

# Rural parent and elementary school student resilience to COVID-19: Disability status and parental predictors of change

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## Abstract

Little is known about how the COVID-19 pandemic relates to child and parent functioning in a rural population. The present study investigated how disability status and parent factors related to resilience in a rural population before and after the shift to remote instruction. Parents of elementary-aged children in a rural area of the U.S. completed an online questionnaire, rating their own functioning and their child's academic, cognitive, and socioemotional functioning (1) retrospectively thinking back to a month before the pandemic, and (2) at the time of the survey, approximately four months after the onset of pandemic changes. Parents of children with disabilities perceived stronger child resilience through the pandemic transition than parents of children without disabilities. Additionally, parents who better maintained their work-life balance and support through the pandemic transition reported stronger resilience in their children. These

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results highlight the importance of supporting all children and parents during difficult transitions (e.g., providing additional resources so that parents can maintain similar levels of balance and support through the transition), including those students who have experienced *less* adversity pre-transition.

### **Keywords**

COVID-19, pandemic, resilience, disability, parenting, rural, elementary

One of the ways in which school psychologists help support student success is by promoting positive development in children who face adverse situations. Knowledge of resilience, or ‘the capacity of a dynamic system to withstand or recover from significant challenges that threaten its stability, viability, or development’ (Masten, 2011, p. 494), is therefore critical for school psychologists’ support of children. A multisystemic perspective (e.g., Masten, 2021; Masten et al., 2021) is one framework for understanding resilience. This multisystem perspective suggests that multiple levels (e.g., individual, family, school, community) and the interactions between these levels function within a child’s life as protective factors for resilience. Just as importantly, optimal integration across these systems allows for more effective interventions that will promote resilience.

A well-researched area of protective factors for resilience involves individual differences or vulnerabilities (Masten, 2007; Masten, 2018). For example, students who display more typical cognitive development, average IQ, or executive functioning capacities (e.g., self-regulation, response inhibition, effortful control of attention, lower neuroticism) are widely reported to respond with resilience to adversity (e.g., Garmezy, 1985; Luthar, 2006; Masten, 2014). By contrast, students who demonstrate individual vulnerabilities in these areas (e.g., disabilities related to cognitive functioning, neurological or executive functioning, or emotional regulation) are more likely to struggle when faced with adversity. For example, previous scholars have presented evidence that children with disabilities (a variety of disabilities, including those listed above as well as physical disabilities) are at higher risk physically, psychologically, and educationally after an adverse event (e.g., Boon et al., 2011; Christ & Christ, 2006; Peek & Stough, 2010).

Previous research has also highlighted adult familial support as one of the strongest elements for promoting the resilience of children challenged by individual and other vulnerabilities (Ashton et al., 2021; Luthar et al., 2020). In particular, the quality of the adult-child relationship is important for promoting both resilience (Luthar et al., 2020) and positive adult-child interactions (Masten et al., 2021). Numerous models of risk and resilience have discussed the relevance of parent-child closeness and parenting skills in managing children’s progress (e.g., Gartland et al., 2017; Masten & Motti-Stefanidi, 2020). In particular, warm parenting is key to children’s resilience (e.g., Masten, 2015; Masten & Motti-Stefanidi, 2020). Studies on resilience, studies on interventions to promote resilience, and meta-analyses all agree that these family protections are one of the most crucial protective factors for resilience when children experience adversity

(e.g., Masten, 2014; Sandler et al., 2011). Only recently (e.g., Masten, 2018) has research linked the systems of parental and family resilience using a multisystem framework.

### *The COVID-19 pandemic*

The COVID-19 pandemic has introduced change and challenges to all children and families. In fact, the pandemic is by definition a crisis: ‘an event that is perceived to be (a) extremely negative, (b) uncontrollable, and (c) unpredictable’ (Brock et al., 2016, p. 15). Since the pandemic began in early 2020, researchers projected that school closures would negatively impact children’s academic functioning (Kuhfeld et al., 2020). Research from the Netherlands supported this prediction, with children who were learning from home during the pandemic experiencing learning loss (as measured by student performance on standardized math, spelling, and reading assessments from 2017–2020; Engzell et al., 2021). In this study, students from less-educated homes were particularly likely to suffer learning loss. Likewise, researchers presented conceptual frameworks explaining the risks to children’s social/emotional well-being (Prime et al., 2020), with subsequent research demonstrating declines in student mental health during the pandemic (de Miranda et al., 2020; Gamonal-Limcaoco et al., 2021; Golberstein et al., 2020; Moore et al., 2020; Xie et al., 2020).

