

Whole-Child Development Losses and Racial Inequalities during the Pandemic: Fallouts of School Closure with Remote Learning and Unprotective Community

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Abstract

Grounded in a strength-based whole-child development model, this study explores the racial disparities of students' learning and well-being during the pandemic. Linking the U.S. national/state databases of education and health, it examines changes in whole-child outcomes and related factors—remote learning and protective community. It reveals race/ethnicity-stratified, cross-state variations of learning and well-being losses during school closure and accountability turnover. Overall, students in the states with longer school closure and remote learning suffered bigger losses, whereas students in the states with better school funding and protective community had smaller losses. While all racial minority groups experienced relatively more remote learning and unprotective community, their consequences diverged: achievement gaps, relative to Whites, widened for Blacks and Hispanics, whereas well-being gaps widened for Asians. Despite common vulnerability, racial minority groups showed different signs of strength and resilience. Policy and research implications are discussed towards holistic and equitable post-pandemic recovery among all races/ethnicities. A silver lining during the pandemic was breaking the silos across state government agencies (education, health/mental health, social work, etc.) for whole-child support services. Without cross-sector partnership and safety nets, school closure and accountability turnover would have serious negative impacts on equity, exacerbating pre-existing racial inequalities and achievement/well-being gaps.

Keywords

Racial Equity, Whole-Child Education, School Accountability, Remote

1. Introduction

Why have the U.S. state education systems exacerbated (or failed to reduce) the racial disparities of students' learning and well-being during the COVID-19 pandemic? How did it happen across so many states with lasting impacts even after the pandemic is over? The racial inequalities of educational opportunities were on the rise even before the pandemic outbreak (Duncan & Murnane, 2011; Kirsch & Braun, 2016; Lee, 2016). However, the COVID-19 pandemic has brought more severe setbacks, exacerbating pre-existing racial inequalities of student achievement and well-being (Office for Civil Rights, 2021; Rickles et al., 2020; Verlenden et al., 2021). Academic losses in the pandemic were prevalent but highly unequal, with more severe learning setbacks among disadvantaged minority students (Dorn et al., 2021; Kuhfeld et al., 2020a; Lewis et al., 2021; NCES, 2022). In addition to the achievement gaps, there were also pandemic-induced declines of children's wellness and health (Calderon, 2020; Leeb et al., 2020; Patrick et al., 2020; Pietrobelli et al., 2021; Singh et al., 2024). In order to tackle both achievement gaps and well-being gaps together for systemic racial equity, it is crucial to understand for whom, why and how pandemic-induced state education policies and conditions affected whole-child development outcomes, not only academically but also mentally and physically.

We revisit this question from the perspective of holistic and equitable school accountability system towards whole-child, whole-community development (Lee & Su, 2022). While many states pursued school accountability system reform to broaden cross-sector education partnership (e.g., community schools) since the Every Student Succeeds Act of 2015, they failed to prevent many vulnerable minority students from falling through the cracks during the pandemic school closure and remote learning; many unprepared schools and teachers may have ended up passing on "de facto" educational responsibilities to students and their parents/caregivers. This unprecedented school accountability turnover left a large number of racial minority students behind, while being exposed longer to ineffective remote learning at home and experiencing unprotective community environment, which disrupted their learning and well-being.

While there is no shortage of research on pandemic-affected students' learning and well-being issues, previous studies were often discrete and snapshot in nature. Child education research with focus on learning issues remains largely separate from child health research with focus on well-being issues, although these two issues are closely interrelated and require cross-sector partnership for effective interventions. Our study attempts to bridge the gap in education and health fields. It remains to be examined why, how and for whom the nation and states failed to address pandemic-induced declines and inequalities of students'

learning and well-being together at the same time. In spite of the U.S. government's COVID-19 financial aid packages (i.e., CARES Act of 2020, American Rescue Plan Act of 2021), many disadvantaged minority kids in low-income families and communities struggled more with remote learning, because they did not have adequate technology support such as Internet/computer access at home and at the same time did not have proper mental/physical health care support at their community either (Bradley et al., 2024; Wiley & Altman, 2024). It is crucial to assess and reduce the systemic racial inequalities of whole-child development opportunities and outcomes exacerbated by pandemic-induced school closure, when diverse racial/ethnic groups of students in different states experienced different levels of education and health disparities.

In light of these concerns, we apply a strength-based, whole-child and whole-community development approach to address the issues of racial inequity in the U.S. education system context. Specifically, we choose to focus on two pandemic-related, policy-manipulable factors that should have affected whole-child development (i.e., academic, socioemotional and physical outcomes): 1) remote learning (risk factor) and 2) protective community (protective factor). Below we provide some critical review of the literature on the topics of remote learning and protective community. Although they seem to be separate issues, we argue that the combination of those two forces—remote learning and unprotective community—under pandemic-induced school closure and accountability turnover, left many at-risk minority students behind in their learning and well-being simultaneously. It is possible that something analogous to or even worse than the COVID-19 pandemic can take place in the future. Thus, it is necessary to be equipped with well-coordinated, cross-sector partnership of school-family-community services and to suggest what to do and what not to do when we encounter a new global pandemic or other emergency situations. Policy implications for post-pandemic recovery and resilience towards more holistic and inclusive system of public education are discussed.

2. Research Framework

This research is based on a strength-based (asset) model (Benson et al., 2011) as opposed to the deficit model to tackle pandemic-induced losses and inequalities of child education and health. It is aimed at empowering child recovery and resilience through cross-state and cross-sector partnership of education, health, and social service for life protection. It is based on the premise of whole-child development in that not only cognitive abilities, but also socioemotional and physical capabilities are vital for life success (National Research Council, 2012; National Research Council and Institute of Medicine, 2009). This study also builds on the premise of cross-sector partnership with collective impact and reciprocal accountability (Karnia & Kramer, 2011; Maier et al., 2017). During the pandemic, this system-wide harmony and balance of whole-child development across sectors have been disrupted by school closure and accountability turn-

over; the primary locus of educational responsibility shifted from school to family and community in which the disparities of remote learning and protective community conditions would have exacerbated pre-existing racial inequalities and achievement/well-being gaps. **Figure 1** displays the schematic diagram of our research framework.

There has been an effort by the Center for Disease Control and Prevention (CDC) addressing student health and well-being in school, the so-called the Whole School, Whole Community, Whole Child (WSCC) model (Birch & Videto, 2016; CDC, 2019; Lewallen et al., 2015; Olson et al., 2021). While recognizing the importance of social determinants of the whole child, the model incorporated several elements, such as economic, educational, social & community contexts, health & health care, and neighborhood, which would have great influences on cognitive and non-cognitive development of children and youth. Lee et al. (2019) further elaborated on the whole community, by highlighting the importance of the bidirectional intersection between education and health and explicitly using the term “the protective community”. The protective community can be defined as the safety net of the whole-child development, encompassing the child’s school, family, and neighborhood that may play “protective” roles when faced with challenges and disruptions (i.e., in the aftermath of the COVID pandemic) in the child’s cognitive, physical, and socioemotional development.

COVID-19 pandemic brought remote learning with disruptive impacts on school accountability system, changing the locus of educational control and responsibilities from schools and teachers to students and parents/caregivers. On one hand, the sudden shift to online/ remote learning during the pandemic caused harms to students’ academic, socioemotional and physical development. Most researchers have shown that remote learning during the COVID-19 pandemic had an inverse relationship with student achievement (Betthäuser et al., 2023; Cortes-Albornoz et al., 2023; De Witte & Francois, 2023; Di Pietro, 2023; Hammerstein et al., 2021; Kuhfeld et al., 2020b). Research also has consistently indicated that there were negative effects of remote learning on children’s social-emotional learning (Duckworth et al., 2021; Hamilton & Gross, 2021; Hanno et al., 2022; Margolius et al., 2020; US Department of the Interior Bureau of Indian Education, n.d.). Researchers have found that remote learning was linked to lower levels of physical activity (Verlenden et al., 2021), increased rates of obesity (Jenssen et al., 2021; Robert Wood Johnson Foundation, 2020), deteriorated overall health and well-being (Margolius et al., 2020).

