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The moderating effect of COVID-19 stress on school racial climate and parent and child mental well-being

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ABSTRACT

The deleterious and racially disparate health outcomes of COVID-19 have been on full display since the pandemic began in the United States; however, less exploration has been dedicated to understanding short- and long-term mental health outcomes for U.S. parents and their children as a result of COVID’s impact on schooling. This cross-sectional study examined U.S. parents perspectives on COVID-19 stress as a moderating influence on the relationship between perceptions of school racial climate (i.e., intergroup interactions and campus racial socialization) and parent and child mental health outcomes. Participants were recruited from Prolific’s online survey platform and included a sample of 397 U.S. parents (52% female, average age 40, 74% White) with a child between the ages of 6 and 17, enrolled in a K-12 public school setting during the 2020–2021 academic year. The results revealed that COVID-19 stress moderated the relationship between parents’ perceptions of campus racial socialization and parent mental well-being. Parents who reported either low, moderate, or high levels of COVID-19 stress had improved mental health when racial socialization in their child’s school was high. This impact was greater for parents with high levels of COVID-19 stress than with low levels of COVID-19 stress. However, parents’ perceptions of COVID-19 stress did not moderate the relationship between school racial climate factors and child behavioral and emotional problems. Findings have important implications which are discussed.

Keywords:
COVID-19 stress
School racial climate
Child and adolescent mental health
Parent mental well-being

Children and families are grappling with two pandemics—the 2019 coronavirus disease (COVID-19) and the long history of institutionalized racism in the United States public education system. Prior to COVID-19, patterns of racial inequities in educational outcomes were pervasive with highly significant consequences for students of color (Brown & Tillio, 2013; Gregory et al., 2010; Warren, 2014). Students of color faced significant challenges as compared with White peers in several educational domains, including achievement outcomes (Hussar et al., 2020; NCES, n.d.), referrals to special education (Hussar et al., 2020; McFarland et al., 2018), exclusionary discipline (Balfanz & Fox, 2015; Riddle & Sinclair, 2019; U.S. Department of Education, 2019), and school climate and interpersonal relationships (Voight et al., 2015). The disproportionate effects of COVID-19 on communities of color in combination with existing structural inequalities threaten to deepen racial inequities for students and their families (Webb Hooper et al., 2020). Although the outbreak of COVID-19 has devastated all U.S. families, the burden of the pandemic’s impact has not been equally shared. Communities of color are at greater risk for negative outcomes as a result of COVID-19, due to existing disadvantages rooted in a legacy of structural racism (Carter et al., 2017; Ladson-Billings, 2006; Webb Hooper et al., 2020). The ways structural racism has patterned society is evident in the education system as schools work as institutionalized microcosms of the society at large (Carter et al., 2017; Ladson-Billings, 2006; Sullivan & A’Vant, 2009).

Outside of the rising death toll and increasing health concerns, the pandemic brought dramatic changes in schooling, including abrupt shifts to remote learning, immediate cessation of social contact, and diminished school capacity for mental health supports (Barker et al., 2021; Reilly, 2020) which has affected students of color at disproportionate rates. The COVID-19 pandemic continues to exacerbate existing educational inequities (Barker et al., 2021) while forcing many families to face multiple crises, such as job loss, housing insecurity, caregiving burden, and illness (Gassman-Pines et al., 2020) that limits parents’ ability to support their children’s learning. Families have been navigating a patchwork of public schooling options from a public education system already rife with racial disparities in achievement, discipline, and mental health outcomes. Parents and children in countries affected early by the pandemic like India and China reported increased...
psychological distress including acute and chronic stress as a result of parental anxiety and the disruption of school and daily routines (Patra & Patro, 2020). The deleterious and racially disparate health outcomes of COVID-19 have been on full display since the pandemic began in the U.S. (USDHHS, 2020); however, less exploration has been dedicated to understanding short- and long-term mental health outcomes for U.S. parents and their children as a result of COVID's impact on schooling (Lee, 2020).

A crucial malleable construct through which schools impact student and parent mental well-being and parents’ involvement in schools is school racial climate. School racial climate is a multidimensional construct characterized by perceptions of how race and racial diversity operates within school norms, values, practices, and relationships (Byrd, 2017; Chavous, 2005; Mattison & Aber, 2007). This construct is concerned with perceptions and does not include objective school features such as racial composition. Moreover, school racial climate is distinguished in the literature from racial discrimination (i.e., perceptions of being treated unfairly because one’s race) in that perceptions of unfair treatment are concerned with the school context and not individual experiences (Byrd, 2017). Although school racial climate has been underexamined, four dimensions that contribute to its conceptualization are clearly represented in the literature: interpersonal interactions, stereotypes, fair treatment and racial equity, and institutional support that encourages racial diversity (i.e., campus racial socialization) (Bacon et al., 1991; Byrd, 2017; Byrd & Chavous, 2011; Golden et al., 2018; Griffin et al., 2017; Mattison & Aber, 2007).

