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ASSESSMENT OF SCHOOL-RELATED COVID-19 CONCERNS AMONG PARENTS OF SCHOOL-AGED CHILDREN – UNITED STATES, JANUARY 2021

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Abstract

COVID-19-related disruptions to K-12 schooling were documented throughout the pandemic, along with parental concerns about the impact of COVID-19 on children's education. This study describes school-related COVID-19 concerns among parents of school-aged children across the United States in January 2021. Cross-sectional data (n=916) were analyzed from parents of children enrolled in public or private K-12 schools through an opt-in internet panel survey. Weighted prevalence estimates were calculated based on the U.S. Census Current Population Survey and differences were examined by race/ethnicity. Analyses were performed using SAS, version 9.4, with a significance level of $p<0.05$. Almost half of parents (46.4%) reported their children received virtual-only learning, 24.0% in-person only learning, and 29.6% combined in-person/virtual learning during fall 2020. School learning mode differed by parental race/ethnicity ($p = 0.01$). Parents reported concerns (somewhat/very concerned) about educational quality (85.2%) and disruption to routines due to virtual learning (70.8%), as well as children contracting COVID-19 at school (82.9%). Parent concerns about children contracting COVID-19 at school differed across racial and ethnic groups ($p = 0.03$), with a higher proportion of non-Hispanic

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Black parents (94.0%; p = 0.003) reporting concerns than non-Hispanic white parents (80.2%). Results document racial and ethnic differences in parental concern about the pandemic's impact on children's school experiences. Intentional monitoring and understanding of parental concerns may help education and public health leaders provide more effective supports for students and families as new school-related emergencies arise.

Keywords

Schools; parental concerns; COVID-19; racial and ethnic differences; educational leadership; emergency preparedness and communication

Introduction

Beginning in March 2020, the COVID-19 pandemic caused disruptions in schools across the U.S., with school closures affecting over 50 million K-12 students nationwide (Zviedrite et al., 2021). For many school districts, closures continued into the 2020-2021 school year, prolonging pandemic disruptions and parental concerns about virtual learning (Oster et al., 2021). For example, a survey fielded in July 2020 found that most parents were highly concerned about the impact of school closures on the quality of their children's education and daily routines (Gilbert et al., 2020). Though these concerns were shared by parents across racial and ethnic groups (Gilbert et al., 2020), by September 2020, non-Hispanic Black and Hispanic students were found to have less access to in-person learning opportunities compared with their non-Hispanic white peers, placing them at greater risk for poor learning and mental health outcomes associated with prolonged virtual learning (Oster et al., 2021). For those tasked with making decisions about school reopening at state and local levels, such concerns had to be weighed alongside those related to COVID-19 transmission in schools.

In the same July 2020 study, Gilbert and colleagues also investigated parental concerns about COVID-19 transmission. Their findings highlighted racial and ethnic differences in concerns about schools' ability to implement COVID-19 prevention measures ahead of the new school year, with Black, Hispanic, American Indian, Alaska Native, multiracial, and parents of other non-Hispanic race or ethnicity reporting significantly higher concerns compared with white parents. Fewer non-Hispanic Black and Hispanic parents agreed that schools should reopen compared with non-Hispanic white parents, and most non-Hispanic Black parents were uncomfortable with schools opening at full capacity in the fall. In contrast, two-thirds of non-Hispanic white parents agreed that the experience of being in school was more important for students, despite ongoing COVID-19 concerns (Gilbert et al., 2020). Given the disproportionate burden of COVID-19 infection on racial and ethnic minority communities at the time the survey was fielded (Azar et al., 2020), it is possible that racial and ethnic minority parents perceived higher risk for COVID-19 infection and related negative health outcomes than non-Hispanic white parents (White et al, 2021; Gilbert et al, 2020).

Taken together, the literature reveals what can be viewed as competing concerns of parents leading up to the start of the 2020-2021 school year — their children experiencing

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COVID-19 transmission at school versus their children experiencing continued virtual instruction that might have a direct detrimental effect on educational outcomes and indirectly affect children's health. Despite significant contextual changes that occurred during the 2020-2021 school year (i.e., the gradual reopening of schools for in-person and hybrid learning; emergence of new COVID-19 variants), the extent to which these concerns evolved over time, and for whom, has yet to be fully explored.

