School Attachment and Discipline Rates and Disparities Among African-American Youth

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Introduction

Decades of research have demonstrated persistent, widespread gaps in school outcomes between African-American and white students in terms of achievement (Rothstein 2015, Bohrnstedt et al 2015). More recent work has investigated differences in how connected Black and white students feel to their schools, which has been demonstrated to be a predictor of student achievement, persistence in school, and reduction in risky behavior (Bryk and Thum 1989, Farkas et al 1990, Newmann et al 1992). Black students on average show lower levels of school attachment than do white students, which may account for part of the observed differences in achievement and completion (Bonny et al. 2000, Johnson et al (2001). At the same time, other research has focused on the racial disparities present within schools in terms of discipline rates and course-taking, with Black students significantly more likely to face suspension or expulsion than white students, and significantly less likely to be enrolled in advanced courses (Bottiani et al 2017, US Dept. of Education Office for Civil Rights 2018, Diette 2012). There is evidence that students are aware of these disparities and that they impact the ways students feel about their schools in terms of equity, fairness and belonging (Mattison & Aber 2007, Shirley & Cornell 2012, Hernandez Sheets 1996, Howard 2008). This paper extends that research to examine whether African-American adolescents are less connected to schools with higher levels of discipline and larger disparities in within-school discipline rates for Black and white students, controlling for a variety of individual, family, and school characteristics. Taking advantage of the rich, longitudinal design of the Fragile Families Study of Child Wellbeing and linking it to school contextual data from the US Department of Education Civil Rights Data, this study demonstrates that Black students attend schools with overall discipline rates that are significantly higher than those at schools attended by white students, but that the levels of overall suspension rate and within-school racial gaps in those rates do not show statistically significant associations with school attachment at age 15 after controlling for other individual, family and school characteristics.

Background

School Connection

Connection to school has been understood as an affective element of how students experience school – to what extent they feel a part of the community and a sense of belonging there. Finn (1989) distinguished between this identification with or attachment to school and a student's engagement with school, a measure of behavioral participation such as attendance, completion of homework, or taking part in sports of extracurriculars. While many authors have found positive associations between school attachment, engagement, and achievement, the strength of these associations has been reduced after individual controls are included (Johnson et al 2001). However, recent work by Lee (2014) showed significant association between emotional attachment to school and reading performance in a national sample of 15-year-old students, partially mediated by the measure of behavioral school engagement. A wide body of research has shown that in addition to higher achievement, students who feel more attached to school show a reduced likelihood of engaging in risky behaviors and of dropping out (Bryk and Thum 1989, Farkas et al 1990, Newmann et al 1992).

This attachment to school is thought to be determined by a combination of individual characteristics as well as by aspects of the school context. Younger students, those from higher SES families, those with both parents living at home, as well as those with more authoritative parents and whose parents have higher academic expectations display greater attachment to school. Effects of sex vary by age – most studies find that girls are more attached to school in middle school, while in high school, boys show higher school attachment (Johnson et al 2001). Bonny et al. (2000) found that white students had higher attachment to school, and Johnson et al (2001) found that African-American students were less connected to but more engaged in school than were white and Latino students. Cheng and Klugman (2010) found that single-race students were more attached to schools that had a

higher proportion of same-race peers, while effects varied for biracial students. The effects of attachment to school on other outcomes have been found to vary by race as well – Pegeuro et al (2016) demonstrated that school connection is protective against dropping out and that these effects are larger for students who are racial and ethnic minorities. Racial composition has been shown to be important for other aspects of equity for students of color in addition to how connected they feel to school. Diette (2012) found that the likelihood of Black students' enrollment in Algebra, a key curricular gateway course, relative to that of white students, was significantly lower in integrated schools as compared to schools that were majority white or majority Black. Similarly, the disparity in Algebra enrollment increased as the share of white teachers at the school increased. While studies find that the size of school effects on connection are smaller than those of individual characteristics, Cook et al (2002) argued that school characteristics remain important to study given that effects of schools are likely cumulative, and that the environments in which students operate are likely interrelated, as they demonstrated for residential neighborhoods and schools. In addition to racial composition, other characteristics of schools have been shown to impact attachment to school, perceptions of school climate, and likelihood of graduation for disadvantaged students. A study of middle schools in California showed that Black and Latino students perceived school climates differently than their white classmates at the same schools, with lower levels of safety, connection, and positive assessments of relationships between adults and students. Achievement gaps between students of color and white students were also larger at the schools with larger gaps in perceived climate (Voight et al 2015).