School mental health research on pre-COVID education has linked student and parent mental health outcomes to social determinants within schools, including school racial climate (Konold et al., 2017). Previous research has associated school racial climate with student mental health outcomes such as anxiety and depression (Byrd & Chavous, 2011; Griffin et al., 2017; LaSalle et al., 2017) and also with parental well-being and involvement in school (Bailey, 2020; McKay et al., 2003). This is especially demonstrated for students and families of color (Voight et al., 2015). For youth of color with strong racial identity, for example, being in schools with fair and respectful racial climate appeared to be most adaptive for satisfying youths’ need for belonging and encouraging intrinsic motivation (Griffin et al., 2017). That is, youth perceiving positive attitudes around race from teachers and staff reported higher school motivation. Griffin et al. (2017) also found that perceptions of racial fairness were indirectly associated with youths’ GPA through higher behavioral and cognitive engagement. Similarly, Byrd & Chavous (2011) concluded that students were more engaged and willing to perform academically when they felt their efforts would be fairly rewarded irrespective of their race. Additionally, positive school racial climate was linked to the reduction of peer victimization including bullying victimization and general victimization which both have a demonstrated link to sadness, depression, and anxiety (Konold et al., 2017). In a study of 152,000 middle school students, LaSalle et al. (2017) found that positive perceptions of school climate were associated with less suicidal thoughts and behaviors. Likewise, for Asian American students, perceived racial climate predicted depressive symptoms, with those who perceived more racial discrimination in schools having increased depressive symptoms.

Previous literature linking school racial climate to parental well-being and involvement in school found that parents’ perceptions of campus racial socialization (i.e., institutional support that encourages racial diversity) was associated with levels of parental involvement in schools. This finding revealed that racism awareness of parents was dissuading parents from having close contact with school staff or attending school events which negatively affected parents’ mental well-being (McKay et al., 2003). In addition, studies show that when parents consider their children’s school racial climate as positive, they were more involved in their children’s schooling and education (Goldkind & Farmer, 2013; Lavenda, 2011). In a national survey of U.S. parents, 42% percent of parents reported excessive anxiety about their children being impacted by racist comments or actions from other students and not knowing whom to go to at school to deal with discrimination; and this percentage rises to 63% for parents of color (Bailey, 2020). The pre-COVID research on school racial climate and student and parent mental well-being indicates the challenges of marginalized students of color connecting with school staff and peers in a way that protects them from negative mental health outcomes. The uncertainty and instability of school racial climate amidst COVID-19 can only serve to further exacerbate the negative mental health outcomes for students and parents.

The current study draws on concepts from the ecological systems theory (EST; Bronfenbrenner, 1977, 1979, 1994) for explanatory purposes. EST is a widely used theoretical approach in understanding child and family development within the context of their environmental and social systems (Bronfenbrenner, 1979; Neal and Neal, 2013). Bronfenbrenner (1977, 1979, 1994) postulated that human development takes place through processes of reciprocal interaction between an individual and their external environment. This includes not only the immediate environment, but also larger social contexts, both formal and informal, in which these settings are embedded. Through this theory, Bronfenbrenner stressed the importance of studying an individual in the context of the entire ecological system in which growth occurs. The importance of studying multiple systems simultaneously is that it allows for the investigation of joint effects and interactions between settings thereby highlighting the possibility that events in one setting may influence behavior and development in another (Bronfenbrenner, 1977). EST provides a framework that guides methodological approaches to the study of parent and child mental well-being. Accordingly, a family’s mental well-being may be explained, in part, as a function of the interactional relationships within their ecological environment such as their child’s schooling experiences and the structural ramifications of the pandemic’s impact.

1. Current study

Pre-COVID research has demonstrated an association between school racial climate and parent and child mental well-being outcomes (e.g., Bailey, 2020; Byrd & Chavous, 2011; Griffin et al., 2017; LaSalle et al., 2017), yet what remains unknown is the effect of COVID-19 stress as a moderating mechanism underlying this relationship. In addition, there is a dearth of research that focuses on parents’ perceptions of school racial climate and its effects. In aiming to address these gaps, this current cross-sectional study examined whether U.S. parents’ perspectives on COVID-19 stress moderated the relationship between school racial climate and parent and child mental health outcomes. The hypotheses were that: (1) school racial climate would be associated with parent and child mental health outcomes and that (2) COVID-19 stress would moderate the association between school racial climate and parent and child mental health outcomes.

2. Methods

2.1. Participants and recruitment strategy

A total of 500 U.S. parents were recruited from Prolific’s online research participant pool of almost one million survey respondents. Prolific is an online survey platform that recruits its members through public advertisement inviting people in U.S. communities to take part in survey research that is incentivized by researchers. This mechanism has been used for numerous peer-reviewed publications (Palan & Schitter, 2019); and previous research has shown that Prolific is more reliable than alternatives such as in-person survey panels of respondents and Mechanical Turk (Peer et al., 2017). For this study, Prolific was used to obtain a convenient sample of adult participants within the U.S. The analytic sample consisted of 397 U.S. adults with 52% identifying as female with an average age of 40 years. In terms of race/ethnicity, 74%
identified as White, 13% Black/African American, 7% Asian, and 6% other race. Forty-eight percent of the sample reported a total household income of $75,000 or more and 37% reported having a Bachelor’s degree.