On the other hand, historically marginalized students and students enrolled in high-poverty schools were more negatively impacted (Lewis et al., 2021; Goldhaber et al., 2022; How kids are performing, 2021). Asian American and White students declined less than Hispanic and Black students. Relative to in-person education, remote learning is much more challenging for disadvantaged minority students who may lack resources and skills to keep their learning on track, search learning resources, and seek help (Qayyum, 2018; Palvia et al., 2018). Further, racial differences exist in protections from their family and community

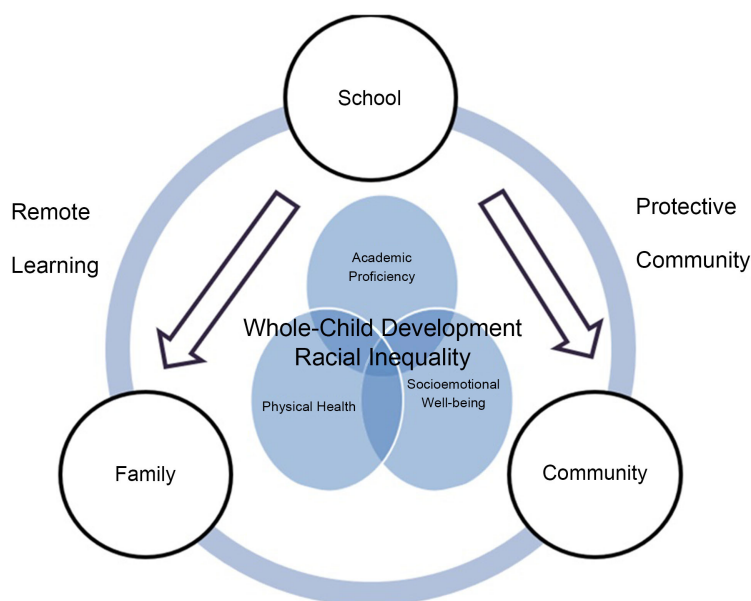


Figure 1. Research framework of whole-child development and racial inequalities as influenced by school closure and accountability turnover with remote learning and protective community.

that can counteract or mitigate the negative effects of school closure by providing safe and supportive environment for at-risk children (Borman & Overman, 2004; Lee & Su, 2022). The government’s policy and funding support for social protection programs are crucial to reduce poverty and inequality among vulnerable families and communities (World Bank, 2018). In the past, the states which did not initiate equity-oriented education policies and funding to explicitly tackle the pre-existing racial gaps of learning environment and resources were less successful for racial equity (Braun et al., 2006; Lee & Wong, 2004).

To sum up, evaluating the race/ethnicity-stratified, cross-state trends of whole-child measures (i.e., academic proficiency, socioemotional wellness, and physical health) and their associations with remote learning and protective community measures is meaningful in that these holistic and inclusive analysis approaches allow us to understand the bigger picture of statewide educational policy consequences for racial equity and take both risk and protective factors into account at the same time. It would be worthwhile to examine whether school closures and subsequent “forced” and “unprepared” remote learning during the COVID-19 pandemic had a detrimental effect on student learning and well-being, and its effects, if any, were differentially felt by varied racial/ethnic groups, thus exacerbating pre-existing inequalities among vulnerable minority students who had to spend more time in unprotective home/community during school lockdown. The current states of the literature guide us to investigate the following research questions:

1) What losses occurred to whole-child outcomes (i.e., students’ academic proficiency, socioemotional wellness, and physical health) during the pandemic across the U.S. states?

2) Are whole-child developmental losses, if any, more predominant among specific racial/ethnic groups and why?

3) Are the racial inequalities of whole-child outcome losses, if any, related to the disparities of remote learning environment (risk factor) among racial/ethnic groups?

4) Are the racial inequalities of whole-child outcome losses, if any, related to the disparities of protective community environment (protective factor) among racial/ethnic groups?

3. Methods

3.1. Data

To address the research questions, this study examines repeated cross-sectional datasets with nation/state-representative samples of school-age children. For academic achievement measures, the National Assessment of Educational Progress (NAEP) 2019 and 2022 datasets are used to assess nationally representative samples of 4th grade and 8th grade students' achievement in reading and math (<http://www.nces.ed.gov/nationsreportcard>). In 2019, the NAEP samples included: 150,600 fourth graders from 8300 schools and 143,100 eighth graders from 6950 schools. In 2022, the NAEP samples included: 1) for reading, 108,200 fourth graders from 5780 schools and 111,300 eighth graders from 5190 schools; 2) for math, 116,200 fourth graders from 5780 schools and 111,000 eighth graders from 5190 schools. Data are weighted to be representative of the US population of students at grades 4 and 8, each for the entire nation and every state. Results are reported as percentages of students performing at or above the NAEP achievement levels: *NAEP Basic*, *NAEP Proficient*, and *NAEP Advanced*. In this study, we focus on changes in the percentages of students at or above the NAEP Basic level, which is the minimum competency level expected for all students across the nation.

For supplement to the NAEP assessment data, this study uses the NAEP School Dashboard (US Department of Education National Center for Education Statistics, 2021, see <https://ies.ed.gov/schoolsurvey/mss-dashboard/>), which surveyed approximately 3500 schools each month at grades 4 and 8 each during the pandemic period of January through May 2021: 46 states/jurisdictions participated, and 4100 of 6100 sampled schools responded. This study uses state-level information on the percentages of students who received in-person vs. remote/hybrid instructional modes. School-reported remote learning enrollment rate is highly correlated with NAEP survey student-reported remote learning experience (during 2021) across grades and subjects ($r = 0.82$ for grade 4 reading, $r = 0.81$ for grade 4 math, $r = 0.79$ for grade 8 reading, $r = 0.83$ for grade 8 math). These strong positive correlations provide supporting evidence for the cross-validation of remote learning measures at the state level.

For socioemotional wellness and physical health measures, the National Survey of Children's Health (NSCH) data are used (available at <http://nschdata.org/>). The

2018/19 surveys involved about 356,052 households screened for age-eligible children, and 59,963 child-level questionnaires were completed. The 2020/21 surveys involved about 199,840 households screened for age-eligible children, and 93,669 child-level questionnaires were completed. Our analysis focuses on school-age children (ages 6 - 17) in the data. In addition, the NSCH data are also used to assess the quality of protective and nurturing environment for child development across family, school, and neighborhood settings (see **Appendix**).

This study also uses two additional sources of data that tap into state government's education policy and funding during the pandemic. First, we use the Education Week survey database of state-level policies on school closure and reopening as of January 22, 2021

(<https://www.edweek.org/leadership/map-coronavirus-and-school-closures-in-2019-2020/2020/03>) to group 50 states into three categories: 1) individual school district decision on reopening (N = 40), 2) statewide school full or partial closure (N = 6), and 3) statewide school return to in-person learning (N = 4). Second, we draw upon the Bureau of Economic Analysis 2020-21 data of state and local expenditures (purchasing power-adjusted) on K-12 education to classify 50 states into three categories: 1) high funding (top-quartile, N = 12), 2) moderate funding (middle-half, N = 26), and 3) low funding (bottom-quartile, N = 12).

3.2. Measures

Dependent variables. We created five gain scores at a state level using academic proficiency from the years 2019 and 2022: 1) Composite academic proficiency (AP) gain scores for 4th and 8th grade reading and math combined (reliability coefficient alpha = 0.94 and 0.93 for 2019 and 2022 respectively), 2) 4th grade reading gain scores, 3) 4th grade math gain scores, 4) 8th grade reading gain scores, and 5) 8th grade math gain scores. We also generated three state-level gain scores using socioemotional wellness (SEW) from the years 2018/19 and 2020/21: 1) Composite SEW gain scores (reliability coefficient alpha = 0.60 and 0.56 for 2018/19 and 2020/21 respectively), 2) school engagement gain scores, and 3) child flourishing gain scores. In a similar vein, we created state-level physical health (PH) gain scores from the years 2018/19 and 2020/21: 1) Composite PH gain scores (reliability coefficient alpha = 0.64 and 0.68 for 2018/19 and 2020/21 respectively), 2) health status gain scores, 3) healthy weight gain scores, 4) physical activity gain scores.

With the same logic, we generated four separate gain scores stratified by racial/ethnic groups (e.g., Asian/Pacific Islanders, Black, Hispanic, White) for each of five AP gain scores, three SEW gain scores, and four PH gain scores (see **Appendix A**). The gain scores were obtained as follows: By subtracting 2019 AP scores from 2022 AP scores, subtracting 2018/19 SEW scores from 2020/21 SEW scores, and subtracting 2018/19 PH scores from 2020/21 PH scores, with higher values indicating an increase in scores for AP, SEW, and PH. Additionally, we created whole-child measures (i.e., a composite measure using geometric means of AP, SEW, and PH) separately for 2018/19 and 2020/21 and whole-child gain

score measures, stratified by racial/ethnic groups (e.g., Asian/Pacific Islanders, Black, Hispanic, and White, with state N 's ranging from 26 [Asian] to 45 [White] for AP and from 20 [Asian] to 45 [White] for SEW and PH). The whole-child gain scores were obtained by subtracting the 2018/19 whole-child measure from the 2020/21 whole-child measure, with higher values indicating an increase in whole-child measure scores.

