

# The Impact of COVID-19, Mental Health Distress, and School-Based Sociocultural Protective Factors among Elementary-Aged Children and their Caregivers

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**Abstract**

Given the individual and systemic stress endured by children and families during the COVID-19 pandemic, research examining culturally responsive school experiences and supports to enhance resilience is critical. This study examined the relationship between caregivers' perceptions of COVID-19 impact, mental health distress among children and caregivers, and school-based sociocultural protective factors, including culturally responsive practices in schools and the relationships between teachers and caregivers, concurrently and longitudinally. Data were collected from caregivers of elementary-aged children at two-time points from March to April 2020 ( $N = 174$ ) and one year later in 2021 ( $N = 114$ ). Regression analyses revealed that COVID-19 impact positively predicted and parent-teacher joining negatively predicted mental health concerns among children and families, concurrently and longitudinally. Furthermore, there was a positive relationship between caregivers' perceptions of teachers' social awareness and justice practices and mental health symptoms for children in 2020. Parent-teacher joining longitudinally moderated the relationship between COVID-19 impact and caregivers' mental health concerns. This study provides implications regarding sociocultural resilience factors that should be considered in schools amidst the COVID-19 pandemic.

**Keywords**

resilience, protective factors, cultural responsiveness, parent-teacher relationships, COVID-19, mental health, elementary school

***Mental health and well-being in COVID-19***

The impact of COVID-19 is widespread on the mental health of children and their caregivers. The stress of COVID-19 exposure, social isolation, changes in routines, familial stressors, contact-restriction procedures, increase in media consumption, and exposure to direct and indirect experiences of infections, hospitalizations, and death have contributed to significant impacts on mental health and well-being, especially among marginalized youth and families who were already facing pre-existing systemic inequities (Imran et al., 2020, Samji et al., 2022). Marginalized children and their parents have experienced social determinants of inequity during COVID-19, including significant increases in mental health concerns, experiences of racism, financial concerns, food insecurity, isolation, technological divide, and unmet intergenerational and familial needs (Yip et al., 2022). Due to the significant impact of the COVID-19 pandemic, it is beneficial to examine school sociocultural factors that may enhance the resilience of children and families.

While some children reported positive changes in their lives due to COVID-19, including increased familial and peer engagement and use of personal coping mechanisms, many children have reported significant increases in mental health concerns, including depressive and anxious symptoms, suicidal ideations, non-suicidal self-injury, and social and behavioral problems (Samji et al., 2022). In addition to COVID-19 stressors, heightened racism in the United States during the COVID era may also distress youth of

color (Luthar et al., 2021). Furthermore, the added burdens of COVID-19 may also accumulate with previous traumas, increasing the risk of mental health difficulties for children with significant trauma histories (Tang et al., 2014). Prior to the pandemic, marginalized children faced substantial educational barriers. The pandemic has exacerbated the barriers regarding equitable educational opportunities, including decreased access to meals, technological disparities, and changes in educational, behavioral, and mental health supports (Office for Civil Rights, 2021). Original challenges of lack of resources, prior trauma, and limited educational opportunities coupled with pandemic-derived stressors may place marginalized children and adolescents at a greater risk for mental health and educational disadvantages following the pandemic (Office for Civil Rights, 2021; Torres-Pagán et al., 2021). Furthermore, children with pre-existing mental and physical health conditions are reportedly more vulnerable to the stressors of COVID-19. Specifically, disruptions to schooling, lack of routine health care, and decreased access to treatment were reported as contributing factors to increased behavioral, emotional, and anxiety symptoms (Imran et al., 2020, Samji et al., 2022).

Children thrive or struggle based on the systems they operate within. Accumulating evidence suggests that parents and caregivers, especially mothers of color and caregivers of younger children, are at increased risk for psychological distress and increased rates of mental health diagnoses requiring treatment (American Psychological Association[APA], 2021; Panchal et al., 2021; Patrick et al., 2020; Russell et al., 2020). Consequently, distressed caregivers have difficulty mobilizing their typical personal resources to optimally support their children's development and well-being (Russell et al., 2020). Recent declines in parental mental health have been directly associated with pandemic-related stressors such as school closures, diminished social support, food insecurity, altered work and parenting roles including additional teaching responsibilities, and changes in children's educational and mental health needs (Brown et al., 2020; Patrick et al., 2020). Promoting caregiver well-being amidst the stressors of COVID-19 is imperative for both children and caregivers (Luthar et al., 2021). It is evident that systemic factors including the role of socio-cultural resilience should be centered when examining and mitigating the effects of the COVID-19 pandemic on marginalized families.

