



Promoting an equitable and supportive school climate in high schools: The role of school organizational health and staff burnout

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ABSTRACT

In response to persistent racial disparities in academic and behavioral outcomes between Black and White students, equitable school climate has drawn attention as a potential target for school reform. This study examined differences in Black and White students' experiences of school climate and explored whether indicators of school organizational health and staff burnout moderated differences in students' school experiences by race. Utilizing hierarchical linear modeling with a sample of 18,397 Black students ($n = 6228$) and White students ($n = 12,169$) and 2391 school staff in 53 schools, we found a consistent pattern of racial inequalities, such that Black students reported less positive experiences than White students across three indicators of school climate (caring $\gamma = -0.08, p < .001$; equity $\gamma = -0.05, p = .007$; and engagement $\gamma = -0.05, p < .001$). In addition, we found significant, positive associations between aggregated staff-report of school organizational health and student-reported school climate (e.g., staff affiliation and student-perceived equity, $\gamma = 0.07, p < .001$). Surprisingly, a number of school organizational health indicators were more strongly associated with positive perceptions of school climate among White students than Black students, translating into greater racial disparities in perceived school climate at schools with greater organizational health (e.g., supportive leadership by race on student-perceived engagement, $\gamma = -0.03, p = .042$). We also found negative associations between staff-reported burnout and students' experience of equity, such that the racial gap was smaller in schools with high ratings of burnout ($\gamma = 0.04, p = .002$). These findings have implications for educators and education researchers interested in promoting school social contexts that equitably support student engagement and success.

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1. Introduction

Attention to the issue of equitable school climate has emerged as educators endeavor to improve school climate for all students (Ross, 2013). In fact, school equity (i.e., respect for diversity, equitable treatment, and cultural inclusion) is considered a central dimension within several school climate frameworks (e.g., National School Climate Council (e.g., Cohen, McCabe, Michelli, & Pickeral, 2009); United States Department of Education's Safe and Supportive Schools (e.g., Bradshaw, Waasdorp, Debnam, & Lindstrom Johnson, 2014)). Equitable school climate may also be understood as the equitable distribution of students' experience of supportive

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school climate as a resource across diverse student groups. Relatively limited research has examined racial inequality in students' experience of supportive school climate; however, the available research suggests that Black students may experience less supportive relationships, perceive less equitable treatment, and feel less engaged at school relative to their White peers (Hughes & Kwok, 2007; Mattison & Aber, 2007).

One factor that may contribute to racial inequality in students' experience of school climate is school organizational health, which is defined as the capacity of schools to successfully adapt to a continually changing environment and new challenges (Hoy, Tarter, & Kottkamp, 1991; Miles, 1965). Several studies have examined the influence of school organizational health on teacher stress, job satisfaction, and teacher efficacy (Bevans, Bradshaw, Miech, & Leaf, 2007; Hoy & Woolfolk, 1993; Mehta, Atkins, & Frazier, 2013) as well as on teachers' perceptions of students' behavior and teachers' use of disciplinary sanctions (Pas & Bradshaw, 2013; Pas, Bradshaw, & Hershfeldt, 2012). Unfortunately, few studies have examined the association between school organizational health and racial inequalities in students' school experiences.

The current study builds upon the school climate literature by examining whether staff perceptions of school organizational health and burnout differentially influence Black relative to White students' experience of school climate. We hypothesized that significant racial gaps would be found in student report of school climate, such that Black students would report lower ratings of supportive school climate relative to White students and that school organizational health and staff burnout would moderate these racial inequalities. Specifically, we expected school organizational health to be associated with fewer racial inequalities and staff burnout to be associated with greater inequalities. The issue of equitable school climate has implications for educational policies and programs aiming to enhance student engagement and reduce racial disparities in Black students' academic, social–emotional, and disciplinary outcomes at school (Aud et al., 2012; Latzman et al., 2011; Skiba et al., 2011). Therefore, it is critical that educators uncover factors that could help to promote equitable school climate.

1.1. School climate and racial disparities in student engagement

Student engagement has been conceptualized as a multidimensional outcome of students' dynamic, reciprocal interactions within supportive relationships and social contexts that drive motivation (Connell & Wellborn, 1991; Skinner & Pitzer, 2012). Central to this concept of engagement is its focus on process; theory suggests that when students' core psychological needs are met by supportive school climates, students will in turn engage productively in school activities, but if their basic needs are unmet, students will either withdraw or act out (Skinner & Pitzer, 2012). In fact, research confirms that schools with supportive climates tend to have more motivated students (Eccles et al., 1993), less student discipline problems (Cohen & Geier, 2010), and higher social–emotional wellbeing (Ruus et al., 2007; Shochet, Dadds, Ham, & Montague, 2006). Applying a disparities framework (Dankwa-Mullan et al., 2010) to this process, it follows that the inequitable distribution of students' experience of support at school could lead to disparities in student engagement and related behavioral and social–emotional outcomes. Indeed, research suggests not only that Black youth report lower ratings of support and connectedness relative to other marginalized groups (Furlong, O'Brennan, & You, 2011; Hughes & Kwok, 2007) but also that lower levels of support among Black students may contribute to racial disparities in engagement (Bottiani, Bradshaw, & Mendelson, submitted for publication).

Supportive relationships with adults at school may be particularly important for Black youth (Decker, Dona, & Christenson, 2007), who must navigate divergent cultural and ecological terrain between school, home, and neighborhood and cope with experiences of prejudice and differential treatment at school (Gay, 2002). Consistent, extensive evidence documenting racial gaps in school discipline exposure among Black youth in particular (e.g., Porowski, O'Conner, & Passa, 2014; Skiba et al., 2011) indicates that Black youth may experience differential treatment by school personnel. Furthermore, research suggests that perceptions of differential treatment and discrimination by school staff among Black youth may contribute to poor academic and behavioral outcomes (e.g., Bogart et al., 2013; Wong, Eccles, & Sameroff, 2003), including deterring student engagement (Bingham & Okagaki, 2012; Dotterer, McHale, & Crouter, 2009). Experiences of discrimination in the high school context during early and middle adolescence among Black youth may be particularly harmful, as this a key period when young people are beginning to develop their sense of racial identity (Phinney, 1989; Seaton, Yip, & Sellers, 2009). Conversely, research on school climate suggests that students' perceptions of equitable treatment and cultural inclusiveness at school may positively influence students' affective and academic engagement (Debnam, Lindstrom Johnson, Waasdorp, & Bradshaw, 2014).

1.2. School organizational health, staff burnout, and racial inequity

An important consideration regarding racial inequality in students' experience of school climate is school organizational health. Considered a multidimensional construct, school organizational health often is considered to include staff perceptions of collegial leadership, trusting and supportive relationships between coworkers (Hoy et al., 1991; Hoy & Woolfolk, 1993; Mehta et al., 2013), and personal connectedness to the school (O'Brennan, Waasdorp, & Bradshaw, 2014). However, staff burnout is inversely associated with school organizational health (Hakanen, Bakker, & Schaufeli, 2006; Shernoff, Mehta, Atkins, Torf, & Spencer, 2011). Consistent with research linking school organizational health with lower teacher stress, elevated efficacy, and more positive perceptions of students (Hoy & Woolfolk, 1993; Mehta et al., 2013; Pas & Bradshaw, 2013), it seems reasonable that school organizational health would also enhance staff capacity to effectively navigate ecological and cultural differences to support Black students. Thus, it follows that gaps would be smaller in schools with high, as compared to low, school organizational health, and larger in schools with high burnout. In the sections that follow, we more closely consider three indicators related to school organizational health (i.e., personal

connectedness, staff affiliation, supportive leadership, and burnout) and how they may be associated with racial inequity in students' school experiences.

