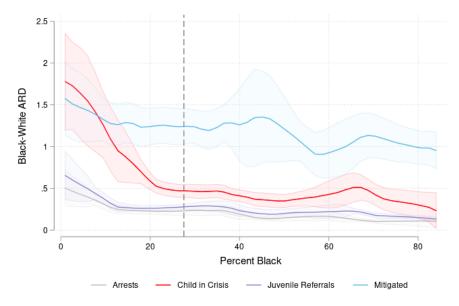
Figure 6. Interventions per Total School Enrollment by School Demographic Composition: Heterogeneity by Pre-2021 and Post-2021



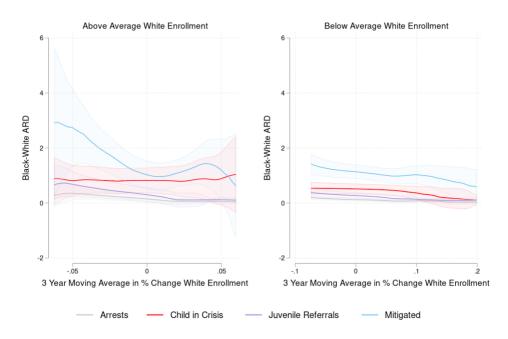
Notes. This figure depicts the number of interventions per total enrollment by the percent of a school that is Black, disaggregated by pre- and post-pandemic years. Pre-pandemic includes 2016/17 through 2019/20. Post-pandemic includes 2021/2022. We fit local polynomials to data across all years and schools. Vertical dashed lines indicate the district-level average demographic composition.

Figure 7. Average Risk Difference between Black and White Students across Precinct Demographic Composition

Panel A. Black-White ARDs in Interventions across the Percent of a Precinct that is Black



Panel B. B-W ARDs by Changes in the Percent White in Precincts with Above or Below Average White Enrollment



Notes. This figure depicts the average risk difference for each intervention type between Black and White students across the distribution of the percent of enrollment that is Black within a given precinct. We fit local polynomials to data across all years and schools.

Source. Authors' calculations. We derive the number of interventions by race from the precinct-level files provided by the NYPD. We calculate the enrollment of Black and White students by aggregating school-level data provided by RANYCS to the precinct level.

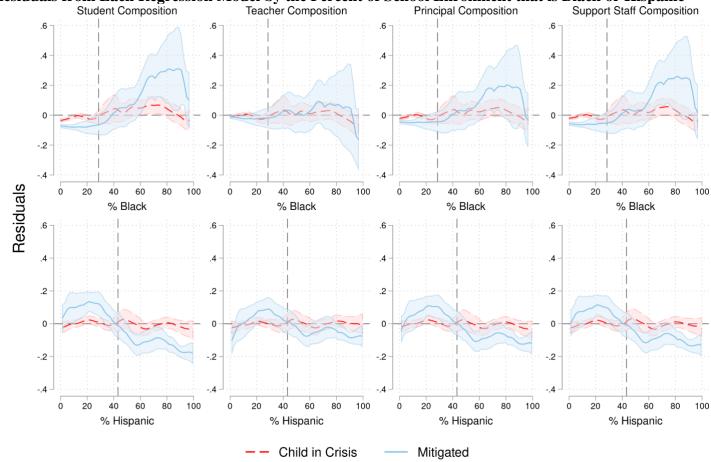


Figure 8. Residuals from Each Regression Model by the Percent of School Enrollment that is Black or Hispanic

Notes. Estimates reflect the residuals constructed from regression models plotted against the percent of a school that is White, Black, or Hispanic using local polynomial estimation with a bandwidth of 5. All models include year fixed effects and control for a school's grade structure. Estimates exclude the 2020-21 academic year. Student composition includes overall and race-specific suspension and office discipline referral rates, incident rates, school violence index, free and reduced price lunch percent, and percent of students that are new to a school. Teacher models include pupil-teacher ratio, average experience, the percent Black, and the percent new to a school. Principal models include the number of principals and assistant principals per student, as well as the percent of principals and assistant principals that are new to a school, the percent Black, and their average years of experience. Support Staff composition includes the number of social workers, guidance counselors, and school psychologists per student and their respective percent that are new to a school, the percent Black, and their average years of experience.