### *Promoting resilience in schools*

Resilience is defined as a strengths-based perspective of positive adaptation amidst short or long-term adversity (Masten, 2014). When understanding resilience, the culture and context must always be considered as it is intertwined within all individuals, systems, and what constitutes positive adaptation for children and families (Masten & Motti-Stefanidi, 2020; Ungar, 2011). The social-ecological perspective integrates resilience into the school ecology by capturing the importance of culturally relevant factors that may enhance positive outcomes amidst adversity (Theron, 2016; Ungar, 2011). Specifically, social-ecological school resilience factors may include close and supportive relationships, expectations for success, safe learning environments, and the provision of equitable and culturally informed teaching and classroom practices (Theron, 2016).

Schools can also enhance coping mechanisms, promote personal identity and agency, provide resources, use problem-solving approaches, and establish routines that integrate traditions and celebrations (Masten & Motti-Stefanidi, 2020, Ungar et al., 2019). In all, schools can promote resilience through both formal (e.g., direct prevention and intervention activities targeting resilience) and informal (e.g., culturally responsive and nurturing school and classroom practices) practices (Theron, 2016).

Research has highlighted various individualized resilience and protective factors for children, including listening to music, praying, re-establishing routines, physical activity, increasing outside time, increasing feelings of optimism, and knowledge and awareness of COVID-19 prevention (Samji et al., 2022). However, teacher and school-facilitated resilience factors that effectively utilize structural and sociocultural lenses are imperative, given that proactive, supportive, and nurturing school environments create opportunities to address systemic inequities and improve coping abilities (Perry, 2002; Swick et al., 2013; Theron, 2016). Schools are uniquely positioned to provide protective support to attenuate the negative mental health impacts of COVID-19. Therefore, examining social-ecological resilience in schools is imperative to help mitigate the psychological impacts of COVID-19 on children and families.

### *Study purpose*

Children and families have experienced significant disruption to their daily lives during the COVID-19 pandemic. Therefore, additional support to boost their resilience during this global crisis is essential. Researchers are beginning to integrate a social-ecological perspective of resilience into the school context, as educational environments play a crucial and consistent role in the lives of children and families (Theron, 2016; Ungar et al., 2019). The social-ecological perspective of resilience in schools stresses the importance of culturally relevant school factors that may enhance positive outcomes amidst adversity, above and beyond children's and families' personal and internal qualities (Theron, 2016; Ungar, 2011; Ungar et al., 2019). Given the disparate impact of COVID-19, schools must effectively engage in culturally responsive education and support, including providing close and supportive relationships, high expectations, safe learning environments, and culturally responsive teaching practices (Theron, 2016) to enhance the resilience of students and families.

This study examined the concurrent and longitudinal links between COVID-19 impact, mental health distress, and school sociocultural protective factors among a sample of elementary-aged children and their caregivers. This study focused on the differential impact during the COVID-19 pandemic, including housing security, finances, physical health, mental health, job security, and education, given the social hierarchy ranking of marginalized families in the United States where privileges, advantages, and resources are differentially allocated. Specifically, this study first examined whether COVID-19 impact was related to higher levels of mental health distress among children and their caregivers. The second aim was to understand whether school sociocultural factors, including caregivers' perceptions of culturally responsive teaching practices, classroom practices that promote social justice and cultural awareness,

and parent-teacher relationships, were associated with lower levels of mental health distress among children and their caregivers. The third aim was to explore whether culturally responsive practices and parent-teacher relationships operated as moderators between personal COVID-19 impact and the mental health of children and caregivers.

## Method

### Participants

Parents and legal guardians ( $N = 174$ ) were recruited at the beginning of the COVID-19 school closures from the end of March to April 2020 (Time 1: T1). Follow-up assessments occurred from March to April 2021 with an attrition rate of 34.5% (Time 2: T2;  $N = 114$ ). Children and caregivers in this study represent various dimensions of diversity, including race/ethnicity according to the U.S. Census categories, generational status, and educational level, and resided in thirty-six states across the United States of America. Caregivers primarily identified as mothers (T1: 54%, T2: 56%), married/partnered (T1: 73%, T2: 77%), and employed full-time (T1: 67%, T2: 65%) with an average of two children (T1:  $M = 1.92$ ,  $SD = .98$ ; T2:  $M = 1.83$ ,  $SD = .82$ ).