2.2. Data collection procedures

Participants completed an electronic survey administered via Question Pro through Prolific’s online survey platform. A member from the research team posted a recruitment flyer to the Prolific platform that included a description of the study, inclusion criteria, and a link to the Question Pro survey. Prolific identified individuals from a subject pool who met the study’s criteria and advertised the study to its members. Inclusion criteria included 1) adult aged 18 and up with at least one child, 2) child between the ages of 6 and 17 and enrolled in a K-12 public school during the 2020–2021 academic school year, and 3) both parent and child residing in the U.S. Respondents with multiple children were asked to select one focal child and their school as the focus for this study. The survey consisted of 75 items and the average response time was 20 minutes. Data were collected May 2021. An informed consent was displayed on the participants’ screen prior to beginning the survey. Participants had the option of taking the survey at their own convenience and stopping and restarting as needed. In addition, survey respondents had the option of withdrawing their consent at any time during the study by deciding not to finish the survey and letting it time out (that is, not reporting completion to Prolific), or they could return their submission, thereby indicating that they wish the researchers not to use their data (Palan & Schitter, 2018). Participants who completed the online survey were compensated $12.50 per hour. Once the survey was complete, participants provided a confirmation code to Prolific and were compensated through their Prolific accounts. The study was approved by the University’s Institutional Review Board for human subjects’ protection protocols.

2.3. Measures

Participants completed a 75-item survey that consisted of demographic questions, COVID-19 related impact questions, and validated scales that measured school racial climate and child and parent mental well-being.

2.3.1. Demographics

Parent demographic questions included age, gender, race, household income, education, physical health status, and COVID-19 diagnosis. Age was a continuous variable measured in years and ranged from 18 to 74 years. Gender was a categorical variable (0 = male, 1 = female). Race was a categorical variable that characterized participants’ self-identified race. Response categories included 0 for White, 1 for Black/African American, 2 Asian, and 3 Other race to include mixed-race, American Indian, Native Hawaiian/other Pacific Islander, and some other race. Household income was a categorical variable and response categories included 0 = less than $25,000, 1 = $25,000–$49,999, 2 = $50,000–74,999, and 3 = $75,000 and above. Education was a categorical variable (0 = high school graduate/equivalent or below, 1 = some college or Associate’s degree, 2 = Bachelor’s degree, 3 = Master’s degree or beyond). Physical health was assessed by asking participants to self-report physical health status. Response choices included 0 for poor health, 1 for good health, and 2 for very good/excellent health. COVID-19 diagnosis was assessed by asking participants “If a doctor or other health care provider ever told you that you have COVID-19?” Response choices were 0 for “no” and 1 for “yes.”

Child demographics questions reported by parent/caretaker included child’s age, gender, race, physical health status, grade level, and school type. Age was a continuous variable measured in years and ranged from 6 to 17 years. Gender was a categorical variable (0 = male, 1 = female). Race was a categorical variable that characterized child’s race. Response categories included 0 for White, 1 for Black/African American, 2 Asian, and 3 Other race to include mixed-race, American Indian, Native Hawaiian/other Pacific Islander, and some other race. Physical health was assessed by asking parent/caregiver to report the physical health status of their child. Response choices included 0 for poor health, 1 for good health, and 2 for very good/excellent health. Grade level was measured as a categorical variable, 0 for 6th grade or below, 1 for 7th and 8th grade, and 2 for 9th–12th grade. School type was a categorical variable that described child’s public school setting. Response categories included 0 for regular/traditional school, 1 for charter school, 2 for special/magnet program, 3 for vocational school, and 4 for alternative school.

2.3.2. COVID-19 stress

COVID-19 stress assessed parents’ experiences with educational, economic, and financial impacts of the COVID-19 pandemic. Items were adapted from Cohen et al., 2020 survey to create a five-item scale. Example questions included, “To what extent are you stressed about the educational implications of COVID-19 for your child?” and “To what extent are you stressed about the economic implications of COVID-19 for you?” The scale was scored by summing responses to each item answered on a 5-point Likert scale 1 (not at all) to 5 (extremely) with scores ranging from 5 to 25. Higher values represented greater COVID-19 stress. The Cronbach’s alpha coefficient for the current sample was 0.80.

2.3.3. School racial climate

School racial climate was measured using items adapted from the School Climate for Diversity-Secondary Scale (Byrd, 2017). The 39-item scale contains two subscales (i.e., intergroup interactions and campus racial socialization) that measures students’ perceptions of campus racial climate. The wording of some of the items were changed to assess parents’ perceptions of their child’s school racial climate. For example, an item that originally stated, “At your school, teachers are fair to students of all races/ethnicities” was restated, “At your child’s school, teachers are fair to students of all races/ethnicities.” Items from intergroup interaction subscale assessed parents’ perceptions of quality of interactions (3), frequency of interaction (3), equal status (3), and support for positive interactions (4). Items from the campus racial socialization subscale assessed perceptions of promotion of cultural competence (6), cultural socialization (3), critical consciousness (4), and mainstream socialization (4). The subscales were scored by summing responses to each item answered on a 5-point Likert scale 1 (not at all true) to 4 (completely true) with scores ranging from 0 to 52 for intergroup interactions and 0–68 for campus racial socialization. Higher scores indicated more intergroup interactions and higher socialization around race and culture on their child’s school campus. Each subscale had high reliability, with the Cronbach’s alpha coefficients being 0.93 for intergroup interaction and 0.94 for campus racial socialization for the current sample.

2.3.4. Child mental well-being

Child mental well-being was assessed using the Brief Problem Monitor-Parent Report (BPM-P; Achenbach et al., 2011). This 19-item scale measured emotional, behavioral, and social problems in children and adolescents and was completed by parent. The BPM-P is made up of three subscales (i.e., attention problems, internalizing problems, and externalizing problems). The full scale was scored by summing responses to each item answered on a 3-point Likert scale 0 (not true, 1 = somewhat true, 2 = very true) with scores ranging from 0 to 36. Higher scores indicated more behavioral and emotional problems. The full scale had high reliability, with a Cronbach’s alpha coefficient of 0.92.

