

Pandemic-Related Social Disruption and Well-Being in Pediatric Gastrointestinal Diseases

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Abstract

Objective The coronavirus disease 2019 (COVID-19) pandemic has impacted everyone, but there are few data regarding how the pandemic has influenced the lives of children with gastrointestinal (GI) conditions. This cross-sectional study assessed pandemic-related social disruption (PRSD) in children with inflammatory bowel disease (IBD), celiac disease (CD), and irritable bowel syndrome (IBS), and the potential buffering effect of the parent-child relationship. Methods A survey completed between September and December 2020 asked 146 children (ages 8-17) diagnosed with IBD (n=44), CD (n=81), or IBS (n=51) and 185 parents how the pandemic has contributed to social disruption (i.e., financial stability, COVID-19 exposure, school changes, GI needs, and isolation) and their social-emotional well-being. Structural equation modeling was used to examine the role of social disruption on well-being, and the moderating effect of the parent-child relationship. **Results** Increased social disruption predicted worse parent, $\beta = 0.24$, p = .02, and child wellbeing, $\beta = 0.38$, p < .01. The parent-child relationship moderated the relationship between parent and child well-being, $\beta = 0.21$, p = .03. Strong parent-child relationships predicted a positive association between parent and child well-being, $\beta = 0.23$, p = .003, whereas medium, $\beta = 0.09$, p = .14, and poor, $\beta = -0.06$, p = .52, relationships did not. **Conclusions** PRSD negatively impacted the well-being of children with GI conditions, and the parent-child relationship moderated this relationship. These findings are relevant to pediatric psychologists treating the physical and mental health needs of children with GI conditions and their parents.

Key words: COVID-19 pandemic; gastrointestinal; pediatric; social disruption; well-being.

Introduction

The coronavirus disease 2019 (COVID-19) pandemic has impacted everyone; emerging research indicates a higher prevalence of mental health problems (e.g., depression, anxiety, and peer relationship problems) in children compared to prior to the pandemic (e.g., Ellis et al., 2020; Gassman-Pines et al., 2020; Patrick et al., 2020; Rothe et al., 2021; Spinelli et al., 2020). Children with medical needs may be more vulnerable due to diminished medical services (e.g., therapies), decrease in access to comprehensive medical care, or

modality changes in medical care delivery associated with the pandemic (e.g., Brisca et al., 2021; Clary et al., 2020; Houtrow et al., 2020; Wong et al., 2020).

Children with gastrointestinal (GI) conditions require frequent medical visits and access to specific treatments, such as medications, dietary modifications, exercise plans, and surgeries (Corica & Romano, 2017; Hyams et al., 2016; Leonard et al., 2017). Data indicate that children with GI conditions have high rates of mental health concerns such as anxiety and depression (e.g., Greenley et al., 2010; Mazzone et al.,

2011; Sansone & Sansone, 2015), and their medical needs impact their social lives (e.g., Greenley et al., 2010; Donovan et al., 2019) and family functioning (e.g., Garr et al., 2021; Gray et al., 2013).

Although research is scarce, one study found that during the beginning of the pandemic, children with inflammatory bowel disease (IBD) were utilizing medical services at lower rates and potentially not adhering to their treatments (Martinelli et al., 2020). Since the pandemic started, children with IBD and their parents report high rates of fear of contracting COVID-19 (Dorfman et al., 2021; Reinsch et al., 2021). Specifically, they are fearful that their medications make them more vulnerable to severe COVID-19; this fear might result in avoidance of medical facilities and social events (Dorfman et al., 2021). Caregivers of children with celiac disease (CD) have reported higher levels of anxiety and caregiver burden during the pandemic (Bucak et al., 2021). However, some children with functional abdominal pain reported levels of anxiety and quality of life in the normal range during the first few months of the pandemic, contrary to prepandemic literature on children with functional abdominal pain (Strisciuglio et al., 2021). Adults with GI disorders who experienced greater social isolation experienced more distress, which was moderated by their GI symptoms (Mikocka-Walus et al., 2021).

