



Research Article

Social Determinants of Health Influence on COVID-19 Exposure and Impact among Parents of School-Aged Children: A Longitudinal Report

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Abstract

Objective: The COVID-19 pandemic placed parents of school-aged children at risk for negative psychological outcomes. This study describes how much parents of school aged-children were exposed to and impacted by the COVID-19 pandemic. **Methods:** Recruited via Facebook advertisements, parents completed an online survey about their COVID-19 exposure and impact at two time-points, May 2020-July 2020 (T1) and November 2020-January 2021 (T2). Data from 580 parents in T1 and 232 in T2 were analyzed using descriptive statistics, Pearson correlations, and t-tests. Attrition analyses assessed group differences in participation between timepoints. **Results:** Mean COVID-19 impact increased over time, $t(231) = -2.84, p = .005$, while mean COVID-19 exposure scores remained fairly constant in the first year of the pandemic ($t(df=231) = 1.50, p = 0.07$). However, there were significant decreases in individual items, such as school closures ($t(df=230) = 9.19, p < .001$) and stay-at-home orders ($t(df=230) = 9.74, p < .001$). Demographic and Social Determinants of Health (SDoH), including male sex ($r = -0.12, p = 0.003$), lower income ($r = -0.29, p < 0.001$), less education ($r = -0.21, p = 0.001$), and identifying as Black or African American ($F(8,586) = 3.399, p < 0.01$), were significantly associated with greater exposure and impact. Parents with lower income and less education were less likely to participate in T2. **Discussion:** COVID-19 significantly impacted families during the pandemic and worsened over time. These difficulties were related to several SDoH. Future research should leverage longitudinal studies to investigate the effects of COVID-19 exposure on family functioning, especially for high-risk populations. Understanding the mechanisms of this risk is crucial to the development of supportive interventions for vulnerable groups during times of crisis.

Keywords: Pandemic; Health indicators; Parental psychological Outcomes; Parental wellbeing

Introduction

COVID-19 was declared a pandemic in March 2020 and a nationwide emergency in the United States (US), with about 102 million infections and 1.1 million deaths by January 2023 [1]. While mass quarantine measures helped mitigate the public health crisis, they also had indirect negative effects on socioeconomic status, psychological wellbeing, and family functioning. Stay-at-home orders, business and school closures, and social-distancing practices disrupted family routines. As a result, parents struggled with new working arrangements, parenting challenges, such as childcare, assisting their child with schoolwork or homeschooling, and restrictions on extracurricular activities [2-4]. Parents also worried about family health, finances, job security, and uncertainty about restrictions from local and national authorities [4-6].

Several studies have established the association between COVID-19 disruptions and worsening levels of anxiety, depression, loneliness, and worry [7-10]. Additionally, parents report higher levels of COVID-19 induced stress in comparison to adults without children, and these levels likely worsened with school closures [11,12].

Reports on mental health during the pandemic are mixed. While some studies reflect worsening of mental health concerns in the general population during the pandemic [9,13,14], others suggest improvement or no change in those levels over time [13,15]. Although cross-sectional studies have indicated how COVID-19 disruptions impact the psychological wellbeing of parents, the variations in COVID-19 exposure and impact over time during the pandemic are less understood [6,16]. Hence, our study presents a longitudinal analysis of the direct and indirect effects of COVID-19 among parents of school-aged children. Since COVID-19 impact on parents of school-aged children is further compounded by demographic and social determinants of health (SDoH), such as race [17], ethnicity [17], parental sex [18], family income [19,20], education, etc., we also examined those associations [15].

Methods

This longitudinal study received local institutional review board approval. Eligible parents met the following criteria: (a) English-speaking, (b) had at least one child aged 8-17 years and (c) the child was attending school in-person before the pandemic.

Recruitment

Due to the constraints of the pandemic, participants were initially recruited using a pay per click Facebook advertisement campaign. The advertisements were published on Facebook from May 13 to July 1, 2020, and targeted parents of school-aged children [21,22]. The marketing team utilized a zip-code targeted approach to increase the ethnic and socioeconomic diversity of the sample. An internet-based recruitment method was chosen to adapt to the

challenges of in-person recruitment during the pandemic. Consent was implied by completion of an anonymous online survey. Facebook advertisements were linked to an electronic REDCap survey, which offered participants a chance to win a \$100 gift card for completion of measures. Questions at the beginning of the REDCap survey determined parents' eligibility for participation. REDCap automatically directed eligible parents to complete the T1 survey. Parents completing the T1 survey were given the option to participate in future research. Those who agreed to further share their experiences provided their contact information. Parents digitally completed the initial (T1) survey between May 2020 to July 2020 and reported on their experience from the start of the pandemic. Follow-up (T2) surveys were sent digitally between November 2020 and January 2021 and asked parents to report on their experience since the last survey.

