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Parental Assistance with Emotion Regulation Moderates Link Between COVID-19 Stress and Child Mental Health

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ABSTRACT

Objective: The COVID-19 pandemic has severely impacted children's mental health. All children have not been affected equally, however, and whether parental emotion socialization might buffer or exacerbate the impact of COVID-19 on children's mental health remains an important question.

Method: During the first peak of the COVID-19 pandemic in the U.S. $N = 200$ parents of children ages 0–17 (52.5% female) completed questionnaires related to parental assistance with children's emotion regulation, symptomatology, and exposure to COVID-19-related stress. Parents were 74% Non-Hispanic/Latino/a White, 13% Asian, 4.5% Hispanic/Latino/a, 4% Black/African American, 2.5% Native American, and 1.5% bi/multiracial; 0.5% of participants preferred not to state their race/ethnicity. In a series of linear regression analyses, we examined whether parental assistance with children's execution of emotion regulation strategies – across a variety of prototypically-adaptive and -maladaptive strategies – moderates the association between children's exposure to COVID-19-related stress and symptomatology.

Results: Results suggest that parental assistance with the execution of prototypically-adaptive strategies (i.e., acceptance, problem solving, behavioral disengagement) and prototypically-maladaptive strategies (i.e., suppression, rumination) may buffer or exacerbate, respectively, the impact of COVID-19-related stress on youth mental health.

Conclusions: Though interpretation of findings is constrained by limitations inherent in collecting data during a pandemic, results highlight the importance of supporting parents – who play a critical role of supporting children – during public health emergencies that affect family life. Interventions designed to improve child wellbeing during the ongoing pandemic may benefit from training parents to assist their children with specific emotion regulation strategies.

Introduction

The COVID-19 pandemic is a major stressor that has disrupted nearly all aspects of family life in the United States since the spring of 2020 (Liu & Doan, 2020; Pfefferbaum & North, 2020; Roos et al., 2021). Growing evidence highlights the detrimental impacts of exposure to COVID-related stress on children's mental health (e.g., Jiao et al., 2020; Newlove-Delgado et al., 2021; Racine et al., 2020). However, not all children have been impacted equally by the COVID-19 pandemic, motivating investigation of factors that may moderate the impact of COVID-related stress on children's mental health.

Parental Emotion Socialization in the Context of Stress

Decades of research highlight the critical role of parents' involvement in children's emotion regulation – as a reliable source of external regulation while children are developing their own intrinsic capacity for self-regulation (Eisenberg & Fabes, 1994; Hofer, 1994) – in shaping children's development. Though parental support of children's emotion regulation varies greatly across development, parents are directly involved in supporting children's increasingly emerging capacity for self-regulation from birth. Gottman's parental meta-emotion philosophy (Gottman et al., 1996) posits that parents' beliefs and attitudes about their children's emotions – including their awareness, acceptance, and coaching of children's negative emotions – translate into specific parental behaviors in response to children's displays of negative affect. Directly building upon this theoretical framework, extensive research in both normative and clinical samples has documented that parental meta-emotion philosophies are associated with a host of developmental outcomes in children, ranging

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from biological responsivity to stress to cognitive outcomes to the development of psychopathology (see Gottman et al., 1997 for a review).

Multiple studies have also examined the function of parental meta-emotion philosophy in the context of stress exposure and have collectively shed light on parental coaching of child emotion regulation as a potential buffer of the detrimental effects of stress exposure on children's development of internalizing and externalizing problems. The emotion coaching tenant of Gottman's meta-emotion philosophy specifically refers to the degree to which parents engage in assisting their children in identifying the emotions they are experiencing, show respect for their children's expression of emotion, and actively engage in helping children cope with situations that elicit negative emotions for children (Gottman et al., 1996, 1997). Specifically, parental meta-emotion philosophies characterized by high levels of awareness, acceptance, and coaching of children's negative emotions have been found to be a protective factor for the subsequent development of both internalizing and externalizing problems, as well as children's emotion regulatory capacities, following exposure to trauma (Johnson & Lieberman, 2007; Katz & Windecker-Nelson, 2006). Notably, parental emotion coaching of children's negative emotions, specifically, appears to be an important driver of this effect, with several studies finding that high levels of parental emotion coaching moderate the effect of stress on children's development of symptomatology (Cohodes et al., 2017; Katz & Windecker-Nelson, 2006). A parallel line of work suggests that parental emotion coaching of negative emotions appears to affect the association between children's exposure to stress and the development of internalizing and externalizing symptomatology by bolstering children's intrinsic emotion regulation capacities during periods of stress characterized by relatively higher levels of negative emotion (Ellis et al., 2014; Wu et al., 2020).