The rapid and ongoing evolution of the COVID-19 pandemic and other school-related emergencies highlights the importance of monitoring and reporting on community concerns, including those of parents of school-aged children. Understanding where concerns converge and differ within communities may help to inform communication and decisionmaking across multiple levels. To support continued understanding of parental concerns at different timepoints during the pandemic, this study builds on existing research to assess the evolution of parental concerns throughout the 2020-2021 school year. Concerns about the impact of COVID-19 on educational quality, disruptions to daily living, and transmission at school are described and discussed, both overall and by parent racial and ethnic groups.

Methods

Data Collection

Data were collected from three online CARAVAN omnibus national surveys conducted among U.S. adults during January 13-17, 2021 by ENGINE Insights (Big Village, 2024), on behalf of Porter Novelli Public Services. Each wave surveyed approximately 1,000 adults and quota sampling was conducted to identify potential opt-in respondents from Cint Exchange (2024). Respondents were informed that their answers were being used for market research and that they could refuse to answer any question; upon survey completion, respondents received cash-equivalent reward points (worth approximately $10) for their participation. Statistical weighting was used during analysis to match the 2019 edition of the Current Population Survey proportions, so the sample represented the U.S. population by sex, age, region, race/ethnicity, and education. Respondents were eligible for this study if they were aged ≥18 years, had not participated in the previous 20 survey administration waves to avoid sampling the same participants for multiple surveys, and had a school-aged child living in the household. While ENGINE Insights is not subject to Centers for Disease Control and Prevention (CDC) Institutional Review Board review, they do adhere to all professional standards and codes of conduct set forth by the Insights Association. This activity was reviewed by the CDC and was conducted consistent with applicable federal law (i.e.,45 C.F.R. part 46; 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d), 5 U.S.C. Sect. 552a, 44 U.S.C. Sect. 3501 et seq).

Instrument

Surveys were administered online in English and included items to measure parental concerns about disruption to daily routines due to virtual school, internet access for virtual schooling, and overall quality of education during the pandemic (Supplement A). Response options were dichotomized into very/somewhat concerned and not very/not at all concerned for each measure, except enough internet access for virtual school (strongly agree/somewhat

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agree and strongly disagree/somewhat agree). Additionally, parents were asked about concerns related to their child(ren) contracting COVID-19 at school and bringing COVID-19 infection home from school during fall 2020. Parental sociodemographic variables included sex, age, race/ethnicity, education, household income, geographical region, and children's grade level and school learning mode (Table 1). Mutually exclusive grade levels were created for statistical analysis (K-4, 5-8, 9-12, and multiple grades [any combination of grades K-4, 5-8, and 9-12]). We created three categories for school learning mode: (1) all children in household attended school in person only; (2) all children in household attended school virtual-only; and (3) household had combined in-person and virtual learning (i.e., one or more children in a mixed in-person and virtual setting; one or more children in virtual-only and one or more children in in-person; and/or a combination of the two).

Statistical Analysis

All analyses were conducted using the statistical analysis system (version 9.4; SAS Institute). Weighted prevalence estimates and 95% confidence intervals (CI) were calculated for overall differences (chi-squared statistics) and by race/ethnicity (chi-squared pairwise comparisons). Statistical tests were considered significant if $p<0.05$.

Results

Among 916 parents with school-aged children living in the household, 50.6% were female (n=430); 59.5% were non-Hispanic white (n=655), 11.3% were non-Hispanic Black (n=83), 23.2% were Hispanic (n=137), and 6.0% were Other non-Hispanic racial groups (including Native American or Alaska Native, Asian, multiracial, and other racial groups [n=41]; see Table 1). Sample demographics closely align with the U.S. population at large, by both race/ethnicity and household income (U.S. Census Bureau, 2020). Approximately one third of parents (30.3%) had children in multiple grade categories (any combination of grades K-4, 5-8, and 9-12); 30.5% had children in kindergarten through grade 4 only; 20.2% had children in grades 5–8 only, and 19.1% had children in grades 9–12 only. Almost half of parents reported all children in their household attended virtual learning only (46.4%); whereas 29.6% of parents had combined in-person and virtual learning in their household, and 24.0% had a child attend in-person-only learning. School learning mode differed by parental race/ethnicity (Table 2). We found significant differences across learning modes of children reported by non-Hispanic Black parents (p=0.003) and Hispanic parents (p=0.0004) compared with non-Hispanic white parents.

