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Punishment and Inequality at an Early Age: Exclusionary Discipline in Elementary School

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Abstract

We advance current knowledge of school punishment by examining (1) the prevalence of exclusionary discipline in elementary school, (2) racial disparities in exclusionary discipline in elementary school, and (3) the association between exclusionary discipline and aggressive behavior in elementary school. Using child and parent reports from the Fragile Families Study, we estimate that more than 1 in 10 children born 1998–2000 in large US cities were suspended or expelled by age nine, when most were in third grade. We also find extreme racial disparity; about 40% of non-Hispanic black boys were suspended or expelled, compared to 8% of non-Hispanic white or other-race boys. Disparities are largely due to differences in children's school and home environments rather than to behavior problems. Next, consistent with social stress and strain theories, we find suspension or expulsion associated with increased aggressive behavior in elementary school. This association does not vary by race but is robust to a rich set of covariates, individual fixed-effects, and matching methods. In conjunction with what we find for racial disparities, our results imply that school discipline policies relying heavily on exclusionary punishment may be fostering childhood inequality.

The “culture of control” (Garland 2001) that led to unprecedented levels of incarceration in the United States has also contributed to high rates of exclusionary school discipline. More

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Supplementary Material

Supplementary material is available at *Social Forces* online.

than 2.6 million children are removed from school each year due to out-of-school suspension, and more than 40% of these are removed again before the year ends. More than 2.7 million experience in-school suspension, or temporary placement in an alternative classroom, and more than 111,000 are expelled permanently (Civil Rights Data Collection 2018). Whereas expulsion is generally reserved for more serious offenses, in-school and out-of-school suspension have become common responses to minor misbehavior and attendance problems. Relatively few suspensions are for substance use, violence, or carrying a weapon (Skiba et al. 2014).

Prior research has consistently found that reliance on exclusionary discipline for minor misbehavior disproportionately affects minority students (Skiba, Shure, and Williams 2012). Among black children born in the early 1980s, two-thirds of boys and nearly half of girls were suspended before completing high school (Shollenberger 2014). This high incidence and racial disproportionality in middle and high school is well documented, but few studies focus on risk prior to middle school. Some suggest that even in elementary school, suspension may be a common experience. In one Florida school district, 12% of black boys in elementary school were suspended in a single year, compared to 3% of white or Hispanic boys (Raffaele Mendez, Knoff, and Ferron 2002). A high concentration of exclusionary discipline among minority students in elementary school is problematic because it may be harmful for children. Suspension and expulsion are stressful events that interrupt children's routines and parent work schedules, and may cause students to fall behind (Weissman 2015). Aggressive behavior is often a coping mechanism for maladjustment to stressful events (Attar, Guerra, and Tolan 1994; Wildeman 2010) and may therefore increase following suspension or expulsion in elementary school.

Previous research on the prevalence, disproportionality, and behavioral outcomes of suspension or expulsion prior to middle school are rare, and few look beyond a single state or school district. To examine school discipline in a larger, more representative sample, we use data from the Fragile Families Study, a cohort of urban-born children followed from birth to age nine. We answer three questions: (1) What is the prevalence of exclusionary discipline among urban elementary school children? (2) How does risk of exclusionary discipline in elementary school vary by race? (3) Is exclusionary discipline in elementary school associated with increases in childhood aggressive behaviors? For the third question, we address concerns with unobserved heterogeneity and selection by controlling for a rich set of covariates and using individual fixed-effects and matching methods. We address reporter bias in all of these analyses by relying on both child and parent reports of school discipline, as well as parent and teacher reports of the child's behavior. Our findings suggest that school discipline policies relying heavily on exclusionary forms of punishment may play an important role in fostering childhood inequality.

Background

Exclusionary School Discipline in the United States

An increasing concern with crime control during the last three decades of the twentieth century led not only to more punitive criminal justice policies, but also to widespread implementation of strict discipline in US schools (Kupchik 2010). The Gun-Free School

Zones Act in the early 1990s mandated that students be removed from school for possession of a firearm, and similar policies were implemented for violence and substance use. However, many schools began applying such policies to less serious behavior as well (Simon 2006; Skiba 2000), and today most discipline incidents continue to be for minor misbehavior. More than 6 in 10 suspension or expulsion incidents in Connecticut in the 2015–2016 school year were for attendance problems or some other nonviolent infraction (Connecticut State Department of Education 2017), and similar proportions are documented in other states (e.g., Skiba et al. 2014).

Because of the emphasis on strict discipline for minor misbehavior, exclusionary discipline is a common experience. In the 2009–2010 school year alone, 11% of middle school students and about the same percentage of high school students were removed from school due to suspension (Losen and Martinez 2013). Cumulative risk is also high; by tenth grade, more than half of black boys and 40% of black girls have been suspended at least once, compared to roughly 30% of white boys and 20% of white girls. Hispanics appear to be at greater risk than whites but lower risk than blacks (Shollenberger 2014; Wallace et al. 2008). Although intended to improve student outcomes, prior research finds exclusionary discipline associated with declining achievement and widening racial gaps in reading and math (Morris and Perry 2016; Perry and Morris 2014). In addition, many find suspension or expulsion associated with increased delinquency and even criminal justice involvement (Arum and Beattie 1999; Hemphill et al. 2006; Mowen and Brent 2016). Although these studies suggest exclusionary discipline may be associated with increases in child aggression, none focus on elementary school specifically.

Exclusionary Discipline in Elementary School

Whereas most research on school discipline focuses on middle and high school, our focus is on elementary school children because they may also be affected by strict discipline policies. At this early stage of development, children are still being socialized to school norms. They are also less likely than adolescents to engage in more serious misbehavior. Thus, exclusionary discipline in elementary school may be less frequent an occurrence than in middle or high school. Indeed, national estimates suggest just over 2% of elementary school students were suspended in 2009–2010 (Losen and Martinez 2013). Smaller-scale studies estimate the number of suspensions per 100 students at between 4 and 8 (Bradshaw, Mitchell, and Leaf 2010; Raffaele Mendez et al. 2002), with boys at greater risk than girls, and blacks but not Hispanics at greater risk than whites (also Skiba et al. 2011). These represent annual estimates, most of which are drawn from schools in a single state or district. None provides information on the proportion of elementary school children who have ever experienced exclusionary discipline. A cumulative estimate would be larger if it captures children who were suspended or expelled in years other than the current year. But this difference may not be high, given that the same students are often suspended multiple times, even in the same year (Civil Rights Data Collection 2018).