Research indicates that a positive parent-child relationship may buffer the negative impact of disasters on children's mental health (Frasquilho et al., 2016; Masten & Obradovic, 2008; Masten & Osofsky, 2010). It has been theorized that the same effect would occur during the COVID-19 pandemic (Prime et al., 2020). In fact, Strisciuglio et al. (2021) noted lower rates of anxiety and better quality of life in children with functional abdominal pain during the pandemic compared to prepandemic, which they argued was in part due to a decrease in school-related stress and an increase in parental attention.

The purpose of this study was to examine the relationship between pandemic-related social disruption (PRSD) and children's and parents' well-being in children with GI conditions. Well-being was a latent variable constructed by multiple facets of mental health such as depressive and anxiety symptoms, anger, peer relationships, and global health, in line with conceptual or operational models (e.g., Busseri & Sadava, 2011; Luhmann et al., 2021). We hypothesized that PRSD and well-being would be inversely related. We also expected that a closer parent—child relationship would buffer the social disruption—well-being association.

Methods

Participants

Families were recruited from a pediatric GI clinic in the southeastern US. To participate, children had to be between ages 8 and 17 with a documented diagnosis of IBD, CD, and irritable bowel syndrome (IBS). Children with comorbid GI conditions, such as abdominal migraines or cyclical vomiting, were included. Children with significant developmental delays, whose parents indicated that the child would be unable to read study questionnaires, or who were not English speakers were excluded.

Procedures

This study was approved by the institutional review board. Children meeting eligibility criteria were identified via electronic medical records, and parents were contacted via phone and email. Participants completed measures via Qualtrics, an online-survey platform, at their homes between September and December 2020. Parents completed an online consent for themselves and their child, and parents read an online assent to their child.

Measures

Consistent with the approach to structural equation modeling (Hoyle, 1995), we used multiple measures or multiple reporters to assess all constructs except the parent–child relationship, which relied only on parent report. The social disruption measure was developed for this study, and all other measures are ones frequently used and validated in the pediatric psychology literature.

Demographics

Parents and children provided basic demographic information (e.g., age, gender, and race).

Social Disruption

The PRSD measure was developed for the study. The PRSD had a total of 40 items, which were combined from both parent and child surveys. The authors began with items from previously validated measures, as well as some that were in the process of validation (Kazak et al., 2021). However, given the novelty of the pandemic, the authors were interested in assessing additional areas through newly created items, such as the level of social isolation of the parents and children. These items were developed by the first three authors, who are clinical psychologists and a clinical psychology doctoral trainee; items were finalized via consensus. The questions asked about changes in financial security, COVID-19 experiences (Kazak et al., 2021), GI needs (Achenbach & Edelbrock, 1991), parent isolation, child isolation, family cohesion (Bloom & Naar, 1994), and school disruption. Scoring criteria were also developed by the first three authors. Item scores were summed with a higher score indicating greater social disruption. The internal consistency of the PRSD with the current sample was adequate (Cronbach's alpha of .70). This measure is available upon request to the corresponding author.

Parent Well-Being

The pediatric inventory for parents (PIP) assessed disease-specific parenting stress (Streisand et al., 2001). Higher scores indicate more difficulty and a greater frequency of parenting stress. The PIP has been widely used with pediatric populations, and the Cronbach's alpha with the current sample was .94 for PIP-difficulty.

The PROMIS Emotional Distress-Depression-Short Form 8a, PROMIS Emotion Distress-Anxiety-Short Form 8a, PROMIS Adult Anger measures were used to assess depressive symptoms, anxiety symptoms, and anger in parents (Cella et al., 2010). These measures were adapted to ask, "Since the COVID-19 pandemic" instead of "in past 7 days." Items are summed, with higher scores indicating greater distress. Raw scores were used. Cronbach's alpha was .93 for depression and anxiety, and .90 for anger.