Discipline Gap

A potentially key factor in determining a student's perception of climate at his or her school is the frequency and distribution of disciplinary action at the school, both overall and specifically for other students similar to themselves (McNeely et al 2002). Black students, particularly Black male students, are suspended and expelled from American schools at rates far outpacing their representation in school

enrollment. A 2018 report from the Government Accountability Office demonstrated that these gaps begin early, with Black students accounting for 47 percent of all suspensions from public preschools while only making up 19 percent of those enrolled (GAO 2018). Despite direction from the Obama administration in 2014 for school districts to take steps to reduce such disparities, data released by the US Department of Education Office of Civil Rights in April 2018 showed that Black male students, who represented 8% of all school enrollment, made up 25% of all out-of-school suspensions in the 2015-16 school year (Balingit 2018). Black female students also made up 8% of all enrollment yet represented 14% of out-of-school suspensions (US Dept. of Education Office for Civil Rights 2018). Academic researchers have shown that the reasons for disciplinary action for Black versus white students differ in addition to the prevalence and relative rates; Skiba and Peterson (2000) determined that Black students were more frequently subject to suspensions for more subjective infractions such as disrespect, while white students were cited for more objective rule violations like smoking or vandalism. In a study of high school girls, Francis (2012) found that teachers were more likely to perceive African-American than white girls as disruptive, even after controlling for socioeconomic status (SES) and school achievement levels. Importantly, she also found racial differences in teacher ratings of student attentiveness, which play a crucial role in teacher recommendation for placement into honors courses.

These differential rates of disciplinary consequences, particularly out-of-school suspension, have significant impacts on learning for students. Losen and Gillespie (2012) estimate that over 3 million school children lost time in class due to discipline across the country in the 2009-10 school year. In one midwestern urban district, Lewis and Butler (2010) found that due to repeated or multiple-day out-of-school suspensions, Black male students lost 3,714 days of school in one year, more than the number of such students enrolled (3,587). They connect this reduced learning time to diminished achievement for Black students, with only 19% of 8th graders scoring proficient or advanced in science, and only 7% of 9th and 10th graders scoring proficient or advanced in math.

Discipline Gaps and School Connection

Unequal distribution of discipline has consequences for students beyond learning and reduced academic time. In interviews, Black students have reported perceiving differences in disciplinary consequences for actions of Black students as compared to the same actions for white students (Hernandez Sheets 1996, Howard 2008). Hilberth and Slate (2014) position the reaction to such disparities within an equity theory framework that emphasizes the importance of fairness of social relationships as well as a belief that consequences be applied in proportion to the level at which an individual contributes to the whole. Violations of these beliefs have been shown to lead to significant negative consequences for students of color; decreased levels of agreement that schools are fair and just has been linked to school failure and dropping out, and students of color demonstrate lower belief that school rules or policies are fair (Peguero 2012, Cammarota 2004, Hagan et al 2005, Kupchik 2012, Rios 2011).

Similarly, other studies have found that gaps in perception of positive racial climate are associated with discipline gaps, and that students of color report less willingness to seek out help from teachers at schools with larger discipline disparities (Mattison & Aber 2007, Shirley & Cornell 2012). Kearney and Levine (2016) found that low-income students living in areas with greater economic inequality are more likely to drop out of high school, a phenomenon potentially explained by a model of individual aspirations put forth by Genicot and Ray (2017). In that model, an individual's aspirations are determined in part by surrounding social conditions, like inequality, that in turn affect that individual's decisions about how much time to invest in an endeavor. The awareness of that inequality is critical for it to impact decision making, suggesting the importance of proximity and visibility of the measure of inequality or social condition. Kearney and Levine address this, by showing that inequality as measured between the 50^{th} and 10^{th} percentile, the bottom end of the income distribution, is more closely related to drop out of low income students, as the higher end of the distribution is likely less meaningful to such

students. For this reason, disparities in discipline rates between Black and white students are a plausibly meaningful indicator of inequality for African-American students; it is likely something they see taking place in their classrooms and hallways, unlike something more abstract like test-based achievement gaps. Indeed, Bottiani et al (2017) found significant associations between the discipline gap at high schools in Maryland and perceptions of school equity, feelings of school belonging, and the likelihood of behavioral adjustment problems for Black students, but not for white.