Explaining Racial Disparities in Early Exclusionary School Discipline

Racial disparities in exclusionary discipline are well documented (Skiba et al. 2012). In elementary school, as in middle and high school, they may be due to student characteristics

correlated with race. Black children are more likely to experience poverty, family instability, and other conditions that interfere with school attendance and increase behavior problems, placing them at greater risk of suspension or expulsion (Macartney 2011; Manning, Brown, and Stykes 2014; Waldfogel, Craigie, and Brooks-Gunn 2010). Whereas some scholars contend that racial disparities are entirely due to differences in behavior problems (Wright et al. 2014), others suggest characteristics of the student's family and home environment also matter, independent of their influences on student behavior. For example, poverty and paternal incarceration are each associated with school discipline, even controlling for behavior problems (Jacobsen and Haskins 2018; Petras et al. 2011). This may be due to the influence that teacher perceptions of students' families have on their decisions about the students. Children with unfavorable family circumstances may be more closely monitored, increasing their risk of suspension or expulsion (Ferguson 2001).

Racial disparities may also be due to school characteristics correlated with race. For example, students are more likely to be suspended or expelled when they attend a school with a greater proportion of black students (Skiba et al. 2014). Such schools tend to rely more heavily on exclusionary discipline for addressing misbehavior (Ramey 2015; Welch and Payne 2010). Schools with higher rates of suspension may have fewer resources for alternative methods, teachers with less training in effective classroom management, or administration that is highly centralized (McFarland 2001; Mukuria 2002). After controlling for student and school characteristics, remaining disparities may be due to factors that are more difficult to observe, such as educators' implicit biases or sociocultural relations that lead educators to interpret misbehavior among blacks as more severe (Graham and Lowery 2004; Vavrus and Cole 2002). Consistent with this idea, prior research finds black students more likely than whites to receive an office referral for more minor misbehavior (Morris and Perry 2017; Skiba et al. 2002).

Early Exclusionary School Discipline and Children's Aggressive Behavior

Greater risk of removal from elementary school among blacks or other minorities would be especially problematic if suspension or expulsion were harmful for child development. Such would be the case if these formal sanctions were stressful enough to foster aggressive behavior in young children. Social stress research defines certain life events as stressors because they change people's usual activities beyond their ordinary capacity to adapt (Aneshensel 1992). Maladjustment to stressful events like family transitions or periods of economic hardship is associated with increased aggression, including at school (Attar, Guerra, and Tolan 1994; Brooks-Gunn and Duncan 1997; Wildeman 2010). In the same way, harsh or excessive punishment such as suspension or expulsion can foster negative emotions, particularly if the child feels treated unfairly or misunderstood (Agnew 2006). Such emotions may be amplified if the suspension or expulsion causes the student to fall behind in school or introduces stress at home by interrupting parent work schedules with disciplinary hearings and meetings with school administrators (Bowditch 1993; Vavrus and Cole 2002). This may be especially true of elementary school students because they, more than adolescents, need child care while out of school. They also have less experience coping with stress and anger through verbal expression and other legitimate means (Agnew and Brezina 2010). Acts of physical aggression such as fighting or vandalism may be coping mechanisms

used to alleviate negative emotions. These negative emotions may be stronger for racial minority children who are more likely than whites to be suspended for infractions that are subjective or minor (Skiba et al. 2002) and who are more likely to experience discrimination. In sum, exclusionary discipline is a stressful event that may be associated with increased aggressive behavior in elementary school. Racial minority children may be differentially exposed to these sanctions, or they may experience more harmful effects.

Finding that exclusionary discipline in elementary school is associated with increased aggressive behavior would be consistent with prior research finding increases in delinquency and justice involvement following suspension in middle and high school (Hemphill et al. 2006; Ramey 2016). However, it is also possible that the association between school discipline and aggressive behavior in elementary school is null. Such would be the case if any positive association were driven by unobserved differences between children who are suspended or expelled and those who are not. Indeed, children at greatest risk are those from more disadvantaged backgrounds who may already face circumstances more stressful than being removed from school. However, an increase in aggressive behavior beyond that which is due to other circumstances may suggest exclusionary discipline is responsible. Thus, it is important to control for observed covariates and use methods that minimize unobserved heterogeneity.

Study Contributions

We make several important contributions to the study of exclusionary discipline and the role of schools in facilitating childhood inequality. First, we assess the prevalence of exclusionary discipline in the early years of elementary school. To examine prevalence, we look at risk of ever being suspended or expelled by age nine, when most students are in third grade. Although annual rates make it seem relatively rare (Losen and Martinez 2013), the proportion ever suspended or expelled may be high. Second, we build on earlier work by assessing the extent to which risk of elementary school discipline varies by race. Prior research suggests black children may be at much greater risk than whites or Hispanics (e.g., Skiba et al. 2011). We expect these disparities to be explained by differences in student and school characteristics which correlate with race. Third, we offer one of the first large-scale examinations of the association between exclusionary discipline and children's aggressive behavior, an important predictor of developmental adjustment and adult violence (Farrington 1991; Moffitt 1993). We focus on physically aggressive behavior because prior research finds exclusionary discipline primarily driven by behavior that is not physically aggressive (e.g., Skiba et al. 2014).

If suspension or expulsion is associated with increased childhood aggression, it may facilitate trajectories of more serious delinquency and violence (Broidy et al. 2003; Dubow et al. 2016). This focus on physical aggression is also in line with prior Fragile Families research examining outcomes of another stressful life circumstance, paternal incarceration (Wildeman 2010). We also look for racial heterogeneity in the association between suspension or expulsion and aggressive behavior. Finding exclusionary discipline associated with increased aggressive behavior in elementary school would suggest a need for more research on the usefulness of such policies in lower grades, particularly for minor

misbehavior. Finding that racial minorities are disproportionately exposed to these sanctions, or that for them the association with aggressive behavior is stronger, would suggest such policies are drivers of childhood inequality.

Data and Methods

Sample

To examine the prevalence of exclusionary discipline among urban elementary school children, we need data that are representative of children in urban areas. To examine changes in children's behavior in elementary school following suspension or expulsion, we need data collected both prior to and following elementary school entry. Therefore, we draw our sample from the Fragile Families and Child Wellbeing Study, a birth cohort study of nearly 5,000 children born in urban hospitals between 1998 and 2000. These include 16 cities drawn from a stratified random sample of cities with 200,000 or more and an additional four cities (excluded when data are weighted) of interest to specific foundations (Reichman et al. 2001). Hospitals were randomly sampled within cities, and births were randomly sampled within hospitals. Births to unmarried parents were oversampled, making the unweighted data over-representative of disadvantaged families (but see Wagmiller 2010, which finds the weighted data generally similar to data from the 2001 birth cohort of the Early Childhood Longitudinal Study (ECLS)).