Focal predictors. We obtained five variables representing remote learning enrollment rates at a state level from NAEP student survey 2022—student-reported percentage of answering “yes” to their experience of remote learning in 2021 at grades 4 and 8 in reading and math respectively. We also created four separate scores stratified by racial/ethnic groups (e.g., Asian, Black, Hispanic, and White) for each of five remote learning enrollment rates, with higher values showing higher remote learning enrollment rates. As a comparison, we obtained school-reported remote learning enrollment rates (corresponding to the student-reported ones above) from the NAEP School Dashboard (refer to <https://ies.ed.gov/schoolsurvey/mss-dashboard/>). We also created a variable denoting protective community at a state level from 2020/21 NSCH data. This measure was created by using six indicators: Percentages of children 1) without adverse childhood experiences, 2) living in a protective family, 3) not being bullied or excluded, 4) being safe at school, 5) living in a supportive neighborhood, and 6) living in a safe neighborhood. Internal consistency reliability for protective community was good (reliability coefficient $\alpha = 0.82$). We also generated a protective community measure each for four racial/ethnic groups (e.g., Asian, Black, Hispanic, and White), with higher values indicating more favorable protective community.

Covariates. Percent students of racial minority (non-White) and poverty (eligible for free and reduced-price lunch) obtained at a state level were used as covariates. Besides, baseline status measures in 2018/19 corresponding to each of the dependent variables were used as covariates—e.g., 2019 AP scores for the AP gain scores (2019 to 2022); 2018/19 SEW scores for the SEW gain scores (2018/19 to 2020/21); 2018/19 PH scores for the PH gain scores (2018/19 to 2020/21); and 2018/19 whole-child measure scores for the whole-child gain scores (2018/19 to 2020/21).

3.3. Analytic Strategies

This study takes multivariate and multigroup approaches to statistical data analysis. All of the above whole-child outcome measures and predictors are stratified by race/ethnicity subgroups and examined together. To explore possible relationship between remote learning, protective community and student outcomes, student-reported remote learning experience data has been aggregated and linked to the NAEP achievement data and NSCH wellness and health data by state. This study employs difference-in-differences method (Murnane & Willett, 2010), comparing pre- vs. post-pandemic differences in whole-child student outcomes among 50 states as stratified by race/ethnicity groups and differentiated by state educa-

tion policies and conditions (school closure/reopening, remote learning, school funding, and protective community). Because all of our measures are in percentage metric (i.e., percentage of students performing at or above desired threshold level), corresponding gain scores can be interpreted as percentage point changes between pre-pandemic and post-pandemic time points. In addition to descriptive analysis, it employs multivariate analysis with multiple group comparisons, paired sample t-test, and multiple regression methods to examine the patterns of changes among racial groups in three interrelated student outcome measures (academic, socioemotional, and physical).

With racial subgroup outcome measures, this study uses multivariate regression methods to examine the pattern and strength of associations between remote learning and protective community environment conditions as independent variables (X) and academic achievement gains, socioemotional wellbeing gains, and physical health gains as dependent variables (Y). To address potential selection biases (non-random assignment to the states) and regression artifacts (regression to the mean), we included demographics and pre-pandemic baseline status scores as covariates in our regression analysis of the gain scores. For the evaluation of statistical significance, we report test results at $\alpha = 0.10, 0.05, 0.01$ and 0.001 levels. For the evaluation of practical significance, group mean differences are reported in Cohen's d metric, and regression coefficients are reported in beta weight metric (i.e., standard deviation unit change for both X and Y).

4. Results

4.1. Trends of Whole-Child Development Losses and Racial Inequalities

Figure 2 shows the trends of academic achievement before and after the pandemic, on average and by race, across all 50 states. On average, there were significant declines among students at grades 4 and 8 in their reading and math academic achievement between 2019 and 2022 (mean gain score $M_{All} = -5.56$ with $p < 0.001$ and Cohen's $d = -2.70$). While all five racial groups reported significant drops in academic achievement, there were also significant variations among the racial groups in the amount of losses ($M_{Asian} = -2.51$; $M_{Black} = -7.44$; $M_{Hispanic} = -7.02$; $M_{White} = -4.53$). On average, Black and Hispanic groups had not only relatively lower pre-pandemic baseline status but also greater declines (negative gains) than Asian and White counterparts over the pandemic period; consequently, racial achievement gaps became larger after the pandemic.

Figure 3 shows the trends of socioemotional wellness across all 50 states. On average, there were significant declines among school-age children at ages 6 - 17 in their social and emotional well-being between 2018/19 and 2020/21 (mean gain score $M_{All} = -5.75$, $p < 0.001$ and $d = -1.90$). There are significant interstate variations in the amount of wellness losses, ranging from -12.59 to -0.30 . On average, Asian, Black and White groups reported relatively higher levels of socioemotional wellness than Hispanic group before the pandemic. However, Asian

and White groups reported a relatively larger drop in wellness than racial minority counterparts over the pandemic period ($M_{\text{Black}} = -2.86$; $M_{\text{Hispanic}} = -3.18$; $M_{\text{Asian}} = -9.43$; $M_{\text{White}} = -7.15$).

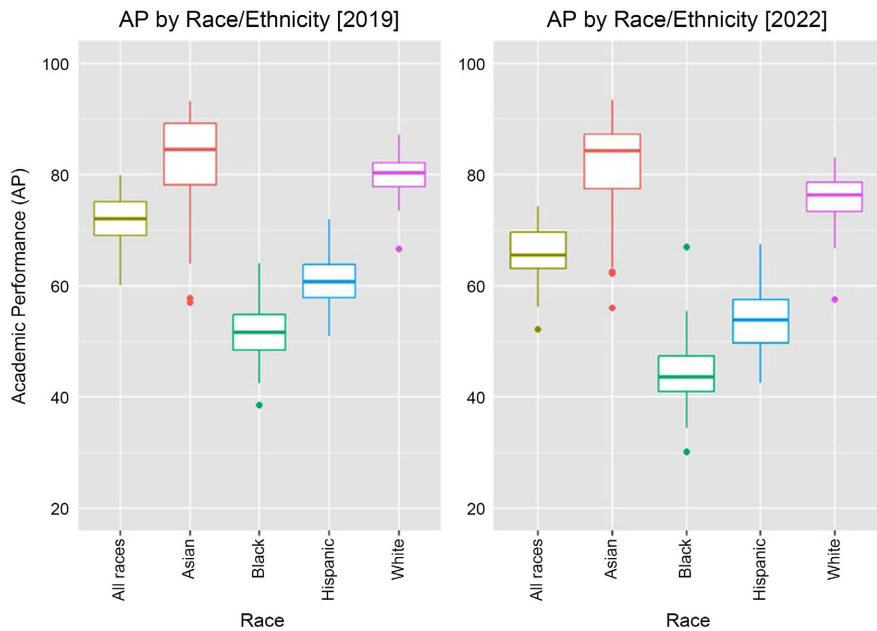


Figure 2. Cross-state variations and trends of academic performance for all and racial subgroups, before and after the pandemic (2019 vs. 2022) among students in grades 4 and 8. Note. All 50 states’ average achievement composite measures are displayed in the above box plots.