1.2.1. Personal connectedness

Staff personal connectedness to school is often thought of as a composite of feelings of pride and belonging at the school, of being respected by others, and of overall job satisfaction (Butler, 2012; Skaalvik & Skaalvik, 2011). Staff experiencing low satisfaction also tend to feel anxious, worried, or depressed (Ho & Au, 2006); conversely, staff experiencing high job satisfaction demonstrate greater commitment and motivation to teach (Barnabé & Burns, 1994; Feather & Rauter, 2004). Consistent with theories of motivation (e.g., Connell & Wellborn, 1991; Maslow, 1943), fulfillment of school staff members' basic needs for security, belonging, and respect may encourage school staff to develop and maintain higher-order competencies necessary to be equitable in effectively teaching and supporting all students. Specifically, researchers in the field of cross-cultural competence and multicultural education suggest that meta-cognitive, reflexive, and reflective practices (e.g., mindfulness and cognitive flex) are necessary to tap cultural assets and respond effectively to ecological divides present in diverse settings (Ang et al., 2007; Dray & Wisneski, 2011; Paris, 2012). Therefore, it is possible that fulfillment of teachers' core psychological need for connectedness is an essential foundation for students' equitable school experiences.

1.2.2. Staff affiliation

School staff members' collegial affiliation with one another also is a salient aspect of school organizational health (Hoy et al., 1991). School staff who share openly with their peers also are inclined to be more open to professional development and innovation (Collie, Shapka, & Perry, 2011). Research also shows that when staff get along well, trust, respect, and help one another, they have higher levels of efficacy, meaning they feel more comfortable and confident in handling challenges in their classrooms (Pas et al., 2012). Efficacy, in turn, has been associated with observed classroom culturally responsive practices (Debnam, Pas, Bottiani, Cash, & Bradshaw, submitted for publication). Thus, it follows that staff perceptions of collegiality may be related to their use of strategies that promote equitable school climate.

1.2.3. Supportive leadership

School staff members' relationships with principals and other administrators also have been shown to be a key indicator of school organizational health (Hoy et al., 1991) and relevant to school equity (Christle, Jolivette, & Nelson, 2005). As with staff affiliation, research shows that staff who feel supported by their principal are more confident and comfortable adapting to student behavior and needs (Pas et al., 2012), less stressed, and more satisfied at work; indeed, supportive leadership has been found to be particularly salient for these teacher outcomes in low-income, urban schools (Mehta et al., 2013). Consequently, it is possible that, as teachers feel more supported by their principals, they have greater emotional and cognitive reserve and confidence to adapt to diverse student needs, thereby fostering greater equity in the students' school experiences.

1.2.4. Burnout

Burnout is a construct closely associated with stress; it pertains to individuals' compromised abilities to effectively carry out the job as a result of work-related stress (Betoret, 2009; Skaalvik & Skaalvik, 2011). A defining feature of staff burnout is emotional exhaustion (Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010). When teachers become emotionally exhausted, they lose the ability to provide students with support (Maslach, Jackson, & Leiter, 1996). Accordingly, it seems likely that burnout would also limit teachers' capacity to respond supportively across diverse student perspectives. Research suggests that stress and stress-related biological mechanisms can bring out cognitive biases such as stereotyping (Friedland, Keinan, & Tytiun, 1999) or racial prejudice (Terbeck et al., 2012). Recent experimental research on implicit stereotype-based biases against stigmatized groups highlights the mediating role of psychological stress (Kang, Gray, & Dovidio, 2014). It is plausible, therefore, that burnout could elicit unconscious cognitive biases among staff, which in turn could negatively influence staff interactions with Black students.

1.3. The present study

To address gaps in the literature on school-level determinants of equitable school climate, this study examined associations between Black students' perceptions of caring, equity, and engagement, and staff-reported indicators related to school organizational health (i.e., personal connectedness, staff affiliation, supportive leadership, and burnout). We used two-level hierarchical linear modeling (HLM) with cross-sectional data from 2391 school staff and 18,397 Black and White students in 53 high schools to test three central hypotheses. First, we hypothesized that Black youth would report experiencing caring, equity, and engagement at lower levels than White youth and that these gaps would persist even after controlling for both student- and school-level indicators of socioeconomic status and other potential confounds (i.e., gender and age). Second, we hypothesized that, regardless of race, student report of equity, caring, and engagement would be positively associated with school organizational health and negatively associated with staff burnout. Third, we hypothesized that school organizational health and staff burnout would also significantly moderate the magnitude of racial gaps in students' experience of caring, equity, and engagement. To test this third hypothesis of school-level moderation of racial inequalities, we examined cross-level interactions of school organizational health and burnout on the associations between Black race and student perceptions of caring, equity, and engagement while controlling for other potential influences at the school-level. We anticipated that high staff-reported school organizational health would be associated with smaller gaps between Black and White youth, whereas high staff burnout would be associated with greater inequalities. This line of research has important

implications for addressing disparities in academic and behavioral outcomes among high school students, where dropout and school failure have significant public health and economic impacts (Freudenberg & Ruglis, 2007).

2. Method

2.1. Procedures

Data for this study were collected as part of the Maryland Safe and Supportive Schools Initiative (MDS3; Bradshaw et al., 2014), which focused on school climate in high schools. Anonymous, cross-sectional data were collected in spring 2013. All data analyses were approved by the researchers' Institutional Review Board.

Fifty-eight Maryland public high schools (grades 9–12) volunteered to participate during district-level meetings initiated by the Maryland State Department of Education. The staff version of the MDS3 School Climate Survey was administered online. All staff were able to participate, and participation was voluntary.

A passive parental permission process and youth assent process was followed for student data collection. Students in participating high schools were asked to complete the student version of the MDS3 School Climate Student Survey. Approximately 25 language arts classrooms per school participated (i.e., seven 9th-grade classrooms and six each of 10th-, 11th-, and 12th-grade classrooms). The student survey was administered online by school staff following a written protocol.

2.2. Participants

The current sample was limited to schools, school staff (including teachers), and students that provided sufficient information for inclusion in the current analyses. Specifically, five schools did not return an adequate number of staff surveys (i.e., > 10) for inclusion in the study and were dropped for this reason. The sample then was further limited to only staff who provided their school role and only students that provided their race or ethnicity, maternal education, gender, and age, resulting in an additional 281 staff and 3328 students dropped from the sample. Staff and students without this information were dropped because missingness on these covariates would result in listwise deletion of the case (Raudenbush et al., 2011). Finally, due to the nature of our research questions, the staff sample was limited to only professional, non-administrative staff (i.e., teachers and school social workers, counselors, and psychologists) and the student sample was limited to only Black and White students. Consequently, the sample for the study included

Table 1
Student and staff characteristics.

Student characteristics (N = 18,397 students)	N (%)
Race	
Black	6228 (33.85%)
White	12,169 (66.15%)
Maternal education	
Did not graduate from high school	1533 (8.33%)
Graduated from high school	5293 (28.77%)
Attended some college	3793 (20.62%)
Graduated from college	7778 (42.28%)
Age ^a	15.89 (1.28)
Gender	
Male	9174 (49.87%)
Female	9223 (50.13%)
Staff characteristics (N = 2391 staff)	N (%)
Race and ethnicity	
Asian/Pacific Islander	28 (1.17%)
Black	179 (7.51%)
White	2047 (85.83%)
Hispanic	32 (1.34%)
Other	99 (4.16%)
Role	
Teacher	2218 (92.76%)
Other professional (student services)	173 (7.24%)
Gender	
Male	860 (36.03%)
Female	1527 (63.97%)
Grade	
9th Grade	356 (14.90%)
10th Grade	317 (13.26%)
11th Grade	206 (8.62%)
12th Grade	147 (6.15%)
Multiple grades or other	1364 (57.07%)

Note. ^a Age represents the mean age in years; the standard deviation is in parentheses.