Based on caregivers' reports, their oldest child, who is currently attending elementary school, ranged from ages 4 to 13 ( $M = 8.05$ ,  $SD = 2.3$ ) at T1 and ranged from 4 to 14 at T2. Children were identified as majority boys (T1: 53%, T2: 52%) and children of color (i.e., racial identity not indicated as 'White'; T1: 61%, T2: 58%), with some children receiving specialized learning support at school, including gifted/talented programming, special education programming, or 504 accommodations<sup>1</sup> (T1: 32%, T2: 24%). At T1, most schools (99%) recently closed at least one to two weeks prior to data collection. At T2, 51% of children were attending school remotely, 28% were remote and in-person, and 21% were in-person. Demographic characteristics of the caregivers and students are presented in the supplementary materials (Supplemental Tables S1 and S2). Caregivers predominantly identified teachers as female (T1: 90%, T2: 91%), White (T1: 76%, T2: 74%), and monolingual (T1: 95%, T2: 99%) at both time points.

### Measures

Note that full descriptive statistics and summaries of data-model fit for each measure used in this study are provided in the supplemental materials (Supplemental Tables S3 and S4).

**Children's mental health.** The *Strengths and Difficulties Questionnaire-Parent Version* (*SDQ*; Goodman, 2001) is a 25-item questionnaire that assesses caregivers' perceptions of the behavioral and emotional functioning of their child over the past six months. The response format for the *SDQ* is a 3-point Likert scale including (0) *not true*, (1) *somewhat true*, and (2) *certainly true*, with higher scores indicating greater mental health concerns. Estimates of model-based reliability based on the present data were good at both time points and largely consistent with past research (e.g., Goodman, 2001; Bourdon et al., 2005)—ordinal  $\omega$  [95% CI] = (T1) .92 [.91, .94]; (T2) .92 [.90, .94]. Further, fit

indices for a higher-order factor structure of the SDQ items supported good data-model fit and justified the interpretation of the 20-item total composite score.

*Caregivers' mental health.* The *Depression Anxiety Stress Scale-Short Version* (DASS-21; Lovibond & Lovibond, 1995) is a 21-item questionnaire that assesses caregivers' experience of psychological distress, including depressive, anxiety, and stress symptoms within a one-week span. Items are rated on a 4-point Likert scale ranging from (0) *never* to (3) *almost always*, with higher scores indicating more significant mental health distress. The 21 items showed strong data-model fit when specified in a higher-order factor structure in addition to having strong model-based reliability at both time points justifying interpretation of a total composite score used for this study—ordinal  $\omega$  [95% CI] = (T1) .97 [.97, .98]; (T2).98 [.97, .98]. Total scores were calculated based on sums of raw item responses.

*Cultural responsiveness in schools.* The *Culturally Responsive and Inclusive School Scale-Parent (CRISS-Parent)* (Goodwin & Long, 2019) is a 46-item questionnaire that assesses parents' perception of teacher cultural responsiveness in their child's school. Parents or guardians are asked to rate their experiences with their child's teacher during the current school year on a 6-point Likert scale ranging from 1 (*disagree very strongly*) to 6 (*agree very strongly*), with higher scores indicating higher levels of cultural responsiveness. The initial validation and subsequent confirmatory factor analysis of the CRISS-Parent include two factors: diverse teaching practices and social awareness & justice. The diverse teaching practices subscale encompasses teachers' ability to integrate culture into their teaching methods. Example items from this scale include 'uses my child's cultural background to help make learning meaningful' and 'provides multicultural literature'. The social awareness and justice subscale evaluates teachers' awareness of various cultural identities and experiences and their ability to create a safe, fair, and equitable classroom environment. Example items from this scale include 'goes out of their way to make students and families feel accepted and included' and 'assesses student learning in a fair and equitable way'. Prior internal consistency reliabilities for the subscales were both 0.95 and for the full scale was 0.97 and significant positive associations were found with school climate ( $r = .63$ ) and parent involvement in school-based activities ( $r = .19$ ) for the overall measure (Goodwin & Long, 2019). Data gathered as part of the current study indicated adequate data-model fit for unidimensional representations of the 23 SAJ items as well as estimates of model-based reliability at both time points—ordinal  $\omega$  [95% CI] = (T1 & T2).98 [.97, .98]. Evidence of unidimensional data-model fit for the 23 DTP items was mixed but had strong model-based reliability at both time points—ordinal  $\omega$  [95% CI] = (T1 & T2).97 [.96, .98].