SUPPLEMENTAL MATERIALS

Data Appendix

Definitions

When police do intervene in NYCPS, they use arrest, summonses, and four other presumably less severe intervention types. First, *child in crisis* interventions involve students experiencing a mental health crisis or emotional distress; upon intervening, a police officer may place these students in mechanical restraints, remove them from the school, and admit them to a hospital for psychological evaluation. *Mitigation* applies to instances when an officer is called upon for an incident involving a student, but instead of employing arrest or summons, police release the student to their school for disciplinary action. A *juvenile report* is generally reserved for students under 16 years of age that committed an arrestable offense, and involves a student who is detained until a report is completed, which does not involve an arrest or summons. Finally, a *PINS* (*Person in Need of Supervision*) warrant involves police being called upon to supervise a student who has been habitually absent from school or has displayed dangerous or out-of-control behavior and requires supervision. *PINS* interventions are exceptionally rare (0.6% of interventions across all years) and are not explored in this study.

Data Matching Process

We use a school name to school ID crosswalk provided by The City to link the school names listed in the NYPD data to the school ID numbers in the data provided by the Research Alliance for New York City Schools (RANYCS). We exclude entries in the NYPD data in which the specific school is not listed (i.e., building complexes, certain learning centers, annexes) as well as charter schools, district 75 (special education only) schools, adult/GED programs, alternative learning centers (district 79), young adult borough centers, and correctional facilities. We also drop incidents in pre-K centers and home schools. We exclude these types of schools because they are

subject to distinct disciplinary regimes and procedures relative to traditional schools in NYCPS. Of those schools that are unmatched to a school identifier from the crosswalk from The City (237 schools), we manually search for these school IDs using public records on that contain school names and associated IDs from 2010 SAT School Level test results, water test records, and links between school names and IDs observable in data from NYCPS. This process allows us to match 183 schools to a school ID, some of which were excluded pursuant to the prior restrictions on school types.

We began with 1995 campuses in the NYPD and upon implementation of these restrictions, we ultimately arrive to 1491 schools (51,259 incidences) that experience at least one incident in at least one year. When including schools that experience no incidents, we have 1570 unique schools. To match SSEC data to NYPD data, we convert borough-district-school (BEDS) codes (provided in SSEC) to district-borough-school (DBN) codes. There are 119 schools across all years that are not identified in the SSEC, but are in the NYPD data. These schools are excluded from the analysis as SSEC reporting is required by law, meaning all NYCPS schools must comply.

Lastly, we merge the SSEC and NYPD data with school-level data from RANYCS, ultimately matching 1555 of 1570 schools to both SSEC and NYPD data. We exclude academic years 2015/16 and 2020/21 as well as schools with incomplete data. Ultimately, there are 1538 schools included in our analytic sample. Of the schools that were ultimately matched to RANYCS and SSEC, 111 were manually matched to their DBN. These schools are flagged and excluded as a robustness check (**Figures A2** and **A3**).

We match schools to precincts using a school's latitude-longitude coordinate from the Common Core of Data (CCD) and a precinct's boundary shapefile from NYC Open Data. This match allows us to aggregate school-level data from RANYCS to the precinct level and examine

racial disproportionalities in interventions not only on average, but across the distribution of student racial composition in a precinct area. This process implicitly assumes that precincts only respond to calls from schools that are physically located within their precinct borders. We find this assumption plausible: examining arrest data from the NYPD from the years 2016-2023 indicate that 96.6 percent of arrests made are by precincts within which the offense occurred. Simply put, there is near perfect overlap between where a crime occurred, and which precinct responds to the crime. To come to this conclusion, we rely on data from NYC Open Data on all arrest records, which contains information on the geographic coordinates where an arrest took place as well as the precinct of the arresting officer. We then match these coordinates to precinct polygons, which allows us to determine the extent to which the arresting officer's associated precinct matches the precinct in which the coordinates of the arrest are located.

SSEC School Violence Index

SSEC (formerly the Violent and Disruptive Incident Reporting Survey) is an annual survey provided to all schools in NYCPS. It requires schools to report a variety of violent and disruptive incidents that are used to construct a school violence index (SVI). Currently, the SVI is just the number of assaults, homicides, sexual offenses, or weapons offenses per 100 students enrolled. Prior to 2022, the SVI was a weighted average per enrolled, which gave greater weight to more severe offenses. For example, homicide received a weight of 100, assault with physical injury received a weight of 30, assault with *serious* physical injury received a weight of 45, etc. To harmonize across all years, we use the post-2022 SVI measure. The pre-2022 measure cannot be used on post-2022 data due to collapsing of categories.