Child Well-Being

The PROMIS Pediatric Global Health (Forrest et al., 2016), **PROMIS** Pediatric Depressive Symptoms-Short Form 8a (Irwin et al., 2010), PROMIS Pediatric Anxiety Symptoms-Short Form 8a (Irwin et al., 2010), PROMIS Pediatric Anger (Irwin et al., 2012), and PROMIS peer relationships (DeWalt et al., 2013) measures were used to assess youth wellbeing, which included global health, depressive symptoms, anxiety symptoms, anger, and peer relationships. All measures used raw scores and were coded such that higher scores indicated worse well-being. For this study, participants were asked to respond regarding symptoms "Since the COVID-19 pandemic." One item (i.e., "How often do you have fun with friends?") from the global health measure was removed because of the social interaction impact of the pandemic. Cronbach's alphas in the current sample were .82 for global health, .93 for depression, .94 for anxiety, .90 for anger, and .87 for peer relationships.

Parent-Child Relationship

Parents completed the conflict behavior questionnaire (CBQ), a 20-item measure of the parent-child relationship (Robin & Foster, 1995), with "true" and "false" response options. Items are summed with higher scores indicating a better relationship. The CBQ has strong psychometric properties including internal consistency of .90 (Foster et al., 1983; Robin, 1981). The Cronbach's alpha for this sample was .87.

Data Analytic Plan

Participants were omitted if they did not meet attention checks or eligibility criteria. A *p*-value of .05 was

used for all analyses to determine significance. Analysis of variances (ANOVAs) were conducted to assess for significant differences in study variables across the three GI conditions.

All quantitative analyses were conducted within a structural equation modeling framework using Mplus 7.3. Missing data were accounted for using full information maximum likelihood estimation under the missing at random assumption with robust standard errors. First, a confirmatory factor analysis was fit to establish the measurement models for child well-being (indicators: depression, anxiety, anger, global health, and peer relationships) and parent well-being (indicators: depression, anxiety, anger, and parenting stress). A path model examining three pathways between social disruption, parent well-being, and child wellbeing was conducted. Five pathways were examined to test the relationships between social disruption, parent well-being, child well-being, and the parent-child relationship. Interactions were created between social disruption and the parent-child relationship, and parent well-being and the parent-child relationship. All interactions were estimated simultaneously (Klein & Moosbrugger, 2000).

Exploratory analyses examined whether the individual components of social disruption (i.e., financial insecurity, COVID experiences, school disruption, parent isolation, child isolation, GI needs) made unique contributions to child and parent well-being.

Results

During recruitment, all eligible participants (N=984) were emailed and called to solicit participation. Twenty-one of these emails (2%) were undeliverable. All phone calls (direct contact or voicemails) resulted in a 20% participation rate; 50% of those who talked by phone with research staff participated. Ten children and eight parents were omitted from the primary analyses for failing the attention check. However, if the parent failed the attention check, their demographic information was still retained. Nine families completed the survey more than one time with different children, so one child was randomly retained, and the rest were omitted. Some parents completed the survey but failed to have their child complete the survey (n = 39). One family was omitted because the child had a significant developmental delay. The final dataset included 146 children and 185 parents.

Descriptive Statistics

On average, children were 13 years old (M = 13.1; SD = 2.7; range 8-17) and parents were 45 (M = 44.7; SD = 6.9; range 19-63) (demographic data are

presented in Table I). Of the child participants, 24% (n=44) had IBD, 44% (n=81) had CD, and 28% (n=51) had IBS; 12% (n=23) of these children had comorbid GI conditions (e.g., gastroesophageal reflux disease, abdominal migraines, and eosinophilic esophagitis).