Nonetheless, the effects of the pandemic have likely not affected all groups equally. Noltemeyer (2014) suggests that children with poorer functioning before a stressor occurs are particularly affected by the stressor. Struggles for children with disabilities may therefore be particularly pronounced under stress caused by the pandemic. In support of this theory, recent research indicates that the impact of COVID-19 challenges has been exacerbated for children with special education needs (Brandenburg et al., 2020; Tso et al., 2020).

The pandemic also disrupted parenting (Briesch et al., 2021; Gregus et al., 2021; Menter et al., 2021). With the shift to remote instruction, parents needed to juggle their work and home responsibilities without many pre-pandemic structural supports. In response to these shifts, parents reported several stressors related to their children’s remote instruction, including lack of time and difficulty communicating with teachers and administration (Briesch et al., 2021). These disruptions to parenting are critical; as previously discussed, parenting factors can be protective for child resilience. Menter et al. (2021) found that parenting practices have changed during the pandemic. Specifically, parents of younger children with oppositional or anxiety difficulties modified both their limit-setting and mindful parenting practices (Menter et al., 2021). Importantly, inconsistent parental discipline exacerbated the negative child outcomes related to the pandemic (Gregus et al., 2021). For parents of children with disabilities (particularly parents of autistic children), the pandemic resulted in poorer parental coping skills (Tokatly Latzer et al., 2021) and parenting distress and burden, including dysfunctional parent-child interactions (Wang et al., 2021b).

Promoting resilience is especially important due to the unique challenges that the pandemic brings for children. Unfortunately, very little research related to COVID-19 has used a resilience-based approach (Burke & Arslan, 2020). For example, researchers

have theorized that close family relations can promote mental health resilience in response to the COVID-19 pandemic (Prime et al., 2020). In support of these theories, researchers found positive parenting and parent-child relationships (authoritative parenting style) protected against negative child outcomes related to the pandemic (Gregus et al., 2021; Ye et al., 2021). Additionally, support from parents helped to mitigate feelings of isolation and improve well-being for children who made the switch to online learning (Wang et al., 2020). And in response to the COVID-19 pandemic, elementary school students reported relatively strong learning environments at home in 2019–2020, and some improvement in these environments in 2020–2021 (Wang et al., 2021a). Finally, it is important to highlight parents' own resilience to the pandemic. While some parents did report negative responses to COVID-19 stressors (Briesch et al., 2021), others reported positive responses to caring for their children at home due to the pandemic, including higher levels of positive affect (Lades et al., 2020). These parental reports become critical when examining resilience using a multisystem perspective. The intersection of risk or protective factors at various levels must be examined in order to fully understand how children will respond with resilience (or not), and how best to intervene to promote resilience.

### *Rural populations*

Approximately one-third of schools in the United States are considered rural (Iruka et al., 2020). Rural refers to an area that has fewer than 4,000 housing units or 10,000 persons within a census block territory (U.S. Census Bureau, 2021). According to the U.S. Census Bureau (2021), a census block is 'an area normally bounded by visible features, such as streets, rivers or streams, shorelines, and railroads, and by nonvisible features, such as the boundary of an incorporated place, minor civil division, county, or other 2020 Census tabulation entity' (p. 10240). Approximately 1/5 of the U.S. population lives in rural areas (U.S. Census Bureau, 2010). Given the importance of school and community resources in understanding resilience from a multisystem perspective, the response of children to COVID-19 within the unique rural culture should be examined. However, little is known about the impact of the pandemic on parent and child functioning in a rural population, which presents its own strengths (e.g., robust sense of community; Shriberg et al., 2012) and challenges (e.g., lack of resources; Beebe-Frankenberger & Goforth, 2014). Zhou et al. (2020) found that, during the pandemic, children in rural areas displayed higher levels of anxiety and depression than children in urban areas. Some research has suggested that low-income/economically marginalized youth are more at risk for negative outcomes due to the pandemic (Van Lancker & Parolin, 2020). This fact is important considering that 15.3% of rural populations live in poverty and that almost 90% of the U.S. counties identified with persistent poverty are rural (Economic Research Service, 2021). Pressingly, about 20% of children who live in poverty reside in rural areas, and they are the most likely to experience extreme poverty (Beebe-Frankenberger & Goforth, 2014).