Table A1. Total Interventions by Sex, Race, Age, and Type (Precinct Level)

		Child in	Juvenile				Row
	Arrests	Crisis	Referrals	Mitigated	PINS	Summons	Total
Female							
Under 12 Years Old							
Black	1	840	37	405	0	0	1,283
White	0	74	4	41	0	0	119
Hispanic	1	644	21	255	0	0	921
Other	0	67	5	31	0	0	103
Over 12 Years Old							
Black	541	2,046	1,016	6,213	58	396	10,270
White	26	308	82	440	1	26	883
Hispanic	252	2,153	704	3,410	37	259	6,815
Other	19	441	33	339	3	16	851
Male							
Under 12 Years Old							
Black	17	2,112	125	1,020	0	0	3,274
White	0	195	19	199	0	0	413
Hispanic	8	1,417	79	555	1	0	2,060
Other	0	160	14	129	0	0	303
Over 12 Years Old							
Black	1,597	1,798	1,698	6,853	50	842	12,838
White	136	275	215	818	0	70	1,514
Hispanic	845	1,770	1,279	4,086	21	599	8,600
Other	154	368	204	812	0	88	1,626
Intervention Total	3,597	14,668	5,535	25,606	171	2,296	51,873

Notes. Estimates correspond to Figure 2. These are the aggregate number of interventions by race, sex, and age of all offenders less than 21 years of age. We aggregate Black Hispanic and White Hispanic students into the "Hispanic" category. "Other" consists of American Indian, Arab, Asian/Pacific Islander, East Indian, and Unknown. Approximately 10 interventions do not record sex. These interventions are dropped.

Table A2. Differences in Intervention ARDs by Tercile of White Enrollment: Sensitivity to Cutoff Age

Intervention	Group 1 - Group 2	Group 1 ARD	Group 2 ARD	P-value
Arrest	Medium-High	0.182	0.335	0.025
	Low-Medium	0.117	0.182	0.010
	Low-High	0.117	0.335	0.001
Child in Crisis	Medium-High	0.345	1.253	0.000
	Low-Medium	0.378	0.345	0.505
	Low-High	0.378	1.253	0.000
Juvenile Referral	Medium-High	0.223	0.399	0.047
	Low-Medium	0.199	0.223	0.380
	Low-High	0.199	0.399	0.022
Mitigated	Medium-High	0.921	1.382	0.021
	Low-Medium	0.829	0.921	0.489
	Low-High	0.829	1.382	0.004

Notes. Estimates represent the adjusted risk differences for each intervention type by the tercile of White enrollment. "Low" indicates the first tercile, "Medium" indicates the second tercile, and "High" indicates the third tercile. P-values for the difference between each tercile and intervention type are provided. Observations include only those students who were younger than 18.

Table A3. Summary Statistics on Average and by Enrollment Quartiles

	<u>g</u>	Top Quartile	Top Quartile	Top Quartile
	All	Black	Hispanic	White
	Schools	Enrollment	Enrollment	Enrollment
Arrests per 100 Students	0.070	0.110	0.063	0.028
	(0.234)		*****	***
Child in crisis per 100 Students	0.291	0.456	0.313	0.128
I I I I I I I I I I I I I I I I I I I	(0.77)			
Juvenile referrals per 100 Students	0.094	0.132	0.102	0.037
r	(0.289)			
Mitigated per 100 Students	0.495	0.925	0.415	0.215
81	(1.584)			
PINS/Warrant per 100 Students	0.003	0.006	0.003	0.001
1	(0.037)			
Summons per 100 Students	0.041	0.065	0.030	0.010
1	(0.253)			
Percent of students Black	28.409	68.103	16.214	9.521
	(25.606)			
Percent of students Hispanic	43.414	22.900	76.648	27.421
•	(25.206)			
Percent of students White	12.833	2.800	2.678	39.473
	(18.252)			
Average attendance rate	0.889	0.867	0.882	0.930
	(0.093)			
Suspension rate	0.019	0.026	0.020	0.010
•	(0.029)			
ODR rate	6.814	8.685	6.867	4.174
	(8.801)			
School Violence Index (2022 calculations)	1.082	1.519	1.097	0.680
	(1.255)			
Percent of students FRPL eligible	62.900	67.789	73.168	46.574
	(19.424)			
Percent transfer students	9.172	11.523	9.291	7.224
	(5.627)			
ODR rate for Black students	0.079	0.079	0.079	0.069
	(0.104)			
ODR rate for Hispanic students	0.052	0.055	0.051	0.043
	(0.071)			
ODR rate for White students	0.047	0.051	0.051	0.034
	(0.093)			
Suspension rate for Black students	0.030	0.031	0.031	0.021
	(0.046)			
Suspension rate for Hispanic students	0.017	0.018	0.018	0.011
	(0.026)			
Suspension rate for White students	0.014	0.016	0.017	0.008
	(0.045)			
Pupil teacher ratio	16.822	16.695	16.126	16.743
	(5.989)			
Average years of teacher experience	10.923	11.460	10.327	11.226
	(3.093)	10.071	10.101	4.4.00
Percent of teachers new to a school	17.145	19.254	18.124	14.037
D (T 1 D) 1	(12.42)	45.460	15.055	5 555
Percent Teachers Black	20.024	45.469	15.875	5.775
P. 1 0 1	(20.299)	0.002	0.002	0.001
Principals per Student	0.002	0.002	0.002	0.001