Biological mothers and fathers were interviewed within days of their child's birth, and follow-up interviews were conducted at about ages one (Y1), three (Y3), five (Y5), and nine (Y9). By Y9, 76% of mothers and 59% of fathers were still participating (Supplementary Table 1 online). Additional interviews were administered to the primary caregiver (mostly mothers) at Y5 (3,700 eligible, 81% response rate) and Y9 (4,688 eligible, 77% response rate). Our multivariable analyses focus on change between Y5 and Y9; therefore, we limit our analytic sample to 2,653 children who had a participating caregiver at both waves. This represents 72% of those who were eligible at Y5 and Y9.¹ In addition, children of participating caregivers completed a short interview at Y9. Surveys were also mailed to teachers of participants at Y5 (kindergarten only; 1,039 children) and Y9 (2,254 children) (669 children with participating teachers at both waves). Neighborhood characteristics are based on Census 2000 data from the mother's residential tract at each wave. School characteristics not based on respondent reports are from the Department of Education Office of Civil Rights (OCR) and National Center for Education Statistics (NCES). OCR data are drawn from 2009 for 92% of the sample and 2011 for the remainder. NCES data correspond to the year the child was enrolled in school at Y9 and the two preceding years; we average across available years.

To reduce issues with survey attrition, which is higher for fathers, we rely most heavily on caregiver and mother reports. Of 2,653 cases with a participating caregiver at both Y5 and

¹At Y5, cases in which the mother did not participate in the parent survey were ineligible for participation in the in-home interview. Most from the first two cities of data collection (Oakland and Austin) were also ineligible (3,700 eligible). At Y9, only cases with a deceased or legally adopted child were ineligible for the in-home interview (4,688 eligible). This change in eligibility requirements forces us to limit our sample to those with valid caregiver data at both waves to avoid being left with large amounts of missing data at Y5.

Y9, we exclude 124 who did not participate in a self-administered questionnaire about the child's behavior at Y9 and an additional 32 who did not respond to items about the child's behavior at Y5. We also exclude 24 with other missing data on aggressive behavior at both Y5 and Y9, bringing our analytic sample to N=2,473 children. Although this represents just over half of the original Fragile Families baseline respondents, this serious drawback is somewhat offset by the uniqueness of the data for examining disadvantaged children with a rich set of variables. Furthermore, characteristics of our analytic sample are very similar to those of the larger baseline sample, and differences that do exist are small (Supplementary Table 2 online). Children in our analytic sample are slightly more likely to be black and less likely to be Hispanic, but they are similar to baseline respondents in terms of gender, socioeconomic status, whether they live with their father at Y5, their mother's age, and whether their parents were married at their birth. Such close similarity on these important characteristics eases concerns about issues that may result from attrition, which is expected in such a large sample of disadvantaged families.

Another potential issue is reporter bias because parents may not be aware of child behavior problems at school. To address this concern, we rely on information reported by teachers at both waves. Of 669 children with completed teacher surveys at both waves, nine are not part of our analytic sample (missing data on outcome measures) and an additional nine are excluded because when reporting on the child's behavior, the teacher at Y9 was referring to an academic year that preceded the year the caregiver was referring to when reporting on the child's school discipline. Thus, teacher-reported variables pertain to N=651 cases, a subsample of children less likely to be male, black, or to have poor or unmarried parents.

Although we know of no other large-scale longitudinal dataset with information about children's exclusionary discipline and aggressive behavior in elementary school, the Fragile Families Study is not without limitations. First, it is common for survey respondents to change their place of residence at some point during the study. Thus, while our data are representative of urban-born children, they may be less representative of children attending urban schools. Second, the study design prevents us from accounting for potentially important year-to-year changes while children are in school, because after Y5 (prior to first grade), Y9 is the only wave collected while children are in elementary school.

Table 1 presents a description of our sample by exclusionary discipline status. Children who were suspended or expelled are more likely to exhibit physically aggressive behavior both at Y5 and Y9. They are more likely to be diagnosed with attention or hyperactivity disorders, have lower cognitive ability, and are more likely to have repeated a grade. We also find differences in family and home environments. Parents of children who were suspended or expelled have fewer economic resources and are more likely to have experienced relationship instability or to be involved in deviant behaviors. Schools the children attend have a higher percentage of students who are black and a lower percentage Hispanic. They also rely more heavily on exclusionary discipline. Only seven variables are missing more than 5% of observations in either our full analytic sample or the subsample with teacher-reports, and none are missing more than 20% (teacher-reported variables are excluded from analyses of our full analytic sample). We address missing data using multiple imputation with chained equations and base our multivariable analyses on 20 multiply imputed datasets.

Variables

Aggressive Behavior.—Our two measures of physically aggressive behavior are based on reports of the caregiver (referred to here as the parent) and the teacher. Our parent-reported measure represents the standardized (z-score) mean of three items of the Child Behavior Checklist (CBCL) (Achenbach and Rescorla 2001). Items include “destroys things belonging to family or others,” “gets in many fights,” and “physically attacks people” (same as Wildeman 2010). Response options range from 1=not true (so far as you know) to 3=very true or often true ($\alpha=0.60$ at Y5 and 0.66 at Y9). Our teacher-reported measure captures student fighting at each wave. At Y5, items “gets in many fights” and “physically attacks people” are combined into a single binary variable coded 1 for any fighting. We do this because at Y9, teacher surveys moved from the CBCL to the Social Skills Rating System (SSRS) (Gresham and Elliott 1990). At Y9, we use a binary version of the item “fights with others,” coded 1 for any fighting in order to examine change in fighting across years.

Exclusionary School Discipline.—Exclusionary discipline is a binary measure from two sources. First, children reported whether they had *ever* been suspended or expelled from school by Y9. Second, caregivers reported at the same wave whether the child had missed school in the most recent school year due to suspension or expulsion (i.e., out-of-school suspension or expulsion). Although the two reports span different lengths of time, they are correlated ($r=0.5$; $p<.001$) and consistent (for children who self-reported no suspensions or expulsions, 99% of their primary caregivers reported no recent out-of-school suspension or expulsion). Moreover, 6% of caregivers reported a recent suspension or expulsion, which is consistent with prior annual estimates (Bradshaw et al. 2010; Raffaele Mendez et al. 2002).