## *The current study*

Uniquely, the current study investigates rural parent reports of child and parent functioning before and after the shift to remote instruction. A multisystemic conception of resilience (e.g., Masten, 2021) views resilience as not only a capacity to withstand threats to development, but also as a process that draws on multiple levels of risk and protective factors, such as child factors and parent factors, that work together to either promote or diminish the likelihood of withstanding a significant risk. In our study, we conceptualize resilience as being able to demonstrate similar or stronger levels of functioning after facing an unexpected and significant risk – the COVID-19 pandemic.

Specifically, we asked parents to think back to a month before the pandemic and report on their own and their child's functioning at that point based on their recollections. We then asked them the same questions based on their functioning at the time of filling out the survey, about four months after the onset of pandemic changes. This approach taps into parent perspectives of functioning at different times, after they have already experienced a significant risk, allowing them to subconsciously consider their prior functioning in relation to their current status. This approach overcomes a significant limitation of a traditional pre-post design, one of response shift bias, where individuals do not accurately estimate their functioning or use the same frame of reference prior to an intervention compared to after an intervention (e.g., Pratt et al., 2000). Since our approach allowed parents to consider their prior and current functioning with the knowledge of the pandemic and related changes, parents perceiving their child's stability or improvement in functioning since the pandemic onset is an indicator of resilience in the face of significant risk.

Drawing on the multisystemic perspective, we additionally examine potential risk and protective factors that may have interacted with the risk of the pandemic to alter trajectories of risk and resilience in children. Specifically, we examine an added individual-level risk (child disability status) and potential parent-level protective factors related to parent resilience in the face of the pandemic to better understand the needs of different risk groups and parent factors that predict stronger resilience in children through the COVID-19 pandemic. Importantly, both child and parent resilience are examined within an understudied (rural) population.

## **Method**

### *Participants*

Forty parents (90% mothers) with children in an elementary school (grades K-6) in a rural region of the northeast United States filled out an anonymous online survey (recruitment procedures are detailed below). Rurality was determined by self-reports; in addition, only areas that met the U.S. Census Bureau's (2021) criteria of rurality were sampled. The sample predominantly identified as White/Caucasian. Fifty-eight percent of children were identified as girls, and 32.5% of parents reported that their child had a disability (most frequently ADHD, a speech or language impairment, or an emotional disorder). IRB consent was obtained prior to survey distribution, and principals from interested

elementary schools in the region emailed the survey link to parents. Parents provided written consent on the first page of the survey. At the time this survey was administered, the region was emerging from a full COVID-19 lockdown and was in various stages of a four-phase reopening plan (dependent on when participants completed the survey).

## Measures

Using an online survey, the present study investigated parental perspectives on the academic, cognitive, social, and emotional well-being of rural children with and without disabilities as they transitioned through the pandemic. The survey's questions on child functioning were adapted from the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001) and the Family Involvement Questionnaire (Fantuzzo et al., 2000). These measures allowed us to measure child functioning (academic, cognitive, social, emotional) before and during the COVID-19 pandemic. The online survey was also developed to examine the resilience of parents through the pandemic transition. The survey's questions on parent functioning were self-designed.