	(0.001)			
Average years of principal experience	6.932	6.464	6.734	7.714
	(5.376)			
Percent new principals	5.255	7.167	4.220	4.448
	(22.136)			
Percent Principals Black	24.641	58.500	17.113	6.620
	(43.025)			
Assistant Principals per Student	0.003	0.003	0.003	0.002
	(0.001)			
Avg Assistant Principal years of experience	6.154	5.664	6.527	6.230
	(4.549)			
Percent Assistant Principal new to school	7.129	8.611	6.124	5.805
	(22.127)			
Percent Assistant Principals Black	22.264	46.766	17.678	7.469
	(36.829)	0.004	0.004	0.004
Social workers per student	0.001	0.001	0.001	0.001
	(0.001)	2.707	5.004	4.050
Avg Social Worker years of experience	4.625	3.787	5.204	4.958
D (C 11W 1) 1 1	(6.937)	12.12.1	10.405	12 100
Percent Social Worker new to a school	12.604	12.134	12.425	13.108
D (C '1W 1 D1 1	(32.108)	22.460	7.074	7.260
Percent Social Workers Black	11.897	23.468	7.274	7.368
C. Maria and an array days	(31.168)	0.002	0.002	0.001
Guidance counselors per student	0.002	0.002	0.002	0.001
A . C '1 C	(0.002)	0.207	0.070	0.015
Avg Guidance Counselor years of experience	8.181	8.287	8.068	8.015
Percent Guidance Counselor new to a school	(7.311)	0.050	9.403	0.072
Percent Guidance Counselor new to a school	8.906	8.858	8.402	9.073
Percent Guidance Counselors Black	(25.185) 19.087	40.562	11.634	9.966
Percent Guidance Counselors Diack	(36.353)	40.362	11.034	9.900
Sahaal mayahala aista man atudant	0.001	0.001	0.001	0.001
School psychologists per student	(0.001)	0.001	0.001	0.001
Avg School Psychologist years of experience	5.443	5.311	4.262	6.619
Avg School I sychologist years of experience	(7.659)	3.311	4.202	0.019
Percent School Psychologist new to a school	8.446	7.176	8.655	9.942
1 erecht School I sychologist new to a school	(26.96)	7.170	0.055).)¬L
Percent School Psychologists Black	5.836	13.046	2.599	3.654
1 electic behoof 1 sychologists black	(22.828)	15.040	2.377	J.UJT
Observations	7516	1800	1943	1911
Unique Schools	1538	403	412	418
Notes. This table annealdes are one and stondard de-				

Notes. This table provides means and standard deviations (in parentheses) for relevant variables for the sample of schools from 2016/17 through 2021/22, excluding the 2020/21 academic year, on average and by quartile of enrollment by race/ethnicity.