ANOVAs demonstrated differences by GI condition for school disruption, F = 3.89, p = .02, GI needs, F = 11.44, p < .001, and child anxiety, F = 3.23, p = .04 (Table II). Post-hoc comparisons revealed that children with CD (M = 0.99) had greater school disruption than those with IBD (M = 0.56), p = .04. Children with IBS (M = 3.30) had more GI needs than those with IBD (M = 0.60), p < .01, and those with CD (M = 1.24), p < .01. Children with IBS (M = 20.70) reported more anxiety than those with IBD (M = 16.59), p = .04.

T-tests revealed that social disruption, t = -2.37, p = .02, GI needs, t = -2.99, p < .01, child depression, t = -2.15, p = .03, and child global health, t = -2.31, p = .02, were all higher in female than male children. Parenting stress was higher for those with daughters than sons, t = -1.95, p = .05. Due to these differences, child gender was included as a covariate in subsequent analyses.

Latent Variable Model: Parent Well-Being and Child Well-Being

The latent variables serve as broader representations of well-being, which are constructed from specific aspects of health that have overlapping features. The latent variable model composed of parent well-being and child well-being had good overall model fit, χ^2 (26) = 36.79, p = .08, root mean square error of approximation (RMSEA) = 0.05, comparative fit index (CFI) = 0.99, Tucker-Lewis index (TLI) = 0.98, and standardized root mean square residual (SRMR) = 0.06. The standardized factor loadings for parent well-being were all greater than 0.80, except for parenting stress, which was 0.58; all indicators were significant. The standardized factor loadings for child well-being were all greater than 0.70, except for peer relationships, which was 0.46; all indicators were significant. Due to the strength of the factor loadings, significance, and global fit statistics, the latent variables were retained.

Path Analysis: Role of Social Disruption on Parent and Child Well-Being

A path analysis examining the impact of social disruption on parent and child well-being was constructed and had good overall fit, χ^2 (40) = 55.16, p = .06, RMSEA = 0.05, CFI = 0.98, TLI = 0.97, and SRMR = 0.06. Social disruption predicted parent, β = 0.24, p = .02, and child, β = 0.38, p < .01, well-being. Greater social disruption was related to poorer

well-being in both children and parents. Child and parent well-being were positively related, $\beta = 0.20$, p = .02.

Path Analysis: Role of the Parent–Child Relationship

A path analysis examining the role of the parent-child relationship on the association between social disruption and child well-being, and parent and child wellbeing was constructed. Due to the lack of global fit statistics for latent variable interaction effects, models are constructed first without the interaction term to have baseline model fit estimates (Maslowsky et al., 2015). This model had good overall fit, χ^2 (47) = 77.09, p = .004, RMSEA = 0.06, CFI = 0.96, TLI = 0.95, and SRMR = 0.06. The parent-child relationship predicted parent well-being, $\beta = -0.22$, p = .01; the stronger the parent-child relationship, the better the parent well-being. However, the parentchild relationship did not predict child well-being, $\beta = -0.07$, p = .46. The parent-child relationship covaried with social disruption, $\beta = -0.41$, p < .01; more social disruption was related to a worse parentchild relationship.

Path Analysis: Buffering Role of the Parent–Child Relationship

The parent-child relationship interaction with parent well-being predicting child well-being was significant, $\beta = 0.21$, p = .03 (Figure 1). Due to the significant interaction term between the parent-child relationship and parent well-being, this relationship was further probed with simple slopes at low (1 SD below the mean), medium (mean), and high (1 SD above the mean) levels of parent-child relationship. At low, $\beta = -0.06$, p = .52, and medium, $\beta = 0.09$, p = .14, levels of parent-child relationship, there was not a significant relationship between child and parent wellbeing. At high levels of the parent-child relationship, $\beta = 0.23$, p = .003, there was a significant relationship between child and parent well-being. With close parent-child relationships, child and parent well-being were positively correlated. The parent-child relationship interaction with social disruption predicting child well-being was not significant, $\beta = 0.01$, p = .99.