*Child functioning.* Parents completed one online survey in June 2020, approximately four months after the onset of the pandemic changes using an adapted retrospective pretest method (e.g., Pratt et al., 2000). In this survey, parents answered the same questions about their child's functioning at two times: they reported (1) retrospectively on their child's functioning a month before the pandemic, and (2) on their child's current functioning (at the time they were filling out the survey) based on the prior two weeks. This meant that approximately four months elapsed between the retrospective and current reports. For each, parents rated how often their child demonstrated 8 qualities of well-being on a scale of 1 (*Never*) to 10 (*Always*). Two survey items each assessed academic well-being (hardworking; does well at schoolwork; Cronbach's  $\alpha = .86$ ), cognitive difficulties (restless; easily distracted;  $\alpha = .76$ ), social well-being (speaks to friends; lonely – reverse scored;  $\alpha = .69$ ), and emotional difficulties (unhappy; nervous;  $\alpha = .61$ ). The two items in each domain were averaged to serve as a composite. Though the reliability of some composites were somewhat low, alphas of .6 to .7 are often still considered acceptable in terms of reliability (Ursachi et al., 2015). Difference scores from before to during the pandemic were also computed to serve as an index of how stable the child's transition was in each domain, an indicator of resilience through the pandemic risk factor.

Parents additionally reported on whether their child had been diagnosed with a disability. Disability status was measured by asking whether their child had an Individualized Education Program (IEP; and if so, for what classification category), a 504 accommodation plan (and if so, for what impairment), and whether their child had been diagnosed with any mental health disorders from a pre-populated list.

*Parent functioning.* Parents completed the online survey in June 2020. Parents answered the same questions about their own well-being at two times: they reported (1) retrospectively on their own functioning a month before the pandemic, as well as (2) on their own

functioning during the two weeks previous to filling out the survey. This meant that approximately four months elapsed between the retrospective and current reports. They reported on three statements for each time point on a scale of 1 (*strongly disagree*) to 10 (*strongly agree*). The three items assessed whether the parents i) felt happy, ii) were able to balance work, home life, and their child's learning, and iii) felt supported by the people in their life. Difference scores from before to during the pandemic were also computed to serve as an index of how stable the parents' transition was in each area, an indicator of parent resilience in these areas of functioning when facing the pandemic risk.

## Procedure

After receiving IRB approval, the authors emailed a convenience sample of principals of 20 elementary schools in a rural region of the northeast United States, inviting participation in the current study. Principals were targeted because they had access to a large and representative sample of parents in the region. Challenges of individuals in this area are similar to other rural areas, such as reliable internet, transportation, and parental employment opportunities. In fact, this area was selected as it was representative of rural strengths and challenges in the United States. If principals were willing to participate, we asked them to email the survey link to parents affiliated with their school. There was a low rate of response and participation, possibly because the test was administered in June 2020, during the early challenges of the pandemic. During survey distribution, many pandemic-related changes persisted. These changes included a transition from in-person to remote learning for all children, social distancing requirements and mask mandates in all public indoor locations, the transition of many jobs from an in-person to a remote work environment, and a lack of childcare options for parents.

The online survey was anonymous. Parents answered questions about their functioning before the pandemic as well as during pandemic. They then reported on their oldest elementary school child, detailing the child's grade, sex, and disability status, and rating the child's functioning at the same two points. The survey took approximately 10–15 min to complete. Parents did not receive compensation for completing the survey.

## Analysis

Data were analyzed in IBM-SPSS version 25. We first analyzed parent-perceived change in their own and their child's functioning from before to during the early stages of the pandemic, and whether this change differed based on child disability status. We used repeated measures analyses of variance with the within-subjects factor of time point (2: before vs. during the pandemic). Child disability status was coded 0 (no disability) or 1 (any disability, including endorsement of an IEP or 504 plan) and was entered as the between-subjects factor in all analyses.

We then investigated whether parents' stability in the transition from before to during the early stages of the pandemic might predict the quality of their reported child's transition through the pandemic. We ran linear regressions with the outcomes of the difference scores in each child domain of functioning. The predictors were the three difference

scores computed for parent functioning (work-life balance, happy, feeling supported) as well as child disability status. Multicollinearity between predictors was below  $r = .40$  for all correlations.

## Results

In this study, we examined how parents perceived their own and their child's transition to the pandemic for children with and without disabilities. We also investigated whether parents who were better able to maintain their own functioning through the threat of the pandemic had children who also demonstrated higher parent-reported resilience as evidenced by greater stability or improvements in functioning from before to during the pandemic.