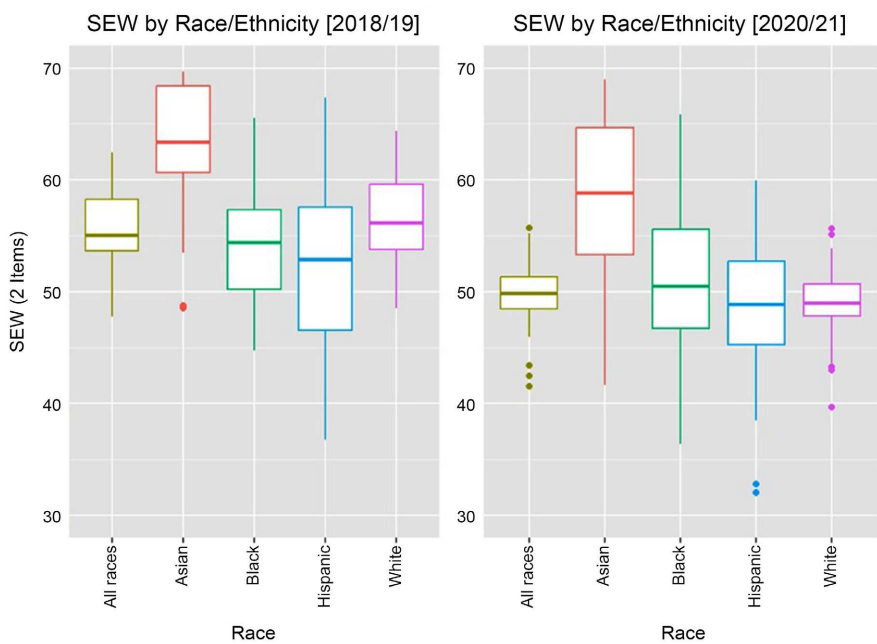


Figure 3. Cross-state variations and trends of socioemotional wellness for all and racial subgroups, before and after the pandemic (2018/19 vs. 2021/22) among students ages 6 - 17. Note. All 50 states’ average wellness composite measures are displayed in the above box plots.

Figure 4 shows the trends of physical health across all 50 states. On average, there were relatively smaller but significant declines among school-age children at ages 6 - 17 in their physical well-being between 2018/19 and 2020/21 (mean gain score $M_{All} = -1.82$ with $p < 0.001$ and $d = -0.87$). There are significant interstate variations in child health gain, ranging from -7.01 to $+3.43$. On average, Asian and White groups reported better health than Black and Hispanic groups before the pandemic, and this pattern of racial inequalities has continued after the pandemic ($M_{Asian} = -3.60$; $M_{Black} = -2.92$; $M_{Hispanic} = -3.03$; $M_{White} = -1.24$).

Table 1 shows whole-child measure gains and their subdomains (i.e., academic proficiency gains, socioemotional wellness gains, and physical health gains) on average and by race/ethnicity. In terms of whole-child measure gain scores, all U.S. states exhibited whole-child measure losses, with some variations. Maryland, Florida, and Delaware had the highest whole-child measure losses (gain scores of -7.91 , -7.72 , and -7.26 respectively), whereas Idaho, Wisconsin, and Alabama had the smallest whole-child measure losses (gain scores of -0.60 , -2.28 , and -2.41 respectively) (see **Appendix B** for state report card details). It also shows the findings of multiple comparisons by racial/ethnic groups, with White student group being used as a reference group. Results indicated that Black ($M = -7.44$, mean difference = -2.91 , $p < 0.001$) and Hispanic ($M = -7.02$, mean difference = -2.49 , $p < 0.001$) students had higher academic proficiency losses than White students ($M = -4.53$, $SD = 1.94$), whereas Asian students ($M = -2.51$, mean difference = 2.02 , $p = 0.014$) had lower academic proficiency losses than White peers. However, opposite results were observed in socioemotional wellness gains. Namely, results showed that Black ($M = -2.86$, mean difference = 4.29 , $p = 0.02$) and Hispanic students ($M = -3.18$, mean difference = 3.97 , $p < 0.001$) exhibited lower socioemotional wellness losses than White students ($M = -7.15$, $SD = 3.43$). In terms of physical health gains, Hispanic ($M = -3.03$, mean difference = -1.79 , $p = 0.08$) had higher physical health losses than White students ($M = -1.24$).

Table 1. Descriptive statistics and t-tests of racial inequalities: whole-child outcomes, remote learning and protective community by race/ethnicity.

	<i>Race/Ethnicity: M (SD)</i>				
	<i>All groups</i>	<i>Asian</i>	<i>Black</i>	<i>Hispanic</i>	<i>White</i>
<i>Whole-child measure gains</i>	-4.51 (1.56)	-7.94 (15.39)	-3.42 (6.15)	-4.44 (3.73)	-4.66 (1.79)
<i>Academic proficiency gains</i>	-5.56 (2.06)	-2.51* (3.86)	-7.44*** (3.60)	-7.02*** (3.53)	-4.53 (1.94)
<i>Socioemotional wellness gains</i>	-5.75 (3.02)	-9.43 (13.60)	-2.86* (9.24)	-3.18*** (7.14)	-7.15 (3.43)
<i>Physical health gains</i>	-1.82 (2.10)	-3.60 (15.48)	-2.92 (9.24)	-3.03^ (6.29)	-1.24 (2.04)
<i>Remote learning enrollment</i>	32.12 (19.45)	48.24*** (21.34)	47.06*** (24.53)	38.32* (22.61)	23.32 (16.74)
<i>Remote learning experience</i>	64.50 (5.04)	69.26 (7.53)	64.60 (4.87)	59.34*** (5.35)	66.02 (6.27)
<i>Remote learning difficulty</i>	41.43 (3.29)	30.42*** (5.57)	43.88*** (3.18)	43.80*** (3.51)	40.99 (3.67)
<i>Protective community</i>	62.08 (2.35)	62.85^ (7.55)	52.11*** (5.50)	56.03*** (3.85)	65.44 (2.25)

Note: ^ $p < 0.10$, * $p < 0.05$, *** $p < 0.001$ (White group as a reference group vs. other racial groups); M (=Mean), SD (=Standard deviation).

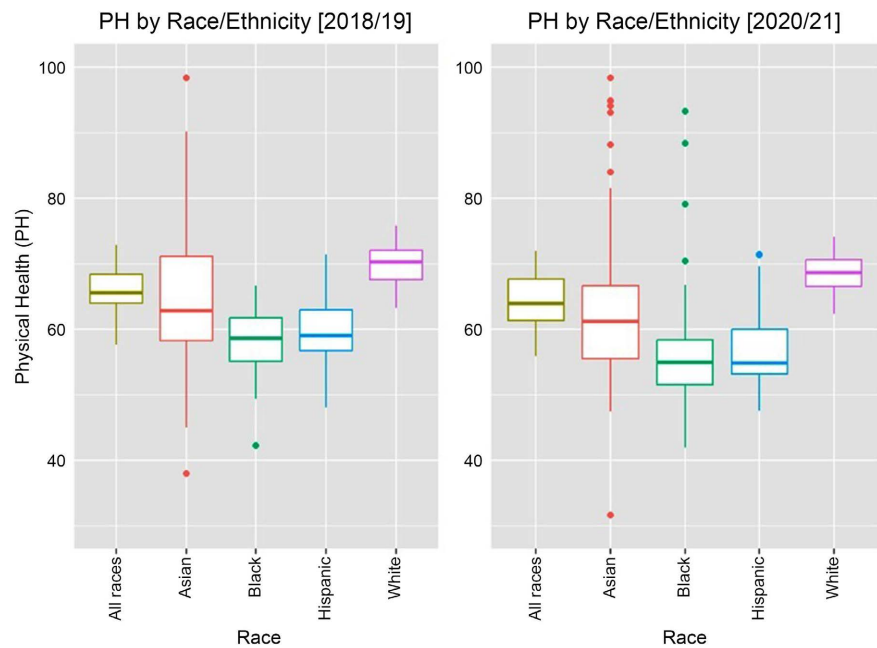


Figure 4. Cross-state variations and trends of physical health for all and racial subgroups, before and after the pandemic (2018/19 vs. 2021/22) among students ages 6 - 17. Note. All 50 states' average health composite measures are displayed in the above box plots.

4.2. Racial Inequalities of Remote Learning and Protective Community

As summarized in **Table 1**, the results of the school-reported remote learning enrollment rates during spring 2021 showed that Asian, Black, and Hispanic students had higher remote learning enrollment rates than White students (mean differences: 24.91, $p < 0.001$ for Asian/PI; 23.74, $p < 0.001$, and 15.00, $p = 0.04$ for Hispanic). In contrast, NAEP 2022 student survey results indicated that there were not as many differences among all racial groups; only Hispanic students had lower remote learning experience than White peers. This difference between school report and student report may be because the NAEP survey timing was much later and by that time of 2022, a large majority of students all experienced remote learning somehow. Even if remote learning participation rates were similar across racial/ethnic groups, the NAEP student survey about remote learning difficulties showed significantly higher challenges among Blacks and Hispanics than Asians and Whites.