Measures

Demographic characteristics. Data were collected from parents about themselves and their partners, including number of children, sex at birth, race, ethnicity, marital status, geographic location, income, employment status, and occupation. Parents also reported on the participating child's age, grade, sex, race, and ethnicity.

COVID-19 Exposure and Family Impact Scale (CEFIS). This validated caregiver report measure assessed exposure as well as direct and indirect impact of the COVID-19 pandemic on families [23]. Part 1 of CEFIS assesses exposure to COVID-19 and events such as school closures, stay at home orders, changes in employment, and missing family functions using 25 yes/no questions. A total exposure score within the range of 0-25 is generated by adding scores from Part 1 responses. Part 2 consists of 12 items and measures the impact of COVID-19, such as effects on parenting, ability to care for children, and physical well-being. The first ten items, rated on a modified five-point scale (to include a midpoint response for no change), indicated the degree to which COVID-19 affected each area of functioning, while the last two items assessed parental and child distress on a 10-point scale. Higher overall cumulative scores indicated greater exposure to COVID-19 stressors and more negative impact.

Statistical analysis

Data were analyzed using IBM SPSS, version 28 for Windows. Cases with missing data were excluded from analysis. Descriptive statistics were used to describe parents' demographic characteristics and individual CEFIS items. Paired samples t-tests were used to examine changes over the two timepoints (T1 and T2) for parent-reported distress. Gender differences in parents' CEFIS responses were examined using independent samples t-tests. Pearson's correlation coefficients were used to examine the relationship between demographic/social determinants of health (SDoH) variables (number of children, parent sex, race, ethnicity, marital status, socioeconomic status, and education) and CEFIS exposure and impact scores. One-way ANOVAs were used to assess if there were any differences in parents' CEFIS exposure

and impact scores based on their race and geographical locations. The US states were divided into four regions: Northeast, Midwest, South, and West [24]. Parents (n=140) based internationally and who did not report on their geographical locations were excluded from the one-way ANOVA.

Attrition analyses were conducted using Chi-square and/or independent sample t-tests to assess completion of both T1 and T2 surveys. Afterwards, sensitivity analyses assessed group differences between parents who completed measures at both timepoints with those who only completed measures at T1 and any effects on study findings.

Results

Sample characteristics

A total of 912 parents completed the screening questionnaire. Of those, 843 parents met eligibility criteria. Eighty percent (n=673) of eligible parents enrolled in the study and 69% (n=580) completed all T1 surveys and 232 (27%) completed T2 surveys.

Parents' characteristics at T1 and T2 are described in Table 1. At both timepoints, participants were mostly mothers (T1: 94%, n=546; T2: 94%, n=219) and White (T1: 89%, n=517; T2: 92%, n=211). Half of the parents reported an annual income prior to COVID-19 of greater than \$100,000 (T1: 50%, n=287; T2: 47.3%, n=108). About a quarter (T1: 24.8%, n=143; T2: 22.1%, n=51) reported being unemployed. Most families were from the Midwest, likely due to the ad being shared on the institution's Facebook page; however, all 50 states in the United States (US) were represented.