Contribution of Present Study

The purpose of this study is to understand how school attachment among Black adolescents is associated with the level of overall discipline as well as the size of racial gaps in discipline at their schools, controlling for several individual, family, and other school characteristics demonstrated in the literature to be connected to school attachment. The present study adds a broader geographic sample than has previously been studied, as well as more detailed measures of family and student characteristics. While Bottiani et al (2017) have an additional measure of school equity not available in the Fragile Families study, they are limited to a single state that had been undergoing a randomized controlled trial of an intervention to reduce bias in discipline. They also are limited to a single point in time in the covariates they can measure, arguably controlling for other post-treatment outcomes that can potentially result in post-treatment bias (Elwert and Winship, 2014). Additionally, the Fragile Families data include detailed measures of family SES, including the income to poverty ratio at multiple points in time, mother's education level, and whether the child studied lives with both parents. The connection of Fragile Families data with Department of Education Office of Civil Rights data allows for a detailed picture of the homes, schools, and lives of these students to be included in attempting to understand how Black students experience their schools in adolescence.

Data and Methods

The Fragile Families Child Wellbeing Study is a birth cohort study of nearly 5000 families. The study includes a probability sample of births in 20 large U.S. cities, of which 16 cities form a probability sample of all births between 1998 and 2000 in U.S cities with populations over 200,000. The study includes a wide variety of life circumstances and characteristics of the child and caregivers, including measures of child's cognitive ability and social emotional development across all waves, attachment to school at age 15, and mental health. The data from the US Department of Education Office of Civil Rights includes AP course taking data, grade retention data, ACT/SAT test-taking data, discipline data by student race/ethnicity, as well as other relevant school characteristics for the majority of schools in the United States for the 2013-14 school year. The data were linked by Fragile Families study staff using NCES identification codes.

Rates of discipline from the Civil Rights Data were calculated by summing counts of out-of-school suspension across sex within racial group then dividing by the total enrollment in that school of that group. Per Bottiani et al (2017), differences in rates were calculated rather than ratios. Ratios are potentially less connected to the perceived realities of students; a ratio of 2.0 is likely to be experienced differently if it represents a 40% risk for Black students versus 20% risk for white students than if it represents a 4% and 2% risk, respectively. In some cases, the counts from the Civil Rights Data (CRD) resulted in proportions greater than 1, likely due to data errors. These represented no more than 10 cases for schools; the values greater than 1 were recoded to missing and excluded. Students were included in the analysis if their school reported data on out-of-school suspensions, and if they had valid data on all covariates. This resulted in an effective sample size of 1,899 respondents, 999 who identified as Black, 416 as white, 53 as white and Black (or other group in combination), and 431 who identified with another racial or ethnic group.

Clustering in Schools

The 1,899 students attended 1,159 schools at the time they were interviewed for the age 15 study. The clear majority (70%) of students represented the only student in the sample at their school (see Table 1), while 14% of students attended the same school as two or more others in the sample.

Table 1. Distribution of Sample Students Across Schools

Number in School	Count of Students	Percent of Students
1	810	70%
2	183	16%
3	76	7%
4	43	4%
5	14	1%
6	11	1%
7	10	1%
8	6	0%
9	2	0%
10	0	0%
11	1	0%
12	1	0%
13	1	0%
14	0	0%
15	1	0%

To determine whether multilevel models would be necessary to account for clustering with schools, intraclass correlation was calculated for school connection to see what percent of variance in the outcome was attributed to school, resulting in 0.05. Additionally, the model for school connection was run with and without random effects for school, resulting in nearly identical coefficients and suggesting that outcomes were not determined by school other than the observables.

Sample Characteristics

School attachment is calculated as the average of four questions used in the Fragile Families Study at age 15 from the Panel Study of Income Dynamics Child Development Supplement, each scored on a 4-point scale from Strongly Disagree to Strongly Agree. The questions are: "I feel close to people at my school," "I feel like I am part of my school," "I am happy to be at my school," and "I feel safe at my school." The same questions were used at age 9, however, the scale of responses was different. At age 9, respondents were asked about how many times a week they felt each way, rather than about the extent of their agreement. Due to the differences in measurement, as well as the likelihood that school context at age 9 was similar to that at age 15, the score at age 9 was not included in the model. The correlation between the two was modest, at .15 ($p < .001$). As found in other studies, Black students at age 15 had a lower average score on the school connection scale than did white students, at 3.37 compared to 3.52, with a p value < .01.