2.3.5. Parent mental well-being

Parent mental well-being was assessed using the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS; Tennant et al., 2007). The 14-item
scale captures subjective well-being and psychological functioning, in which all items are worded positively and address aspects of positive mental health. The scale was scored by summing responses to each item answered on a 5-point Likert scale (0 = none of the time to 4 = all of the time) with scores ranging from 0 to 56. Higher scores indicated more positive mental health states. The Cronbach’s alpha coefficient for the current sample was 0.95.

2.4. Data analysis

Prior to data analysis, data quality checks were performed. To ensure independence of data, if there were duplicate Internet protocol (IP) addresses, only the first occurrence of the IP was retained (∑ = 4). An additional 77 participants were excluded from analyses for indicating having a child outside of the inclusionary range of 6 to 17 years of age (∑ = 35) or that the child was not enrolled in a public K-12 school setting at any time during the 2020–2021 academic school year (∑ = 42). List-wise deletion was used to address missingness in that all variables had >2% missing observations. Cases with missing data on key study variables were excluded from analysis (∑ = 22) to produce unbiased estimates (Kang, 2013), resulting in a final sample of 397 parents of public school students in grades K-12. Model assumptions were tested and results revealed no concerns with issues of multicollinearity; average variance inflation factor (VIF) = 1.72 for parent mental well-being and (VIF) = 1.80 for child mental well-being. Data analytic strategies included the use of descriptive, bivariate, and multivariate techniques. Descriptive statistics (means and standard deviations for continuous variables and percentages for categorical variables) were used to describe study variables. Next, bivariate correlations among key study variables were assessed.

Hierarchical regression analyses were used to examine the associations of school racial climate, COVID-19 stress, and parent and child mental well-being. Two sets of regression analyses were performed for each dependent variable, parent mental well-being and child mental well-being. For each model, in step 1, parent mental well-being and child mental well-being were regressed on statistical controls. In Step 2, school racial climate variables (i.e., campus racial socialization and intergroup interactions) were added to the models to explain variance in outcomes above and beyond that of the statistical controls. In Step 3, the moderating variable, COVID-19 stress was entered into the models. In Step 4, interaction terms (i.e., campus racial socialization × COVID-19 stress and intergroup interactions × COVID-19 stress) were added to the models to assess the moderation effect of COVID-19 stress on the relationship between school racial climate variables and parent and child mental well-being. Centering was conducted before creating interaction terms. The coefficient of determination (R²) and Adjusted R² are reported. All analyses were conducted using Stata 16.1 software (Stata-Corp, 2019).

3. Results

3.1. Descriptive statistics

The descriptive statistics for study variables are presented in Table 1. Of the 397 U.S. parents of public school students in grades K-12, 52% were female with an average age of 40 years, and 74% identified as White. Forty-eight percent of the sample reported a total household income of $75,000 or more. In terms of parent education, 37% reported having a Bachelor’s degree. Seven percent of the sample reported being diagnosed with COVID-19 by a healthcare provider. The average age for children was 11 years with 54% being male. Fifty-seven percent of children were enrolled in elementary schools (6th grade or below) and 89% of children attended a regular/traditional school setting.

| Variable                              | % or M (±SD)         |
|---------------------------------------|----------------------|
| Parent Mental Well-Being              | 33.11 (±11.10)       |
| School Racial Climate                 |                      |
| Intergroup Interactions               | 35.78 (±9.89)        |
| Campus Racial Socialization           | 40.02 (±14.02)       |
| COVID-19 Stress                       | 14.57 (±4.52)        |
| Parent Race                           |                      |
| White [reference]                     | 74%                  |
| Black/African American                | 13%                  |
| Asian                                 | 7%                   |
| Other Race                            | 6%                   |
| Parent Gender                         |                      |
| Male [reference]                      | 48%                  |
| Female                                | 52%                  |
| Parent Age                            | 39.74 (±11.36)       |
| Household Income                      |                      |
| < $25,000 [reference]                 | 11%                  |
| $25,000–49,999                        | 19%                  |
| $50,000–74,999                        | 22%                  |
| ≥ $75,000                             | 48%                  |
| Parent Education                      |                      |
| ≤ high school diploma/equivalent [reference] | 10%                  |
| Some college/Associate’s degree       | 30%                  |
| Bachelor’s degree                     | 37%                  |
| ≥ Master’s degree                     | 23%                  |
| Parent Physical Health                |                      |
| Poor Health [reference]               | 13%                  |
| Good Health                           | 34%                  |
| Very Good/Excellent Health            | 53%                  |
| Parent COVID-19 Diagnosis             |                      |
| No [reference]                        | 93%                  |
| Yes                                   | 7%                   |
| Child Mental Well-Being               | 5.75 (±6.54)         |
| Child Age                             | 10.93 (±3.68)        |
| Child Gender                          |                      |
| Male [reference]                      | 53%                  |
| Female                                | 47%                  |
| Child Race                            |                      |
| White [reference]                     | 67%                  |
| Black/African American                | 12%                  |
| Asian                                 | 6%                   |
| Other Race                            | 15%                  |
| Child Physical Health                 |                      |
| Poor Health [reference]               | 3%                   |
| Good Health                           | 8%                   |
| Very Good/Excellent Health            | 89%                  |
| Grade Level                           |                      |
| 6th grade or below                    | 57%                  |
| 7th–8th grade                         | 17%                  |
| 9th–12th grade                        | 26%                  |
| School Type                           |                      |
| Regular/Traditional School            | 89%                  |
| Charter School                        | 6%                   |
| Special/Magnet Program                | 4%                   |
| Vocational School                     | <1%                  |
| Alternative School                    | <1%                  |

Note. % = percentage for categorical variables; M (SD) = mean (±standard deviation) for continuous variables.