Given the consistency between reporters, we combine the two variables into a single measure of school discipline. Cases in which the child reports never being suspended or expelled but the caregiver reports a recent out-of-school suspension or expulsion are coded in the affirmative (5% of suspensions or expulsions in our sample). Because the wording of the child questionnaire specifies “from school,” we likely exclude some in-school suspensions. We may therefore underestimate the prevalence of exclusionary discipline in our sample. Another limitation is that the timing of discipline experiences is not observed. However, our analyses assume all suspensions or expulsions occur after Y5 when nearly all children are under age six, the age at which children in the US typically enter first grade. This likely introduces some error because some students experience suspension or expulsion prior to first grade and minority children are at greater risk. However, these instances, though troublesome and highly publicized (Anderson 2015), are rare; in the 2011–2012 school year, less than 0.5% of public preschool students (1% of blacks, 0.3% of Hispanics) received an out-of-school suspension and only 0.01% were expelled (Civil Rights Data Collection 2018). Although, preschool expulsion rates at the time our sample was in preschool were closer to 0.67% (Gilliam 2005). We illustrate a timeline of our exclusionary discipline and aggressive behavior measures in Supplementary Figure 1 online.

Control Variables.—To minimize selection influences, we use a long list of control variables likely to be associated with exclusionary discipline and aggressive behavior. These include basic demographic characteristics, household socioeconomic indicators, parenting

and health characteristics, parent deviant behavior, family structure and stability, the child's school adjustment and psycho-social development, and characteristics of the child's school and teacher. All controls are measured at Y5 or are considered time-stable. A complete list, including descriptive statistics by exclusionary discipline status, is presented in Table 1.

Analytic Approach

Our analyses proceed in three stages. In the first stage, we examine risk of exclusionary discipline among urban-born children by age nine. We account for the oversampling of unmarried parents by adjusting for parents' baseline marital status using sampling weights and then regression adjustment (Geller et al. 2012). In the second stage, we assess the extent to which risk of exclusionary discipline in elementary school varies by race. For this, we estimate predicted probabilities of suspension or expulsion using logistic regression models to account for student and school characteristics that may explain racial disparities. Student characteristics include indicators of socioeconomic status, parent and home environment, and behavior problems. School characteristics include racial composition, exclusionary discipline level, and other characteristics reported by teachers. Comparing coefficients across nested logistic regression models is problematic because of the rescaling that occurs when variables are added or removed, due to the fixed residual variance (Winship and Mare 1984). We thus rely on the Karlson, Holm, and Breen (2012) (KHB) method for mediation with a binary outcome. This method assesses the level of confounding (extent to which racial disparities are explained by controls) relative to the change in scaling that occurs when variables are added. It enables us to compute an accurate percent change in our race coefficients, representing the portion of racial variation due to each set of control variables. In the third stage, we examine the association between suspension or expulsion in elementary school and physically aggressive behavior. We use a series of linear and logistic regression models with fixed effects and multiple sensitivity checks. Models of parent-reported aggressive behavior use ordinary least squares (OLS) regression, and models of teacher-reported aggressive behavior (binary measure) use logistic regression. We include interaction terms to assess the extent to which the association between suspension or expulsion and aggressive behavior varies by race. We bolster our models using a long list of covariates and a lagged dependent variable (parent- or teacher-reported aggressive behavior at Y5). Variance inflation factors reveal no issues with multicollinearity.

To test the robustness of our regression results, we supplement these analyses with models that rely on an alternative measure of exclusionary discipline based only on suspensions or expulsions that occurred prior to the current or most recent school year. Then, as a more conservative test, we pool Y5 and Y9 to examine within-individual change using fixed-effects (Allison 2009). Our fixed-effects analyses are limited because they examine change across only two waves, the first prior to first-grade (pretreatment) and the second following school discipline (posttreatment). Nevertheless, they offer an important benefit over standard regression and matching techniques by adjusting for all observed and unobserved time-stable covariates. Together, these methods help to minimize concerns with bias due to unobserved heterogeneity or reverse causality, but the limitations of the data preclude us from making strong causal claims about the association between exclusionary discipline and physically aggressive behavior. Even still, our use of data from multiple reporters about changes in

elementary school children's exclusionary discipline and aggressive behavior is an important contribution.

Results

Prevalence of Exclusionary Discipline in Elementary School

In the first stage of our analysis, we examine risk of suspension or expulsion. Twenty percent of our sample were suspended or expelled by Y9, but this does not account for the oversampling of unmarried parents at baseline. To address this, we weight cases that belong to the randomly selected 16 cities mentioned previously. This temporarily reduces our sample size ($n=1,772$) but makes the data representative of children born in large US cities in 1998–2000.² With these weights applied, we find that 11% of urban-born children were removed from school by age nine, when most are in third grade. There are few large-scale surveys to which to compare this estimate; ECLS surveys do not ask about suspension or expulsion in elementary school. The National Longitudinal Survey of Youth 1997 (NLSY97) allows for comparable estimates, but the sample is much older (age nine in years 1989–1993, compared to 2007–2009 for Fragile Families) and relies on retrospective data from up to nine years back. Weighted estimates from the NLSY97 suggest 2.1% of students were suspended by age nine (2.3% of youth in urban areas). The difference in estimates between the data sets is large but not unexpected given the increased reliance on school suspension between these two decades (Losen and Martinez 2013). Indeed, Department of Education data suggest the rate of all US students suspended each year increased by 40% between 1988 and 2006, and much of this growth was driven by rising rates for blacks (Civil Rights Data Collection 2018).

Racial Disparities in Early Exclusionary School Discipline

Turning to the second stage of our analyses, we now assess the level of racial heterogeneity in elementary school exclusionary discipline and explore student and school characteristics that may explain disparities. For this, we rely on nested logistic regression models, from which we estimate predicted probabilities. To avoid small cell sizes in these models, we rely on our full analytic sample with cases from all 20 cities ($N=2,473$) rather than the 16-city national sample. Instead of applying weights to adjust for the oversampling of unmarried parents, we control for whether parents were married at baseline (Geller et al. 2012). Using the 16-city sample to examine racial disparities reveals similar results (Supplementary Figure 2 online), but makes explaining racial disparities less feasible.

Figure 1 shows predicted probabilities of suspension or expulsion by gender and race.³ Panel A shows results from our full sample, with and without controls. Panel B presents results from the subsample with data from teachers. All results adjust for parents' baseline marital status. We estimate predicted probabilities from log odds $\{\exp(\text{logit})/[1 + \exp(\text{logit})]\}$ resulting from the KHB procedure described previously; probabilities within

²These 1,772 cases represent 72% of our full analytic sample. Weights were applied prior to imputation, so this number excludes 26 cases with missing data on school discipline.