Parent Characteristics	Time 1	Time 2
	<i>n (%)</i>	
Parent sex		
Male	34 (5.9%)	13 (5.6%)
Female	546 (94.1%)	219 (94.4%)
Race		
American Indian/Native American	1 (0.2%)	-
Asian	11 (1.9%)	5 (2.2%)
Black or African American	15 (2.6%)	6 (2.6%)
Native Hawaiian/Pacific Islander	1 (0.2%)	1 (0.4%)
White	517 (89.1%)	211 (91.7%)
Other	31 (5.3%)	7 (3.1%)
Ethnicity		
Hispanic or Latino	42 (7.2%)	14 (6.1%)
Not Hispanic or Latino	532 (91.7%)	215 (93.9%)
Marital status		
Single	38 (6.6%)	9 (3.9%)
Married/Domestic Partnership	491 (84.7%)	201 (86.6%)
Divorced	30 (5.2%)	12 (5.2%)
Separated	3 (0.5%)	3 (1.3%)
Remarried	2 (0.3%)	2 (0.9%)
Widowed	15 (2.6%)	5 (2.2%)
Education level		
Some Elementary	52 (9.1%)	23 (10.0%)
Elementary	7 (1.2%)	4 (1.7%)
Some high school	5 (0.8%)	1 (0.4%)
High school	46 (8.0%)	10 (4.3%)
Some college	85 (14.9%)	34 (14.8%)
College	109 (19.1%)	40 (17.4%)
Graduate/Professional	268 (46.9%)	119 (51.3%)
Employment status		
Working full time (>30 hrs per week)	336 (58.2%)	148 (63.8%)
Part-time (<30 hrs per week)	98 (17.0%)	33 (14.3%)
Unemployed	143 (24.8%)	51 (22.1%)
Partner employment status		
Working full time (>30 hrs per week)	441 (86%)	186 (88.2%)
Part-time (<30 hrs per week)	28 (5.5%)	10 (4.8%)
Unemployed	44 (8.6%)	15 (7.1%)
Family income		
Under \$25,000 per year	39 (6.8%)	12 (5.3%)
\$25,001-\$50,000 per year	68 (11.8%)	22 (9.6%)
\$50,001-\$75,000 per year	74 (12.9%)	31 (13.5%)
\$75,001-\$100,00 per year	106 (18.5%)	43 (18.9%)
\$100,001-\$150,000 per year	166 (28.9%)	62 (27.2%)
\$150,001 or more per year	116 (20.2%)	57 (25.0%)
Child Characteristics	Time 1	Time 2
Child sex		
Male	217 (49.0%)	88 (54.0%)
Female	226 (51.0%)	75 (46.0%)
Child race		
American Indian/Native American	-	-
Asian	11 (2.5%)	4 (2.5%)
Black or African American	11 (2.5%)	4 (2.5%)
Native Hawaiian/Pacific Islander	1 (0.2%)	1 (0.6%)
White	403 (92.0%)	149 (92.5%)
Other	12 (5.5%)	3 (1.9%)
Child ethnicity		
Hispanic or Latino	40 (9.1%)	16 (9.9%)
Not Hispanic or Latino	400 (90.9%)	146 (90.1%)
Mean (SD)		
Number of children	2.35 (1.06)	2.39 (1.10)
Child age	11.84 (2.73)	11.75 (2.67)
Child grade	6.36 (5.84)	6.02 (2.80)

Table 1: Demographic Characteristics.

Attrition Analysis

Due to the attrition rate of 60%, we conducted sensitivity analyses to compare the characteristics of parents who completed the measures at both timepoints versus parents who completed only T1 measures. Chi-squared tests examined group differences for sex, race, ethnicity, marital status, and employment, and no significant associations were observed. There were significant results for the independent sample t-tests examining family income and education, which suggested higher attrition among parents with lower family income ($t(664) = -2.19, p = .03$) and lower education level ($t(661) = -1.96, p = .05$).

The mean overall CEFIS exposure and impact scores were also compared for parents who completed the surveys at both timepoints versus parents who completed only T1 surveys, using independent sample t-tests; however no significant associations were indicated. This was followed by chi-squared tests for the 25 yes/no questions on CEFIS exposure. No significant differences were indicated in responses between the two timepoints. Parents reporting decreased ability to care for their child ($t(497) = -2.16, p = .03$) and to care for older adults ($t(424) = -2.03, p = .04$) at T1 were less likely to participate at T2.

COVID-19 Exposure and Impact

Time 1: The mean CEFIS exposure for parents was 8.0 (SD = 2.51, n = 580), on a scale of 0 to 25. Only 16.4% (n = 95) of participants reported experiencing direct exposure to COVID-19, and an even smaller proportion (1.0%, n = 6) reported COVID-19 related deaths. The CEFIS exposure scores included mostly indirect exposures related to the virus, such as closure of schools and daycares (99.5%, n = 577), stay-at-home orders (96.6%, n = 560), disruption in education (94.3%, n = 547), missing important events (87.1%, n = 505), and inability to visit and care for family members (79.1%, n = 459). Parents reported a mean impact score at T1 of 46.94 (SD = 10.35, n = 580). In particular, parents reported their anxiety levels (M = 4.15), mood (M = 3.97), and their ability to care for older adults (M = 3.88) were impacted by the pandemic.