Overall, most parents (85.2%) were concerned (very or somewhat) about the quality of their children's education being negatively affected due to the pandemic and disruptions to daily routines due to virtual learning (70.8%) (Table 2). Twelve percent of parents did not have enough internet access for their children to attend virtual only learning. No differences were found between racial and ethnic groups. Overall, concerns about COVID-19 transmission to their child in school were also prevalent among 82.9% of parents and differed across racial and ethnic groups (p=0.03). Specifically, concerns were more prevalent among non-Hispanic Black parents (94.0%, CI: 88.8-99.2, p=0.003) followed by Hispanic/Latino (85.0%, CI: 78.9-91.1, p=0.198), Other racial groups non-Hispanic (81.1%, CI: 68.5-93.6, p=0.889), and

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non-Hispanic white parents (80.1%, CI: 76.8-83.5, ref) (Figure 1). See Online Supplement B for results of pairwise chi squared tests in table format.

Discussion

Administered approximately five months into the 2020-2021 school year, this study provides further evidence of school-related COVID-19 concerns among parents of school-aged children during a time when many schools were reopening for in-person instruction and others continued offering hybrid or virtual learning (Parks et al., 2021). Our findings indicate that as of January 2021, most parents remained concerned about COVID-19 affecting the quality of their children's education and about virtual learning disrupting daily routines. Prevalence of concerns were consistent across racial and ethnic groups and persisted even as an increasing number of schools transitioned operations from virtual to in-person learning between fall 2020 and spring 2021 (Gilbert et al., 2020; Parks et al., 2021). This survey was administered when many U.S. communities faced high levels of transmission and families navigated changing school policies related to COVID-19 exposures, cases, and outbreaks, including temporary school building closures and shifts to virtual learning. These factors coupled with the emergence of COVID-19 variants and lack of vaccine eligibility for school-aged children may have contributed to enduring parental concerns about quality of education and disruption to routines and influenced concerns about COVID-19 transmission in school, even as schools began to reopen for in-person learning (CDC, 2020; Dorn et al., 2020).

Consistent with previous studies reporting on primary student learning modes amidst the pandemic (e.g., Oster et al., 2021; Verlenden et al., 2021), differences were observed in learning mode between children of non-Hispanic Black and Hispanic parents compared with children of non-Hispanic white parents. Non-Hispanic Black and Hispanic parents more frequently reported having children in virtual learning. This suggests that while most parents were concerned about disruptions due to virtual learning, there are demographic differences in who experienced such disruptions and for how long. Research related to racial and ethnic disparities in learning environments during the COVID-19 pandemic points to high levels of community transmission in urban school districts as a potential explanation for increased prevalence of virtual learning among racial and ethnic minority students (Oster et al., 2021). Emerging evidence also suggests that virtual learning can contribute to poorer academic outcomes and worsening mental health for children and families, as well as reduced access to school meal services (Dorn et al., 2020; Oster et al., 2021; Verlenden et al., 2021). Differences in access to in-person learning may worsen educational and health disparities among racial and ethnic minority students in the U.S. (Dorn et al., 2020; White et al., 2021).

Across all groups, the prevalence of parental concerns about their children contracting COVID-19 in school remained high, and in particular, among racial and ethnic minority parents. Non-Hispanic white parents had the lowest prevalence of concern. In prior research, Gilbert et al. (2020) found that racial and ethnic minority parents were more concerned about schools' ability to effectively implement COVID-19 prevention measures than non-Hispanic white parents, which may help explain persisting concerns about school-related COVID-19 transmission and ongoing uncertainty about the safety of in-person

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learning. Further, racial and ethnic minority populations have historically experienced disproportionate illness, hospitalization, and death during public health emergencies (Dee et al., 2011; Rodriguez-Diaz et al., 2017; Azar et al., 2020), which can exacerbate concern and reduce trust that systems (e.g., schools) will adequately protect the health of community members during emergencies (Akintobi et al., 2020). In the context of COVID-19, disproportionate rates of COVID-19 cases, hospitalization, and mortality among racial and ethnic minority populations in the U.S. may contribute to differences in observed concerns, as well as differences in virtual learning (Karaca-Mandic et al, 2021; Oster et al, 2021; White et al., 2021).