³Consistent with Table 1, results shown here are based on analyses using the first of 20 imputed datasets. However, results were similar across imputed datasets. Confidence intervals are presented in Supplementary Table 3 online.

each panel are thus comparable across models. Overall, they suggest extreme racial disparities, particularly between black and non-black children. Differences between Hispanics and white/other-race students are not statistically significant. Focusing first on results in Panel A before controls, findings suggest that in a classroom of 25 non-black girls, about one would be suspended or expelled. In a same-size class of non-black boys, fewer than three would be suspended or expelled. But for black girls and boys, this number jumps to four and ten, respectively. Indeed, the probability of suspension or expulsion for black boys is three times that for Hispanic boys and nearly five times that for white/other-race boys. Risk for girls is lower, but for black girls it is nearly four times that of Hispanic girls and more than six times that of white/other-race girls.

Due to the more advantaged nature of the subsample with teacher-reports, results in Panel B before controls show slightly lower risk than those reported in Panel A. Among nonblack girls and boys, the probability of suspension or expulsion is zero and just over one in 25 students, respectively. But among black girls it is nearly three, and among black boys it is almost eight. Despite lower overall risk in this subsample, disparities are larger than they are in our full sample. Among boys, the probability of suspension or expulsion is five times that of Hispanics and more than seven times that of white/other-race students. For girls, the probability for blacks is six times that of Hispanics and more than nine times that of white/other-race students.

We next explore student and school characteristics that might explain these disparities. The second set of results in each panel of Figure 1 shows predicted probabilities for each race-gender category after controlling for student and school characteristics. These controls are combined into the following aforementioned categories: socioeconomic status, parent characteristics and home environment, externalizing behavior problems,⁴ and school characteristics (notes for Figure 1 list specifics of each category). With controls included, risk of suspension or expulsion is nearly eliminated for all racial groups, but some disparities remain. Results in each panel, suggest that blacks (boys or girls) are about twice as likely as Hispanics and three times as likely as white/other-race students to be suspended or expelled.

Together, these characteristics explain about half the disparity between white/other-race students and blacks in each panel. Differences between white/other-race students and Hispanics are not statistically significant. To further explore the disparity between blacks and white/other-race students, we control for each set of student and school characteristics separately, before including all of them together. Beginning with our full sample, we find 35% of the disparity explained by school characteristics, 26% by the parental/home environment, and 19% by socioeconomic status. None is due to differences in parent-reported externalizing behavior. Turning to the subsample with teacher-reports, we find 28% explained by school characteristics, which for this subsample, also includes the teacher's race and education, school security level, and student-to-teacher ratio.⁵ Forty-four percent is

⁴We control for externalizing behavior when estimating predicted probabilities of school discipline but not when predicting aggressive behavior. Parent-reported externalizing behavior is a standardized mean of 24 items from the CBCL ($\alpha=0.85$). Teacher-reported externalizing behavior is a standardized mean of 6 items from the SSRS ($\alpha=0.93$). Both are at Y9, when school discipline is observed, to maximize their opportunity to explain racial disparities.

explained by parent/home characteristics, 31% by socioeconomic status, and 20% by teacher-reported externalizing behavior.

Next, we examine the percent explained by each set of controls when all are included together. Beginning with the full analytic sample, results suggest school characteristics are responsible for the largest portion (19%) of the disparity between black and white/other-race students. These are followed by characteristics of the parental/home environment (15%) and socioeconomic status (10%). Again, none of the disparity is due to differences in externalizing behavior as reported by the parent. In the subsample with teacher-reports, school and teacher characteristics explain very little racial disparity when other controls (socioeconomic status in particular) are added. This has to do with the more advantaged nature of this subsample. Socioeconomic status explains 24% of the disparity; parental and home characteristics explain 31%, and teacher-reported externalizing behavior explains 16%.

Exclusionary School Discipline and Physically Aggressive Behavior

Given the large proportion of children, particularly blacks, who get suspended or expelled in elementary school, we explore how this potentially stressful experience affects one aspect of their wellbeing. In this third stage of our analysis, we examine the association between suspension or expulsion and physically aggressive behavior, an important predictor of adolescent violence (Farrington 1991). We also assess the extent to which this association is greater for racial minorities. Results from linear and logistic regression models are presented in Table 2.⁶ The top panel shows results of OLS models predicting parent-reported aggressive behavior. The bottom panel presents results of logistic regression models where log odds coefficients represent change in the odds of aggressive behavior associated with suspension or expulsion. Looking first at the top panel, parents of children who were suspended or expelled report 0.647 more standard-deviation units of aggressive behavior than parents of children who were not ($p < .001$). This association declines by nearly 40% when controls are added and an additional 9% when the lagged dependent variable is included, suggesting at least half the bivariate association is due to selection. As a sensitivity check, we next remove 155 children from the sample whose parent indicated an absence from school due to suspension or expulsion in the current or most recent school year. This results in a “lag” measure which approximates discipline *prior to* the current year. Results show some decline in the association with aggressive behavior, perhaps suggesting unobserved heterogeneity or reverse causality in earlier results. Even still, suspension or expulsion is associated with a 0.162 standard-deviation unit increase in aggressive behavior when the lagged dependent variable and other controls are added ($p < .01$).

Next, we turn to results from the subsample with teacher-reports. In these logit models, aggressive behavior at Y5 and Y9 are reported by teachers, and teacher-reported characteristics are added as controls.⁷ Even with these changes, results are consistent with

⁵In these analyses, teacher-reported characteristics are measured at Y5. In supplemental analyses, we used Y9 teacher characteristics instead, but they explained less racial disparity. When school and teacher characteristics are included with no other controls, racial composition, exclusionary discipline level, and teacher race each explain about a third of the disparity.

⁶As an additional sensitivity check, we repeat these analyses using matching methods. We present results in Supplementary Tables 4 and 5 online for both the full sample and subsample with teacher-reports. Results are consistent with those of our regression models.

those based on parent reports. The odds of the teacher reporting aggressive behavior increase by nearly seven times ($e^{1.913}$) if the student was suspended or expelled ($p < .001$). This association declines substantially with the addition of controls but remains high. The odds of teacher-reported aggressive behavior increase by 326% [$(e^{1.448} - 1) \cdot 100$] if the student was suspended or expelled ($p < .001$). Again, we perform a sensitivity check by removing 42 students from this subsample who were absent due to suspension or expulsion in the current or most recent school year. Even when suspension or expulsion only took place prior to the current year, it is still strongly associated with the odds of teacher-reported aggressive behavior. When the lagged dependent variable and other controls are added, suspension or expulsion is associated with a 182% increase [$(e^{1.037} - 1) \cdot 100$] in the odds of teacher-reported aggressive behavior at Y9 ($p < .01$).