Time 2: At T2, the mean CEFIS exposure score for parents (n = 232) was 7.81 (SD = 3.31). Parental reports included stay-at-home orders (65.4%), school closures (71.9%), disruption in education (78.0%), missing important events (86.6%), and inability to visit family members (74.1%). However, over one-half (54.7%) of parents reported that either they or a close family member experienced direct exposure to COVID-19 since T1 and 4.3% reported a family member had died from COVID-19. Mean parent reported CEFIS impact score at T2 was 49.29 (SD = 8.66, n = 232) on a scale of 0 to 60. Difficulty caring for older adults (M = 3.84), anxiety levels (M = 4.34), and mood (M = 4.17) continued to be highly impacted, and sleep (M = 3.82) was an additional domain experiencing significant impact.

Longitudinal Analyses. Although the paired samples t-test showed no significant change in overall CEFIS exposure scores from T1 to T2, (t(df = 231) = 1.50, p = .07), there were statistically significant differences in the individual items comprising the CEFIS exposure score. At T2, families reported fewer stay at home orders (t(df = 230) = 9.74, p < .001) fewer school closures (t(df = 230) = 9.19, p < .001), less disruption to their child’s education (t(df = 231) = 5.16, p < .001), and fewer family members with cut work hours (t(df = 230) = 3.43, p < .001) or temporarily stopping work (t(df = 231) = 3.75, p < .001). Parents completing T2 measures also reported significantly more direct exposure to COVID-19 (t(df = 230) = -9.46, p < .001), more family members with COVID-19 symptoms (t(df = 229) = -5.50, p < .001), more family members hospitalized for COVID-19 (t(df = 227) = -3.22, p = .001), more family members treated in an intensive care unit for COVID-19 (t(df = 229) = -2.33, p = .02), and more exposure to COVID-19 related death (t(df = 228) = -2.13, p = .02). Additionally, at T2, parents reported more difficulty getting household essentials (t(df = 231) = -3.07, p = .002), more quarantines due to COVID-19 exposure (t(df = 231) = -4.83, p < .001), more essential workers in the family (t(df = 231) = -3.07, p = .002), and more family members losing their permanent job (t(df = 228) = -2.08, p = .04). There was no statistical difference between T1 and T2 reports of missing important events (t(df = 231) = 1.18, p = .12) or any other exposure indicators. Table 2 shows individual item responses to the exposure questions across both timepoints.

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	Time 1	Time 2
	n (%)	
Stay at home order	560 (96.6%)	151 (65.4%)
School closed	577 (99.5%)	166 (72.2%)
Education disruption	547 (94.3%)	181 (78.4%)
Unable to visit or care for family	459 (79.3%)	172 (74.1%)
Family lived separately for health, safety, or job demands	66 (11.4%)	25 (10.9%)
Someone moved back into home	48 (8.3%)	24 (10.4%)
Had to move out of home	5 (0.9%)	3 (1.3%)
Essential worker in home	378 (65.3%)	169 (72.8%)
Healthcare provider/first responder in family	173 (29.9%)	62 (26.8%)
Difficulty getting food	80 (13.8%)	29 (12.6%)
Difficulty getting medicine	39 (6.7%)	18 (7.8%)
Difficulty getting healthcare	90 (15.6%)	22 (9.5%)
Difficulty getting other essentials	155 (26.8%)	42 (18.3%)
Self-quarantined due to possible exposure	115 (19.8%)	85 (36.6%)
Family income decreased	233 (40.2%)	80 (34.5%)
Family member had to cut back work hours	249 (42.9%)	68 (29.3%)
Family member had to stop working temporarily	156 (26.9%)	33 (14.3%)
Family member lost job permanently	32 (5.5%)	27 (11.6%)
Lost health insurance/benefits	15 (2.6%)	8 (3.5%)
Missed important family events	505 (87.1%)	201 (86.6%)
Family member exposed to COVID-19	95 (16.4%)	127 (54.7%)
Family member had symptoms/diagnosis of COVID-19	69 (11.9%)	71 (30.6%)
Family member hospitalized for COVID-19	14 (2.4%)	19 (8.3%)
Family member in ICU for COVID-19	8 (1.4%)	12 (5.2%)
Family member died from COVID-19	6 (1.0%)	10 (4.3%)

Table 2: CEFIS Exposure Responses.