18,397 students and 2391 school staff in 53 Maryland public high schools. The eligible student sample was 66.1% White ($n = 12,169$) and 33.9% Black ($n = 6,228$). An average of 395.5 students per school (median = 392.5, range = 110 to 1435) provided data for this study. Over 92% of the 2391 school staff were teachers, 63.4% were female, and 85.8% were White. An average of 45.1 teachers and staff per school (median = 37, range = 11–132) provided data for this study. Additional demographic characteristics of students and staff are presented in Table 1.

In Table 2, school-level demographics (percentages, means, and standard deviations) are provided along the diagonal. The total school enrollment ranged from 323 to 2240 students ($M = 1267.45$, $SD = 477.56$). The percentage of staff with advanced certification ranged from 41.30% to 88.50% ($M = 66.55\%$, $SD = 11.49\%$). The percentage of students receiving free or reduced-price meals (FARMS) ranged from 6.80 to 70.40% ($M = 36.77\%$, $SD = 18.16\%$). The percentage of student enrollment representing Black or Latino students ranged from 4.10 to 96.10% ($M = 37.05\%$, $SD = 24.08\%$). Correlations between school-level demographic characteristics and school-level aggregated staff-report variables are given in Table 2.

2.3. Measures

2.3.1. Student reports

The MDS3 School Climate Survey—Student Version (see Bradshaw et al., 2014) is a comprehensive, 56-item measure that draws items from existing measures of school climate, including the National Longitudinal Study on Adolescent Health (Resnick et al., 1998) and the School Development School Climate Survey (Haynes, Emmons, & Ben-Avie, 2001). For this study, 11 items from the MDS3 School Climate Student Survey were utilized. These items reflected students' perceptions of school staff treatment and students affective engagement at school, and were chosen for this study based on prior research identifying racial inequalities in these domains (see Bottiani et al., submitted for publication). A multiple group confirmatory factor analysis (CFA) utilizing WLSMV estimation (in which all items were treated as categorical) grouping by race ($n = 12,169$ White and 6228 Black) found that a hypothesized three-factor model of Caring, Equity, and Engagement provided adequate fit to the data, $\chi^2(109) = 2069.29$, $p < .001$, CFI = .99, TLI = .99, and RMSEA = .044 (95% CI: .043–.046). Factor loadings ranged for Caring from .78 to .87, for Equity from .70 to .86, and for Engagement from .81 to .90; all p -values for factor loadings were $< .001$. The correlations between Caring and Equity ranged from .60 to .64; Caring and Engagement ranged from .69 to .72, and Equity and Engagement ranged from .50 to .56. All p -values for correlations were $< .001$.

Based on the results of the CFA, separate scales were created to represent each of the three factors from the model. Scales stemmed from averaging item scores associated with each factor identified in the CFA. The Caring scale had a Cronbach's alpha (α) of .86 and included four items focused on students' experience of caring ("My teachers care about me"), respect ("At this school, teachers respect the students" and "My teachers listen when I have something to say"), and trust ("At this school, students trust the teachers") in their relationships with their teachers. The Equity scale (Debnam et al., 2014; $\alpha = .83$) included four items. Three items focused on students' perceptions of equitable treatment based on race, gender, and socioeconomic status (e.g., "At this school, students of all races are treated the same"), and one focused on cultural inclusiveness ("The school provides instructional materials that reflect my culture"). The Engagement scale ($\alpha = .84$) comprised three items that assess an affective dimension of engagement ("I like this school," "I like coming to this school," and "I enjoy learning at this school"). All response options were on a 4-point Likert scale from *disagree strongly* (1) to *agree strongly* (4), with higher scores indicating more favorable school environment.

Students also responded to a series of questions regarding demographic characteristics. They reported their age in years, gender, maternal education level (with higher score signifying more education), and race and ethnicity. The race variable was dummy coded to indicate Black students (1) relative to White students (0).

2.3.2. Staff reports

The MDS3 School Climate Survey—Staff Version (see O'Brennan et al., 2014) produced a Personal Connectedness scale ($\alpha = .89$); it comprised six items derived from the Organizational Social Context measure (Glisson et al., 2008) that reflected staff school pride ("People who work here feel pride in the school"), belonging ("People at this school care about me as a person" and "At this school, I feel like I belong"), esteem ("My ideas are used and listened to"), and overall job satisfaction ("I am satisfied with the recognition you get for doing a good job" and "This school inspires you to do the very best at your job"). Staff also reported on staff affiliation. The

Table 2

School characteristics and correlations with school organization health and burnout variables ($N = 53$ schools).

School-level variables	1	2	3	4	5	6	7	8
1. FARMS (%)	36.77 (18.16)							
2. School size (enrollment) (M)	-.34*	1267.45 (477.56)						
3. Highly qualified teachers (%)	-.59*	-.01	66.55 (11.49)					
4. Black and Latino students (%)	.54*	.05	-.51*	37.05 (24.08)				
5. Personal connectedness (M)	-.39*	-.16	.40*	-.40*	2.94 (.26)			
6. Staff affiliation (M)	-.19	-.17	.24	-.34*	.85*	3.05 (.21)		
7. Supportive leadership (M)	-.33*	-.09	.24	-.25	.86*	.69*	2.97 (.38)	
8. Burnout (M)	.32	.12	-.29*	.25	-.84*	-.72*	-.73*	2.61 (.29)

Note. FARMS refer to percent of student enrollment eligible for free- and reduced-price meals subsidy. Percentages (%), means (M), and standard deviations (reported in parentheses) are displayed on the diagonal. Correlations among level-2 aggregated staff report variables are inflated. Variance inflation factor and tolerance statistics indicated collinearity concerns with personal connectedness. The four staff-reported, school-level independent variables were conservatively modeled separately.

* $p < .05$.

resulting Staff Affiliation scale ($\alpha = .90$) draws four items from the Organizational Health Inventory (OHI; Hoy & Woolfolk, 1993) and reflected staff views of collegial trust (“Staff have trust and confidence in each other”), support (“Staff are willing to help each other out”), respect (“Staff respect each other”), and overall affiliation (“Staff get along well”) at their school. The Supportive Leadership scale ($\alpha = .93$) included six items, also from the OHI (Hoy & Woolfolk, 1993), characterizing the principal’s accessibility (“Principal at this school is friendly and approachable”), support (“Principal looks out for faculty and staff” and “Principal goes out of his or her way to show appreciation for faculty and staff”), clear expectations (“Principal at this school lets faculty and staff know what is expected of them”), and the overall school administration’s responsiveness regarding staff concerns and problems (“School administration works collaboratively with staff to solve problems” and “School administration responds promptly to my concerns”). The Burnout scale ($\alpha = .90$) included four items tapping staff experience of emotional exhaustion at work. Items include “I feel burned out from my work,” “I feel emotionally drained from my work,” “I feel like I am at the end of my rope,” and “I feel used up at the end of the work day” derived from the Maslach Burnout Inventory (Maslach et al., 1996). Response options were on a 4-point Likert scale from *disagree strongly* (1) to *agree strongly* (4), with higher scores indicating a more favorable environment for the school organizational health scales, and more burnout for the Burnout scale.