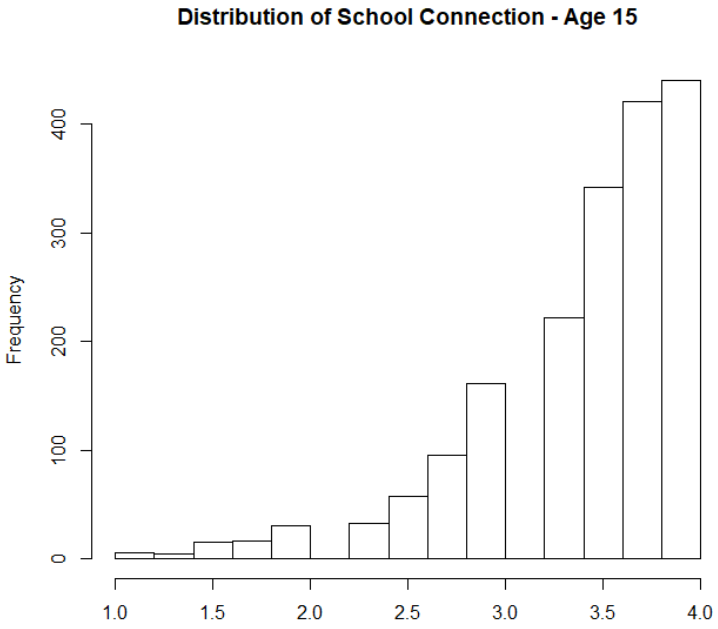

Figure 1. School Connection at Age 15

Family and individual characteristics shown in the literature above to be associated with school attachment were also examined, including student race, sex, mother's education, family income, and whether the student's father lived with the family. To avoid including covariates potentially also associated with assignment to particular schools, these family characteristics were measured before age of school entry, either at birth (mother's education) or at age 3 (income and father cohabitation) (Elwert and Winship, 2014). Additionally, a key advantage of the Fragile Families data is the inclusion of measures of child behavior independent of and prior to school entry. At age 3, mothers reported on externalizing (aggression, rule-breaking, etc.) and internalizing (anxiety, withdrawal) behaviors. These reports were summed, with higher values indicating more potentially problematic behaviors. Characteristics of schools other than discipline were included, also based on importance in prior literature. These measures were percent Black students enrolled and percent of students eligible for free-and-reduced price lunch (a proxy for family poverty).

The suspension gap had a mean value of .116, indicating that the difference in out-of-school suspension rates between Black and white students experienced by the average student in the analysis sample was nearly 12 percentage points. Only 352 students (18.9%) attended schools where the suspension rates for Black and white or students were equal or where white students had a higher rate of suspension than did Black students; more than 80% of students in the sample attended schools where Black students received out-of-school suspensions at a higher rate than did white students.

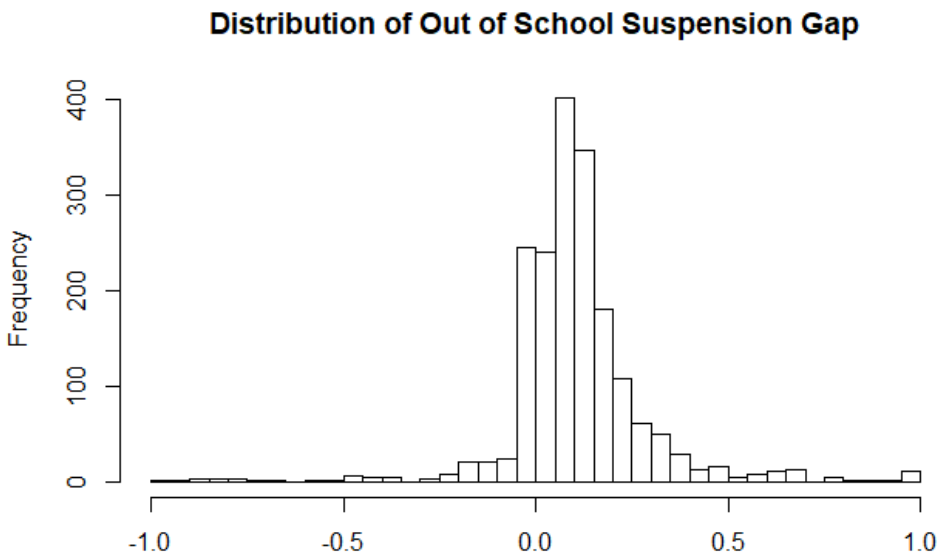

Figure 2. Out-of-school Suspension Gap

Descriptive statistics for the analytic sample are found in Table 2. Just under a third had a mother with less than a high school degree at the time of their birth, with 26% having a mother who completed some college and 11% having a mother with a BA or higher degree. The average family income was 1.9 times the federal poverty line amount at age 3, and half the sample lived with their biological father at home at age 3. The schools were fairly diverse, with an average percent Black of 36%, and percent white of 33%, and they were not overwhelmingly economically disadvantaged, with 55% of students at the schools eligible for free- or reduced-price lunch.