Exploratory Analyses

Exploratory analyses examined the individual components of social disruption on child well-being and parent well-being (Figure 2). Due to differences in school disruption and GI needs by GI condition, GI condition was controlled for in this model. The overall model had adequate fit statistics, χ^2 (99) = 145.11, p = .002, RMSEA = 0.05, CFI = 0.94, TLI = 0.93, and SRMR = 0.06. School disruption, β = 0.16, p = .04, parent isolation, β = 0.21, p = .02, and GI needs,

Table I. Demographic Information

	Child	Parent
Age	M = 13.1, $SD = 2.7$	M = 44.7, $SD = 6.9$
Gender	,	,
Female	95 (63%)	174 (94%)
Male	51 (34%)	11 (6%)
Non-binary	2 (1.3%)	0
Transgender	1 (0.7%)	0
Other	1 (0.7%)	0
Ethnicity	, ,	
Not Hispanic/	168 (91%)	174 (94%)
Latinx		
Hispanic/Latinx	17 (9.2%)	11 (6%)
Race		
White	162 (88%)	164 (87%)
Black or African	16 (9%)	15 (8%)
American		
Multi-racial	6 (3%)	2 (2%)
Asian	5 (3%)	4 (2%)
Other	4 (2%)	3 (2%)
American Indian or	3 (2%)	0
Alaska Native		
Native Hawaiian	1 (0.5%)	0
Other Pacific Island	0	0
Gastrointestinal		
condition		
Celiac disease	81 (44%)	
Irritable bowel	51 (28%)	
syndrome		
Crohn's disease	24 (13%)	
Other	23 (12%)	
Ulcerative colitis	20 (11%)	
Approximate annual		
family income		
Up to \$20,000		13 (7%)
\$20,001-\$40,000		18 (10%)
\$40,001-\$60,000		16 (9%)
\$60,001-\$80,000		21 (11%)
\$80,001-\$100,000		22 (12%)
\$100,001 and above		93 (50%)
Missing		2 (1%)
Marital status		
Married		153 (83%)
Single		13 (7%)
Divorced		13 (7%)
Separated		4 (2%)
Widowed		2 (1%)
Method of school		
instruction		
Online	75 (41%)	
Hybrid	55 (30%)	
In-person	52 (28%)	

 $\beta = 0.20$, p = .03, were significant predictors of parent well-being, but financial insecurity, $\beta = 0.06$, p = .47, COVID experiences, $\beta = 0.06$, p = .43, and child isolation, $\beta = -0.03$, p = .78, were not. When children had more school disruption and greater GI needs, and their parents were more isolated, their parents' well-being was worse. Financial insecurity, $\beta = -0.17$, p = .02, and GI needs, $\beta = 0.48$, p < .01, were significant predictors of child well-being, but COVID experiences, $\beta = 0.03$, p = .70, school disruption, $\beta = -0.12$,

p = .13, parent isolation, $\beta = 0.09$, p = .35, and child isolation, $\beta = 0.14$, p = .10, were not. When a child's parent had more financial insecurity, or children had fewer GI needs, children's well-being was better.

Discussion

Based on high rates of mental health problems among youth with GI conditions (e.g., Greenley et al., 2010; Mazzone et al., 2011), and the unique impact of the pandemic on children with medical needs (e.g., Brisca et al., 2021), we explored whether PRSD was associated with the well-being of youth with GI conditions and their parents. As hypothesized and supported by theory (Prime et al., 2020), greater social disruption was associated with poorer child and parent well-being. These findings contribute to the literatures on the impacts of financial insecurity (Gassman-Pines et al., 2020), job loss (Gassman-Pines et al., 2020), and social isolation (Ammar et al., 2020; Borbás et al., 2021) on child and parent well-being.