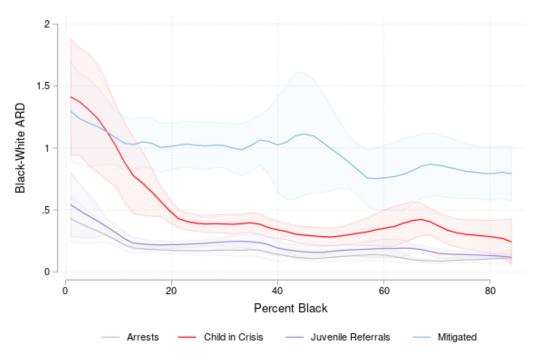
Table A4. Regression Estimates of the Relationship between the Percent of Black Student Enrollment and Mitigated Intervention Rate

	(1)	(2)	(3)	(4)	(5) Support	(6)	(7) Pupil	(8)	(9) % Teachers
		Student	Teacher	Principal	Staff	% Teachers	Teacher	Teacher	New to a
VARIABLES	Raw	Controls	Controls	Controls	Controls	Black	Ratio	Experience	School
Quartile 2: 13.77% Students Black	0.055*	0.018	-0.003	0.026	0.024	-0.027	0.020	0.040	0.023
	(0.033)	(0.031)	(0.037)	(0.033)	(0.032)	(0.035)	(0.032)	(0.032)	(0.031)
Quartile 3: 30.14% Students Black	0.321*** (0.063)	0.094 (0.067)	0.030 (0.079)	0.082 (0.070)	0.097 (0.071)	-0.008 (0.079)	0.098 (0.066)	0.124* (0.066)	0.102 (0.067)
Quartile 4: 67.49% Students Black	0.681***	0.392***	0.158	0.334***	0.374***	0.127	0.395***	0.382***	0.397***
	(0.079)	(0.069)	(0.106)	(0.099)	(0.079)	(0.103)	(0.069)	(0.068)	(0.070)
Observations	7,516	7,516	7,516	7,516	7,516	7,516	7,516	7,516	7,516

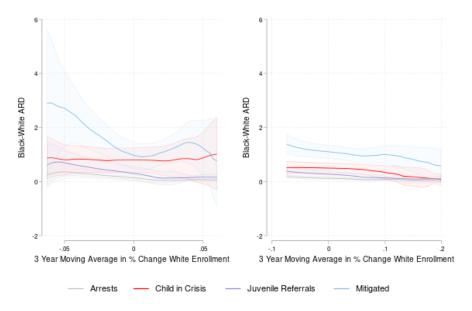
Notes. Estimates reflect coefficients on indicators for the quartile of a school's Black enrollment relative to the omitted category: the first quartile of Black enrollment (2.77 percent). All models include grade level and year fixed effects. Column 2 adds controls related to student characteristics. Column 3 includes student controls as well as all teacher controls. Column 4 includes student controls and principal controls. Column 5 includes student controls and support staff controls. Columns 6-9 include student controls and only the respective teacher control. Clustered, robust standard errors are in parentheses (*** p<0.01, ** p<0.05, * p<0.1).

Figure A1. Average Risk Difference between Black and White Students across Precinct Demographic Composition: Sensitivity to Cutoff Age

Panel A. Black-White ARDs in Interventions across the Percent of a Precinct that is Black



Panel B. B-W ARDs by Changes in the Percent White in Precincts with Above or Below Average White Enrollment



Notes. This figure depicts the average risk difference for each intervention type between Black and White students across the distribution of the percent of enrollment that is Black within a given precinct. We fit local polynomials to data across all years and schools. Data exclude students who are older than 18.

Source. Authors' calculations. We derive the number of interventions by race from the precinct-level files provided by the NYPD. We calculate the enrollment of Black and White students by aggregating school-level data provided by RANYCS to the precinct level.

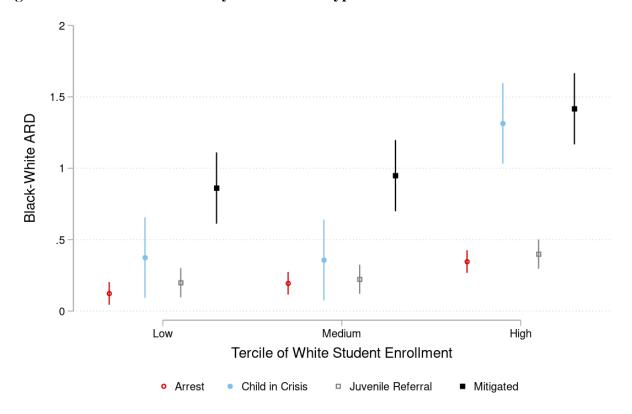
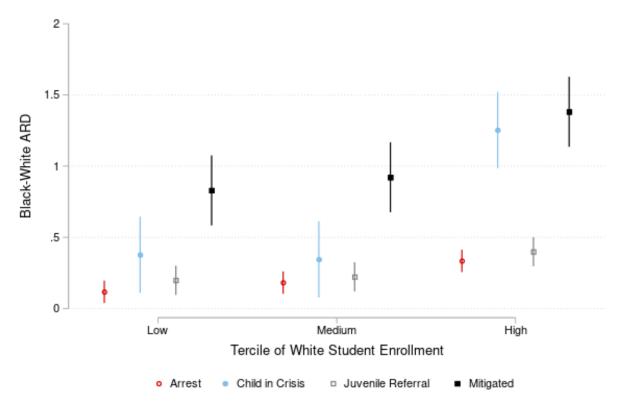