*Relationship between parents and teachers.* The *Parent-Teacher Relationship Scale* (PTRS-II; Vickers & Minke, 1995) is a 24-item questionnaire that assesses the quality of parent-teacher relationships with two domains: joining and communication to others. The joining factor assesses parent-teacher affiliation and support, dependability and availability, shared expectations and beliefs, and teachers' communication with parents. The communication to others factor assesses parents' ability to share emotions

and information with the teacher. The response format for the PTRS-II is a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*) with higher scores indicating better parent-teacher relationships. Psychometric properties of the scale from previous research yielded internal consistency estimates of .97 for the joining factor and .86 for the communication to others factor (Vickers & Minke, 1995). Present data indicated mixed evidence for unidimensional data-model fit for the 19 Joining items but strong model-based reliability at both time points—ordinal  $\omega$  [95% CI] = (T1).96 [.95, .97]; (T2).96 [.95, .97]. Evidence of unidimensional data-model fit for the Communication to Others items was similarly mixed and notably weaker than the Joining items but also had good model-based reliability at both time points—ordinal  $\omega$  [95% CI] = (T1).90 [.88, .93]; (T2).91 [.89, .94]. Given the relative psychometric weakness of the Communication to Others items in this dataset, this construct was excluded from the core regression analyses.

*COVID-19 impact.* The original *Personal Disaster Impact* scale (Kuntz et al., 2013) is a seven-item questionnaire that evaluates the level of negative impact on one's personal life following a disaster. Items are rated on a 5-point Likert scale ranging from (1) *to a very little extent* to (5) *to a very large extent*, with higher scores indicating greater personal disaster impact. Given the lack of COVID-19 impact measures, the *Personal Disaster Impact scale* was adapted for the current study. The introductory sentence was modified from 'The 2010 and 2011 Earthquake Events have negatively impacted' to 'The events surrounding the Coronavirus disease (COVID-19) have negatively impacted'. The items were slightly modified, and additional content was added. Results from a series of factor models indicated a 10-item version of the measure was the most theoretically and statistically defensible, showing mixed but acceptable data-model fit when specified in a higher-order structure as well as good model-based reliability at both time points—ordinal  $\omega$  [95% CI] = (T1).90 [.87, .92]; (T2).92 [.90, .94]. These results justified the interpretation of a global composite score calculated by summing responses to the ten retained items, which assessed families' economic, health, parenting, and educational impact during COVID-19 from the caregivers' perspective.

## Procedure

Caregivers were recruited through Prolific, an online platform that connects researchers to subjects who provide more demographic diversity than traditional, in-person non-probability samples, including convenience and snowball sampling (Palan and Schitter, 2018). Following a consent script, the study screened for inclusion criteria, and then eligible subjects completed study demographics and measures. U.S. parents and legal guardians were eligible to participate if they were 18 years or older and had at least one child they lived with 50% or more of the time that attended a brick-and-mortar elementary school. Caregivers with more than one child answered based on their oldest child in elementary school. Attention checks were placed randomly throughout the study survey for quality control. Participants were solicited in March/April 2020 and again one year later (March/April 2021) for follow-up. All compensation was provided via Prolific (equivalent to minimum wage per hour) upon survey completion at each time point.

## Data analytic approach

Data were analyzed with R statistical software (ver. 4.1.2; R Core Team, 2021) using functions from base R and the following packages: tidyverse (ver. 1.3.1; Wickham et al., 2019), psych (ver. 2.1.9; Revelle, 2021), lavaan (ver. 0.6-9; Rosseel, 2012), ufs (ver. 0.4.5; Peters & Gruijters, 2021), jtools (ver. 2.1.0; Long, 2020), and interactions (ver. 1.1.0; Long, 2019). Correlation analyses were conducted using Pearson's  $r$  to estimate the bivariate relationship between the continuous variables of interest. Next, four multiple regression analyses were conducted to estimate concurrent mental health outcomes as measured by the SDQ and DASS-21 at T1 and T2. These models used simultaneous inclusion of each predictor variable (i.e., CRISS-P SAJ & DTP, PTRS Joining, COVID Impact) along with three interaction terms between the CRISS-P and PTRS scores with COVID Impact. Finally, two more multiple regression models were specified similarly but with T2 SDQ and DASS-21 scores respectively regressed onto all T1 predictors. T1 SDQ and DASS-21 scores were also included as predictors in their respective models to control for baseline reports of child and parent distress. Significant interaction terms were evaluated for trends in simple slopes between the predictor and criterion at low, moderate, and high levels of the moderating variable (i.e.,  $-1$   $SD$ , mean,  $+1$   $SD$ ).