Each of the four staff-report scale scores was aggregated to create four school-level mean scores (Hoy & Woolfolk, 1993). CFA utilizing WLSMV estimation (with all items were treated as categorical) was used to examine the four-factor model of school organizational health; it provided adequate fit to the data, $\chi^2(164) = 1460.69$, $p < .001$, CFI = .98, TLI = .98, and RMSEA = .058 (95% CI: .056–.061). Factor loadings ranged for Personal Connectedness from .77 to .91, for Staff Affiliation from .91 to .95, and for Supportive Leadership from .84 to .95, and for Staff Burnout from .85 to .95; all p -values for factor loadings were $< .001$. The correlations between the constructs were Burnout and Personal Connectedness ($-.55$), Burnout and Staff Affiliation ($-.36$), Burnout and Principal Support ($-.46$), Personal Connectedness and Staff Affiliation (.83), Personal Connectedness and Principal Support (.82), and Staff Affiliation and Principal Support (.62). All p -values for correlations were $< .001$.

2.3.3. School demographic characteristics

Other school-level indicators were obtained from the Maryland State Department of Education for the school year. They included school enrollment, percentage highly qualified teachers (as indicated by advanced professional certification), minority concentration (percentage of enrollment comprising Black and Latino students), and percentage of students receiving free or reduced price meals (FARMS). FARMS has been shown to be valid indicator of low household income (Ensminger et al., 2000).

2.4. Analyses

2.4.1. Measurement invariance

We examined measurement invariance in the factor structure of the Caring, Equity, and Engagement model between Black and White students through a series of configural, metric, and scalar models (Meredith, 1993) fit through multiple group CFA in *Mplus* with WLSMV estimation (in which all items were treated as categorical). In testing metric invariance, we constrained factor loadings to be equal across groups. Scale factors were fixed at one in one group and free in the other group. Factor variances were free to vary across groups, and factor means were fixed at zero in one group and free in the other group. In testing scalar invariance, we constrained factor loadings and thresholds to be equal across groups. Scale factors were fixed at one in one group and free in the other group, and factor means were fixed at zero in one group and free in the other group. Factor variances were free to vary across groups. Consistent with Cheung and Rensvold (2002), measurement invariance was found through the multi-group model demonstrating adequate fit to the data, with the difference in CFI between models at less than .01. When comparing metric against configural models, $\chi^2 = 104.31$ ($df = 8$), $p < .001$, $\Delta CFI = .000$, $\Delta TLI = .002$, and $\Delta RMSEA = .002$. When comparing scalar against configural models, $\chi^2 = 155.738$ ($df = 27$), $p < .001$, $\Delta CFI = .002$, $\Delta TLI = .008$, and $\Delta RMSEA = .001$. When comparing scalar against the constrained metric model, $\chi^2 = 103.88$ ($df = 19$), $p < .001$, $\Delta CFI = .002$, $\Delta TLI = .006$, and $\Delta RMSEA = .008$. These findings suggested that the assumption of measurement invariance held.

2.4.2. Missing data

After limiting the student sample to those who provided adequate initial demographic information (i.e., race, age, gender, and maternal education), descriptive analyses found very little missing outcome data (<1% of students were missing items). Our analyses assumed that data were missing at random (MAR; Arbuckle & Wothke, 1999). The multilevel models were conducted in HLM 7, which adjusts parameter estimates for attrition using maximum-likelihood estimation, a widely recognized and appropriate means of handling missing data under the assumption that data are MAR (Raudenbush & Bryk, 2002; Schafer & Graham, 2002). Although the amount of missing outcome data in the study was relatively small, analyses did suggest that Black race relative to White race was associated with missing items for the MDS3 School Climate Survey Equity and Caring scales and that male gender and maternal education were associated with missing items within the engagement scale. However, the association of these variables with missingness was quite small (coefficients ranged from .001 to .004), and maternal education and gender were included as controls in the study. Black race was a central predictor in the study; however, because Black race was associated with lower caring, equity, and engagement, it is likely that bias in the estimates resulting from missingness (if any) would have minimized rather than exaggerated the association between race and the outcomes.

2.4.3. Multicollinearity

To explore the potential of multicollinearity among the Personal Connectedness, Staff Affiliation, and Supportive Leadership scales, correlations among the level-2 aggregated mean scores of items in these scales were examined using Stata 11 (see Table 2). Correlations among each of the scores were inflated, and the variance inflation factor (VIF) and tolerance diagnostics (Tabachnick & Fidell, 2007) indicated that collinearity was a concern with regard to one of the staff-reported variables (Personal Connectedness). As a result, the four staff-reported, school-level predictor variables were modeled in a series of separate multilevel models (with their corresponding interaction terms). For ease of reference, however, the three school organizational health predictors are shown together in one table in the results.

2.4.4. Multilevel analyses

We used a multilevel approach to examine our main hypothesis that average staff-reported school organizational health would moderate discrepancies in Black and White students' perceptions of school climate, even after controlling for other school- and individual-level factors. An HLM approach was selected because it allowed us to test our hypothesis of school-level moderation of racial inequalities by examining cross-level interactions of school organizational health on the association between race and student report of school climate while controlling for other school-level fixed and random effects. Moreover, because the data (from students nested within schools) were hierarchical in nature, individuals from the same schools likely have correlated errors, and a basic assumption of multivariate regression would otherwise be violated (Luke, 2004). Multilevel modeling allows for correlated error structures.

To examine our central research question, we estimated two-level hierarchical linear models using HLM 7 (Raudenbush et al., 2011). A stepwise approach to model building was taken, such that the HLM models were built one variable and one level at a time in order to be sensitive to the stability of findings with and without nonsignificant effects (Raudenbush & Bryk, 2002). Each level-1 parameter was inspected individually to assess the significance of the residual variance. Any covariates with nonsignificant variances were fixed (Hox, 2002; Raudenbush & Bryk, 2002) and grand-mean centered; those with significant variances were allowed to randomly vary and were group-mean centered (Croninger, 2013).

For all outcome variables, we fit linear hierarchical models and generated standardized coefficients. Standardized regression coefficients are presented as an effect size to allow readers to assess the strength of the associations identified and their practical meaning (Nieminen, Lehtiniemi, Vähäkangas, Huusko, & Rautio, 2013). Because HLM 7 does not have a function to generate standardized coefficients, we prepared standardized variables in Stata prior to running the analysis in HLM. Specifically, we created z-scores in Stata for all independent and dependent variables to be included in our analyses (i.e., all the variables were standardized so their variances were equal to 1). The resulting standardized coefficients allow readers to interpret the results in terms of how many fractions of a standard deviation the response or outcome variable changes per standard deviation increase in the exposure variable. The overall fit of the models was assessed using the Akaike information criterion (Akaike, 1974) and likelihood ratio tests (Raudenbush & Bryk, 2002). All outcomes were measured at the student level (level 1). Additional covariates included at level 1 were age, gender, maternal education, and race (dummy coded Black relative to White). At level 2, in addition to school-aggregated mean staff report of school organizational health, we included total student enrollment, percentage highly qualified teachers, percentage Black and Latino students, percentage of students receiving FARMs, and a dummy indicator for study group (intervention or control). All level 2 variables were grand-mean centered. To examine whether school average school organizational health moderated discrepancies between Black and White students' perceptions of positive school climate, we tested cross-level effects between the level-1 race indicator on student outcomes with the hypothesized school-level variables (i.e., Personal Connectedness, Staff Affiliation, Supportive Leadership, and Burnout) at level 2. For each outcome variable, four models were fit separately to model staff-reported (a) Personal Connectedness, (b) Staff Affiliation, (c) Supportive Leadership, and (d) Burnout. Each model included the level 2 variable main effect and corresponding cross-level effect.