There were very wide ranges of student-reported remote instruction among 45 states; the average rate of remote instruction during that pandemic year ranged from 51% (Nebraska) to 73 % (New Jersey). Further, there were significant interstate differences of remote learning enrollment rates due to the variations of states' policies on school closure and reopening. It is worth noting that the relatively higher enrollment in remote leaning was more conspicuous among Asian, Black and Hispanic groups who lived in the states with full or partial school closure compared to states with school reopening order (see **Figure 5**). For example, Black remote learning enrollment rates varied among the states by the status

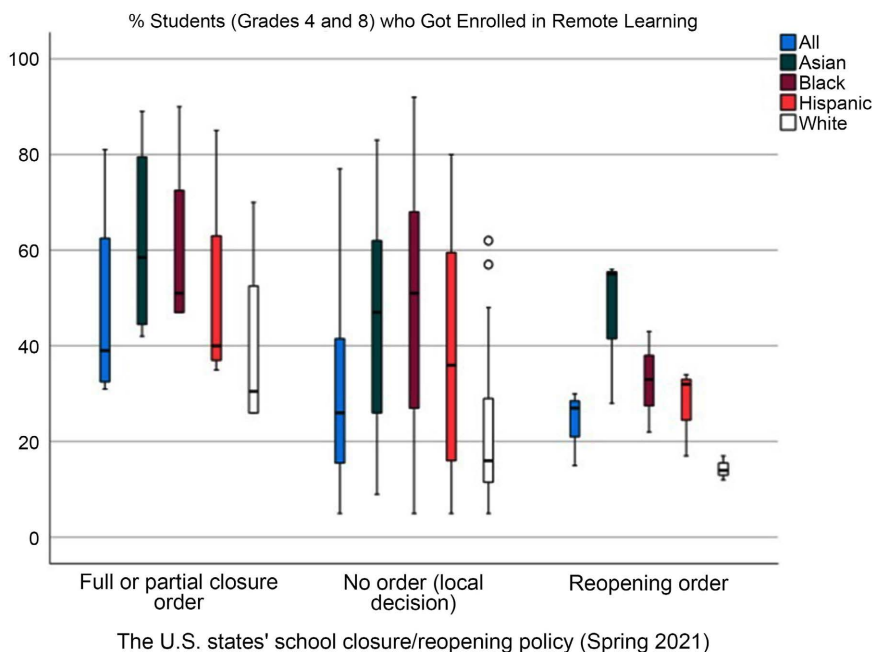


Figure 5. Box plots of remote learning enrollment by the states' school closure/reopening policy among racial/ethnic groups (grades 4 and 8 students during spring 2021).

of their school closure/reopening policy: states with full or partial school closure ($M = 64.00\%$) > states with local school district decision on reopening ($M = 46.78\%$) > states with school reopening order ($M = 32.67\%$). This pattern also holds true across other race/ethnicity groups as well.

In terms of protective community, it was found that Asian, Black, and Hispanic students had significantly lower levels of protective community than White peers (mean differences: 2.59, $p = 0.07$ for Asian/PI; 13.33, $p < 0.001$ for Black; and 9.41, $p < 0.001$ for Hispanic) (Table 1). The percentage of children aged 6 - 17 who live in safe, nurturing and supportive environment in 2021 ranged from 56% (Nevada) to 66% (Minnesota). There were systematic patterns of inequalities in protective community environment along the lines of statewide demographics, particularly racial minority ($r = -0.35$, $p = 0.01$) and poverty ($r = -0.36$, $p = 0.01$); the states with larger concentrations of poor and minority students tended to have less protective family-school-neighborhood environment. Further, it depended partly on the states' K-12 education funding as measured by per capita expenditures for school-age children. Less protective community environment emerged among minority groups who lived in the states with lower funding compared to their counterparts in the states with higher funding (see Figure 6). In other words, there were better protections in their own family and neighborhood among those minority student groups whose schools got more funding support by their states. For example, Black students' protective community environment did vary among the states by the level of their school funding: states with high funding ($M = 55.83\%$) > states with moderate funding ($M = 51.88\%$) > states with low funding ($M = 48.94\%$).

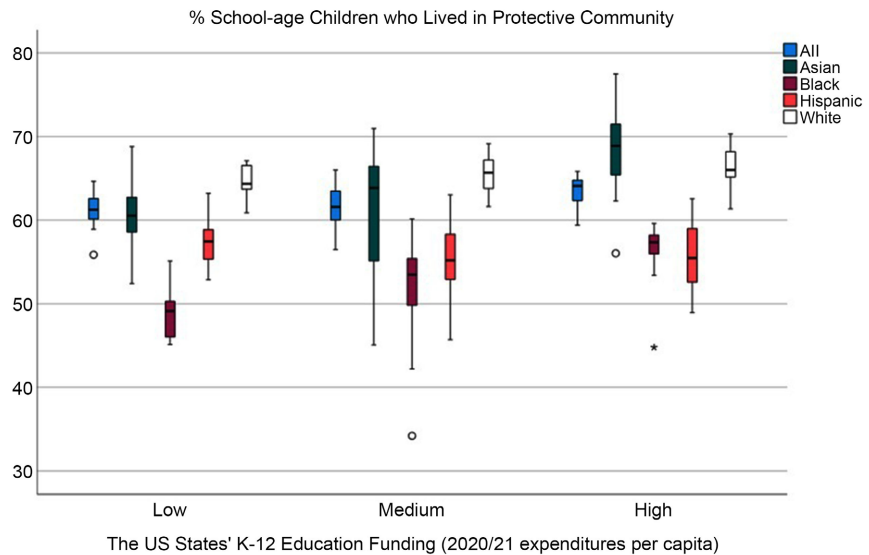


Figure 6. Box plots of protective community environment by the states’ K-12 education funding levels among racial/ethnic groups (school-age children during 2020/21).

4.3. Associations between Remote Learning, Protective Community, and Whole-Child Outcomes

Table 2 shows the cross-state pattern of moderately negative correlation, namely, an inverse relationship between student-reported remote learning experience and whole-child measure gain scores (2020/21-2018/19). After controlling for student demographics and baseline whole-child measure (2018/19), and protective community among the states, the associations between remote learning enrollment and whole-child measure gain scores were significantly negative ($b = -0.47, p < 0.001$ for all groups combined). **Table 2** also shows the cross-state pattern of moderately positive correlation between protective community environment and whole-child measure gain scores (2020/21-2018/19) during the pandemic. After controlling for percent poverty, percent minority, baseline whole-child measure (2018/19), and student-reported remote learning enrollment rates among the states, the associations between protective community environment and whole-child measure gain scores were significantly positive ($b = 0.66, p < 0.001$ for all groups combined).

The results of multiple regression analysis with remote learning and protective community as focal predictors are summarized in **Figure 7** and **Figure 8** respectively, where we reported the average of all groups first and then break it down by race/ethnicity. After controlling for demographics and pre-pandemic baseline status, the negative effects of remote learning continue ($b = -0.42, p = 0.01$ for achievement; $b = -0.23, p = 0.05$ for wellness; $b = -0.24, p = 0.09$ for health). Conversely, the cross-state relationships between protective community and child outcomes were largely positive, but the effect size were more modest and inconsistent ($b = 0.35, p = 0.11$ for academic achievement; $b = 0.44, p = 0.005$ for socioemotional wellness; $b = 0.14, p = 0.45$ for physical health). Among achievement outcomes, protective community had positive effects on grade 4 math ($b =$

0.48, $p = 0.03$). Among wellness outcomes, protective community showed large positive effect on child flourishing ($b = 0.59, p < 0.001$).