Closer parent-child relationships were associated with better parent well-being, which is not surprising (Armistead et al., 2019); however, the null finding between the parent-child relationship and child wellbeing contradicts studies linking these constructs (Armistead et al., 2018; Murphy et al., 2015). Further, we did not find that the parent-child relationship buffered the social disruption-well-being association. which is also inconsistent with prior work demonstrating the protective nature of the parent-child relationship (Frasquilho et al., 2016; Masten & Obradovic, 2008; Masten & Osofsky, 2010). These null findings may be related to sample demographics in that parents in our sample were financially stable; much of the previous prepandemic research has focused on samples from resource-limited communities (e.g., HIV-affected families, families impacted by natural disasters).

Our finding that child and parent well-being were only related at high, but not medium or low levels of the parent—child relationship deserves attention. It is possible that when children and parents have stronger relationships, their well-being is more mutually influential. For example, if a child is doing poorly, and frequently shares this with their parent in the context of a supportive relationship, the parent might worry or feel distressed. Similarly, if a parent is upset, children who are closer to the parent might be more aware of and sensitive to their well-being.

In our exploratory analyses, we found that school disruption, parent isolation, and GI needs each individually predicted worse parent well-being; however, financial insecurity, COVID experiences, and child isolation were not related to parent well-being. In the youth, financial insecurity and GI needs were associated with better child well-being, but COVID

Table II. Differences in Variables by GI Condition

	IBD $M (n = 44)$	CD $M (n = 81)$	IBS $M (n = 51)$	F	p
Social disruption	19.00	20.77	22.17	1.22	.30
Financial insecurity	0.41	0.33	0.45	0.75	.48
COVID experiences	0.23	0.38	0.39	0.65	.53
School	0.56^{a}	0.99 ^b	$0.65^{a,b}$	3.89	.02
Parent isolation	9.47	8.67	8.78	0.67	.51
Child isolation	8.96	8.69	8.66	0.06	.94
GI needs	0.60^{a}	1.24 ^a	3.30^{b}	11.44	<.001
Parent					
Depression	15.37	17.29	17.78	1.42	.25
Anxiety	17.94	19.23	19.50	0.62	.54
Anger	11.06	12.46	12.35	1.59	.21
Parenting stress	163.52	156.46	178.39	2.19	.12
Parent-child	15.57	16.96	16.65	1.55	.22
relationship					
Child					
Depression	19.07	19.02	20.11	0.31	.73
Anxiety	16.59 ^a	$17.79^{a,b}$	20.70^{b}	3.23	.04
Anger	10.74	11.48	12.93	2.47	.09
Global health	10.26	9.63	11.70	2.73	.07
Peer relationships	16.73	17.63	17.26	0.94	.39

Note. Superscripts included to represent planned comparisons. Differences in superscript indicate significant differences between groups. Bold values are significant at p < .05.

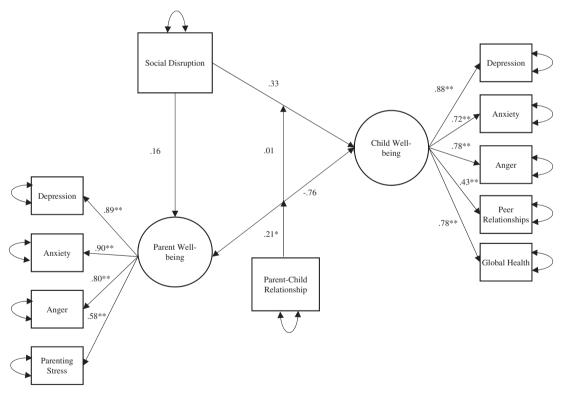


Figure 1. Parent-child relationship moderating the association between child well-being and parent well-being.

experiences, school disruption, parent isolation, and child isolation were not associated with child well-being. These results suggest that the pandemic is impacting children and parents in different ways. For example, other researchers have found that parents have particularly struggled during the pandemic with

changes in their children's schooling (Patrick et al., 2020; Spinelli et al., 2020; Wu et al., 2020) and social isolation (Ammar et al., 2020; Borbás et al., 2021). A majority of our sample received at least some inperson school instruction, and due to the use of online communication methods (e.g., texting, video chat,