3. Results

Tables 3 and 4 present findings from two-level hierarchical linear models. Table 3 examines the associations between student race, student-reported school climate, and staff-reported school organizational health, while controlling for other student- and school-level covariates. Table 4 examines the associations between student race, student-reported school climate, and staff-reported staff burnout, while controlling for other student- and school-level covariates. See Tables 3 and 4 for full test statistics including γ coefficients, standard errors, and t ratios.

3.1. Individual-level associations with students' perceptions of school climate

The upper sections of Tables 3 and 4 depict the influence of the student demographic variables on the domains of student-reported school climate (Caring, Equity, and Engagement). Because the student-level coefficients were essentially unchanged across the models, for simplicity, the student demographic estimates and significance levels given here and in the upper section of Table 3 refer only to those from the Personal Connectedness predictor model.

Consistent with our first hypothesis, for all models and across all outcome indicators, Black students' reports of school climate were significantly lower than White students' reports; this finding was true for Caring ($\gamma = -0.08, p < .001$), Equity ($\gamma = -0.05, p = .007$), and Engagement ($\gamma = -0.05, p < .001$), even after controlling for maternal education level (a proxy for socioeconomic status), age, and gender at level 1. Higher student-reported SES (i.e., higher maternal education) was associated with higher ratings

Table 3

Two-level models examining staff-reported school organizational health and student-reported caring, equity, and engagement.

	School organizational health								
	Caring			Equity			Engagement		
	γ	SE	t	γ	SE	t	γ	SE	t
Student-level variables									
Black	−0.08***	0.01	−7.45	−0.05**	0.02	−2.72	−0.05***	0.01	−4.40
Maternal SES	0.06***	0.01	6.13	0.04***	0.01	5.23	0.08***	0.01	6.25
Age	−0.01	0.01	−0.94	−0.01	0.01	−1.96	−0.05***	0.01	−5.01
Male	0.04***	0.01	4.89	0.03***	0.01	3.86	0.05***	0.01	4.70
School-level variables									
PC	0.07**	0.02	3.33	0.09***	0.02	3.71	0.11***	0.02	5.20
SA	0.07***	0.02	3.79	0.07***	0.02	3.97	0.08***	0.02	4.79
SL	0.05**	0.02	2.71	0.06*	0.02	2.28	0.07**	0.02	3.49
Study group	−0.02	0.02	−1.21	0.00	0.02	−0.01	−0.02	0.02	−0.95
FARMS	0.02	0.03	0.66	−0.10**	0.03	−3.32	0.01	0.03	0.18
Enrollment	0.01	0.02	0.63	−0.01	0.02	−0.27	0.05	0.02	1.95
Highly-qualified	0.06**	0.02	3.20	0.04	0.02	1.99	0.08**	0.02	3.27
Percent minority	−0.06**	0.02	−3.17	0.05*	0.02	2.61	−0.01	0.02	−0.43
Cross-level interactions									
PC × Black	0.00	0.01	0.00	−0.06***	0.02	−4.90	−0.04**	0.01	−2.73
SA × Black	0.00	0.01	0.22	−0.04*	0.02	−2.69	−0.03	0.01	−1.93
SL × Black	0.01	0.01	0.52	−0.05**	0.01	−3.34	−0.03*	0.01	−2.08
Proportion of between-school variance explained									
PC	64.23%			64.47%			66.60%		
SA	64.97%			60.76%			59.85%		
SL	35.37%			55.12%			56.58%		
AIC									
PC	51,422.94			51,407.15			51,427.68		
SA	51,420.99			51,417.74			51,438.69		
SL	51,427.11			51,421.69			51,440.81		

Note. The school organizational health dimensions reflect level-2 aggregated staff-report. PC = Personal Connectedness, SA = Staff Affiliation, and SL = Supportive Leadership. For ease of reference, all 3 school organizational health predictors are shown together here, however each were modeled separately with their corresponding interaction term to avoid multicollinearity concerns. Only coefficients and accompanying statistics for individual and school-level covariates in the Personal Connectedness models are shown; differences in these estimates across the three predictor models were negligible. Coefficients are standardized. $N = 18,397$ students, $J = 53$ schools. Unadjusted intraclass correlation coefficients (ICCs), Caring = .03, Equity = .04, Engagement = .04. AIC = Akaike information criterion. FARMS = free and reduced price meals.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

of Caring ($\gamma = 0.06, p < .001$), Equity ($\gamma = 0.04, p < .001$), and Engagement ($\gamma = 0.08, p < .001$). Overall, males reported higher levels of Caring ($\gamma = 0.04, p < .001$), Equity ($\gamma = 0.03, p < .001$), and Engagement ($\gamma = 0.05, p < .001$) than females. Older age was not significantly associated with Caring or Equity but was negatively associated with Engagement ($\gamma = -0.05, p < .001$).

3.2. School-Level Associations with Students' Perceptions of School Climate

To examine our second hypothesis, we explored the associations between student reported school climate (i.e., Caring, Equity, and Engagement) and staff-reported burnout and school organizational health (i.e., Personal Connectedness, Staff Affiliation, and Supportive Leadership) while controlling for several other school-level covariates (see the second section from the top of Tables 3 and 4).

3.2.1. School organizational health

Table 3 presents models examining the association between staff-reported Personal Connectedness, Staff Affiliation, and Supportive Leadership (aggregated at level 2) and students' reported School Climate. Across all three school climate outcomes, students in schools characterized by higher levels of staff-reported Personal Connectedness to their school reported higher levels of Caring ($\gamma = 0.07, p = .002$), Equity ($\gamma = 0.09, p < .001$), and Engagement ($\gamma = 0.11, p < .001$). Students in schools characterized by higher levels of staff-reported Staff Affiliation also reported higher levels of Caring ($\gamma = 0.07, p < .001$), Equity ($\gamma = 0.07, p < .001$), and Engagement ($\gamma = 0.08, p < .001$). Last, students in schools characterized by higher levels of staff-reported Supportive Leadership again reported higher levels of Caring ($\gamma = 0.05, p = .009$), Equity ($\gamma = 0.06, p = .028$), and Engagement ($\gamma = 0.07, p = .001$).

3.2.2. Burnout

Table 4 presents models examining the association between staff-reported Burnout (aggregated at level 2) and student-reported School Climate. Contrary to our hypothesis, student reports of Caring did not vary significantly as a function of staff-reported Burnout ($\gamma = -0.03, p = .119$). The findings for Burnout on perceptions of Equity were also nonsignificant ($\gamma = -0.04, p = .068$).

Table 4
Two-level models examining staff-reported burnout and student-reported caring, equity, and engagement.

	Burnout								
	Caring			Equity			Engagement		
	γ	SE	t	γ	SE	t	γ	SE	t
Student-level variables									
Black	−0.07***	0.01	−7.54	−0.05*	0.02	−2.64	−0.05***	0.01	−4.04
Maternal SES	0.06***	0.01	6.10	0.04***	0.01	4.30	0.08***	0.01	9.93
Age	−0.01	0.01	−0.98	−0.01	0.01	−1.72	−0.05***	0.01	−6.14
Male	0.04***	0.01	4.89	0.03***	0.01	3.55	0.05***	0.01	7.07
School-level variables									
Burnout	−0.03	.02	−1.59	−0.04	.02	−1.87	−0.06**	.02	−2.77
Study group	−0.02	.02	−0.92	0.00	.02	0.20	−0.01	.02	−0.58
FARMS	0.01	.03	0.19	−0.12**	.04	−3.29	0.00	.03	0.04
Enrollment	0.00	.02	0.14	−0.02	.03	−0.75	0.04	.02	1.48
Highly-qualified	0.07**	.02	3.27	0.05	.03	1.97	0.09**	.03	3.26
Percent minority	−0.07**	.02	−3.40	0.05	.03	1.90	−0.02	.03	−0.90
Cross-level interactions									
Burnout × Black	0.00	.01	−0.42	0.04**	.01	3.27	0.02	.01	1.81
Proportion of between-school variance explained									
Burnout	53.49%			50.24%			51.49%		
AIC									
Burnout	51,31.09			51,425.55			51,445.79		

Note. The school organizational health dimension of Burnout reflects level-2 aggregated staff-report and was modeled separately with the corresponding interaction term. Coefficients are standardized. $N = 18,397$ students, $J = 53$ schools. Unadjusted intraclass correlation coefficients (ICCs), Caring = .03, Equity = .04, Engagement = .04. AIC = Akaike information criterion. FARMS = free and reduced price meals.