**Child functioning.** We investigated parent-reported child academic, cognitive, social, and emotional functioning through the pandemic transition and whether the quality of the transition differed by child disability status. For academic well-being, a significant interaction between time point (before vs. during pandemic) and disability status emerged,  $F(1, 38) = 5.55, p = .024$ . Post-hoc paired  $t$ -tests revealed that children with a disability did not significantly change in their parent-reported academic well-being before vs. during the pandemic,  $t(12) = -.65, p = .530$ , but children without diagnoses significantly declined in their academic well-being through the transition,  $t(26) = 3.17, p = .004$ . Descriptive statistics on child functioning can be found in Table 1.

The repeated measures ANOVA with the outcome of child cognitive difficulties had a significant main effect of time point (before vs. during pandemic),  $F(1, 38) = 7.67, p = .009$  and a significant interaction between time point and disability status,  $F(1, 38) = 4.74, p = .036$ . There was also a significant main effect of disability status,  $F(1, 38) = 6.69, p = .014$ , such that children with a disability had more parent-reported

**Table 1.** Means (sds) of child functioning by time point and child disability Status.

Child Functioning	Children with a Disability			Children without a Disability		
	Before Pandemic	During Pandemic	Cohen's $d$	Before Pandemic	During Pandemic	Cohen's $d$
Academic Well-being	7.12 (1.93)	7.46 (1.27)	0.21	8.56 (1.51)	7.24 (2.05)	0.73
Cognitive Difficulties	5.54 (1.85)	5.77 (2.45)	0.11	3.02 (1.85)	4.94 (2.62)	0.85
Social Well-being	8.27 (1.52)	4.58 (1.82)	2.20	8.98 (1.03)	5.52 (2.42)	1.86
Emotional Difficulties	3.77 (2.42)	4.62 (2.42)	0.35	2.35 (1.63)	3.65 (1.91)	0.73



cognitive difficulties on average. Overall, parents reported that children increased in their level of cognitive difficulties (distractibility/restlessness) through the pandemic transition, but this increase was significantly more pronounced for children without a disability than those with a disability,  $t(38) = 2.18, p = .036$ .

Children's social well-being (parent-reported) significantly declined from before the pandemic to during the pandemic,  $F(1, 38) = 73.51, p < .001$ , and the degree of the decline was equivalent for children with and without disabilities. The same pattern emerged for children's emotional difficulties, such that emotional difficulties increased from before to during the pandemic,  $F(1, 38) = 9.43, p = .004$ , and this occurred to the same degree regardless of disability status. A main effect of disability status also emerged for emotional well-being such that children with disabilities had greater parent-reported emotional difficulties overall than children without disabilities,  $F(1, 38) = 4.25, p = .046$ .

In sum, based on parent reports, children with disabilities maintained their academic and cognitive functioning through the pandemic transition, an indicator of resilience through the pandemic risk, while children without disabilities evidenced larger decreases in academic well-being and greater cognitive challenges through the transition. Parents reported that their children, on average, suffered in their social and emotional health through the transition regardless of their disability status (see Table 1).

### Parent functioning

We next looked at parent functioning through the pandemic transition and whether it differed by child disability status. The repeated measures ANOVA on parent work-life balance revealed a significant main effect of time point (before vs. during the pandemic),  $F(1, 40) = 32.82, p < .001$ , such that work-life balance dropped after the pandemic onset. The interaction between time point and child disability status as well as the main effect of child disability status was not significant. The main effect of time point was also the only significant difference for the outcomes of parent happiness,  $F(1, 40) = 15.01, p < .001$ , and feelings of support,  $F(1, 40) = 6.90, p = .012$ , such that parents felt less happy and less supported during the pandemic compared to before. Descriptive statistics on

**Table 2.** Means (SDs) of parent functioning by time point and child disability status.

Parent Functioning	Children with a Disability			Children without a Disability		
	Before Pandemic	During Pandemic	Cohen's <i>d</i>	Before Pandemic	During Pandemic	Cohen's <i>d</i>
Work-Life Balance	7.80 (1.70)	4.80 (3.21)	1.17	8.19 (2.39)	4.78 (2.99)	1.26
Happy	8.07 (1.33)	6.53 (2.56)	0.75	8.19 (1.75)	6.78 (2.65)	0.63
Supported	8.07 (1.75)	7.07 (2.81)	0.43	7.96 (2.33)	7.48 (2.69)	0.19

parent functioning can be found in Table 2. Overall, parent well-being declined in all three areas through the pandemic transition.