3.2. Correlations

As shown in Table 2, all independent variables were significantly associated with parent mental well-being at the p < .01 and significantly associated with child mental well-being. All significantly associated relationships with parent mental well-being were weak to moderate. The smallest correlation was between COVID-19 stress and parent mental well-being (r = −0.249, p < .001) and the largest correlation were found between campus racial socialization and parent mental well-being (r = 0.343, p < .001). For child mental well-being, the largest correlations were found between COVID-19 stress and child mental well-being (r = −0.198, p < .001) and campus racial socialization and child mental well-being (r = −0.144, p < .01). In addition, there was a significantly
negative association between parent mental well-being and child mental well-being ($r = -0.266p < .001$). That is, as child behavioral and emotional problems decreased, parent mental well-being increased.

3.3. Hierarchical regression

The results of the regression analyses examining the moderating influence of COVID-19 stress on the association between school racial climate and parent mental well-being are shown in Table 3. In step 1, gender ($β = -0.106, p = .020$), age ($β = 0.164, p < .001$), being Black/African American ($β = 0.186, p < .001$), and being in very good/excellent physical health ($β = 0.441, p < .001$) significantly predicted parent mental well-being, $F(11, 385) = 11.23, p < .001$ and accounted for 22% of the variance. Being of older age, being Black/African American, identifying as male, and self-reporting a very good/excellent physical health status were more likely to report positive mental well-being. In step 2, school racial climate variables were entered into the model to explain the variance in parent mental well-being beyond that of control variables. This model (Model 2) explained an additional 10% of the variance in parent mental well-being. Parents’ perceptions of campus racial socialization ($β = 0.166, p = .002$) and intergroup interactions ($β = 0.198, p < .001$) in their child’s school significantly predicted parent mental well-being, in addition to control variables, gender ($β = -0.097, p = .023$), age ($β = 0.158, p < .001$), being Black/African American ($β = 0.210, p < .001$), being in very good/excellent physical health ($β = 0.372, p < .001$), and household incomes above $50,000 ($β = 0.151, p = .024$ for $50,000–74,999 and β = 0.185, p = .012$ for $≥ 75,000), Adjusted $R^2 = 0.32, F(13,383) = 15.24, p < .001$. Adding COVID-19 stress ($β = -0.175, p < .001$) in Step 3 explained an additional 3% of the variance in parent mental well-being, Adjusted $R^2 = 0.35, F(14, 382) = 15.92, p < .001$. Low levels of perceived COVID-19 stress were associated with more positive mental well-being in parents.

In step 4, interaction terms were entered into the model (Model 4) and there was no change in explained variance on the outcome, Adjusted $R^2 = 0.35, F(16, 380) = 14.25, p < .001$. Results showed a significant interaction effect between campus racial socialization and perceived COVID-19 stress ($β = 0.106, p = .009$), showing a significant moderating effect of COVID-19 stress on the relationship between campus racial socialization and parent mental well-being. For descriptive purposes, campus racial socialization was plotted against parent mental well-being for low, moderate, and high levels of COVID-19 stress (Fig. 1). Simple slopes showed that at a low level (1SD below the mean) of COVID-19 stress, campus racial socialization was significantly and positively related to parent mental well-being ($β_{simple} = 0.299, p < .001$). Also, the effect of campus racial socialization on parent mental well-being was significant and positive at the moderate level ($β_{simple} = 0.383, p < .004$) and high level of perceived COVID-19 stress ($β_{simple} = 0.468, p = .007$). This finding showed that parents who reported either low, moderate, or high levels of COVID-19 stress had improved mental well-being when perceived racial socialization in their child’s school was higher. However, this impact was greater for parents with high levels of COVID-19 stress than with low levels of COVID-19 stress. In addition in Model 4, age ($β = 0.128, p = .003$), being Black/African American ($β = 0.229, p < .001$), being in very good/excellent physical health ($β = 0.342, p < .001$), household incomes above $50,000 ($β = 0.146, p = .026$ for $50,000–74,999 and β = 0.159, p = .028$ for $≥ 75,000), campus racial socialization ($β = 0.163, p = .004$), intergroup interactions ($β = 0.206, p < .001$), and COVID-19 stress ($β = -0.180, p < .001$) remained statistically significant, with very good/excellent physical health status being the most important predictor of parent mental well-being.

The results of the regression analyses examining the moderating influence of COVID-19 stress on the association between school racial climate and child mental well-being are shown in Table 4. In step 1, children attending vocational school ($β = 0.156, p = .001$), enrolled in 9th-12th grades ($β = -0.192, p = .028$), and in good health ($β = -0.299, p = .001$) or very good/excellent health ($β = -0.490, p < .001$) significantly predicted child mental well-being, $F(13, 383) = 3.84, p < .001$ and accounted for 9% of the variance. Children attending vocational school were more likely to present with behavioral or emotional problems and children enrolled in higher grade levels and in good health were less likely to demonstrate behavioral problems. In step 2, school racial climate variables were entered into the model to explain the variance in child mental well-being beyond that of control variables. This model (Model 2) only explained an additional 1% of the variance in child mental well-being. Parents’ perceptions of campus racial socialization ($β = 0.113, p = .058$) and intergroup interactions ($β = 0.018, p = .772$) in their child’s school was not statistically associated with child behavioral or emotional problem scores.