* $p < .05$.
** $p < .01$.
*** $p < .001$.

However, as hypothesized, student-reported Engagement was significantly lower in schools characterized by higher Burnout ($\gamma = -0.06, p = .002$).

3.2.3. Other school-level covariates

Because differences in covariate school-level coefficients were negligible across the school organizational health predictor models, for ease, the specific school demographic estimates and significance-levels given here and in the middle section of Table 3 refer only to those from the Personal Connectedness model. The percentage of highly qualified teachers consistently had a significant, positive association with Caring ($\gamma = 0.06, p = .002$) and Engagement ($\gamma = 0.08, p = .002$), whereas it was not significantly associated with student perceptions of Equity ($\gamma = 0.04, p = .053$). Schools with higher concentrations of Black and Latino students had lower levels of student-reported Caring ($\gamma = -0.06, p = .003$) but higher Equity ($\gamma = .05, p = .012$); yet, there was no association with Engagement ($\gamma = -0.01, p = .669$). Another unique finding across all the models for equity was that students in schools with a high FARMS rate reported significantly lower Equity (e.g., in the burnout model, $\gamma = -0.12, p = .002$); however, this finding was not significant for Caring or Engagement.

3.3. Cross-level interactions of school organizational health on racial inequalities

To examine our third hypothesis, we tested cross-level interactions of the influence of each of the school organizational health dimensions and staff burnout on the association between race and student-reported school climate. These results are presented in the third section from the top of Tables 3 and 4. Contrary to our hypothesis, none of the cross-level effects of school organizational health on racial inequalities in Caring were statistically significant (see details in the sections on each predictor model that follows below). However, all the cross-level interactions for Equity were statistically significant, and two interactions were statistically significant for Engagement. In each instance, the moderation of racial inequalities was in the reverse direction of what we expected, such that the slopes of the associations for White students were steeper than the slopes for Black students.

3.3.1. Personal connectedness

In the graphs presented in Fig. 1, the significant cross-level interactions between staff Personal Connectedness to their school and racial inequalities in Equity and Engagement are depicted visually. It appears with regard to caring, staff-reported Personal Connectedness was associated with Black and White students' experience of Caring in approximately equal measure, such that the initial discrepancy remained unchanged in schools with high staff Personal Connectedness ($\gamma = 0.00, p = .999$; not shown); however, among both Black and White students, the association was positive. With respect to Equity, staff personal connectedness had a positive association with White students' perceptions of Equity, whereas the association with perceived Equity was negligible or even slightly negative among Black students; therefore, the disparity was significantly exacerbated ($\gamma = -0.06, p < .001$). In regard to Engagement, staff Personal Connectedness again was positively associated with both White and Black students' experience of

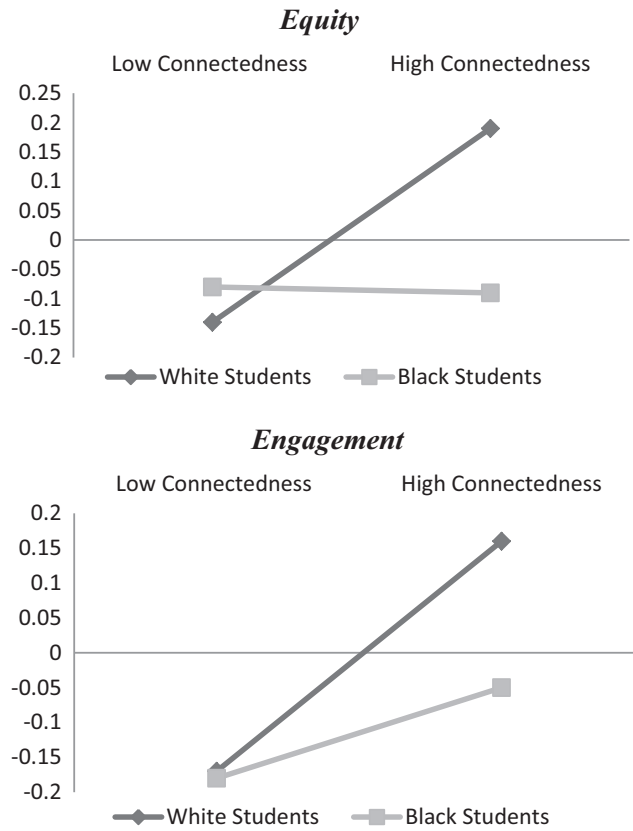


Fig. 1. Line graphs depicting the cross-level interactions of school-level, staff-reported personal connectedness on the association between race and students' experience of equity ($p < .001$) and engagement ($p < .01$).

engagement; however, the increase was greater for White students than for Black students, and thus the disparity was significantly amplified ($\gamma = -0.04, p = .009$).

3.3.2. Staff affiliation

Fig. 2 illustrates the significant cross-level interaction between Staff Affiliation and racial inequalities in students' experience of Equity. Black and White students' perceptions of Caring were uniformly positively associated with staff affiliation ($\gamma = 0.00, p = .825$; not shown). Therefore, although report of Caring is higher in both groups in schools with higher affiliation, the disparity remained approximately unchanged. However, for the associations of staff-reported Staff Affiliation with student-reported equity, the slope was significantly steeper for White students than Black students, such that the racial gap in perceived Equity was

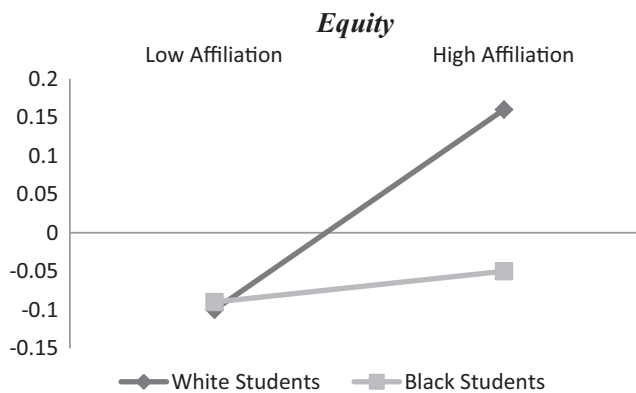


Fig. 2. Line graphs depicting the cross-level interactions of school-level, staff-reported staff affiliation on the association between race and students' experience of equity ($p < .01$).