## Results

### Preliminary analyses

The Pearson's bivariate correlation analyses for the study variables are presented in Table 1. Welch two-sample  $t$ -tests were conducted to examine the effects of attrition and revealed that average SDQ Total scores for individuals who completed surveys only at T1 ( $M = 10.44$ ,  $SD = 7.26$ ) were significantly greater than those that participated at both time points ( $M = 7.95$ ,  $SD = 6.07$ ) at the  $\alpha = .05$  level— $t(119.26) = -2.33$ ,  $p < .05$ ,  $d = 0.37$ . As reported in Supplemental Table S3, caregivers endorsed mean SDQ scores in the 'close to average' range, and mean DASS-21 scores in the 'normal' range across both time points. Caregivers reported mean CRISS-P DTP scores close to the slightly agreeable range, CRISS-P SAJ scores in the agreeable range, and PTRS Communication to Others and Joining scores in the close to the frequent range. Caregivers endorsed some COVID-19 Impact based on mean scores. The three highest endorsed COVID-19 impact items were 'my children's education' ( $M = 3.24$ ,  $SD = 1.34$ ), 'my mental health' ( $M = 2.89$ ,  $SD = 1.36$ ), and 'my financial situation' ( $M = 2.75$ ,  $SD = 1.43$ ) at T1, and 'my children's education' ( $M = 3.01$ ,  $SD = 1.37$ ), 'my mental health' ( $M = 2.73$ ,  $SD = 1.34$ ), and 'my views of my child(ren)'s school' ( $M = 2.56$ ,  $SD = 1.44$ ) at T2. To examine the mean differences between families of color and White families, additional comparisons with Welch two-sample  $t$ -tests revealed that average PTRS Joining scores for children of color ( $M = 82.92$ ,  $SD = 11.47$ ) were significantly greater than those for White children ( $M = 78.25$ ,  $SD = 15.24$ ) at T1 at the  $\alpha = .05$  level— $t(114.86) = 2.16$ ,  $p < .05$ ,  $d = 0.35$ . However, no other statistically significant differences were found.



**Table 1.** Pearson r correlations among total scores at T1 and T2.

	1	2	3	4	5	6	7	8	9	10	11	12	13
<b>T1</b>													
1. SDQ	–												
2. DASS-21	.53***	–											
3. CRISS-P DTP	-.04	-.02	–										
4. CRISS-P SAJ	-.17	-.11	.77***	–									
5. PTRS Join	-.46***	-.32**	.57***	.78***	–								
6. PTRS Com	-.04	.02	.42***	.48***	.41***	–							
7. COVID Imp	.33**	.45***	-.09	-.19	-.29	-.07	–						
<b>T2</b>													
8. SDQ	.73***	.50***	-.08	-.23	-.36	-.07	.33	–					
9. DASS-21	.40**	.68***	.02	-.10	-.24	.03	.40**	.53***	–				
10. CRISS-P DTP	.14	.20	.45***	.27	.18	.24	.05	.06	.16	–			
11. CRISS-P SAJ	-.04	.07	.43**	.52***	.40***	.34	-.15	-.11	.05	.73***	–		
12. PTRS Join	-.23	-.12	.42**	.60***	.61***	.39**	-.26	-.31	-.15	.45***	.74***	–	
13. PTRS Com	-.02	.19	.33	.31	.24	.55***	-.05	-.05	.18	.51***	.48***	.49***	–
14. COVID Imp	.25	.35*	-.21	-.28	-.28	-.10	.68***	.45***	.49***	<.01	-.16	-.32	-.05

Note: \*p < .05; \*\*p < .01; \*\*\*p < .001. Holm-Bonferroni adjustment for multiple comparisons applied to p-values.

T1 = Time 1; T2 = Time 2; SDQ = Strength and Difficulties Questionnaire; DASS-21 = Depression Anxiety Stress Scale-21; CRISS-P = Culturally Responsive and Inclusive School Scale-Parent; DTP = Diverse Teaching Practices; SAJ = Social Awareness & Justice; PTRS = Parent-Teacher Relationships Scale; Join = Joining; Com = Communication to Others; COVID Imp = COVID-19 Personal Impact.