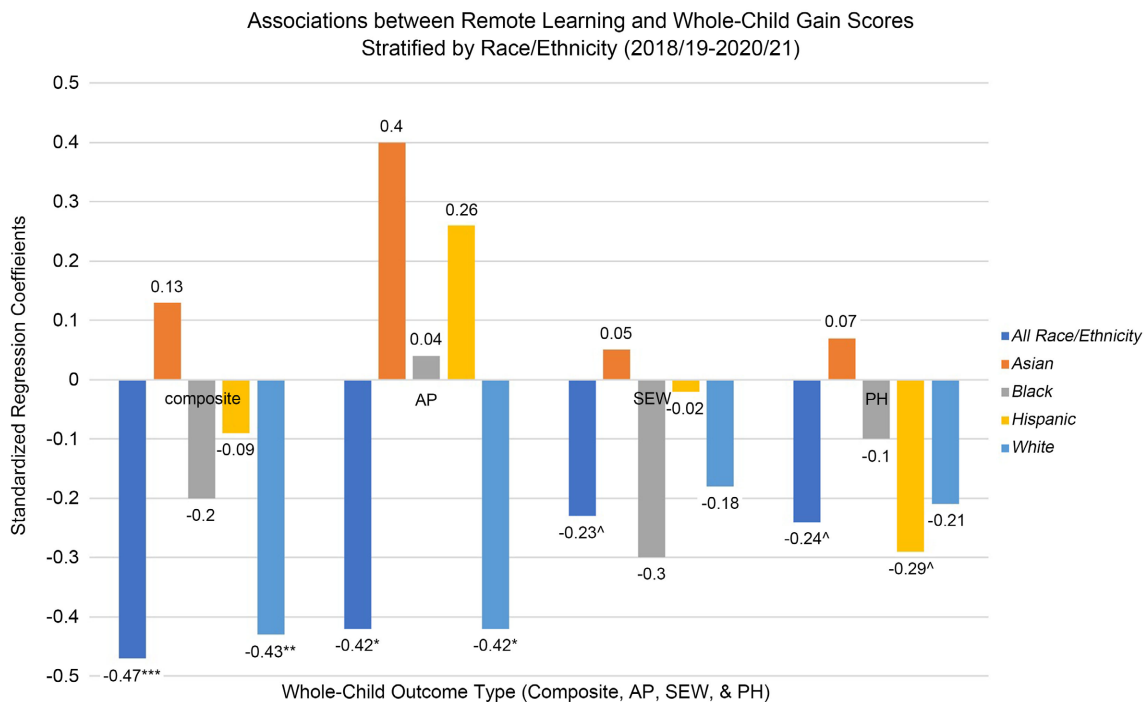


Figure 7. Associations between Remote Learning and Whole-Child Gain Scores Stratified by Race/Ethnicity (2018/19-2020/21). Note: $^{\wedge}p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001$.

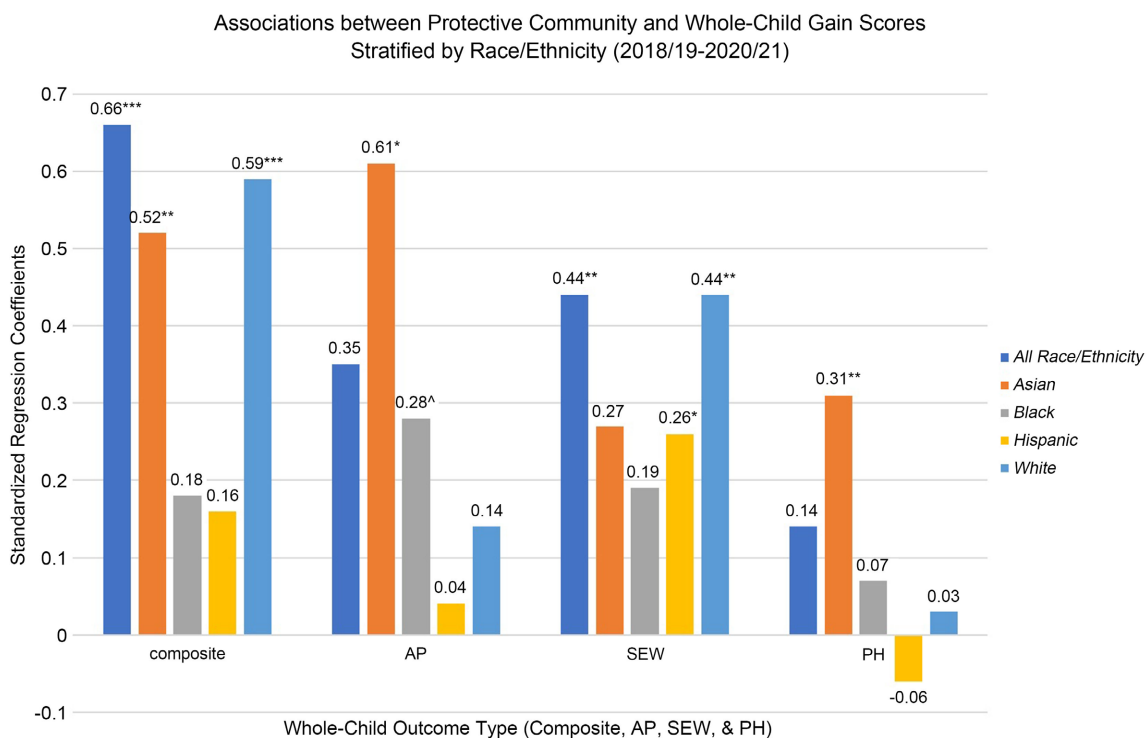


Figure 8. Associations between Protective Community and Whole-Child Gain Scores Stratified by Race/Ethnicity (2018/19-2020/21). Note: $^{\wedge}p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001$.

Table 2. Results for state-level regression of whole-child outcomes on remote learning and protective community by race.

<i>Race /Ethnicity</i>	<i>IVs</i>	<i>Whole-Child Outcomes</i>			
		<i>Composite</i>	<i>Academic Proficiency</i>	<i>Socioemotional Wellness</i>	<i>Physical Health</i>
<i>All</i>	Remote learning	-0.47***	-0.42*	-0.23^	-0.24^
	Protective community	0.66***	0.35	0.44**	0.14
	<i>R</i> ²	<i>0.60</i>	<i>0.21</i>	<i>0.60</i>	<i>0.41</i>
<i>Hispanic</i>	Remote learning	-0.09	0.26	-0.02	-0.29^
	Protective community	0.16	0.04	0.26*	-0.06
	<i>R</i> ²	<i>0.52</i>	<i>0.10</i>	<i>0.71</i>	<i>0.46</i>
<i>White</i>	Remote learning	-0.43**	-0.42*	-0.18	-0.21
	Protective community	0.59***	0.14	0.44**	0.03
	<i>R</i> ²	<i>0.50</i>	<i>0.25</i>	<i>0.57</i>	<i>0.26</i>
<i>Black</i>	Remote learning	-0.20	0.04	-0.30	-0.10
	Protective community	0.18	0.28^	0.19	0.07
	<i>R</i> ²	<i>0.54</i>	<i>0.36</i>	<i>0.65</i>	<i>0.33</i>
<i>Asian</i>	Remote learning	0.13	0.40	0.05	0.07
	Protective community	0.52**	0.61*	0.27	0.31**
	<i>R</i> ²	<i>0.74</i>	<i>0.30</i>	<i>0.70</i>	<i>0.91</i>

Note: ^ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Analyses adjusted for % poverty, % minority, baseline measures corresponding to DV; Values are standardized coefficients.

In terms of *academic proficiency (AP)*, remote learning was negatively associated with overall AP gain scores only for White students ($b = -0.42, p = 0.01$) and the association was not found for Black and Asian students, whereas remote learning was positively associated with grade 8 reading gain scores for Hispanic students ($b = 0.28, p = 0.09$). Protective community was positively associated with the gain scores of overall AP ($b = 0.28, p = 0.09$ for Black, $b = 0.61, p = 0.04$ for Asian), grade 4 reading ($b = 0.31, p = 0.04$ for Black), grade 4 math ($b = 0.33, p = 0.05$ for White, $b = 0.35, p = 0.04$ for Black, $b = 0.58, p = 0.02$ for Asian), and grade 8 math ($b = 0.40, p = 0.01$ for Black, $b = 0.75, p = 0.01$ for Asian). Protective community’s positive relationship with AP gain scores was more pronounced than remote learning’s negative relationship with AP gain scores in the race/ethnicity-stratified adjusted analyses.

As for *socioemotional wellness (SEW)*, remote learning was negatively associated with child flourishing ($b = -0.29, p = 0.01$ for White) and school engagement ($b = -0.39, p = 0.09$ for Black). However, protective community was positively associated with the gain scores of overall SEW ($b = 0.26, p = 0.01$ for Hispanic, $b = 0.44, p = 0.001$ for White), school engagement ($b = 0.22, p = 0.04$ for Hispanic, $b = 0.31, p = 0.03$ for White), and child flourishing ($b = 0.53, p < 0.001$ for White, $b = 0.23, p = 0.08$ for Black). It appears that protective community played a more important role in maintaining socioemotional wellness for His-

panic and White groups than for Black and Asian groups. Remote learning played a detrimental role in child flourishing for White students and in school engagement for Black students.