A paired samples t-test revealed a significant increase in the CEFIS impact score from T1 to T2 ($t(df = 231) = -2.84, p = .005$). At T2, parents reported worsened impact on parenting ability ($t(df = 227) = -3.36, p < .001$), exercise practices ($t(df = 230) = -1.96, p = .026$), and changes in their mood ($t(df = 223) = -2.70, p = .004$), in addition to already high levels of impact on other domains. Changes in CEFIS exposure and CEFIS impact reports over the two timepoints are illustrated in Figures 1 and 2 respectively.

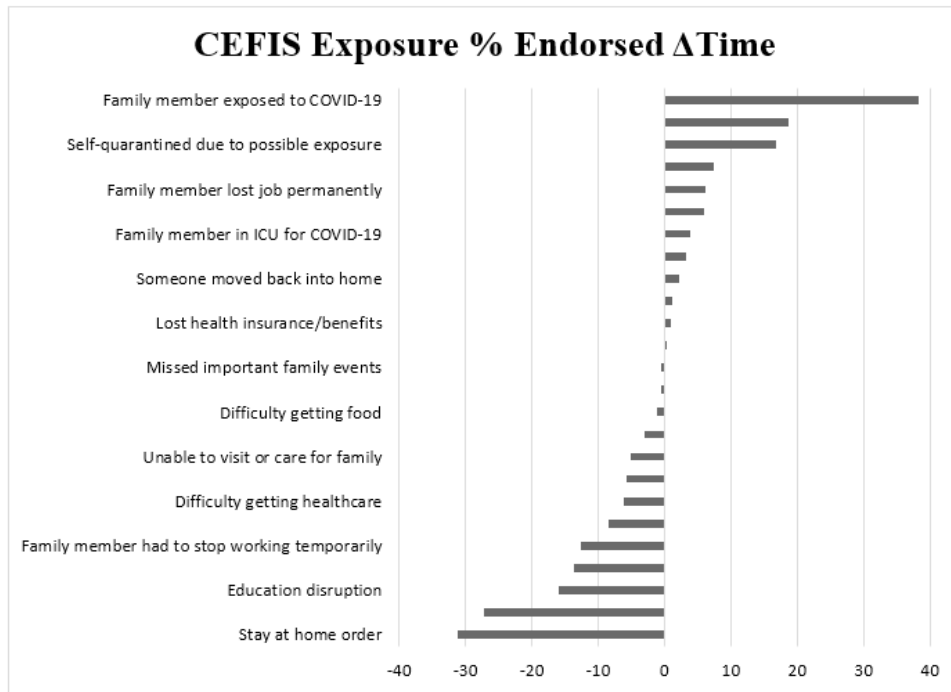


Figure 1: Percent change in CEFIS exposure over time.

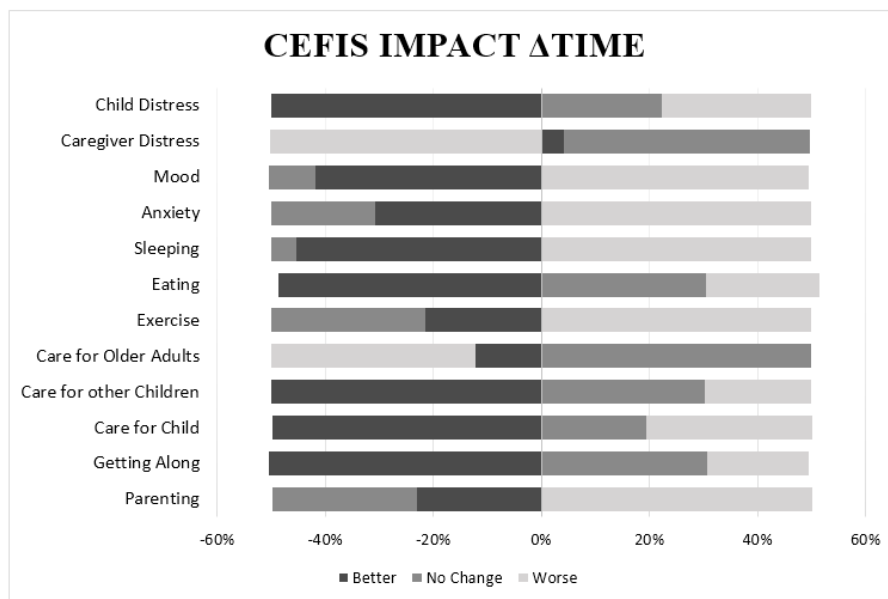


Figure 2: Change in CEFIS impact over time.