Table 2. Descriptive statistics

	Mean	SE
School connection - age 15	3.431	0.570
Black	0.554	0.497
White	0.247	0.431
Male	0.521	0.499
Mom less than high school *(at birth of child)*	0.300	0.459
Mom some college *(at birth of child)*	0.263	0.440
Mom BA or higher *(at birth of child)*	0.109	0.311
Biological father lives at home *(at age 3)*	0.502	0.500
Family income to poverty ratio *(family income divided by federal poverty line amount at age 3)*	1.922	0.500
Internalizing behavior scale sum *(at age 3)*	9.423	5.737
Externalizing behavior scale sum *(at age 3)*	9.776	5.827
School percent Black	0.359	0.338
School percent white	0.329	0.431
School percent of students eligible for free or reduced-price lunch	0.545	0.261
Overall Out-of-School Suspension Rate	0.109	0.113
Suspension Gap: Black Out-of-School Suspension Rate - White Out-of-School Suspension Rate	0.116	0.181

Results

Out-of-school Suspension Rates

Student perceptions of discipline at their schools is likely a function of both overall frequency of suspension as well disparities in rates between groups. For that reason, trends in overall rates of out-of-school suspension were examined in combination with the size of within-school disparities in suspension rates between Black and white students. Quartiles of suspension rates were created at the school level, with the first quartile including schools with out-of-school suspension rates of 2.9% or less, the second including schools with rates of 7.0% or less, the third including schools with rates of 14.7% or less, and the fourth including all schools with rates above 14.7%. Nineteen schools had suspension rates of 50% or higher, and these schools had significantly higher shares of Black students than did the sample as a whole, with 71% percent Black on average compared to 36.8%. These schools were relatively small compared to all schools in the sample, with an average of 645 students total, just over half of the

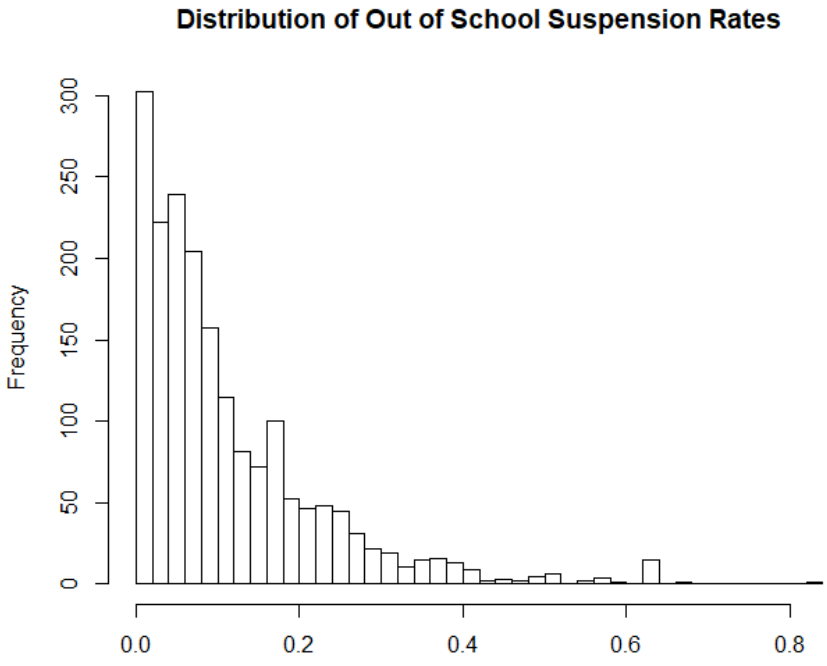

Figure 3. Out-of-school Suspension Rates

sample average school size of 1224. Additionally, these highest-discipline schools had an average of 432 Black students enrolled, more than ten times the average number of white students enrolled, at 35.

Broadening to schools across suspension-rate quartiles, white students were over-represented at schools with the lowest discipline rates relative to Black students, with 38% of white students attending schools with suspension rates under 3% (see Figure 4).