### *Parental predictors of child transition (resilience) to the pandemic*

Our final set of analyses investigated whether the quality of the parental transition to the pandemic might relate to the quality of the child's transition. Predictors in the models were the three parent functioning transition scores as well as child disability status. Full regression results are available in Table 3.

The model predicting children's academic transition was significant,  $F(4, 27) = 4.46$ ,  $p = .007$ ,  $R^2 = .40$ . Two predictors were significant: the level of change in parent work-

**Table 3.** Linear regressions of parent resilience predicting child resilience through the pandemic transition.

Outcome	Predictor	B	SE	B	t	Sig.
Child Stability of Academic Well-being	Parent Work-Life Balance Stability*	0.25	0.10	0.41	2.40	.023*
	Parent Feelings of Support Stability	0.29	0.23	0.23	1.24	.225
	Parent Happiness Stability	0.02	0.19	0.03	0.09	.930
	Child Disability Status* (Disability = 1; No disability = 0)	1.54	0.66	0.36	2.35	.026*
Child Stability of Cognitive Difficulties	Parent Work-Life Balance Stability*	-0.37	0.11	-0.54	-3.49	.002*
	Parent Feelings of Support Stability*	-0.55	0.24	-0.39	-2.34	.027*
	Parent Happiness Stability	0.17	0.19	0.17	0.90	.376
	Child Disability Status* (Disability = 1; No disability = 0)	-1.45	0.66	-0.30	-2.19	.038*
Child Stability of Social Well-being	Parent Work-Life Balance Stability	0.12	0.14	0.18	0.88	.386
	Parent Feelings of Support Stability	0.51	0.31	0.37	1.69	.103
	Parent Happiness Stability	-0.12	0.25	-0.12	-0.49	.627
	Child Disability Status (Disability = 1; No disability = 0)	-0.32	0.86	-0.07	-0.37	.715
Child Stability of Emotional Difficulties	Parent Work-Life Balance Stability*	-0.39	0.12	-0.60	-3.63	.001*
	Parent Feelings of Support Stability*	-0.59	0.24	-0.44	-2.46	.021*
	Parent Happiness Stability	0.26	0.20	0.26	1.34	.192
	Child Disability Status (Disability = 1; No disability = 0)	-0.42	0.68	-0.09	-0.61	.544

Note. \* indicates  $p < .05$

life balance,  $B = .41$ ,  $p = .023$ , as well as child disability status,  $B = .36$ ,  $p = .026$ . Stronger maintenance of parental work-life balance predicted stronger maintenance of children's academic well-being,  $r(40) = .48$ ,  $p = .005$ . Child disability status results aligned with the previous ANOVA and revealed that children with disabilities were more likely to better maintain their academic well-being through the pandemic transition (as reported by parents),  $r(40) = .36$ ,  $p = .024$ .

The model predicting children's transition for cognitive difficulties was significant,  $F(4, 27) = 6.64$ ,  $p = .001$ ,  $R^2 = .50$ . Three significant predictors emerged: the level of change in parent work-life balance,  $B = -.54$ ,  $p = .002$ , the level of change in the parent feeling supported,  $B = -.39$ ,  $p = .027$ , and child disability status,  $B = -.30$ ,  $p = .038$ . Children with a weaker transition (parent-reported increase in cognitive difficulties) were more likely to have parents with (1) a weaker work-life balance transition,  $r(40) = -.55$ ,  $p = .001$ , and (2) lower maintenance of feelings of support,  $r(40) = -.35$ ,  $p = .053$ . Children were more likely to have a weaker cognitive transition if they did not have disabilities,  $r(40) = -.33$ ,  $p = .036$ .

Children's transition in terms of emotional difficulties was also significantly predicted by our model,  $F(4, 27) = 5.20$ ,  $p = .003$ . There were two significant predictors – level of change in parent work-life balance,  $B = -.60$ ,  $p = .001$ , and parent maintenance of feelings of support,  $B = -.44$ ,  $p = .021$ . According to their parents, children had a weaker emotional adjustment when parents had a greater decline in their work-life balance,  $r(32) = -.55$ ,  $p = .001$ , and when parents were less able to maintain feelings of support through the transition,  $r(32) = -.36$ ,  $p = .044$ .