Figure A2. Black-White ARDs by Intervention Type and Tercile of White Enrollment

Notes. Estimates represent the adjusted risk differences for each intervention type by the tercile of White enrollment. "Low" indicates the first tercile, "Medium" indicates the second tercile, and "High" indicates the third tercile.

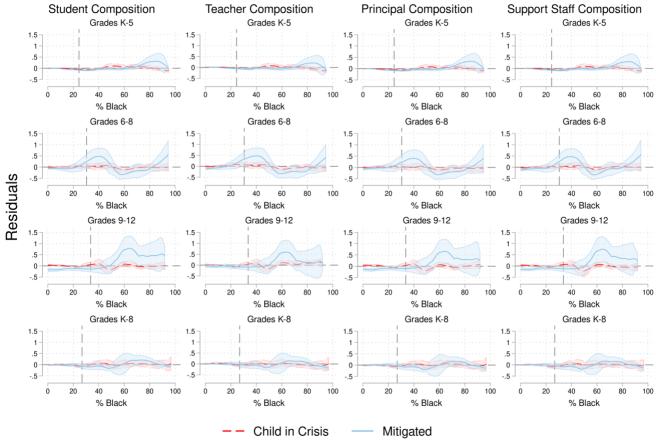
Source. Authors' calculations. We derive the number of interventions by race from the precinct-level files provided by the NYPD. We calculate the enrollment of Black and White students by aggregating school-level data provided by RANYCS to the precinct level.

Figure A3. Black-White ARDs by Intervention Type and Tercile of White Enrollment: Sensitivity to Cutoff Age



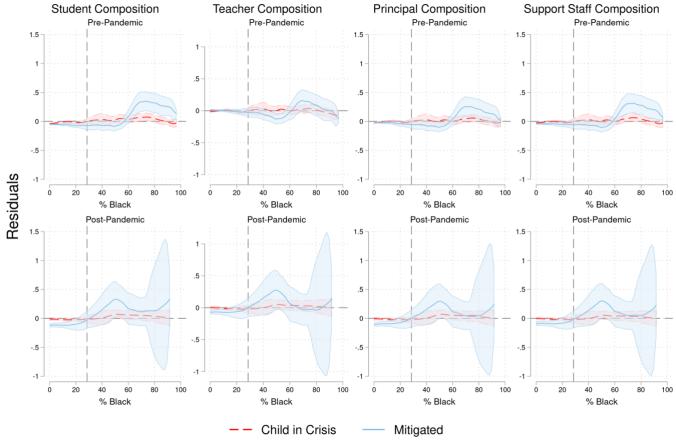
Notes. Estimates represent the adjusted risk differences for each intervention type by the tercile of White enrollment. "Low" indicates the first tercile, "Medium" indicates the second, and "High," the third. 95% confidence intervals are provided. Data exclude students who are over 18 years old.

Figure A4. Residuals from Each Regression Model by the Percent of School Enrollment that is Black: Heterogeneity by Grade Structure