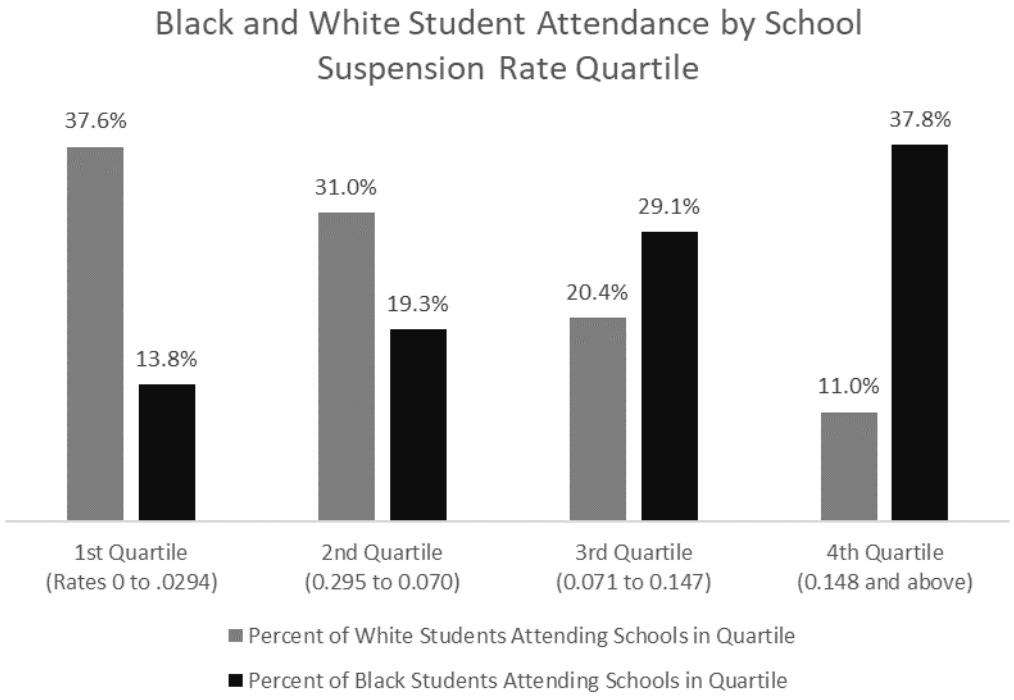

Figure 4. School Enrollment by Race within Suspension Rate Quartiles

The level of school connection was negatively correlated with the out-of-school suspension rate for the sample as a whole, with a correlation coefficient of -.15 ($p < .01$). For Black students, this relationship was more negative, with a correlation coefficient of -.19 ($p < .001$). For white students, however, the correlation was not significant (though still negative). Taking mean school connection levels within each quartile of out-of-school suspension rate, the average level decreased from 3.6 among students attending schools in the lowest quartile of suspension rates to 3.3 among students attending schools in the highest quartile of out-of-school suspension rates.

Out-of-school Suspension Rates and Black-White Gaps in Rates

The intersection of overall rates of suspension and inter-group differences in suspension rates was explored to determine whether the size of disparities between Black and white discipline rates differed by overall disciplinary context. The mean difference between Black and white suspension rates was at .104 (representing a 10.4 percentage point difference) in schools in the lowest quartile of overall suspension rates. In other words, Black students at schools that used out-of-school suspension the least were more than 10 percentage points more likely to be suspended than were their white counterparts. As the overall suspension rate increased, the size of the gap between Black and white rates increased as well, from .104 in the first quartile of schools to .149 in the top quartile.

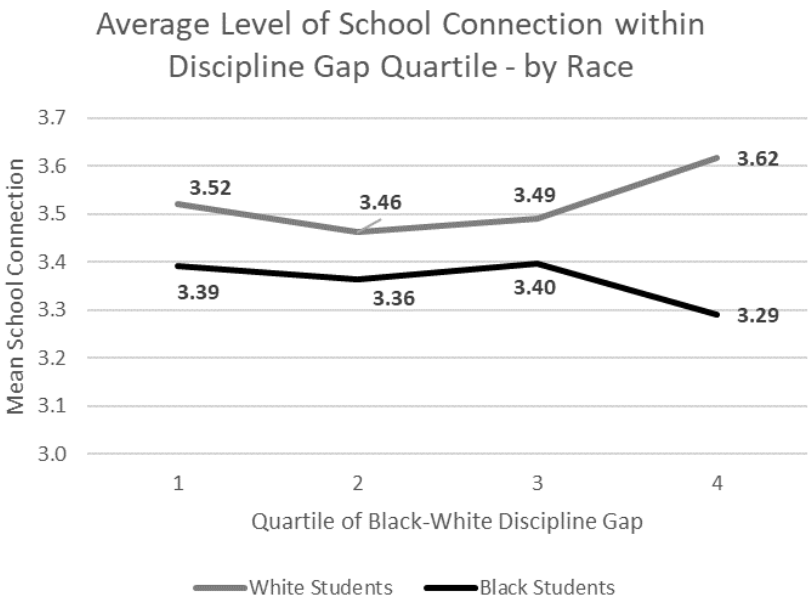

Figure 5. School Connection Mean within Discipline Gap Quartile

Schools were sorted into quartiles by the size of the gap between Black and white out-of-school suspension rates, as with overall suspension rates, with schools in the first quartile having differences of .0347 and below, the second quartile up to .098, the third up to .178, and the fourth with gaps larger than .179. The level of school connection trended differently for Black and white students in schools

across these quartiles, with connection increasing somewhat for white students at schools with the highest levels of racial disparity in out-of-school suspension rates (see Figure 5).