For children's social well-being transition, neither the model nor any predictors reached significance.

In sum, parents who were able to better maintain their work-life balance through the pandemic transition were more likely to report their children had a healthier academic, cognitive, and emotional transition to the pandemic. When parents were able to better maintain their feelings of being supported through the pandemic transition, children's cognitive and emotional transitions (parent-reported) were also healthier. Nonetheless, it is important to remember that these data were gathered at one discrete timepoint in a quite lengthy pandemic and thus need to be considered as 'snapshot' data regarding the initial transition from pre- to during-pandemic.

## Discussion

Psychology research rarely focuses on rural settings (e.g., Heflinger & Christens, 2006), particularly in relation to the COVID-19 pandemic (e.g., Mueller et al., 2021). The present study adds to our understanding of how children's disability status and parenting factors relate to rural child well-being that the multisystemic resilience framework emphasizes. During involuntary remote instruction, parents in a rural setting did experience significant worsening of their own functioning and reported similar struggles for their children's functioning. However, there were notable exceptions, which should be viewed as areas of resilience.

First, the results of this study show that rural children with and without disabilities adjusted differently to the changes imposed by the pandemic. Pre-pandemic, parents reported that their children with disabilities struggled more academically and cognitively than their peers without disabilities. These findings align with prior work (e.g., Watson & Keith, 2002) that suggests having a disability is related to slightly weaker well-being. Many differences between these groups disappeared after the switch to remote instruction. Interestingly, students who struggled more pre-pandemic (children with disabilities) were not those ‘hardest hit’ by the shift to remote learning. This finding does not align with previous research indicating that children with weaker functioning before a stressful event are particularly affected by the event (Noltmeyer, 2014). Rather, our findings indicate that parents saw their children with disabilities as more resilient in response to the shift to remote learning, as they were more likely to maintain their academic and cognitive well-being through the transition.

These results may be because parents of children with disabilities had lower expectations of their children’s capacities to adjust, and so were more understanding of challenges when they arose (McCoy et al. 2016); by contrast, parents of children without disabilities may have been ill-equipped for the unexpected needs their children demonstrated (Trute & Hiebert-Murphy, 2002). More optimistically, children with disabilities may have fared better because of the supports they were already receiving through their schools. Their school-based support teams may have been particularly beneficial during the transition to remote instruction, as these students had legally-bound case managers and related service providers who monitored student progress. Finally, children with disabilities may have demonstrated a ‘steeling’ effect (Rutter, 2012), whereby their previous struggles in fact strengthened their capacity to cope/be resilient when the medium of learning changed.

The concepts of *equifinality* and *multifinality* are also instrumental in interpreting these results. *Equifinality* refers to multiple developmental paths leading to the same outcome, while *multifinality* refers to the same developmental path leading to multiple outcomes (Mash & Barkley, 2014). While we should be ready to support those students most at risk, it is important to remember that a significant number of at-risk children do not go on to develop later problems, and can in fact show resilience. To assume that students with disabilities will struggle is to discount the concept of *multifinality*. This assumption may also result in schools overlooking students without particular risk factors. Interestingly, results suggest that particular attention and resources may need to be paid to those students who have experienced *less* adversity pre-transition, as they nonetheless may end up struggling in response to difficult transitions (*equifinality*).

Second, the results of this study showed that children’s cognitive and emotional adjustment to the changes imposed by the pandemic were predicted by their parents’ ability to maintain relatively similar levels of work-life balance and feelings of support through pandemic-related changes. Aligned with the multisystemic framework of resilience (e.g., Gartland et al., 2017; Masten & Motti-Stefanidi, 2020), parental resilience likely supported a healthy parent-child relationship through the pandemic transition, which in turn may have supported child well-being. These parental predictors of child resilience highlight the importance of supporting parents through difficult transitions,

as it is their ability to maintain those feelings of support and balance for themselves that was tied to parent perceptions of their children's resilience through those same transitions (Luthar et al., 2020).