### Concurrent multiple regression models

Complete results from the four concurrent multiple regression models are presented in Table 2. Results of omnibus  $F$  tests indicated that each model accounted for a statistically significant amount of variance in concurrent SDQ and DASS-21 scores at both T1 and T2. Specifically, adjusted  $R^2$  values indicated that these models accounted for approximately 22–33% of criterion score variance. No interaction terms reached statistical significance.

Considering models estimating concurrent scores on the SDQ, at T1, statistically significant individual model terms included a negative slope for PTRS Joining ( $\beta = -0.76, p < .001$ ) and positive slopes for COVID Impact ( $\beta = 0.18, p < .01$ ) and CRISS-P SAJ ( $\beta = 0.31, p < .05$ ). At T2, a significant negative slope was found for PTRS Joining ( $\beta = -0.33, p < .05$ ), and a significant positive slope was found for COVID Impact ( $\beta = 0.36, p < .001$ ).

Considering models estimating concurrent DASS-21 scores, at T1, statistically significant individual model terms included a negative slope of PTRS Joining ( $\beta = -0.45, p < .001$ ) and a positive slope of COVID Impact ( $\beta = 0.36, p < .001$ ). At T2, the only significant term was a positive slope for COVID Impact ( $\beta = 0.44, p < .001$ ).

### Longitudinal multiple regression models

Complete results from the two longitudinal multiple regression models are presented in Table 3. The Omnibus  $F$  test for the SDQ model was statistically significant, and

**Table 2.** Multiple regression model results estimating concurrent scores on the SDQ and DASS-21 at T1 and T2.

	SDQ		DASS-21	
	T1	T2	T1	T2
Model Term	Est. (SE)	Est. (SE)	Est. (SE)	Est. (SE)
(Intercept)	9.01 (.43)***	9.08 (.56)***	11.76 (.79)***	11.59 (1.07)***
CRISS-P SAJ	0.12 (.05)*	0.04 (.06)	0.18 (.09)	0.08 (.12)
CRISS-P DTP	0.05 (.03)	0.04 (.04)	0.04 (.06)	0.08 (.07)
PTRS Join	-0.38 (.05)***	-0.15 (.06)*	-0.39 (.10)***	-0.13 (.12)
COVID Imp	0.14 (.05)**	0.25 (.06)***	0.49 (.09)***	0.59 (.12)***
SAJ x COVID Imp	0.007 (.006)	0.003 (.006)	-0.002 (.01)	-0.003 (.01)
DTP x COVID Imp	-0.0002 (.003)	-0.0009 (.004)	0.006 (.006)	0.007 (.008)
Join x COVID Imp	-0.004 (.005)	0.0002 (.006)	-0.005 (.009)	0.002 (.01)
$F$ (df)	13.28 (7, 165)***	5.45 (7, 105)***	9.77 (7, 165)***	6.01 (7, 105)***
Adjusted $R^2$	0.33	0.22	0.26	0.24
Residual SE	5.42	5.62	10.00	10.71

Note: \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

T1 = Time 1; T2 = Time 2; SDQ = Strength and Difficulties Questionnaire; DASS-21 = Depression Anxiety Stress Scale-21; CRISS-P = Culturally Responsive and Inclusive School Scale-Parent; DTP = Diverse Teaching Practices; SAJ = Social Awareness & Justice; PTRS = Parent-Teacher Relationships Scale; Join = Joining; COVID Imp = COVID-19 Personal Impact

the adjusted  $R^2$  value indicated that the predictors accounted for approximately 53% of the variance in the criterion scores. Two individual model terms reached statistical significance, including positive slopes for both T1 SDQ ( $\beta=0.69$ ,  $p < .001$ ) and COVID Impact ( $\beta=0.15$ ,  $p < .05$ ). No interaction terms were statistically significant.

Results from the DASS-21 model indicated statistical significance of the overall model, and the predictors accounted for approximately 48% of variance in the criterion based on adjusted  $R^2$ . Three individual model terms reached statistical significance, including positive slopes for T1 DASS-21 scores ( $\beta=0.62$ ,  $p < .001$ ) and COVID Impact ( $\beta=0.21$ ,  $p < .01$ ), as well as a negative slope for the interaction between PTRS Joining and COVID Impact ( $\beta=-0.33$ ,  $p < .05$ ). Probing this interaction revealed that the higher an individual scored on T1 PTRS Joining, the weaker the relation was between T1 COVID Impact and T2 DASS-21 scores. Specifically, while simple slopes for the relation between T1 COVID Impact and T2 DASS-21 scores remained positive and statistically significant for low ( $b=0.73$ ,  $SE=0.24$ ,  $p < .01$ ) and average ( $b=0.29$ ,  $SE=0.12$ ,  $p < .05$ ) levels of T1 PTRS Joining scores, the slope for individuals with high scores was no longer significant ( $b=-0.16$ ,  $SE=0.21$ ,  $p = .46$ ).