Results from within-individual, fixed-effects models are presented in Table 3. These models control for all time-stable differences between children who were suspended or expelled and those who were not, reducing concerns about selection and unobserved heterogeneity. The full models also include control variables for which we have repeated measures at Y5 and Y9. Again, the top panel shows results from linear models predicting a pretreatment to posttreatment change in parent-reported aggressive behavior. The bottom panel, showing log odds coefficients, corresponds to the subsample with teacher-reports. Results for parent-reported aggressive behavior suggest suspension or expulsion is associated with a 0.127 standard-deviation unit increase in aggressive behavior ($p < .05$). This is slightly lower than the most conservative estimate for parent-reports in Table 2 ($b = 0.162$). Moreover, it remains remarkably stable when time-varying controls are added ($b = 0.124$; $p < .05$). Next, we return to our subsample with teacher-reports, preserving statistical power by relying on a “hybrid fixed-effects model” (Allison 2009). This involves centering each explanatory variable on the individual-level mean and including each individual-level mean as a control. Results are the same as they would be in a standard fixed-effects model. Even with the addition of the teacher-reported controls, the odds of teacher-reported aggressive behavior still increase by 352% [$(e^{1.509} - 1) \cdot 100$] with suspension or expulsion ($p < .001$).⁸

Finally, we return to bivariate results from the full analytic sample presented in Table 2 ($b = 0.647$; $p < .001$) to examine the extent to which the association between suspension or expulsion and physically aggressive behaviors varies by race. In supplemental models (Supplementary Table 6 online), we add dummy variables for black and Hispanic to this bivariate model and find no significant difference in physically aggressive behavior by race ($b = 0.009$ for black; $b = 0.009$ for Hispanic). Next, we add interaction terms for each dummy variable, standardizing race (z-scores) to avoid issues with collinearity. The coefficient for the interaction term for black is statistically significant but not in the expected direction ($b =$

⁷A few controls, including sample-city dummies are excluded here to avoid small cell sizes. In supplemental analyses, we found no significant variation across sample cities in residuals for our full model, suggesting results are not biased by between-city variation.

⁸To check for bias due to reverse causality, we split our main analytic sample by the presence or absence of early reported physically aggressive behavior. There are 1,000 children whose parent reported that the child exhibited no physically aggressive behaviors at Y3 or Y5. If reverse causality is fully responsible for our findings, results should be rendered null when analyses are limited to this subsample. Instead, we find that among children whose parents reported no early aggressive behaviors, suspension or expulsion is associated with an increase in such behavior ($b = 0.262$; $p < 0.001$). Suspension or expulsion was also accompanied by an increase in aggressive behavior among children who already exhibited the behavior ($b = 0.142$), but the increase was not statistically significant. Results are consistent when using the subsample with teacher-reports. Together, these results help alleviate concerns that our findings are driven by reverse causality.

–0.222; $p < .05$). This interaction is not meaningful, given the lack of racial variation in parent-reported aggressive behavior. Furthermore, it is rendered null when we include control variables. We find more racial variation in teacher-reported aggressive behavior; teachers are more likely to report aggressive behavior if the student is black, but these differences are explained by other student characteristics. Moreover, the association with school discipline does not vary by race. Taken together, these results suggest no meaningful racial variation in the association between suspension or expulsion and children's aggressive behavior.

Discussion

Extreme emphasis on crime control in the US has not only filled our jail cells, it has emptied our classrooms. Our purpose has been to examine the implications of this growth in exclusionary school discipline for childhood inequality. Prior research has documented a high prevalence and disproportionate distribution of such sanctions in middle and high school (Losen and Martinez 2013; Morris and Perry 2017), as well as associations with subsequent delinquency and criminal justice involvement (Hemphill et al. 2006; Ramey 2016) but relatively little is known about suspension or expulsion in elementary school. If suspension or expulsion in elementary school is unevenly distributed by race and has harmful effects for children, or differential effects for certain children, then school discipline policies relying heavily on exclusionary forms of punishment for minor misbehavior are fostering childhood inequality.

This inequality is evident in the combination of findings from three main analyses. Results of our first analysis suggest that exclusionary discipline in early elementary school is anything but a rare experience. At age nine, most US children are still learning to read (Annie E. Casey Foundation 2014), but already more than 1 in 10 born in urban areas have acquired a suspension or expulsion—some of the most serious sanctions schools administer—on their school records. Results of our second analyses suggest that even in elementary school, exclusionary discipline is highly stratified by race. Among urban-born black children, about 40% of boys and 15% of girls were suspended or expelled by age nine. These rates are consistent with prior annual estimates. Raffaele Mendez and colleagues (2002) found 12% of black boys in elementary school in a single school district were suspended in one year. Had they been examining cumulative estimates among nine-year-old black boys, as opposed to annual estimates among all elementary school black boys, we expect their estimate would have been closer to our own. It would not have been offset by lower risk in earlier grades and would have captured students suspended in years other than the current year. Our estimates for blacks stand in stark contrast to our estimates for white/other-race children, among whom suspension or expulsion affected 8% of boys and 2% of girls. Risk among Hispanics appears slightly higher than that of white/other-race students, but differences are not significant.

We extend this second analysis by exploring factors that may explain racial disparities. We find characteristics of the school the child attends, family context, and home environment explain much more of the racial disparity in exclusionary discipline than externalizing behavior explains (Skiba et al. 2012, 2014). This stands in contrast to prior work suggesting

racial disparities are due entirely to differences in behavior problems (Wright et al. 2014). Although we find little of the disparity explained by behavior problems overall, teacher-reported behavior explains more than parent-reported behavior. This may be due to differences in how parents and educators interpret disruptive behavior, perhaps due to cultural barriers in teacher-student interactions (Vavrus and Cole 2002), although little of the disparity was due to characteristics of the teachers themselves. Characteristics of the school, including racial composition and exclusionary discipline level, explain the largest portion of the disparity. Minority schools and those that rely heavily on suspension may have fewer resources for alternative methods, teachers with less training in effective classroom management, or highly centralized administration (McFarland 2001; Mukuria 2002). Much of the disparity in our data was left unexplained, and this may be due to school characteristics we did not account for, such as administrator attitudes (Skiba et al. 2014), or to factors that are more difficult to observe. The latter would include such influences as educators' implicit biases and sociocultural relations leading educators to interpret minority misbehavior as more severe (Graham and Lowery 2004). This would be consistent with research finding blacks more likely to be disciplined for more subjective infractions (e.g., disrespect or noise rather than fighting or vandalism) (Morris and Perry 2017; Owens and McLanahan 2017; Skiba et al. 2002).