Given the impact that parents' well-being has on their own functioning as well as their children's, our results highlight that parents' needs through any challenging transition should be foregrounded. School psychologists should forefront home-school collaboration with all families. For example, they can check with parents to ensure they have the resources to deal with the changes brought about by the pandemic. Matsopoulos and Luthar (2020) suggest that parents and other caregivers (e.g., teachers) can demonstrate resilience more effectively when they have resources available to deal with their own stressors. Parents who are lacking in supports may be offered psychoeducation (Borden et al., 2010) to strengthen their competencies.

Additionally, school psychologists can fill a consultative role or provide in-service parent trainings to help them model resilient behaviors (Noltemeyer, 2014). How children view their parents' functioning during adverse times also impacts children's well-being. The mental health of children is strongly tied to how positively they view their parents' levels of functioning (Luthar et al., 2020). Similarly, child perceptions of poor parental functioning are linked to depression and anxiety in children. One way to promote parental resilience is to provide the resources they need in order to maintain their own well-being (Matsopoulos & Luthar, 2020). Helping parents understand the impact their own response to the pandemic may have on their children could help parents be more mindful in demonstrating resilience for their children (NASP, 2016).

Finally, school staff should be mindful not to stigmatize parental response to the pandemic as lack of involvement or value of schooling (Robinson & Harris, 2014). School psychologists may work collaboratively with school staff to increase awareness of these potentially automatic responses.

School psychologists may also need to place a particular focus on social skills and functioning of children as they return to school. In our study, social well-being dropped during the pandemic and was the only child outcome that did not relate to parent well-being. This is likely because the pandemic limited social interaction between children regardless of what parents were doing, highlighting a critical competency that children were unable to improve on during the pandemic and may need additional support with after the prolonged absence of extended social interactions with peers.

This study provided insights into a rural population's response (and resilience) to the COVID-19 pandemic. Nonetheless, there were several limitations. A relatively small number of parents participated in the study. Given the sparser density of rural populations as well as the timing of the survey (Spring 2020, when parents may not have been able to devote time to voluntary research), this limited participation is not unexpected. In addition, this might have been a particularly high functioning sample of parents given that they were able to respond to the survey at such a tumultuous time.

Other methodological limitations included using self-developed questions to assess parent functioning rather than established instruments. Though our questions have face validity, the use of a wider variety of formally validated instruments will be important in future research. We used a modified retrospective pretest design and only asked

parents to report on two time points: a retrospective account of how they remember functioning before the pandemic and current functioning at the time of the survey. Though this design allows us to overcome a limitation of multiple data collections before and after an event – response shift bias, where individuals do not accurately estimate their functioning or use the same frame of reference prior to an intervention compared to after an intervention – it is still challenging to report retrospectively and recall past feelings accurately. Using a longitudinal design with three or more time points in conjunction with the retrospective pretest design would have been more robust, but difficult to obtain given the sudden and unplanned emergence of the COVID-19 pandemic and difficulties associated with participant recruitment during the pandemic.

We also combined two child questions assessing different domains of functioning, and at times, the internal consistency of the two questions within a domain was relatively low. This is not entirely surprising given the questions tapped related but not identical aspects of the domain (e.g., feelings of loneliness and frequency of speaking with friends for the social domain) and the number of items and data points were low, but it will be important for future research to use a variety of methods to assess similar questions to ascertain replicability across measures and samples.

Finally, data were parent-reported – no direct student or school reports were collected. As such, the results are confined to parents' views on their own and their children's functioning. Furthermore, parents' assessment of their own functioning may be inextricably tied to their perceptions of their child's functioning. However, parents were not informed that their self-reported functioning would be connected to their reports of their child's functioning, so they are unlikely to have consciously answered questions in this manner. Nonetheless, future research should expand to a wider range of stakeholders, including teachers and children themselves. These new perspectives will give us a more comprehensive understanding of the ecological system in which students experience the pandemic. In addition, these perspectives will allow for a wider approach to promoting resilience that targets not only children and parents, but the entire home and school systems (Matsopoulos & Luthar, 2020).

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The SUNY Plattsburgh Institutional Review Board (IRB) reviewed our study (IRB #1638) and found the project to be exempt research involving the use of educational tests, survey procedures, interview procedures, or observation of public behavior. No further review by the IRB was required. We have no conflicts of interest to disclose.


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