Parental Emotion Socialization in the Context of COVID-Related Stress

In the context of children's exposure to COVID-related stress, several studies have begun to identify specific elements of parental nurturance of offspring that may be especially salient predictors of the degree to which a parent is able to effectively buffer – or conversely, exacerbate – the potential negative effects of exposure to COVID-related stress (Cohodes et al., 2021; Glynn et al., 2021; Shorer & Leibovich, 2020; Spinelli et al., 2020). Rooted in Gottman's meta-emotion philosophy, recent research has identified that parental engagement in emotion coaching of children's negative emotions, broadly, may effectively buffer a child from developing symptomatology amidst COVID-related stress exposure (Cohodes et al., 2021; Lobo et al., 2021). These findings underscore the importance of parental emotion socialization during times of stress in buffering children from negative outcomes. Further, these results suggest that more granular examination of specific parental emotion socialization practices during the ongoing COVID-19 pandemic – specifically, parental assistance with children's execution of an array of prototypically-adaptive and -maladaptive emotion regulation strategies – may yield novel insight into the mechanisms by which parents buffer or exacerbate the effects of stress on children during public health crises.

Parental Assistance with Children's Emotion Regulation at the Strategy-Specific Level

Empirical investigation of the degree to which parents assist children in regulating their emotions at the strategy-specific level is in its infancy; however, studies employing strategy-specific assessment of adult emotion regulation have shed light on the potential adaptive – or maladaptive – function of specific strategies (Garnefski & Kraaij, 2007; Gross & John, 2003; Izadpanah et al., 2019). Though there are many person-specific and contextual factors that influence the degree to which use of a specific strategy will be adaptive or maladaptive in a given situation (Bonanno & Burton, 2013), broadly, the extant literature on adult intrinsic emotion regulation has highlighted reappraisal, problem solving, and acceptance as adaptive emotion regulation strategies, in that they tend to be most effective in changing an individual's affective state. Conversely, strategies such as suppression, rumination, and avoidance tend to be viewed as maladaptive strategies, due to documented associations between reliance on these strategies and development of psychopathology (e.g., Aldao & Nolen-Hoeksema, 2010). Extensive additional work is needed to fully understand the function of these complex strategies in adult samples; however, this nascent body of literature has inspired efforts to assess parental assistance of children's emotion regulation at the strategy-specific level as well. In line with Gross's process model of emotion regulation (Gross, 1998, 2015), parent-child co-regulation processes are likely to span five distinct temporal phases at which a parent can choose to assist their child in regulating their emotions: situation selection, situation modification, attentional deployment, cognitive change, and response modulation. At any given phase, a particular strategy may be considered more effective and associated with greater well-being or less effective and associated with higher symptoms

of psychopathology. Preliminary evidence suggests that parental assistance with prototypically-maladaptive (e.g., suppression, rumination) and prototypically-adaptive (e.g., reappraisal, acceptance) strategies is associated with children's development of psychopathology (Cohodes et al., 2021).

The Present Research

Building on this extant literature, the present study aimed to examine whether parental assistance with children's emotion regulation – across an array of prototypically-adaptive and -maladaptive strategies – may moderate the association between children's exposure to COVID-related stress and children's development of internalizing and externalizing symptomatology. By elucidating the specific mechanisms of emotion socialization by which parents modulate the impact of exposure to COVID-related stress on youth functioning, findings of the present study have the potential to inform prevention and intervention efforts targeting parents' support of children's emotion regulation amidst exposure to a salient stressor such as a global pandemic.

Hypotheses

We hypothesized that the degree to which parents assist their children in regulating their emotions would moderate the association between child exposure to COVID-related stressors and child mental health, such that higher levels of parental assistance with children's execution of an array of prototypically-adaptive strategies (e.g., reappraisal) would attenuate the association between children's exposure to COVID-related stress and child symptomatology, and conversely, higher levels of parental assistance with children's execution of an array of prototypically-maladaptive strategies (e.g., suppression) would exacerbate the association between children's exposure to COVID-related stress and child symptomatology.