Regarding physical health (PH), remote learning was negatively associated with overall physical health (PH) ($b = -0.29$, $p = 0.08$ for Hispanic) and good/excellent health status ($b = -0.18$, $p = 0.10$ for White, $b = -0.25$, $p = 0.03$ for Asian). Protective community, on the other hand, was positively associated with overall PH ($b = 0.31$, $p = 0.01$ for Asian), good/excellent health status ($b = 0.20$, $p = 0.06$ for White, $b = 0.25$, $p = 0.10$ for Black, $b = 0.42$, $p = 0.002$ for Asian), and physical activity ($b = 0.38$, $p = 0.03$ for Asian). It seems that the negative role of remote learning was more salient for Hispanic, White, and Asian students than Black peers, whereas the positive role of protective community was noticeable for White, Black, and Asian.

5. Discussion

The COVID-19 pandemic has created one of the unintended consequences—a natural experimental lab for assessing the effects of (involuntary/forced) school lockdown on whole-child outcomes, including student achievement, physical health, and socioemotional wellness. Student learning losses and well-being declines due to school closures and subsequent remote learning in the pandemic have been a great concern for all the stakeholders involved including students, parents, teachers, education researchers, and policy makers. However, this collective traumatic experience had varied consequences for different racial/ethnic groups of students in different states, depending on their state education policies and conditions. Thus, our study makes unique contributions to more holistic and systematic assessments of the pandemic-induced changes in children's developmental outcomes and racial inequalities across all fifty U.S. states. This analytical approach is pioneering as the first cross-state, time-series investigation of whole-child outcomes as stratified by race/ethnicity in relation to both risk and protective factors.

Overall, students in the states with longer school closures and remote learning suffered larger losses of learning and well-being, whereas students in the states with better protective community had smaller losses. The problem is that racial minority student groups were more exposed to remote learning and unprotective community during the pandemic-induced school closure and accountability turnover, when educational and childcare responsibilities passed on from schools and teachers to vulnerable students' parents and caregivers. Particularly, Blacks and Hispanics experienced more remote learning difficulties and less protective community than did Whites. Consequently, it turns out that Black and Hispanic groups' achievement gaps relative to Whites widened after the pandemic, but their well-being gaps rather narrowed. In contrast, Asian group had fewer academic losses, but equal or more well-being losses than White counterpart. Therefore, racial minority groups showed different signs of resilience.

Although all racial groups experienced some common losses across all domains during the pandemic, it became evident that certain racial minority groups suffered more losses due to their disparate exposures and/or responses to risk and protective factors. While racial minorities were more exposed to remote learning than Whites, its negative effects varied by race, being more harmful in academic achievement among Whites and in wellness and health among Asians, Blacks, and Hispanics. While racial minorities had less protective community than Whites, the benefits of protective community were more evident in achievement among Asians and Blacks and in wellness and health among Asians, Hispanics and Whites. The results call for race/culture-responsive, strength-based policy intervention approaches to post-pandemic learning and well-being recovery among diverse racial/ethnic groups.

6. Limitations and Implications

This study has several methodological limitations and caveats. Although we consider potential selection biases, there can be unobserved confounders that might threaten the validity of comparing 50 states' child outcome trends and drawing causal inferences about the attribution of observed between-state differences in child outcome trends to pandemic-induced environmental conditions (i.e., remote learning, protective community). Further study is needed to examine the fallouts of pandemic-induced school closure and accountability turnover accompanied with ineffective remote learning and unprotective community. We also cannot tell whether those observed changes are temporary or not, since there is only one or two years (i.e., 2020/21 or 2022) of post-pandemic data available so far; it is desirable to track subsequent measures for the longer-term trends of post-pandemic changes in student outcomes.

We noted that different racial minority groups have unique profiles (strengths and weaknesses) in different domains: the pattern of racial inequality in socioemotional wellness (e.g., Black and Hispanic groups' relative strength) was different from the racial inequality pattern in academic achievement (e.g., Asian and White groups' relative strength). Therefore, our analyses call for further investigations of different sources of racial inequalities and subgroup-specific strength-based remedies. It should be also noted that American Indian/Alaska Native (AI/AN) groups were not reported in this study due to a low sample size and subsequently arising estimation issues. This study also acknowledges the limitations of secondary survey data analyses which rely on participants' self-reports, including the parents' reports about child wellness and health in the NSCH data and students' reports about remote learning experience and challenge in the NAEP data. Although the survey has inherent limitations of subjectivity and potential biases, we would be able to detect and build on the signs of strength and resilience in the voices of racial/ethnic minority groups.

Lastly, our study has limitations due to its exclusive focus on the U.S. data, but it is important to understand the larger global context of how the U.S. experi-

ences compare to other developed nations during the pandemic period. There are some clues from international data and reports. For example, the PISA 2022 test results among OECD countries revealed that the U.S. had relatively larger losses of math achievement (OECD, 2023). Is this phenomenon attributable to remote learning and unprotective community? According to the UNESCO school closure tracking data as of March 2022, the U.S. recorded the longest duration of school closure among OECD nations with heavy reliance on remote learning (UNESCO, 2022; Vegas, 2020). Further, compared to European countries, the U.S. had relatively higher rates of child poverty (13 percent) due to the dearth of social safety nets (i.e., universal health care, paid family leave, unemployment insurance). Although the U.S. federal government adopted special aid packages to fill these pre-existing safety-net gaps during the pandemic, many of those temporary band-aid support did not last (Miler & Parlapiano, 2023). Taking lessons from our cross-state comparative research in the U.S., subsequent research may extend investigating the associations between these environmental factors and whole-child outcomes at the cross-national level.

7. Conclusion

The pandemic brought unprecedented challenges of whole-child development losses and racial inequity during school closure and accountability turnover. Many vulnerable students fell through the cracks of unprepared remote learning and unprotective community, resulting in significant losses of both learning and well-being. Despite vulnerability, racial minority groups showed different signs of strength and resilience, depending on their states' education policies and conditions. It made us rethink the question of "who should be held accountable to children for what and how?" during the time of such emergencies. The key lesson is that the governments must build the stronger and wider social safety nets for the better protection of vulnerable minoritized children in high-need families and communities; "it takes a village to raise a child". Without cross-sector partnerships and safety nets, school closure and accountability turnover with remote learning would have serious negative impacts on equity, exacerbating pre-existing racial inequalities and achievement/well-being gaps.

Post-pandemic recovery and prevention initiatives require state government leadership and investment in systemic cross-sector partnership. According to the New York Commissioner of Education, one silver lining during the pandemic was breaking the silos across state government agencies (i.e., education, health/mental health, social work, labor) for whole-child support services (Rosa, 2022). For sustaining the pandemic-induced policy changes, further steps may include re-envisioning school accountability system accompanied with adequate funding and capacity-building support (Schneider et al., 2023); school report card reform with integration of academic, socioemotional and physical development standards/measures (Lee, 2016); investment in community school programs for whole-child wraparound services (Maier et al., 2017). In order for the commu-

nity schools strategy to truly be an integral part of the nation's school system, state governments must drive this work; many programs operate at the school level without involvement of district/state governments (McDaniels, 2018). Model community school programs, integrated with state funding and accountability system, include New York state's funding formula for expanding community schools in high-need school districts (New York State Education Department, 2024); Kentucky education reform law requirement of the Family Resource and Youth Services Centers (FRYSC) in high-need schools (Kentucky Department for Family Resource Centers and Volunteer Services, 2024); California Community Schools Partnership Program (CCSPP) and Local Control Funding Formula (LCFF) for high-need schools (California Department of Education, 2024).

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix A. Description of Key Variables and Data Sources

Description of Key Variables and Data Sources

Whole Child: This composite index consists of the following ten indicators, as organized by the subcategories of academic proficiency, socioemotional wellness, and physical health and using their geometric means for the states. Data sources: 2019-22 National Assessment of Educational Progress and 2018-21 National Survey of Child Health (NSCH) data.

Academic Proficiency: This sub-index consists of the following four indicators.

1) Reading proficiency at grade 4 (%): the percentage of grade 4 students whose NAEP reading achievement is at or above basic level.

2) Math proficiency at grade 4 (%): the percentage of grade 4 students whose NAEP math achievement is at or above basic level.

3) Reading proficiency at grade 8 (%): the percentage of grade 8 students whose NAEP reading achievement is at or above basic level.