SDoH and Demographic Factors Associated with COVID-19 Exposure and Impact

Time 1: Parents reported higher CEFIS exposure scores at T1 when they were male ($r=-0.12$, $p=0.003$), had less education ($r=-0.12$, $p=0.003$), had lower family income ($r=-0.29$, $p<0.001$), were unemployed ($r=0.11$, $p=0.01$), or were single ($r=-0.19$, $p<0.001$). Participants identifying as Hispanic ($r=-0.18$, $p<0.001$) and Black or African American, or “Other” ($F(8,586)=3.399$, $p<0.01$) experienced higher exposure to COVID-19. Higher impact scores were noted when parents reported lower family income ($r=-0.11$, $p=0.009$) and residing in the Northeast region of the United States at T1 ($F(3,470)=5.89$, $p<0.001$). No other SDoH or demographic factors were associated with CEFIS exposure or CEFIS impact scores at T1.

Time 2: Parents reported higher CEFIS exposure scores at T2 when they were less educated ($r = -0.21$, $p = 0.001$), older ($r = -0.16$, $p = 0.018$), had lower family income ($r = -0.21$, $p = 0.001$; $r = -0.23$, $p < 0.001$), or were unemployed at T1 ($r = -0.15$, $p = 0.023$). Parents identifying as Black or African American, or “Other” also experienced greater COVID-19 exposure ($F(7,224) = 2.05$, $p < 0.051$). Although being female was associated with lower CEFIS exposure scores at T1, this association did not persist at T2 ($r = -0.11$, $p = 0.093$). The CEFIS impact score at T2 was higher when parents reported lower T1 and T2 family income, respectively, ($r = -.23$, $p < 0.001$; $r = -0.23$, $p < 0.001$), were unemployed at T1 and T2 ($r = 0.14$, $p = 0.035$; $r = 0.14$, $p = 0.039$), or were single ($r = -0.20$, $p = 0.002$).

Discussion

Evidence is limited on the level of exposure to and impact from COVID-19 experienced by U.S. families over time. Hence, our study longitudinally described COVID-19 exposure and impact among a large sample of US parents in the first year of the pandemic. Exposure to COVID-19, as measured by the CEFIS, was stable over time, but an increase in impact scores was noted. COVID-19 exposure was significantly correlated with several SDoH and demographic factors (i.e., sex, education level, income, employment status, marital status, and race), while impact was significantly correlated with income and employment status. These findings suggest parents and their families experienced significant difficulty during the pandemic that worsened over the course of the pandemic, and that these difficulties were magnified for families with less privilege.

While exposure scores did not differ from T1 to T2, parents reported different levels of exposure for individual items comprising the CEFIS scores at each of the two timepoints. While parents reported fewer stay-at-home orders, school closures, and education disruptions from T1 to T2, they reported increased frequency of direct exposure to COVID-19, COVID-19 related symptoms, hospitalizations, ICU admissions, and deaths. The variations in parents’ responses across the two timepoints reflect the evolving nature of the pandemic [25,26], as well as the changes in exposure and impact of COVID-19 over time, indicating that

research from the COVID-19 pandemic should be interpreted based on the timing of data collection and the context of the pandemic.

Parents have reported higher stress, decreased well-being, and challenges in coping ability longitudinally during the COVID-19 pandemic [27]. In this sample, mean impact scores increased during the pandemic, while the overall exposure scores remained relatively constant across different timepoints. However, parent-reported increases in direct family exposure to COVID-19 suggest that as public health measures eased, such as stay-at-home orders and school closures, coronavirus cases increased, and families may have subsequently felt greater impact from the pandemic. Alternatively, the increased impact over time may be due to the chronic stress imposed by the pandemic. Chronic stress is related to decreased biological and psychological well-being [28,29]. Thus, parents’ experience of increased stress over a prolonged period may have led them to report greater impact at T2. These results contrast with other work concluding positive psychological adjustment over time during the pandemic [30]. However, recognizing the timing of studies during the pandemic is important when interpreting results as the referenced study [30] collected data at the initial implementation of physical distancing protocols and then after their discontinuation, while our study collected data during the first few months of the pandemic in 2020 and then during a spike in reported cases from November 2020-January 2021.