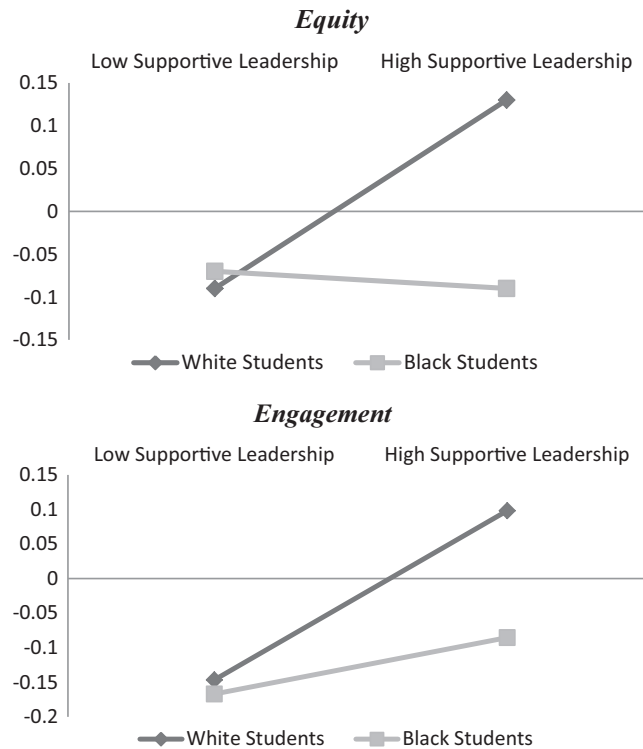


Fig. 3. Line graphs depicting the cross-level interactions of school-level, staff-reported supportive leadership on the association between race and students' experience of equity ($p < .05$) and engagement ($p < .05$).

significantly wider in schools with high levels of staff affiliation ($\gamma = -0.04, p = .010$). In regard to Engagement, the slope for White students' in schools with high staff affiliation was steeper than for Black students, although this finding was nonsignificant ($\gamma = -0.03, p = .059$; not shown).

3.3.3. Supportive leadership

A similar pattern of findings in the cross-level interaction of supportive leadership on racial inequalities in Caring, Equity, and Engagement was found; the significant cross-level interactions between Supportive Leadership and racial inequalities in Equity and Engagement are depicted visually in Fig. 3. The slopes for White and Black students' experiences of Caring are shown to increase to a comparable degree in association with higher levels of staff-reported Supportive Leadership ($\gamma = 0.01, p = .604$; not shown). However, there was a discrepancy in the association between Supportive Leadership and Equity for Black vs. White students, such that the slope for White students' perceptions was significantly steeper than Black students' ($\gamma = -0.05, p = .002$). In fact, there was a slightly negative association of Supportive Leadership on Equity among Black students. In schools with low levels of

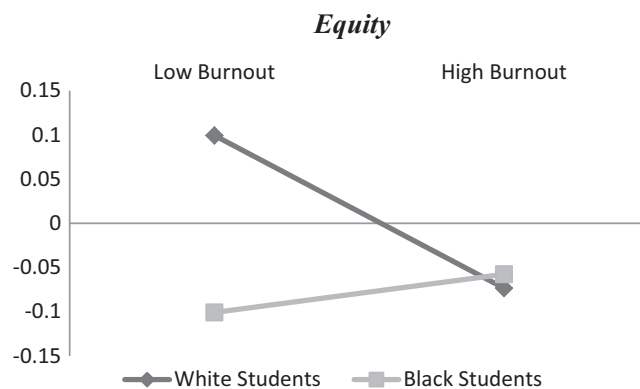


Fig. 4. Line graph depicting the cross-level interactions of school-level, staff-reported burnout on the association between race and students' experience of equity ($p < .01$).

staff-reported Supportive Leadership, White and Black students fared similarly in their experience of Engagement. However, in schools with high Supportive Leadership, White students' experience of engagement was greater than Black students' experience of engagement, creating a significantly greater disparity ($\gamma = -0.03, p = .042$).

3.4. Cross-level interactions of burnout on racial inequalities

In Fig. 4, the line graphs report the significant interaction of staff-reported Burnout on racial inequalities in Equity. The difference in the influence of Burnout on Caring between White and Black students was negligible ($\gamma = 0.00, p = .677$; not shown). In contrast, staff-reported Burnout was associated with a less favorable rating of Equity among White students compared to Black students, significantly amplifying the disparity ($\gamma = 0.04, p = .002$); in fact, among Black students, perceived equity was slightly improved in high burnout schools. Thus, disparities in Equity were actually mitigated by Burnout. With regard to Engagement, White students' perceptions were not differentially associated with high burnout schools relative to Black students' ($\gamma = 0.02, p = .084$; not shown).

4. Discussion

Although a number of studies have concluded that staff perceptions of school organizational health are associated with favorable outcomes among students generally (Brookover et al., 1978; Gottfredson, 1989), research examining its influence within historically marginalized student populations, or its impact on racial disparities, is almost entirely lacking. Our study addressed this gap in the literature by examining how school organizational health and staff burnout differentially relate to Black and White students' experiences of supportive school climate (i.e., caring, equity, and engagement). This line of inquiry is relevant for educators and education researchers interested in fostering school social contexts that equitably support the engagement and success of all students.

4.1. Racial inequalities in students' experience of supportive school climate

Consistent with our hypothesis, we found that Black youth reported significantly lower levels of caring, equity, and engagement relative to White students, with the relatively largest inequity in their experience of caring. These findings persisted even after controlling for socioeconomic status (maternal education), gender, and age at the student-level and socioeconomic status (free and reduced price meals), percent highly qualified teachers, percent minority enrollment, and school size (total enrollment) at the school-level.

The finding regarding racial inequality in school climate is consistent with a small but growing number of quantitative studies documenting racial inequities in students' perceptions of supportive school experiences (Furlong et al., 2011; Hughes & Kwok, 2007; Mattison & Aber, 2007). The findings mirror research documenting Black students' disparate exposure to punitive, exclusionary discipline such as office disciplinary referrals and suspensions (e.g., Bradshaw, Mitchell, O'Brennan, & Leaf, 2010; Gregory, Skiba, & Noguera, 2010; Skiba et al., 2011) and support the large, extant body of interpretive and theoretical research highlighting the necessity of school reform efforts to promote more equitable, culturally responsive, and culturally sustaining school practices (e.g., Au, 2009; Day-Vines & Day-Hairston, 2005; Epstein, Mayorga, & Nelson, 2011; Gay, 2002; Griner & Stewart, 2013; Garza, 2009; Ladson-Billings, 1995; Lee, 2011; Moll, Amanti, Neff, & Gonzalez, 2005; Paris, 2012; Toldson & Lemmons, 2013; Ware, 2006; Weinstein, Tomlinson-Clarke, & Curran, 2004).

The study findings indicate a pattern of inequality in perceived supportive climate among Black relative to White youth; however, future research must examine mechanisms explaining these inequalities to advance school-based practice to eliminate such differences. One potential hypothesis, considering the vast majority of staff in the study was White (86%) while only 8% was Black, is that Black youth may perceive more responsive and engaging interactions with staff who come from similar racial and cultural backgrounds. In fact, many scholars in the field of culturally responsive teaching have asserted that Black educators respond to their Black students in more culturally relevant ways than White teachers (Ladson-Billings, 2005) and may be more intentional in providing counter-narratives for future intellectual and professional achievement with which Black students can identify (Perry, Steele, & Hillard, 2003). In contrast, Bates and Glick (2013) documented that Black students received worse teacher-reported evaluations of their behavior (e.g., classroom disruptive behavior) when they had a White teacher than when they had a Black teacher, suggesting either potential teacher bias or objective behavioral differences potentially resulting from racial or cultural mismatch between student and teacher. However, school counseling and school discipline research suggests that student-teacher racial match alone is not the answer. For example, Bradshaw et al. (2010) found that teacher-student racial match did not reduce Black students' risk of being removed from the classroom. In fact, some research supports the critical importance not of racial match, per se, but of school staff's level of racial identity functioning, an important precursor to broaching issues related to race and building strong relationships with Black students (Day-Vines et al., 2007). And, although efforts to diversify the teacher workforce pipeline are ongoing, White educators continue to predominate, even in schools with large populations of Black and Latino youth (Frankenberg, 2006). Therefore, although it may be a necessary line of inquiry to examine the effects of racial congruence between teachers and students on inequalities in perceived climate, future research also needs to examine the effectiveness of professional development to promote teachers' racial identity functioning and culturally responsive classroom practices—regardless of the race of the teacher.