Limitations

This study has several limitations. This incentivized opt-in internet panel of English-speaking adults may not fully represent concerns of those with limited English literacy or those without internet access. Sampling bias is also a risk with online panel surveys; parents who opted into this survey may be more active online or have significantly different opinions about COVID-19 than those who did not respond. Data were also self-reported, and responses may be subject to social desirability bias. Administered in January 2021, the responses reflect a period during which the U.S. experienced elevated SARS-CoV-2 cases and vaccine availability was limited (CDC, 2020). Because some families had more than one child living in the household, some parent responses may not reflect variance in concerns by each child's grade or school environment. Further, due to sample size, this study did not adjust for other factors, such as socioeconomic status, urbanicity, or geography, which might also affect parental concerns about COVID-19 and schools.

Implications for Schools

Irrespective of contextual changes that occurred between July 2020 and January 2021, our findings reveal a continuation of parent concerns regarding the impact of COVID-19 on their children's school experiences, as well as racial and ethnic differences in concerns about school safety. Since data were collected for this study, schools have transitioned back to in-person learning while navigating ongoing uncertainty about potential new SARS-COV-2 variants, and vaccines have emerged as a critical strategy to prevent severe disease and hospitalization and reduce transmission. CDC continues to provide resources and strategies that schools can use to reduce the spread of COVID-19 and other infections in school environments (CDC, 2024). As such, identifying sustainable practices for documenting parental attitudes, concerns, and experiences remains critical to inform communication strategies and decisions that can potentially support effective responses to parent concerns and future school-related emergencies for leaders in education and public health alike.

In this study, non-Hispanic Black parents reported heightened concerns about children getting COVID-19 in school. Continuing school practices that facilitate infectious disease prevention, and ensuring schools have adequate resources to do so, can reduce school-related transmission and may foster confidence among parents regarding the safety of school environments (CDC, 2024; REMS, 2022; Dawson et al, 2021; Doyle et al., 2021). Proactive communication from leaders and decision-makers across multiple levels (i.e., school, state,

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and local levels) about the steps being taken to protect the health of students including reducing infectious disease transmission may also boost parent confidence in strategies. Likewise, establishing clear and accessible mechanisms for parents to express concerns and for schools to respond to concerns and communicate with families can facilitate improved trust and engagement (Hoover, Heiger-Bernays, Ojha, & Pennell, 2020; Szilagyi et al., 2021). Such actions are critical for leaders to mitigate mistrust of educational institutions among racial and ethnic minority youth and families (Hochschild & Shen, 2014). Creating digital platforms for parent discussions along with email, social media, school blogs, and mobile apps have been identified as tools to support communication (Beecher & Buzhardt, 2016; Pavlakis, Conry, & del Rosal, 2019). Such strategies have the potential to strengthen school-family partnerships by elevating the concerns and voices of all parents, while also ensuring parents and families with the highest need are prioritized.