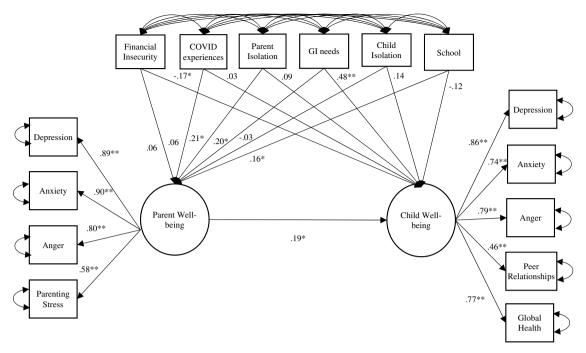


Figure 2. Exploratory analyses examining the individual components of social disruption on child well-being and parent well-being.

social media), social isolation may have been partially mitigated for the children. In addition, due to stay-athome orders, school closings, and decreased in-person social experiences, children with GI disorders may have experienced an increase in flexibility in the management of their condition that they did not have before the pandemic (Strisciuglio et al., 2021). Lastly, if parents worked from home or lost their job, they might have had more time to spend with their child, which might have led to improved child well-being.

Our findings are relevant to pediatric psychologists or others working with children with GI conditions. For example, healthcare practitioners should carefully assess how the pandemic might have impacted the family (e.g., financial loss, social isolation, school disruption) and whether and how this disruption is related to the well-being of the pediatric patient or parent. It is not uncommon to fail to consider contextual factors when working in a healthcare setting; our results highlight the relevance of social disruptions on patient and parent functioning. In contrast, practitioners should recognize that there might be silver linings associated with the pandemic. For instance, children with GI might have found it easier to adhere to their medical regimens given more home meals and a decrease in school or restaurant dining. In addition, parent-child relationships might have improved given that they are spending more time together and facing shared stressors. Our findings also re-emphasize the link between parent-child relationships and child well-being; healthcare practitioners should take a holistic perspective in working with pediatric GI patients

and consider the importance of family relationships. Proactive pediatric psychologists might consult with social workers or others to intervene in addressing social disruption (e.g., refer for community resources, referrals) to optimize the well-being of the child with a GI condition as well as their parents.

Our study had some limitations. As our sample mostly included high-income, White, mothers, the findings might not generalize to other families with a child with a GI condition. Additionally, based on the low response rate of eligible participants, there may be selection bias, which further impacts the generalizability of the findings. Given variations by month and location in terms of case surges, health guidelines, testing options, vaccines, and schooling, findings might not generalize well outside of Georgia or the timeframe. Although there are some symptom similarities across our patient populations and merging the sample increased power for our modeling analyses, this approach likely obscured potentially relevant differences. For example, children with IBS tend to have higher stress, those with IBD generally require more health care encounters and often take immunosuppressant medications, and youth with CD may face more difficulty procuring gluten-free foods. Thus, each group might have unique pandemic-related responses, which deserve a scientific inquiry. Our cross-sectional design does not allow us to make causal inferences; longitudinal analyses might shed light on the directionality of relationships. Although our queries included stems such as "since the pandemic" or "compared to before the pandemic," we are limited by not having true prepandemic data. Related, the absence of a control group does not allow us to consider whether the children living with GI conditions in this sample are any more or less likely to be impacted by the pandemic than healthy children. Although we had parent and child reports for some constructs, only parents report on the parent—child relationship; children might have unique perspectives on the parent—child relationship.

Conclusion

PRSD is related to the well-being of children with GI conditions and their parents. For those families with close parent–child relationships, there appears to be a tight link between the children's and parents' well-being. Future research should consider the long-term effects of the pandemic on this population, and how youth with GI conditions and their parents' transition back to prepandemic routines.

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