Adding COVID-19 stress ($β = 0.229, p < .001$) in Step 3 explained an additional 4% of the variance in child mental well-being, Adjusted $R^2 = 0.14, F(16, 380) = 5.17, p < .001$. High levels of perceived COVID-19 stress were associated with more behavioral and emotional problems in children indicating poor mental well-being. The addition of interaction terms in step 4 did not have a significant effect on the amount of variance explained in the model (Model 4), Adjusted $R^2 = 0.14, F(18,378) = 4.63, p < .001$. Results indicated that campus racial socialization × COVID-19 stress ($β = 0.035, p = .567$) and intergroup interactions × COVID-19 stress ($β = 0.011, p = .858$) were not statistically significant. That is, COVID-19 stress did not moderate the relationship between school racial climate variables and child mental well-being. In the final regression model, children attending vocational school ($β = 0.151, p = .001$), enrolled in 9th-12th grade ($β = -0.216, p = .012$), being in good health ($β = -0.262, p = .004$) or very good/excellent health ($β = -0.431, p < .001$), campus racial socialization ($β = -0.123, p = .035$), and COVID-19 stress ($β = 0.224, p < .001$) significantly predicted child mental well-being, with very good/excellent physical health status being the most important predictor of child mental well-being.

4. Discussion and implications

Although the association between school racial climate and parent and child mental well-being have begun to garner empirical support (e.g., Bailey, 2020; Byrd & Chavous, 2011; Griffin et al., 2017; LaSalle et al., 2017), much less is known about the influence of COVID-19 stress as a moderating mechanism underlying this relationship. In addition, there is a lack of research that focuses on parents’ perceptions of school racial climate and its effects. Some scholars have argued that measurement of parent perceptions are necessary as parents’ attitudes about their child’s schools can have far reaching effects (Schueter et al., 2014).

This study is distinct in its examination of U.S. parents perspectives on COVID-19 stress as a moderating influence on the relationship between perceptions of school racial climate (i.e., intergroup interactions and campus racial socialization) and parent and child mental health outcomes. Results of the hierarchical regression analyses show that Hypothesis 1 (i.e., school racial climate would be associated with parent and child mental health outcomes) and Hypothesis 2 (i.e., COVID-19 stress would moderate the association between school racial climate
and parent and child mental health outcomes) were both partially upheld. Study findings revealed that parents’ perceptions of school racial climate were significant predictors of parent mental well-being, but not child behavioral or emotional problems. Moreover, COVID-19 stress moderated the relationship between parents’ perceptions of campus racial socialization and parent mental well-being. Parents who reported either low, moderate, or high levels of COVID-19 stress had improved mental health when racial socialization in their child’s school was high. This impact was greater for parents with high levels of COVID-19 stress than with low levels of COVID-19 stress. However, parents’ perceptions of COVID-19 stress did not moderate the relationship between school racial climate and child behavioral and emotional problems.

Consistent with previous research on U.S. parents’ perceptions of school racial climate during the COVID-19 era (Bailey, 2020), this study suggests that parents who reported more favorable perceptions of campus racial socialization and intergroup interactions in their child’s school were more likely to report positive mental well-being. This finding is significant in that parents’ perceptions of climate not only directly affect parents themselves, but may have an indirect effect on student and school-level outcomes. For example, research demonstrates

Table 3
Hierarchical regression analysis for parent mental well-being (n = 397).

| Step | Variable | \( \beta \) | SE | \( R^2 \) | Adjusted \( R^2 \) | \( F \) |
|------|----------|--------|-----|--------|----------------|-----|
| 1    | Gender   | 0.106* | 0.152 | 0.242  | 0.221           | 11.23*** |
|      | Age      | 0.164*** | 0.211 | 1.177  |                 |     |
|      | Race (Black/African American) | 0.186*** | 0.209 | 1.497  |                 |     |
|      | Race (Asian) | 0.005 | 0.251 | 1.952  |                 |     |
|      | Race (Other Race) | 0.033 | 0.217 | 2.117  |                 |     |
|      | Income ($25,000–49,999) | 0.031 | 0.198 | 1.918  |                 |     |
|      | Income ($50,000–74,999) | 0.119 | 0.188 | 1.866  |                 |     |
|      | Income (> $75,000) | 0.161 | 1.735 | 1.735  |                 |     |
|      | Good Health | 0.106 | 1.646 |         |                 |     |
|      | Very Good/Excellent Health | 0.441*** | 1.590 |         |                 |     |
|      | COVID-19 Diagnosis | –0.023 | 1.981 |         |                 |     |
| 2    | Gender   | 0.097* | 0.912 | 0.341  | 0.319           | 15.24*** |
|      | Age      | 0.158*** | 0.042 | 1.404  |                 |     |
|      | Race (Black/African American) | 0.211*** | 1.381 |         |                 |     |
|      | Race (Asian) | 0.019 | 1.838 |         |                 |     |
|      | Race (Other Race) | 0.151* | 1.768 |         |                 |     |
|      | Income ($25,000–49,999) | 0.185* | 1.626 |         |                 |     |
|      | Income ($50,000–74,999) | 0.096 | 1.540 |         |                 |     |
|      | Income (> $75,000) | 0.441*** | 1.502 |         |                 |     |
|      | Good Health | 0.166** | 0.041 | 0.372  | 0.345           | 15.92*** |
|      | Very Good/Excellent Health | 0.098** | 0.059 | 0.369  | 0.345           | 15.92*** |
|      | COVID-19 Diagnosis | 0.375 | 0.349 | 0.395  | 0.375           | 14.25*** |
|      | Racial Socialization | 0.175*** | 0.106 | 0.105  |                 |     |
|      | Intergroup Interactions | 0.180*** | 0.013 | 0.105  |                 |     |

Note. For gender, 0 = male, 1 = female; White was the reference group for race; income < $25,000 was the reference group; and poor health was the reference group for physical health status.