Findings from this study revealed that most parents had concerns about the potential impact of the pandemic on their children's education, as well as about COVID-19 transmission at school. Understanding parental concerns can help strengthen the continued efforts of schools to implement and communicate about emergency response measures and potentially foster parent confidence in school-related decision making and leadership (Akintobi et al., 2020; CDC, 2020; REMS, 2022). In developing emergency response plans and communication strategies, school and district leaders may consider leveraging partnerships with trusted community voices (e.g., healthcare providers, religious leaders, parent-teacher organizations) and experts to communicate key messages and engage with diverse communities (Akintobi et al., 2020; REMS, 2022). Further research on best practices for establishing community-informed public health emergency communication strategies in educational settings is warranted. As new infectious diseases emerge and other school-related emergencies arise, intentional monitoring of and response to parental concerns remains important.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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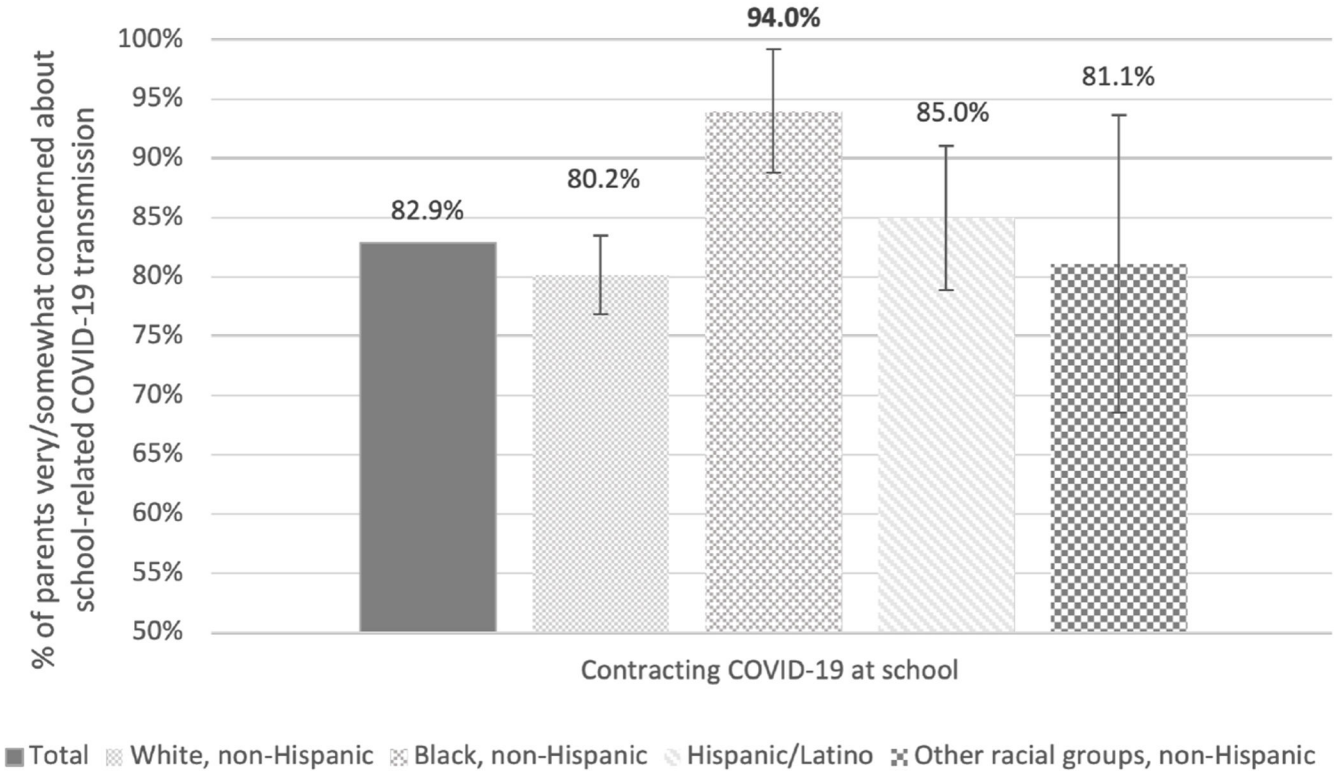


Figure 1. Parents' concerns* about their child(ren) attending school and cntracting COVID-19 by racial and ethnic group†

N = 916

*Respondents were asked about how concerned (very, somewhat, not very, or not at all) they were regarding: Contracting COVID-19 at School: "Your child attending school and as a result contracting COVID-19""

†Pairwise chi squared tests reveal significant differences in parental concerns about their child contracting COVID-19 at school between non-Hispanic Black parents compared with the reference group. Bolded value denotes a p-value < 0.05. Appendix B includes results of pairwise chi squared tests in table format.

§ Reference group

¶ Other racial groups, non-Hispanic includes participants who identified as Native American and Alaska Natives, Asians, multiracial, and other.

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Table 1.

Demographic characteristics of parents with school-aged children and their child(ren)-ENGINE Insights, United States, January 2021

Parent	N (%)	Parent	N (%)
Overall	916 (100.00)		
Sex			
Female	430 (50.6)	Male	486 (49.4)
Age			
18-34	301 (33.8)	35-64	601 (64.1)
65+	14 (2.2)		
Race/Ethnicity			
Black, non-Hispanic	83 (11.3)	White, non-Hispanic	655 (59.5)
Hispanic†	137 (23.2)	Other racial groups, non-Hispanic§	41 (6.0)
Education			
Less than high school	209 (29.6)	Some college or technical school	190 (22.9)
Bachelor's degree or higher	517 (47.5)		
Household Income			
Less than or equal to $34,999	193 (26.8)	$35,000 - $49,999	98 (12.0)
$50,000 - $74,999	132 (14.7)	$75,000 - $99,999	117 (11.9)
Greater or equal to $100,000	376 (34.6)		
U.S. Region¶			
Northeast	170 (16.8)	Midwest	175 (19.5)
South	349 (37.8)	West	222 (25.9)
Child			
Grade Level			
K-4th	287 (30.5)	5th - 8th	185 (20.2)
9th - 12th	159 (19.1)	Multiple grade categories**	285 (30.3)
Mode of School Attendance			
In-person only	227 (24.0)	Virtual only	411 (46.4)
Combined in-person and virtual	278 (29.6)		

*Unweighted N; weighted percentages (%), Statistical weighting was used during analysis to match the 2019 edition of the Current Population Survey proportions, so the sample represented the U.S. population by sex, age, region, race/ethnicity, and education.