Results from our third analysis suggest suspension or expulsion is associated with increases in physically aggressive behavior in elementary school. This association is robust to a long list of control variables, multiple methods, and additional sensitivity checks for selection and reverse causality. Our findings are in line with our conceptualization of exclusionary discipline as a stressful event for young children. They are also consistent with theories of strain and social stress (Agnew 2006; Aneshensel 1992). Exclusionary discipline interrupts the routines of children and their parents and may cause children to fall behind in school (Bowditch 1993). It may also invoke negative emotions such as anger if children feel misunderstood or treated unfairly. Physically aggressive behavior may be a coping mechanism for some elementary school children who are still developing verbal skills and emotional regulation (Agnew and Brezina 2010). Future research should build on our findings to test these mechanisms empirically and to examine long-term consequences and cumulative effects of multiple disciplinary encounters at early ages. Repeated exclusion may solidify harmful labels and place strains on children to which they are unable to successfully adapt. We find little evidence that this association is stronger or weaker for children of one race than another. However, in combination, findings from our three analyses suggest black children are disproportionately exposed to exclusionary discipline in elementary school, increasing their risk of physically aggressive behavior, an important predictor of developmental adjustment and adult violence (Broidy et al. 2003; Farrington 1991; Moffitt 1993).

In closing, we reiterate that our findings may not generalize beyond nine-year-old children born in large US cities (Wagmiller 2010). Our results should also be interpreted with caution because of the high attrition in our sample and because we rely on child- and parent-reports which are subject to social desirability bias, likely underestimating the prevalence of suspension or expulsion in elementary school. Nevertheless, our findings are consistent with prior annual estimates based on administrative records (e.g., Raffaele Mendez et al. 2002).

Another limitation is that we are only able to measure change across two time-points separated by about four years. This prevents us from accounting for year-to-year circumstances like classroom transitions and specific incidents leading to disciplinary referrals. Furthermore, we are unable to examine heterogeneity in discipline experiences. Perhaps in-school suspension is less stressful than out-of-school suspension or expulsion because children are not required to leave school. There may also be cumulative effects for children removed multiple times. Future research can address these issues by collecting data on the type, frequency, and length of each sanction. Despite these limitations, our study is one of the most rigorous tests to date of a specific behavioral outcome associated with suspension or expulsion in elementary school.

Conclusion

Our analyses join a growing body of work documenting impacts of a “culture of control” (Garland 2001) on children’s school experiences (Perry and Morris 2014; Turney and Haskins 2014). African American children in elementary school are differentially exposed to suspension or expulsion and this experience is associated with increases in physically aggressive behavior, especially for children whose parents or teachers reported no such behavior prior to school entry. Given the high public financial costs of exclusionary discipline (Rumberger and Losen 2016), many schools are implementing evidence-based alternatives (Owen, Wettach, and Hoffman 2015). In some states, this has reduced suspension rates, but racial disparities remain (Loveless 2017). Elementary school administrators should implement research-based alternatives to reduce exclusionary discipline, but they may also benefit from addressing school and other structural characteristics that are fostering racial disparities.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.

Predicted Probabilities of Suspension or Expulsion by Age Nine, by Race and Gender.

Note: Fragile Families and Child Wellbeing Study. Sample limited to observations with non missing values for composite measures of children's physically aggressive behavior (1,295 males and 1,178 females in full analytic sample; 311 males and 340 females in subsample with teacher reports). Controls include socioeconomic status (household poverty, parent education), parent/home characteristics (parent citizenship, impulsivity, substance use, unemployment; mother depression, multipartner fertility, children, spanking, victimization, neighborhood disadvantage, moves, religiosity; father residential status, incarceration), school characteristics (racial composition, punitiveness level), child externalizing behaviors, and indicators of child development (age, low birth weight, poor health, attention/hyperactivity disorder, cognitive ability, preschool attendance, grade retention, schools attended). Results based on Karlson, Holm, and Breen (2012) method using the first of 20 multiply imputed datasets.

Table 1.

Descriptive Statistics by Exclusionary School Discipline Status

Variable	Suspended or Expelled		Not Suspended or Expelled		Difference in Means	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
<i>Dependent Variables (Y9)</i>						
Parent-reported physically aggressive behavior (z-score)	0.52	1.45	−0.13	0.80	0.65	***
Teacher-reported physically aggressive behavior	0.81		0.40		0.41	***
<i>Lagged Dependent Variables (Y5)</i>						
Parent-reported physically aggressive behavior (z-score)	0.42	1.36	−0.10	0.86	0.52	***
Teacher-reported physically aggressive behavior	0.33		0.08		0.25	***
<i>Control Variables (at or before Y5)</i>						
Child male	0.72		0.48		0.25	***
Child black Non-Hispanic	0.79		0.47		0.32	***
Child Hispanic	0.16		0.31		−0.16	***
Mother and father income-to-poverty ratio (log)	0.78	0.45	1.03	0.54	−0.25	***
Mother postsecondary education	0.24		0.39		−0.15	***
Father postsecondary education	0.16		0.34		−0.18	***
Either parent not a citizen	0.06		0.15		−0.08	***
Mother and father married, child’s birth	0.10		0.26		−0.16	***
Father impulsivity (z-score)	0.23	1.08	−0.01	0.98	0.24	***
Mother impulsivity (z-score)	0.17	1.03	−0.05	0.95	0.22	***
Mother depression	0.21		0.17		0.04	
Father lives with child	0.41		0.58		−0.17	***
Mother multipartner fertility	0.61		0.43		0.18	***
Father incarceration	0.62		0.43		0.19	***
Mother children in household (0 to 10)	2.79	1.48	2.48	1.33	0.32	***
Mother spansks child	0.61		0.47		0.13	***
Mother domestic violence victimization	0.23		0.19		0.04	*
Mother or father substance abuse	0.20		0.14		0.07	***
Mother or father unemployment	0.40		0.27		0.13	***
Mother neighborhood disadvantage (z-score)	0.42	0.88	−0.06	0.88	0.48	***
Mother residential moves	0.53		0.48		0.05	*
Mother religious attendance (z-score)	−0.07	1.04	0.02	0.99	−0.08	
Child age at Y5 (months)	61.28	2.27	61.10	2.42	0.18	
Child low birth weight	0.10		0.10		0.00	
Child poor health	0.12		0.11		0.01	