## Discussion

Given the novel impact of COVID-19, there is a shortage of research on resilience and protective factors for school-attending children and families. Much of the existing

**Table 3.** Multiple regression model results estimating T2 scores on the SDQ and DASS-21 from T1 predictors.

Model Term	SDQ	DASS-21
	Est. (SE)	Est. (SE)
(Intercept)	9.59 (.45)***	12.34 (.90)***
SDQ	0.73 (.09)***	
DASS-21		0.70 (.09)***
CRISS-P SAJ	0.02 (.06)	0.002 (.11)
CRISS-P DTP	-0.005 (.03)	0.05 (.07)
PTRS Join	-0.02 (.07)	-0.02 (.13)
COVID Imp	0.11 (.06)*	0.31 (.12)**
SAJ x COVID Imp	-0.005 (.007)	0.02 (.01)
DTP x COVID Imp	-0.001 (.004)	0.003 (.01)
Join x COVID Imp	0.008 (.007)	-0.03 (.01)*
<i>F</i> (df)	15.75 (8, 98)***	13.25 (8, 98)***
Adjusted $R^2$	0.53	0.48
Residual SE	4.44	8.90

Note: \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

T1 = Time 1; T2 = Time 2; SDQ = Strength and Difficulties Questionnaire; DASS-21 = Depression Anxiety Stress Scale-21; CRISS-P = Culturally Responsive and Inclusive School Scale-Parent; DTP = Diverse Teaching Practices; SAJ = Social Awareness & Justice; PTRS = Parent-Teacher Relationships Scale; Join = Joining; COVID Imp = COVID-19 Personal Impact

research focuses on individualized resilience factors (Samji et al., 2022). Therefore, this study aimed to examine school sociocultural factors that may promote resilience for children and families amidst the COVID-19 pandemic. Consistent with the first hypothesis, COVID-19 impact emerged as a significant predictor of children and caregivers' mental health, concurrently and longitudinally. The findings are consistent with studies showing that experiences of COVID-19-related stressors were associated with mental health concerns during the earlier stages of the pandemic (American Psychological Association, 2020; Brown et al., 2020; Imran et al., 2020; Russell et al., 2020) and approximately one year later (American Psychological Association, 2021; Samji et al. 2022). Extending these cross-sectional findings, the results of this study also showed that longitudinally, children and caregivers in our sample who experienced higher levels of impact during the beginning of the pandemic were more likely to experience mental health concerns one year into the pandemic, which supports the concerns that many have postulated throughout the pandemic (Imran et al., 2020; Prime et al., 2020; Samji et al., 2022). Overall, COVID-19-related stressors that children and families experience can adversely affect both short- and long-term mental health and wellbeing.

In addition to COVID-19 impact, caregivers' perceptions of greater social justice and awareness in their child's classroom predicted higher mental health concerns for children at the 2020 time point, which is contrary to the second hypothesis. This finding is surprising given the number of theories that hypothesize the importance of culturally responsive practices on the well-being of children due to the deleterious impact of discrimination on mental health (Cholewa et al., 2014; Gay, 2018). Previous research shows that the relationship between ongoing and consistent discrimination in schools and mental health remains high, even when culturally responsive practices are high based on parents' perceptions (Goodwin & Long, 2022). Therefore, social justice and awareness practices may be insufficient in isolation to alleviate mental health concerns, especially when compounded with various systemic inequities amid a global pandemic. Further, the relationship between culturally responsive classroom practices and mental health may be confounded with other factors that were not assessed in this study. In line with the reverse finding in this study, students with higher mental health symptoms may experience higher social awareness and justice practices from their teachers, given that culturally responsive teachers must actively respond to the emotional needs of their students (Cholewa et al., 2014). Overall, it is crucial for future research to examine further the relationship between culturally responsive practices and mental health in schools.