†Parents were asked: Do you consider yourself to be of Hispanic/Spanish/Latino descent? [Yes, No]

§Other, non-Hispanic includes participants who identified as Native American or Alaska Native, Asian, multiracial, other.

¶States categorized into four U.S. census regions: Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont; Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin; South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia; West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

**Includes any combination of grades K-4, 5-8, and 9-12.

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Table 2.

Prevalance of parent reported school learning mode for their child(ren) and school-related concerns about COVID-19 by race/ethnicity — ENGINE Insights, United States, 2021

	Total	White, non-Hispanic*		Black, non-Hispanic		Hispanic/Latino		Other racial groups, non-Hispanic†		
	N (%)**	N (%)	CI	N (%)	CI	N (%)	CI	N (%)	CI	Chi Squared§ p-value
School learning mode										
										p=0.01
In-person only	227 (24.0)	179 (28.1)	24.3, 31.9	17 (22.2)	12.7, 31.6	24 (16.2)	10.1, 22.2	7 (17.1)	5.0, 29.2	
Virtual only	411 (46.4)	264 (39.0)	35.0, 43.0	49 (58.7)	47.8, 69.5	74 (56.9)	48.5, 65.3	24 (56.6)	40.5, 72.7	
Combined	278 (29.6)	212 (32.9)	29.0, 36.8	17 (19.2)	10.7, 27.6	39 (26.9)	19.5, 34.3	10 (26.3)	11.7, 40.9	
School-related concerns¶										
Quality of education										p=0.41
Very/somewhat concerned	748 (85.2)	556 (84.0)	80.9, 87.2	74 (89.6)	83.0, 96.2	119 (87.5)	82.0, 93.0	35 (80.1)	66.0, 94.2	
Not very/not at all concerned	132 (14.8)	99 (15.9)	12.8, 19.1	9 (10.4)	3.8, 16.9	18 (12.5)	7.0, 18.0	6 (19.9)	5.8, 34.1	
Disruption to daily routines due to virtual learning										p=0.62
Very/somewhat concerned	652 (70.8)	464 (69.4)	65.5, 73.2	61 (72.8)	62.9, 82.6	101 (74.4)	67.0, 81.8	26 (67.0)	52.1, 81.8	
Not very/not at all concerned	264 (29.2)	191 (30.6)	26.8, 34.5	22 (27.2)	17.4, 37.0	36 (25.6)	18.2, 33.0	15 (33.0)	18.2, 47.9	
Internet access										p=0.71
Not enough for virtual school	116 (12.4)	82 (11.8)	9.2, 14.4	12 (15.5)	7.3, 23.7	19 (13.2)	7.6, 18.9	3 (8.7)	0.0, 18.0	
Enough for virtual school	800 (87.6)	573 (88.1)	85.6, 90.7	71 (84.5)	76.3, 92.7	118 (86.8)	81.1, 92.4	38 (91.3)	82.0, 100.0	
School-related transmission										p=0.03
Child contracting COVID-19 at school										p=0.01
Very/somewhat concerned	758 (82.9)	531 (80.2)	76.8, 83.5	78 (94.0)	88.8, 99.2	116 (85.0)	78.9, 91.1	33 (81.1)	68.5, 93.6	
Not very/not at all concerned	158 (17.1)	124 (19.8)	16.5, 23.2	5 (6.0)	0.8, 11.2	21 (15.0)	8.9, 21.1	8 (18.9)	6.3, 31.5	

Abbreviations: CI = confidence interval; COVID-19 = coronavirus disease 2019.

*Reference group

†Other racial groups, non-Hispanic includes participants who identified as Native American and Alaska Natives, Asians, multiracial, and other.

[§]Chi squared p-value denotes differences present between racial groups. Pairwise chi squared tests reveal significant differences in school learning mode between children of non-Hispanic Black and Hispanic parents compared with the reference group. Bolded values denote a p-value < 0.05. Appendix B includes results of pairwise chi squared tests in table format.

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