The overall correlation between size of racial disparity and level of school connection was not significant, but when broken out and calculated among Black students and white students separately, the signs were different, with a coefficient of -.02 for Black students and .09 for white students ($p < .10$ for white students).

Sex and Race Differences in School Connection

As found in Johnson et al (2001), boys had a higher level of school connection than did girls, for both white and Black students. Focusing in on the particular items making up the scale, Black and white boys had higher average scores than girls on all items, with the exception of "I feel safe at my school," where Black boys averaged slightly lower than Black girls (and all other groups). The lowest for any group on an individual item was Black girls in response to "I feel close to people at my school" (see Table 4).

Table 4. Sex and Race Differences in School Connection Scale Items and Overall Score

	I feel close to people at my school		**I feel like I am part of my school**		**I am happy to be at my school**		**I feel safe at my school**		**Overall School Connection Score**	
Group	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
All Female	3.22	0.834	3.37	0.801	3.35	0.838	3.61	0.679	3.38	0.593
All Male	3.38	0.771	3.46	0.757	3.45	0.826	3.62	0.681	3.48	0.563
Male - Female	*0.16*		*0.09*		*0.10*		*0.01*		*0.1*	
White Female	3.38	0.768	3.43	0.77	3.46	0.759	3.67	0.628	3.48	0.566
White Male	3.47	0.721	3.53	0.714	3.5	0.765	3.74	0.591	3.56	0.53
Male - Female	*0.09*		*0.10*		*0.04*		*0.07*		*0.08*	
Black Female	3.12	0.869	3.35	0.819	3.27	0.86	3.58	0.702	3.33	0.603
Black Male	3.31	0.795	3.45	0.766	3.37	0.892	3.55	0.73	3.42	0.589
Male - Female	*0.19*		*0.10*		*0.10*		*-0.03*		*0.09*	

Regression Models – Association of discipline levels and disparities with school attachment

To examine the combined association of multiple factors with school connection, linear regression was run on the level of school connection at age 15. The first model controlled for individual and family characteristics prior to assignment to school, then added controls for school demographic characteristics, then for the overall rate of out-of-school suspension and suspension gap. Results are shown in Table 5. In the family and individual model, the indicator for Black was significant and negative, as was the externalizing behavior scale score. The indicator for male was significant and positive, and mother with less than a high school degree and family income were marginally significant and positive. Once school demographic characteristics were added, the indicator for Black was no longer significant, though male remained significant and positive, and externalizing behavior score remained significant and negative. The percent Black at the school was significant and negative. The out-of-school suspension rate and Black-white difference in suspension rates were added in Model 3. The overall suspension rate entered with a negative coefficient of -0.14 but was not significant, though the size of the coefficient on percent Black decreased slightly to -0.14. The size of the racial gap in suspension rates was not significant and had a slightly positive coefficient.

To explore the possibility that school attachment operates differently for Black and white students, the models were run for each group in turn, removing the indicator for Black. Among Black students, the results were similar to those with the entire sample, with the indicator for male significant and positive and externalizing behavior score significant and negative. The coefficient on percent Black at school remained negative but was no longer significant. The coefficient on overall suspension rate grew more negative, from -0.14 in the whole sample to -0.21 for Black students, though it was not significant. The coefficient on the racial gap in suspension rates became negative but of small magnitude. Among white students, the indicator for male was positive and significant, and the externalizing scale score was marginally significant and negative. Moving to school characteristics,

however, the percent of Black students in school was significantly negative for white students, with one of the largest coefficients of any variable in any model at -0.57. The out-of-school suspension rate was positively associated with school connection for white students with a coefficient of 0.63, though also not significant. Similarly, the gap in suspension rates was positive but not significant.

Table 5a. Linear regression results – Predicting Level of School Attachment at Age 15

	Model 1			Model 2			Model 3	
Variable	**b**	**Sig**		**b**	**Sig**		**b**	**Sig**
Constant	3.51	***		3.58	***		3.62	***
Black	-0.12	***		-0.03			-0.05	
Male	0.09	***		0.08	**		0.09	***
Mom less than HS - birth	-0.06	.		-0.04			-0.04	
Mom some college – birth	-0.01			-0.03			-0.02	
Mom BA or more – birth	0.06			0.03			0.01	
Dad lives at home – age 3	0.00			0.00			0.00	
Family income to poverty line ratio – age 3	0.01	.		0.01			0.01	
Internalizing behavior scale sum – age 3	0.00			0.00			0.00	
Externalizing behavior scale sum – age 3	-0.01	**		-0.01	**		-0.01	**
School percent black				-0.17	**		-0.14	*
School percent white				0.04			0.03	
School percent of students eligible for free or reduced-price lunch				-0.09			-0.11	
Overall Out-of-School Suspension Rate							-0.14	
Suspension Gap: Black Out-of-School Suspension Rate - White Out-of-School Suspension Rate							0.03	

. p < .1; * p < .05, ** p < .01, *** p < .001

Table 5b. Linear regression Results (cont.)