4.2. School organizational health, staff burnout, and equitable school climate

Our second and third hypotheses suggested that improvements in school organizational health may be one strategy to improve students' perceptions of school climate. Consistent with our second hypothesis, we found that staff-reported school organizational

health was significantly positively associated with students' report of caring, equity, and engagement overall, whereas staff's report of burnout was negatively associated with students' experience of supportive school climate (although the significance of the associations for burnout were less consistent). We were particularly interested in examining whether students' report on the dimension of equitable treatment and cultural inclusion varied with changes in school organizational health and burnout. Examining the slopes without regard to race across the staff-reported predictors in their influence on students' perceptions of equity, it would appear that school organizational health has potential to promote more equitable school climate.

However, on examination of the differential influence of school organizational health and burnout on Black students' perceptions of equity relative to that of White students', another possibility emerged. Although school organizational health was positively associated with perceived equity among White students, Black students' report of equity remained relatively fixed regardless of shifts in school organizational health. As a result, the cross-level interactions for equity were statistically significant; however, the effects were in the reverse of what we anticipated in our third hypothesis. Specifically, high levels of school organizational health were associated with widening racial gaps in students' experiences of school equity.

One implication of this finding for evaluating school reform efforts is that we may need to carefully assess racial inequalities in students' perceptions in order to gauge improvements in equitable school climate. Specifically, it appears that simply measuring students' overall perceptions of equity as an indicator of equitable school climate may not be enough; rather, we need to examine racial equality (or inequality) in student experiences of equity and other dimensions of school climate as an outcome in and of itself. Some might suggest assessing school equity through the reports of others, such as staff. However, research indicates that staff perceptions of school equity and culturally inclusive practices may be subject to social desirability bias (Bottiani et al., 2012). Moreover, the vast majority of school staff are often White, which further introduces potential bias. Emerging research therefore is exploring the potential for establishing reliable, valid observational measures of equitable, culturally responsive, and sustaining school and classroom practices (Debnam et al., submitted for publication).

A similar pattern of findings emerged in our examination of disparities in engagement, with statistically significant cross-level interactions producing moderation effects in the reverse of what we predicted in two models (i.e., supportive leadership and personal connectedness), whereas we found no significant influence on racial inequalities in students' experience of caring. Our findings nonetheless demonstrate that Black students' experience of caring and engagement is higher in schools with higher school organizational health, as it is with White students. The slope of this association, however, is not as steep and suggests that school organizational health may be necessary (albeit not sufficient) to promoting equitable and supportive school climate experiences among Black youth.

A number of questions are raised by the collective findings from the cross-level interactions of school organizational health and burnout on racial inequalities in students' experience of school climate that merit future research. For example, the extant research suggests that school organizational health is positively associated with factors such as teacher efficacy and reduced stress, which in turn have been associated with culturally responsive practices and lower levels of stereotype-based cognitive biases respectively (Debnam et al., submitted for publication; Kang et al., 2014; Mehta et al., 2013; Pas & Bradshaw, 2013). Therefore, we expected school organizational health to contribute to closing racial gaps rather than widening them. One possible reason for this counterintuitive finding is that our study did not actually assess schools' access to resources to enhance school equity or culturally sustaining practices (e.g., professional development, training, and coaching for staff). Staff may have been primed to engage in more equitable practices in schools with higher levels of school organizational health but still lacked access to resources to build practical skills necessary to promote equitable school climate. Thus, it is important that future research which examines equitable school climate include measures of school involvement in initiatives to improve school equity. Such research should also include measures of staff access to and engagement in trainings and other professional development to improve culturally responsive and culturally sustaining practices.

There were also a set of unique findings with regard to student perceptions of school equity and the school demographic covariates in the model. Most notably, students' perceptions of equity, but not caring or engagement, were significantly lower within low-SES schools (i.e., schools characterized by a high percentage of enrollment eligible for FARMs), even when controlling for students' SES (i.e., maternal education level) and the percent of highly qualified teachers and the percent of minority students at the school-level. This finding suggests that low-SES schools may be more prone to inequitable school climates or that students in low-SES schools may be more sensitive to equity.

4.3. Limitations and strengths

There are some limitations worth noting when interpreting the findings of this study. In many cases, our findings reflect differences representing less than a tenth of a standard deviation change in the outcome. These may be considered small effect sizes. Furthermore, the school- and cross-level components of our model help to explain the variance between schools, which represented less than 4% of the outcome variance overall in our models. In addition, the school equity scale in this study featured separate questions for race, gender, socioeconomic status, and cultural inclusion. Although results from factor analyses and internal consistency reliability estimates suggested that the scale items are collectively tapping the construct of students' perceived fair and inclusive treatment of all students at school, some might question whether one item weighed more heavily than the others. Examination of the factor analyses results in Stata suggested that the influence of each of the items were approximately equal (i.e., coefficients ranging between .27 and .32). Although this scale tapped students' feelings of being treated the same as other students, we recognize that to achieve equity in resources and opportunities, students may benefit from differential supports and that more in-depth indicators of racial climate may be relevant to this research.

Another point worth noting is that the data were cross-sectional; therefore, we were not able to infer causality between the school-level predictors and student-reported climate. Future research should examine data drawn from multiple time points in

order to establish the direction of causality. In addition, schools included in this study were from suburban, rural, and urban fringe communities within a single state; therefore, we are not certain the extent to which they will generalize to other communities. It is also important to note that we modeled nesting only at the school-level, even though student-level data were nested within classrooms, within schools, and within school districts. Although there is research that suggests important effects of classroom-level factors on school climate at the elementary level (Koth, Bradshaw, & Leaf, 2008), where students remain in their classrooms much of the day, there is less evidence to support its consequence on estimates in high schools, where classrooms change with each class period. Furthermore, because student report was on the school's climate, classroom factors were not of direct interest in this study. We did not model the district-level because, with only 12 districts, it would have significantly limited power; however, future studies including large samples of districts may want to examine these influences, particularly because school reform initiatives relevant to school equity may be initiated at the district-level.

Despite these limitations, this study has a number of strengths, most notably the large sample size, the utilization of data from multiple informants, the inclusion of teaching and non-teaching school staff, and the use of multi-level modeling to handle data nested within schools. Moreover, the focus on examining school contextual influences on racial inequalities is a strength of this study and fills a gap in the literature that is important to informing school practices to improve outcomes for Black youth. Although we were not able to examine inequalities in perceptions among other historically marginalized groups (e.g., Latino students), it is important for future studies to determine if a similar pattern of findings holds for other groups.

4.4. Conclusion

Taken together, these findings suggested that Black students' perceptions of supportive school climate were significantly lower than those of their White peers while also being somewhat less responsive to variation in school organizational health and burnout. This pattern was particularly true of Black students' perceptions of school equity. Therefore, although the notion of improved school organizational health as a "rising tide that lifts all boats" has potential, overall the influence was not enough to overcome (or even improve) inequalities in students' experience of school climate. This research suggests that although school organizational health may be a necessary focus in improving students' experience of equitable and supportive school climate, it is not sufficient to close the gaps. Rather, an explicit focus on school equity, cultural responsiveness and inclusion, and culturally sustaining school practices may be key to reform efforts to more equitably support all students' engagement in school.

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