Supportive of the second hypothesis, parent-teacher joining negatively predicted mental health symptoms concurrently for both children and caregivers at the 2020 time point and for children at the 2021 time point. As already defined, the joining aspect of parent-teacher relationships is the degree to which parents and teachers are interpersonally connected, including supportiveness, dependability, and availability when problems need to be solved, and shared expectations and beliefs about each other and the child (Vickers & Minke, 1995), which are factors promoted in the social-ecological theory of resilience (Theron, 2016; Ungar, 2011). Parents and teachers reported increased empathy, patience, and awareness of each other's roles during the pandemic, despite inconsistent direct interactions (Stelmach, 2021). The pandemic has re-sharpened our

focus on understanding the importance of parent-teacher relationship building, clear expectations, and innovative methods of connection given school closures, and the overlapping roles of parents and teachers, which may contribute to decreased stress and anxiety for caregivers. Furthermore, safe and supportive relationships between caregivers and teachers both directly and indirectly are related to increases in positive student outcomes (Song et al., 2013).

Partially consistent with the third hypothesis, the findings also suggest that parent-teacher joining could serve as a buffer against the negative relationship between COVID-19 impact and parental mental health symptoms. Feeling connected and ‘on the same page’ with their child’s teacher may act in ways that protect caregivers from the long-term negative mental health impacts of COVID-19-related stressors (Giannotti et al., 2022). In support, recent research indicates that parent-teacher relationships might be similar to co-parenting in that caregivers and teachers work together in their roles to co-care for children (Freisthler et al., 2021)— a form of support that might release the burden caregivers experience during the pandemic (Sosa Diaz, 2021). Further, assessing and intervening in parental mental health and basic needs during COVID-19 is imperative for enhancing the resilience of children (Luthar et al., 2021). In sum, perceived support, trust, dependability, and shared expectations among adults working together to care for children serve as a crucial cultural protective factor for the mental health outcomes of caregivers during the COVID-19 pandemic, especially for caregivers enduring significant COVID-19 impact.

### *Limitations and future directions*

This study enhances the knowledge base of social-ecological resilience factors on the mental health outcomes of children and their caregivers but is not without limitations. First, the study sample is characterized by individuals with internet access who chose to complete the survey. Therefore, it is possible that this study captured information from caregivers with greater resources and time. Second, the sample size of this study precluded the examination of the differential impact of the school-based resilience factors across varying cultural groups, as well as the impact of school experiences. Therefore, further investigation with a larger sample size to examine cultural differences, school composition, and the relationship of school-based resilience factors during in-person, hybrid, and remote learning is imperative. Third, the current study relied solely on caregivers’ ratings, a unique and vital perspective not usually assessed in school-based research. However, future research should utilize multi-informant data to minimize the threat of common-method bias. Fourth, the data were restricted to two-time points, despite the preferred longitudinal collection of greater than two-time points (Rogosa et al., 1982). However, the authors captured meaningful findings from the beginning of the pandemic to one year later. Future research should investigate across more than two-time points. Finally, this study did not utilize a traditional measure of resilience. Given the aim of examining school-based resilience factors, the authors believe that aspects of social-ecological resilience in schools found in the literature were captured across the varying measures.

## Conclusion

Children and families experiencing more significant personal impact during the COVID-19 pandemic may be susceptible to more significant short-term and long-term mental health concerns. The interpersonal connection between parents and teachers may serve as a direct and buffering school sociocultural resilience factor on children's and caregivers' mental health and well-being amid the COVID-19 pandemic. Marginalized children and families experience more significant concerns of systemic, familial, and community stressors during the COVID-19 pandemic, which requires social-ecological resilience in schools. The National Association of School Psychologists (2020) provides suggestions and resources for equitable school support, including consultation, collaboration, policy, and culturally responsive practices during and after COVID-19. Schools must recognize the varying needs of families' cultures, historical marginalization, and strength-based preferences of the communities they serve. School psychologists can serve as liaisons to support parent-teacher communication by fostering two-way communication that includes ongoing trust, sensitivity, support, availability, cultural responsiveness, and equity between parents and teachers (National Association of School Psychologists, 2019). Schools should consider leveraging COVID-19 funding to assist families with their basic needs, develop plans for efficiently connecting and communicating with family members, and collaborate with families, teachers, community leaders, and community agencies to enhance socio-cultural resilience within schools.


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## Supplemental material

Supplemental material for this article is available online.

## Note

1. Section 504 of the Rehabilitation Act is a civil rights law that requires federally funded United States schools to provide accommodations to persons with disabilities to allow equal and beneficial access within the educational environment.

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