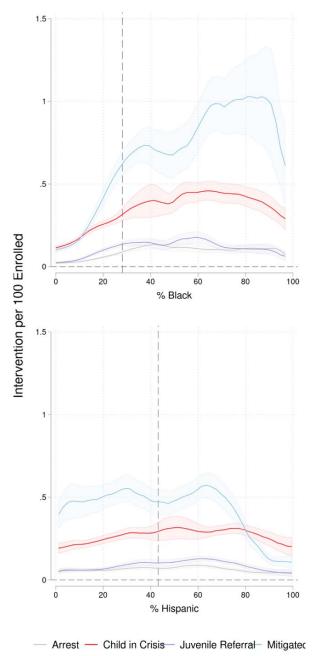
Notes. Estimates reflect the residuals constructed from regression models plotted against the percent of a school that is White, Black, or Hispanic using local polynomial estimation with a bandwidth of 5 disaggregated by the grade structure of a school. Other combined schools (i.e., 6-12s or K-12s) are excluded. K-5s, K-8s, and 6-8s are mutually exclusive. All models include year fixed effects and control for a school's grade structure. Estimates exclude the 2020-21 academic year. Student composition includes overall and race-specific suspension and office discipline referral rates, incident rates, school violence index, free and reduced price lunch percent, and percent of students that are new to a school. Teacher models include pupil-teacher ratio, average experience, the percent Black, and the percent new to a school. Principal models include the number of principals and assistant principals per student, as well as the percent of principals and assistant principals that are new to a school, the percent Black, and their average years of experience. Support Staff includes the number of social workers, guidance counselors, and school psychologists per student and their respective percent that are new to a school, the percent Black, and their average years of experience.

Figure A5. Residuals from Each Regression Model by the Percent of School Enrollment that is Black: Heterogeneity by Time Period



Notes. Estimates reflect the residuals constructed from regression models plotted against the percent of a school that is White, Black, or Hispanic using local polynomial estimation with a bandwidth of 5 in pre-pandemic years and 10 in post-pandemic years disaggregated by pre- and post-pandemic years. Pre-pandemic includes 2016/17 through 2019/20. Post-pandemic includes 2021/2022. All models include year fixed effects and control for a school's grade structure. Estimates exclude the 2020-21 academic year. Student composition includes overall and race-specific suspension and office discipline referral rates, incident rates, school violence index, free and reduced price lunch percent, and percent of students that are new to a school. Teacher models include pupil-teacher ratio, average experience, the percent Black, and the percent new to a school. Principal models include the number of principals and assistant principals that are new to a school, the percent Black, and their average years of experience. Support Staff composition includes the number of social workers, guidance counselors, and school psychologists per student and their respective percent that are new to a school, the percent Black, and their average years of experience.

Figure A6. Interventions per 100 Enrolled when Excluding Schools that Were Manually Matched



Notes. This figure depicts the number of interventions per total enrollment by the percent of a school that is Hispanic, Black, or White. We fit local polynomials to data across all years and schools. Vertical dashed lines indicate the district-level average demographic composition. Schools that were manually matched to school ID numbers are excluded.

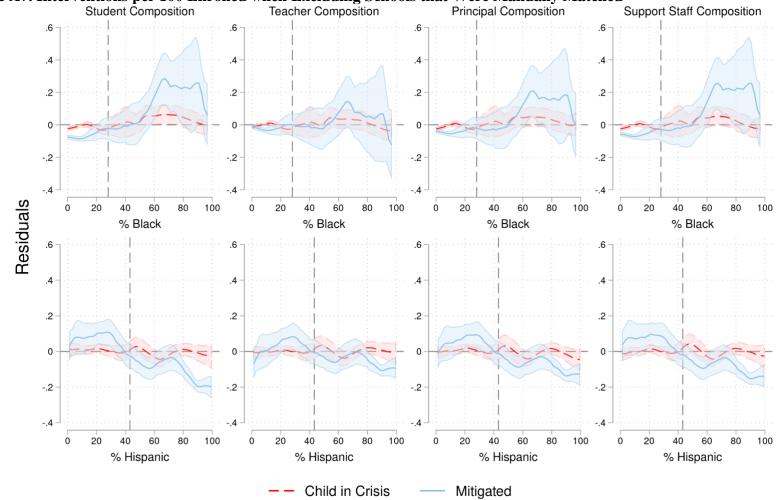


Figure A7. Interventions per 100 Enrolled when Excluding Schools that Were Manually Matched

Notes. Estimates reflect the residuals constructed from regression models plotted against the percent of a school that is White, Black, or Hispanic using local polynomial estimation with a bandwidth of 5. All models include year fixed effects and control for a school's grade structure. Estimates exclude the 2020-21 academic year. Student models include overall and race-specific suspension and office discipline referral rates, incident rates, school violence index, free and reduced price lunch percent, and percent of students that are new to a school. Teacher models add in the pupil-teacher ratio, average experience, the percent Black, and the percent new to a school. Principal models include the number of principals and assistant principals per student. Support Staff covariates add in the number of social workers, guidance counselors, and school psychologists per student. Schools that were manually matched to school ID numbers are excluded.