*p < .05; ** p < .01; *** p < .001.
that parental attitudes can influence children’s attitudes regarding school (Harackiewicz, 2012) and that students’ attitudes about school in turn affect their behavior, academic performance, and mental well-being (Griffin et al., 2017; LaSalle et al., 2017). Furthermore, previous literature suggests that parents’ impressions of climate can influence whether and how families engage with schools (Bunting et al., 2013; Robinson & Harris, 2014). Bailey (2020) found that 42% of parents of all racial and ethnic backgrounds reported being worried about their children being in schools with poor school racial climate and not knowing whom to go to at school to deal with discriminatory behaviors which impacted parents’ level of involvement in their child’s school. Schools might better support student success by understanding and improving the way parents view the school (Schueler et al., 2014). In line with this, study findings suggest the school racial climate is not only relevant for children and families most directly affected (i.e., non-White families), but that the disproportionately White sample in our study reported being worried about their children being in schools with poor school racial climate and not knowing whom to go to at school to deal with discriminatory behaviors which impacted parents’ level of involvement in their child’s school. Schools might better support student success by understanding and improving the way parents view the school (Schueler et al., 2014).

Contrary to empirical findings that indicate indirect effects of parent perceptions of school climate on student-level outcomes (Berkowitz et al., 2021; Schueler et al., 2014), parents’ perceptions of campus racial socialization and intergroup interactions in their child’s school were not statistically associated with child behavioral or emotional problem scores. Inconsistencies in previous research findings may be due to a lack of measurement tools that gauge parent perspectives of racial climate and/or explicitly assessing racial equity and issues with unfair treatment in schools. Tools designed for students and even educators may be inappropriate for use with parent populations given that few parents are regularly present in schools (Schueler et al., 2014). Thus, adapting a student measure (e.g., Byrd, 2017) may have been ineffective.

A contribution of this study is the examination of COVID-19 stress as a moderating factor. The findings revealed that COVID-19 stress moderated the relationship between parents’ perceptions of campus racial socialization and parent mental well-being, adding to the scant literature. For parents who reported any level of COVID-19 stress, mental health improved when the levels of campus racial socialization in their child’s school was perceived high. However, this impact was greater for parents with high levels of COVID-19 stress than with low levels of COVID-19 stress. This could be due to parents experiencing greater relief in their child’s educational process as a result of their assessment that schools are affording the opportunity for students to learn about different cultures, traditions, and social issues affecting one’s culture and race. Racial equity promotion in K-12 schools is necessary and important given the systematic inequities and disparities present in the education system (Hussar et al., 2020; Warren, 2014), and in society at large (Carter et al., 2017; Ladson-Billings, 2006; Webb Hooper et al., 2020). Research shows that schools that promote more equitable practices, emphasize the value of diversity, and support culturally-relevant, school-wide mental health efforts improve the health and well-being of the student body and improve family-school partnerships (Childs et al., 2021; Barker et al., 2021; Levine et al., 2019). Beyond this, study findings point to the importance of equitable systems for students and families across racial communities in light of the negative impacts of the pandemic.

Although parents’ perceptions of COVID-19 stress did not moderate the relationship between school racial climate and child behavioral and emotional problems, high levels of perceived COVID-19 stress was associated with more behavioral and emotional problems in children indicating poor mental well-being. A number of research findings highlight the detrimental impacts of the COVID-19 pandemic on child and adolescent behavior (Gassman-Pines et al., 2020; Singh et al., 2020). For example, Gassman-Pines et al. (2020) found that children’s problematic behavior and overall sadness increased after the onset of the COVID-19 pandemic.

Implications of research findings point to the need for more validated measures to assess parent perceptions of school climate with an emphasis on racial equity in schools. In addition, the ongoing collection of parental views can help guide policy and reform and contribute to student-level outcomes at school. Policy reform and intervention efforts anchored in empirical evidence can help parents to better support children’s educational and mental health needs (Berkowitz et al., 2021; Childs et al., 2021). In addition, study findings provide empirical support for the benefits of family-school partnerships in mental health promotion in schools. This could include attracting the initial involvement of parents in the screening and assessment process to determine the appropriate risk level of their children and implementing school-based interventions at varying tier levels that support parental involvement in treatment.