4) Math proficiency at grade 8 (%): the percentage of grade 8 students whose NAEP math achievement is at or above basic level.

Socioemotional Wellness: This sub-index consists of the following two indicators.

5) Active engagement in school (%): the percentage of children (ages 6 through 17) whose parents report that their child always cares about doing well in school and doing required homework. Response options were always engaged in school, usually engaged in school, or sometimes or never engaged in school.

6) Flourishing in school ages (%): the percentage of children (ages 6 through 17) who met all three flourishing conditions: a) child shows interest and curiosity in learning new things, b) child works to finish tasks they start, and c) child stays calm and in control when faced with a challenge. The “Definitely true” response to the question indicates the child meets the flourishing item criteria.

Physical Health: This sub-index consists of the following three indicators.

7) Excellent or very good health (%): the percentage of children (ages 6 through 17) whose parents report excellent or very good health conditions. This measure combines five response categories (excellent, very good, good, fair, and poor) into two response categories.

8) Healthy weight (%): the percentage of children (ages 10 through 17) whose body mass index (BMI) belongs to the range of healthy weight: 5th percentile to less than the 85th percentile.

9) Regular Physical activity (%): the percentage of children (ages 6 through 17) who exercise, play a sport, or participate in physical activity for at least 60 minutes at least 4 days a week.

Remote Learning Enrollment: the percentages of grade 4 and grade 8 students enrolled in remote learning as opposed to other instructional delivery modes during Jan-May 2021 (i.e., in-person, hybrid, or remote learning mode each). Data source: NAEP school survey 2021.

Remote Learning Experience: the percentages of grade 4 and grade 8 students who experienced remote learning in English language arts (ELA) and math during the COVID-19 pandemic period. This combines grades 4 and 8 student's responses (% yes) about their experience of remote learning during previous year (2021).

Data source: NAEP student survey 2022.

Remote Learning Difficulty: the percentages of grade 4 and grade 8 students who expressed remote learning challenges (a lot more difficult than the normal) in English language arts (ELA) and math during the COVID-19 pandemic period. This combines grades 4 and 8 student's responses (% yes) about their difficulty of remote learning relative to in-person learning.

Data source: NAEP student survey 2022.

Protective Community. This composite index consists of the following six indicators, using their geometric means for the states. Data sources: 2018-21 NSCH data.

1) Child without adverse childhood experiences (%): the percentage of children (ages 6 through 17) with no adverse childhood experiences from the list of nine adverse childhood experiences (ACEs). The 2018-21 NSCH includes nine ACEs items: hard to cover basics like food or housing (ACE1); parent or guardian divorced or separated (ACE3); parent or guardian died (ACE4); parent or guardian served time in jail (ACE5); saw or heard parents or adults slap, hit, kick, or punch one another in the home (ACE6); was a victim of violence or witnessed violence in neighborhood (ACE7); lived with anyone who was mentally ill, suicidal, or severely depressed (ACE8); lived with anyone who had a problem with alcohol or drugs (ACE9); and treated or judged unfairly due to race/ethnicity (ACE 10). A response of "somewhat often" or "very often" to the question ACE1 was coded as an adverse childhood experience. The remaining survey items ACE3-ACE10 are dichotomous "Yes/No" response options.

2) Child living in protective family (%): the percentage of children (ages 6 through 17) who met three or more protective family routines and habits out of five indicators: a) No exposure to household smoking; b) Family shares meals on four or more days per week; c) Children watch TV or spent time on computers less than two hours per day; d) School-age children did all required homework; e) Parents of school-age children participate in their children's events or activities.

3) Child not being bullied or excluded (%): the percentage of children (ages 6 through 17) whose parents do not agree that their child is bullied, picked on, or excluded by other children.

4) Child being safe at school (%): the percentage of children (ages 6 through 17) whose parents definitely agree that their children are safe at school.

5) Child living in supportive neighborhood (%): the percentage of children (ages 6 through 17) who live in supportive neighborhood: a) People in my neighborhood help each other out (K10Q30); b) We watch out for each other's children in this neighborhood (K10Q31); and c) When we encounter difficulties,

we know where to go for help in our community (GOFORHELP). Children are considered to live in supportive neighborhoods if their parents reported “definitely agree” to at least one of the items and “somewhat agree” or “definitely agree” to the other two items.

6) Child living in safe neighborhood (%): the percentage of children (ages 6 through 17) whose parents definitely agree that their children are safe in the neighborhood.

Appendix B. State Report Cards on Whole-Child Development Outcomes before and after Pandemic

State	Before Pandemic (2018-19)			After Pandemic (2020-22)		
	Academic Performance (AP)	Socioemotional Wellness (SW)	Physical Health (PH)	Academic Performance (AP)	Socioemotional Wellness (SW)	Physical Health (PH)
Alabama	62.26	57.80	66.21	60.66	55.23	63.16
Alaska	62.60	52.41	70.46	59.25	41.54	71.21
Arizona	68.76	56.57	64.36	64.06	48.52	59.49
Arkansas	66.81	52.03	63.90	61.26	50.56	62.70
California	66.54	59.26	65.53	61.79	53.13	61.20
Colorado	75.17	55.03	70.17	69.59	46.72	68.20
Connecticut	75.35	57.60	67.78	68.08	54.16	63.92
Delaware	68.46	58.34	62.91	57.23	50.26	60.52
Florida	73.35	62.49	65.69	69.26	51.31	58.69
Georgia	69.55	58.69	65.58	65.69	53.83	63.31
Hawaii	68.27	58.01	65.85	66.40	52.97	62.23
Idaho	75.35	47.87	67.09	70.25	47.57	70.41
Illinois	70.83	59.92	65.30	67.49	50.48	63.23
Indiana	74.50	53.91	63.35	69.03	47.39	66.78
Iowa	73.35	52.70	68.38	70.25	49.16	67.84
Kansas	72.35	55.68	69.95	65.49	49.64	67.78
Kentucky	71.78	54.44	63.56	65.16	50.89	60.53
Louisiana	63.88	52.80	62.81	60.90	51.27	57.63
Maine	73.32	53.99	72.84	65.24	45.95	69.47
Maryland	69.31	59.94	62.99	60.24	47.89	61.05
Massachusetts	79.93	59.84	68.37	73.89	52.00	64.33
Michigan	70.10	53.65	64.94	64.02	49.32	63.94
Minnesota	76.03	58.42	72.11	69.73	49.38	70.20
Mississippi	69.01	53.19	60.87	63.11	52.30	59.24
Missouri	71.76	54.78	64.99	64.82	49.85	65.22
Montana	74.85	53.80	71.55	71.03	48.43	71.36
Nebraska	75.06	58.69	69.01	70.53	55.70	69.07
Nevada	67.76	54.69	57.61	62.21	49.21	57.43
New Hampshire	77.82	52.81	68.16	72.34	47.72	68.12
New Jersey	77.36	61.00	64.32	71.83	54.63	62.26
New Mexico	60.09	55.77	64.85	52.13	51.20	61.24
New York	69.38	61.39	64.13	63.32	53.23	60.24
North Carolina	72.80	53.95	62.40	65.51	49.09	61.56

Continued

North Dakota	75.56	55.95	72.51	70.76	49.40	71.95
Ohio	74.33	55.38	65.43	68.83	49.86	67.29
Oklahoma	69.71	54.59	63.51	59.57	49.94	63.37
Oregon	69.61	48.82	66.67	61.29	43.39	64.19
Pennsylvania	72.84	57.66	66.16	67.29	51.32	66.07
Rhode Island	70.20	59.81	66.64	65.22	51.36	64.48
South Carolina	67.49	61.43	62.20	63.17	49.83	60.04
South Dakota	75.33	54.97	70.50	72.30	51.05	66.16
Tennessee	71.33	57.79	63.49	65.16	49.33	62.18
Texas	69.51	57.36	61.60	65.33	53.73	55.87
Utah	75.64	47.80	68.30	72.37	46.32	65.20
Vermont	75.10	50.93	70.73	68.57	46.21	69.99
Virginia	75.19	54.78	64.91	67.03	50.29	61.84
Washington	72.32	55.04	66.82	67.30	42.45	65.87
West Virginia	65.53	51.72	63.99	56.28	50.71	64.01
Wisconsin	74.31	50.78	68.18	70.77	48.85	66.68
Wyoming	77.57	53.71	71.83	74.31	48.01	71.72
National Average	71.38	55.49	66.14	65.77	49.76	64.28