	Model 7			Model 8	
	Black Students			White Students	
Variable	**b**	**Sig**		**b**	**Sig**
Constant	3.61	***		3.68	***
Male	0.09	*		0.09	*
Mom less than HS - birth	-0.06			-0.09	
Mom some college – birth	-0.02			-0.06	
Mom BA or more – birth	-0.04			0.06	
Dad lives at home – age 3	0.00			-0.08	
Family income to poverty line ratio – age 3	0.01			0.01	
Internalizing behavior scale sum – age 3	0.00			0.01	
Externalizing behavior scale sum – age 3	-0.01	*		-0.01	.
School percent black	-0.13			-0.57	***
School percent white	-0.02			-0.05	
School percent of students eligible for free or reduced-price lunch	-0.17			-0.18	
Overall Out-of-School Suspension Rate	-0.21			0.63	
Suspension Gap: Black Out-of-School Suspension Rate - White Out-of-School Suspension Rate	-0.05			0.07	

. p < .1; * p < .05, ** p < .01, *** p < .001

Discussion

The results suggest that the association between levels of school connection and levels of overall discipline as well as larger racial disparities in discipline rates is not significant after other characteristics of schools, students and families are included. While the coefficients on discipline rates and disparities are directionally different for Black and white students, without statistical significance, no conclusions can be drawn. The model may suffer from multicollinearity, as the percent Black, percent of students eligible for free-and-reduced-price lunch and out-of-school suspension rates are all correlated with one another at about 0.5. When any one of those is included as a predictor of school connection at the exclusion of the other two, it emerges as significant and negative. The prior finding

that percent Black at school is positively associated with school attachment for Black students was not confirmed.

As has been shown in prior work, male students had higher connection to their schools at age 15 than did female students. Unlike prior work, however, individual SES as measured by mother's level of education or family income did not show significant association with school connection after individual behavior at age 3 and school characteristics were controlled for, nor did whether the student's biological father lived with the family. The vast majority of variation in school connection, however, was not explained by these models, indicating the limited explanatory power of even this long list of personal, family, and school characteristics. The largest adjusted R squared of any model was .068, suggesting significant unexplained variation. The differential associations of level of discipline and disparities in discipline rates with school connection between Black and white students are perhaps unsurprising given the differential exposure of those students to disciplinary contexts, with Black students vastly more likely to attend schools with high levels of out-of-school suspension, or to be subject to significantly higher rates than their white counterparts, even at schools where suspension is relatively rare.

Conclusion

The way that students feel at school – how safe they are, how much they belong – is an important indicator of how well they will be able to reap the educative benefits of their schools, in terms of academic and other critical life outcomes (Johnson et al 2001, Lee 2014, Bryk and Thum 1989, Farkas et al 1990, Newmann et al 1992). Patterns of unequal treatment in terms of discipline and punishment can significantly impact Black students' sense of fairness and equity at their schools, which in turn can affect their likelihood of persisting to graduation (Peguero 2012, Cammarota 2004, Hagan et al 2005, Kupchik 2012, Rios 2011). This study demonstrates the disparate overall levels of discipline at the types

of schools Black and white students attend, though does not provide evidence of an independent impact of disciplinary context on how connected Black versus white students feel to their schools at age 15.

Further study in a variety of school settings would add to the understanding of how students of color perceive and are impacted by inequities in discipline and course access at their schools, as would a sampling framework allowing for larger groups within schools. More direct measures of beliefs about equity and fairness in the form of qualitative interviews or additional survey measures could aid in this endeavor. Additionally, later waves of Fragile Families data after students have ultimately graduated or reached graduation age would be informative as to the real-life impacts of attending schools with larger or smaller discipline gaps and how connected students feel to their schools.

The notion that racial disparities in discipline and disproportionate exposure to punitive environments may affect Black students and their connection to school, beyond those personally disciplined, adds further urgency to the need to address these widespread inequities. Schools must be places where all students can feel safe and see room for themselves for the US public education system to meet its goal of universal, quality education. Understanding the ripples of impact that individual discipline decisions can have on students' fundamental belief in fairness or on whether school is a place they belong is critical to prioritizing efforts to reform the ways that teachers and administrators address behavior and infractions; the stakes are incredibly high.

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