In collaboration with school district officials and staff, school social workers are uniquely positioned to assist school leadership in a collective effort to engage parents, families, and communities with a shared
Hierarchical regression analysis for child mental well-being (n = 397).

| Step | Variable | \( \beta \) | SE | \( R^2 \) | Adjusted \( R^2 \) | \( F \) |
|------|----------|--------|-----|---------|-----------------|-----|
| 1    | Gender   | -0.024 | 0.064| 0.115   | 0.085           | 3.84*** |
|      | Age      | 0.122  | 0.086| 0.179   | 0.144           | 5.17*** |
|      | Race (Black/ African American) | -0.055 | 0.129 | 1.312 | 2.166 |
|      | Race (Asian) | -0.030 | 0.152 | 0.096 | 1.913 |
|      | Race      | -0.299** | 0.115 | 1.941 | 2.166 |
|      | Good Health | -0.480*** | 0.085 | 1.941 | 2.166 |
|      | Very Good/ Excellent Health | -0.019 | 0.063 | 1.293 | 1.697 |
|      | School Charter School | -0.019 | 0.028 | 6.236 | 2.166 |
|      | Special/ Magnet Program Vocational School | -0.019 | 0.156** | 4.433 | 2.166 |
|      | Alternative School | -0.001 | 0.081 | 1.285 | 1.697 |
|      | 7th-8th grade | -0.123* | 0.027 | 1.285 | 1.697 |
|      | 9th –12th grade | -0.215* | 0.027 | 1.285 | 1.697 |
| 2    | Gender   | -0.028 | 0.067| 0.119   | 0.151           | 3.79*** |
|      | Age      | 0.117  | 0.089| 0.171   | 0.149           | 5.17*** |
|      | Race (Black/ African American) | -0.060 | 0.031 | 1.314 | 2.166 |
|      | Race (Asian) | -0.001 | 0.119 | 0.026 | 0.968 |
|      | Race      | -0.282** | 0.081 | 2.166 | 2.166 |
|      | Good Health | -0.444*** | 0.151 | 1.959 | 1.959 |
|      | Very Good/ Excellent Health | -0.019 | 0.079 | 1.286 | 1.653 |
|      | School Charter School | -0.015 | 0.024 | 6.209 | 2.166 |
|      | Special/ Magnet Program Vocational School | -0.019 | 0.155** | 4.411 | 2.166 |
|      | Alternative School | -0.034 | 0.041 | 6.209 | 2.166 |
|      | 7th-8th grade | -0.013 | 0.011 | 1.108 | 0.968 |
|      | 9th –12th grade | -0.194* | 0.027 | 1.280 | 1.001 |
|      | Racial Socialization | -0.113 | 0.081 | 0.027 | 0.001 |
|      | Intergroup Interactions | -0.018 | 0.079 | 0.040 | 0.001 |
| 3    | Gender   | -0.037 | 0.062| 0.179   | 0.144           | 5.17*** |
|      | Age      | 0.172  | 0.148| 0.211   | 0.148           | 5.17*** |
|      | Race (Black/ African American) | -0.079 | 0.014 | 1.283 | 1.504 |
|      | Race (Asian) | -0.021 | 0.061 | 0.889 | 1.504 |
|      | Race      | -0.264** | 0.037 | 2.105 | 2.105 |
|      | Good Health | -0.432*** | 0.081 | 1.906 | 1.906 |
|      | Very Good/ Excellent Health | -0.012 | 0.0765 | 1.251 | 1.504 |
|      | School Charter School | -0.012 | 0.0387 | 1.251 | 1.504 |
|      | Special/ Magnet Program Vocational School | -0.012 | 0.151** | 4.291 | 3.541 |
|      | Alternative School | -0.012 | 0.0387 | 6.041 | 4.504 |

Note. For gender, 0 = male, 1 = female; White was the reference group for race; income < $25,000 was the reference group; and poor health was the reference group for physical health status.

\(*p < .05; **p < .01; ***p < .001.\)

5. Limitations and future directions

This study has several limitations that should be addressed. First, this cross-sectional design limits evidence of causal relationships and the goal of promoting racial equity and positive mental health in schools (Ball & Skrzypek, 2020; Childs et al., 2021; Kelly et al., 2015; Phillippo et al., 2017). Emphasis should be placed on reaching out to and actively engaging families, community mental health providers, community leaders, local churches, and local businesses of color to build inclusive educational institutions and stronger advocacy networks of diverse perspectives and experiences which can enhance the overall climate and well-being of the school. This effort of connecting the school and community with the intent of brokering resources supports the community school strategy (Finigan-Carr & Shaia, 2018) and reinforces the need for school social workers to explicitly engage in systemic, structurally oriented interventions that support the healthy development of the school environment (Kelly et al., 2015).
direction of effects. There is a pressing need for planning and conducting longitudinal studies to assess long-term effects of the COVID-19 pandemic and to test if perceptions of school racial climate have a lasting impact on parent and child well-being. Second, data was only self-reported by parents through the use of a validated scale measure for students. More research is needed that includes validated measures of parent perceptions of school racial climate. In addition, this study could be extended to include the perceptions of students and teachers/school staff for triangulation. In line with this, more research is needed to include measurement of school-level variables for multilevel analysis and also the inclusion of additional ecological influences that may impact mental health. A final area of concern is the validity of responses as participants were recruited from an online research participant pool where members are asked to take part in survey research for a fee. This convenient sample does not offer the rigor needed to make conclusions about larger populations of U.S. parents and their children.

6. Conclusions

This study has shown that parents’ perceptions of school racial climate are an integral component in promoting equitable practices within K-12 educational systems for students and families across racial communities. Racial equity promotion in K-12 schools is necessary and important given the systematic inequities and disparities present in the education system (Hussar et al., 2020; Warren, 2014), and in society at large (Carter et al., 2017; Ladson-Billings, 2006; Webb Hooper et al., 2020). Consequently, there is a need for more validated measures to assess parent perceptions of school climate with an emphasis on racial equity in schools and a collective effort by districts and schools to engage parents, families, and communities with a shared goal of promoting racial equity and positive mental health in schools.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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