Our findings also highlighted associations of SDoH and other demographic factors with CEFIS scores. First, we found that males in our sample experienced more overall exposure during the pandemic than females, and despite potentially higher risks, females had no significant difference in COVID-19 related impact. Previous literature contrasts with our findings, as females appear to have been at a heightened risk of depressive symptoms [18], particularly during lockdowns; this finding has been attributed to caregiver burden [5] and the motherhood penalty [31]. The motherhood penalty refers to females being considered default caregivers for their children, and thus, their childcare responsibilities limit their career growth [32]. However, females tend to be at lower risk of mortality from COVID-19 [33], practice better hygiene [34], and experience fewer negative economic impacts (e.g., job loss), than males [35].

As with many disparities, there is a growing body of literature indicating that COVID-19 has disproportionately affected those with lower educational status [15,35]. In our sample, those with less education were more likely to report higher exposure scores. However, there was no association between impact scores and educational status, suggesting that the CEFIS may not be sensitive to detecting differences in the impact of the pandemic with respect to education level. In other studies, income and economic status have been associated with COVID-19 exposure and impact [19,36]. Low-wage, essential workers in grocery stores, warehouses, and factories were placed in the challenging position of choosing between their wage and health [20]. Coupled with this, low-wage workers were typically not able to work remotely and, during the

pandemic, were more vulnerable to job loss [20]. Our findings reflect these trends over time, as those with less income and who were unemployed tended to report higher levels of exposure and impact. Further, income was the only variable related to CEFIS impact over time.

Additionally, race and ethnicity have been linked with economic and employment status, as well as COVID-19 related outcomes [17,37,38]. Findings from the present study provide additional support for these findings, as those reporting White race and non-Hispanic ethnicity tended to have lower exposure scores. While sex and ethnicity differences in exposure did not persist across timepoints, this effect may have been due to high attrition in the sample. Despite this attrition, our findings, and others [18,35,36] indicate that the pandemic has exacerbated existing SDoH disparities in the U.S.

Overall, findings from this national sample illustrate families' experiences over the first year of the COVID-19 pandemic. While total exposure scores on the CEFIS remained relatively constant, individual items either increased or decreased significantly between the two different timepoints. Impact scores increased over the first year. These findings showed the impact of the pandemic on families was significant but may depend on the stage of the pandemic when data were collected. Additionally, several demographic factors and SDoH were associated with CEFIS exposure and impact scores. These associations were expected, given previous literature, and highlight the importance of considering vulnerable populations at risk for COVID-19 exposure and impact over time.

Limitations

Although our study adds to literature describing the impacts of the COVID-19 pandemic on parents of school-age children, it is not without limitations. Recruitment was through social media, which offered a convenient and cost-effective sampling method for data collection. However, this method may have influenced the rate of participant dropout/survey attrition [4,39]. Our study introduces both non-response attrition, as eligible parents chose not to take part in the survey, and dropout attrition when respondents did not complete all portions of the surveys [39,40]. Since our sample included a majority of White, female parents from high-income families, our findings present an over-representation of these groups compared to the national U.S. demographics [4]. Study demographic characteristics likely do not reflect the full experiences of families of diverse race, ethnicity, and socio-economic groups [41]. The limited participation from under-represented and minority groups restricted the ability to investigate COVID-19 related health disparities among Black and Hispanic populations [42-44].

Future Directions

While there is evidence on the impact of COVID-19 on U.S. adults, most of those studies are cross-sectional. Hence, our study was one of the first to examine parent reports of COVID-19 exposure and impact longitudinally among a large national sample. While it is important to understand physical health

outcomes during the pandemic, the mental health, emotional, and social impacts, specifically for parents, should not be ignored. Parents reported their families experienced significant challenges as a result of the pandemic. SDoH were relevant in determining a family's experience during the pandemic. There is a need to understand relationship dynamics during the COVID-19 pandemic for targeted interventions [45]. Future research should leverage longitudinal studies focused on the impact of COVID-19 over time to identify risk and protective factors that affect family functioning. Prospective studies should investigate the effects of COVID-19 exposure on family functioning, especially for high-risk populations. Widespread emergencies, like the COVID-19 pandemic, place vulnerable populations at risk of poor outcomes. Understanding the mechanisms of this risk is crucial to the development of supportive interventions for vulnerable groups during times of crisis. Further study will allow us to be better prepared to respond to future emergent crises.

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Conflict of Interest Disclosure

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Prior Presentation of Work

There are no prior presentations of the study data as an abstract or poster or as reprints.

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