Variable	Suspended or Expelled		Not Suspended or Expelled		Difference in Means	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Child diagnosed with attention/hyperactivity disorder	0.27		0.10		0.17	***
Child cognitive ability (z-score)	-0.11	0.93	0.10	1.01	-0.22	***
Child preschool attendance	0.82		0.79		0.03	
Child grade retention	0.24		0.15		0.09	***
Number of schools child attended (log)	0.56	0.49	0.42	0.46	0.14	***
Percent school black (z-score)	0.58	0.97	-0.08	1.00	0.66	***
Percent school Hispanic (z-score)	-0.31	0.83	0.01	1.01	-0.32	***
School punitiveness level (z-score)	0.19	0.12	0.14	0.10	0.05	***
Teacher-reported students per teacher (1 to 34)	14.30	6.37	14.52	5.75	-0.22	
Teacher-reported school security level (z-score)	0.25	0.88	-0.07	1.00	0.32	**
Teacher self-reported black Non-Hispanic	0.29		0.12		0.17	***
Teacher self-reported graduate school degree	0.51		0.44		0.07	
N	489		1,984			

Note: Fragile Families and Child Wellbeing Study. Y5=age-five wave; Y9=age-nine wave. M=mean; SD=standard deviation. Sample limited to observations with non-missing values for composite measures of children's physically aggressive behavior at Y5 and Y9. Sample for teacher-reported variables also limited to observations with a participating kindergarten teacher at Y5 and elementary school teacher at Y9 (N=555 not suspended or expelled; N=96 suspended or expelled). Sample city dummy variables excluded for parsimony. Results based on the first of 20 multiply imputed datasets. Independent-samples t-tests compare means by suspension or expulsion status.

*
p<.05;

**
p<.01;

p<.001 (two-tailed tests)

Ordinary Least Squares and Logistic Regression Models of the Association between Exclusionary Discipline and Physically Aggressive Behavior (Parent- and Teacher-Reported) in Elementary School

Table 2.

	Suspension or Expulsion		Add Control Variables		Add Lagged Dependent Variable		N
	<i>b</i>	<i>se</i>	<i>b</i>	<i>se</i>	<i>b</i>	<i>se</i>	
Parent-reported Aggressive Behavior (OLS)							
Full analytic sample	0.647	*** (0.049)	0.396	*** (0.052)	0.339	*** (0.051)	2,473
Recently suspended/expelled removed	0.429	*** (0.060)	0.202	(0.062)	**	0.162 (0.061)	** 2,318
Teacher-reported Aggressive Behavior (Logit)							
Full teacher subsample	1.913	*** (0.280)	1.585	*** (0.322)	1.448	*** (0.333)	651
Recently suspended/expelled removed	1.437	*** (0.324)	1.222	*** (0.365)	**	1.037 (0.377)	** 609

Note: Fragile Families and Child Wellbeing Study. Sample limited to observations with non-missing values for composite measures of children's physically aggressive behavior at Y5 and Y9. Sample for teacher-reported variables also limited to observations with a participating teacher at Y5 and Y9. Coefficients for parent-reported behavior are based on ordinary linear regression. Coefficients for teacher-reported behavior are based on logistic regression and represent log odds. Controls include gender, race and ethnicity, household income to poverty ratio (log), mother's post-secondary education, father's post-secondary education, either parent not a citizen, mother and father married at child's birth, father's impulsivity, mother's impulsivity, child's age in months at Y5, child's low birth weight, child diagnosed with attention or hyperactivity disorder, preschool attendance, number of schools child attended (log), school racial composition, school punitiveness level, sample city, father's residential status, mother and father income-to-poverty ratio, mother's neighborhood disadvantage, mother spansks child, mother's depression, mother's multipartner fertility, child's grade retention, number of children in mother's household, father's incarceration, child's poor health, child's cognitive ability, mother's residential moves, mother's domestic violence victimization, either parent's substance abuse, either parent's unemployment, and mother's religious attendance. Models of teacher-reported behavior also control for whether the kindergarten teacher has a graduate degree, whether the kindergarten teacher is black, the school security level, and the student-to-teacher ratio; however, they exclude the child's low birth weight and poor health as controls due to a lack of variation in the smaller sample. Models of teacher-reports with a lagged dependent variable also control for parent-reported aggressive behavior. Results based on 20 multiply imputed datasets.

p<.001;

**
p<.01 (two-tailed tests)

Within-Individual, Fixed-Effects Models of the Association between Exclusionary Discipline and Change in Physically Aggressive Behavior (Parent- and Teacher-Reported) in Elementary School (Y5 to Y9)

Table 3.

	Suspension or Expulsion		Add Control Variables		N
	<i>b</i>	<i>se</i>	<i>b</i>	<i>se</i>	
Parent-reported aggressive behavior (linear)	0.127	(0.059) *	0.124	(0.060) *	4,946
Log odds of teacher-reported aggressive behavior (logit)	2.343	(0.374) ***	1.509	(0.424) ***	1,302

Note: Fragile Families and Child Wellbeing Study. Y5 = age-five wave; Y9 = age-nine wave. Sample size corresponds to person-waves (two waves per respondent). Sample limited to observations with non-missing values for composite measures of children’s physically aggressive behavior at Y5 and Y9. Sample for teacher-reported variables also limited to observations with a participating teacher at Y5 and Y9. Coefficients for parent-reported behavior are based on linear, within-individual, fixed-effects models. Coefficients for teacher-reported behavior are based on random-effects models with individual fixed effects and represent log odds (binary outcome). Time-varying controls include the father’s residential status, mother and father income-to-poverty ratio, mother’s neighborhood disadvantage, mother spansks child, mother’s depression, mother’s multipartner fertility, child’s grade retention, number of children in mother’s household, father’s incarceration, child’s poor health, child’s cognitive ability, mother’s residential moves, mother’s domestic violence victimization, either parent’s substance abuse, either parent’s unemployment, and mother’s religious attendance. Models of parent-reported behavior also control for the observation wave. Models of teacher-reported behavior also control for whether the kindergarten teacher has a graduate degree, whether the kindergarten teacher is black, the school security level, student-to-teacher ratio, and parent-reported aggressive behavior; however, they exclude the child’s poor health due to a lack of variation in the smaller sample. Results based on 20 multiply imputed datasets.

p<.001;

*
p<.05 (two-tailed)