Method

Pre-Registration

Study hypotheses, detailed methods and procedures, and a preliminary data analysis plan (including exclusion criteria and data-stopping rules) were pre-registered using the Open Science Framework repository (https://osf.io). The pre-registration was submitted following data collection but prior to data analysis and was embargoed to prevent modification. Aims, hypotheses, and analyses presented in the current manuscript deviate from the pre-registration in that: 1) the following covariates were included in all models in the final analytical plan: child age, parental racial/ethnic minority status, parental education level, annual family income, and parental marital status; 2) full multiple regression models were presented rather than hierarchical regression models; and 3) Benjamini and Hochberg's (1995) procedure for controlling the false discovery rate (FDR) was used to statistically correct the alpha (no method of alpha correction was specified in the pre-registration). The full pre-registration is available at https://osf.io/mk98u and will be made publicly available following manuscript publication.

Participants

Table 1 provides descriptive statistics for all demographic variables. $N = 247$ English-speaking participants were recruited in response to an Amazon TurkPrime posting advertising a study for parents of children under 18 years of age. Participants were excluded for admitting to answering randomly and for failing attention checks ($n = 47$), yielding a final sample of $N = 200$ (same sample as that reported on in Cohodes, McCauley, & Gee [2021]).

Recent methodological reviews of research studies utilizing online convenience samples have emphasized the importance of excluding low-reputation, inattentive workers from MTurk samples to maintain data quality (Hauser & Schwarz, 2016). Therefore, several TurkPrime features were used to ensure the highest possible data quality (i.e., automatic verification of worker country location, automatic blocking of suspicious geocode locations and duplicate IP addresses, and automatic blocking of workers who had previously completed any pilot studies related to the present study). All TurkPrime workers were prescreened using the Prime Panels feature, resulting in the study only being advertised to participants who were verified to be the parent of at least one child under age 19 (potential participants were then additionally screened to verify that they were the parent of at least one child under age 18). Additionally, the study was only advertised to participants who had successfully completed at least 90% of past studies that they had signed up for (i.e., who had an approval rating over 90).

A Priori Power Calculations

We used the software program G*Power to conduct a power analysis (Faul et al., 2009). We aimed to obtain 80% power to detect a medium effect size of $f = .25$ at the standard .05 alpha error probability for linear multiple

Table 1. Descriptive statistics for all demographic variables.

Parent demographic variables	
Age	
Mean ± SD	38.27 ± 7.32
Min-Max	25-61
Median (IQR)	11
Sex	
Male	108 (54%)
Female	92 (46%)
Race/Ethnicity	
Non-Hispanic White	148 (74%)
Hispanic/Latino	9 (4.5%)
Black/African American	8 (4%)
Asian	26 (13%)
Native American	5 (2.5%)
Other	3 (0.5%)
Prefer not to answer	1 (0.5%)
Years of education	
Mean ± SD	16.41 ± 2.91
Min-Max	4-24
Median (IQR)	4
Annual household income	
Mean ± SD	$89,377.50 ± $63,121.83
Min-Max	$3,000–$525,000
Median (IQR)	$76,500
Parent's relationship to target child	
Biological	188 (94%)
Adoptive	12 (6%)
Parent marital status	
Married	171 (85.5%)
Single	14 (7%)
Separated/divorced	11 (5.5%)
Partnered	1 (0.5)
Widowed	0 (0%)
Parent marital status (continued)	
Other	3 (1.5%)
Parenting arrangement	
Single parent	19 (9.5%)
Co-parent with spouse/live-in partner	171 (85.5%)
Co-parent with former spouse/partner	7 (3.5%)
Co-parent with another adult	2 (1%)
Other	1 (0.5%)
Parent employment status	
Stay at home parent	37 (18.5%)
Unemployed	12 (6%)
Part-time	32 (16%)
Full-time	119 (59.5%)
Retired	1 (0.5%)
On disability	—
Student	4 (2%)
Looking for a job	4 (2%)
Other	6 (3%)
Child demographic variables	
Target child age	
Mean ± SD	8.84 ± 4.78
Min-Max	10 months-17 years
Median (IQR)	8
Target child sex	
Male	95 (47.5%)
Female	105 (52.5%)
Number of children in family	
Mean ± SD	2.07 ± 1.37
Min-Max	1-10
Median (IQR)	1
Sex of children in family	
Male only	53 (26.5%)
Female only	54 (27%)
Both female and male	93 (46.5%)

Employment percentages do not sum to 100% because more than one item could be selected. Percentages do not always sum to 100 due to rounding.

regression tests examining whether parental assistance with specific emotion regulation strategies moderates the effect of COVID-related stress on child symptomatology, which yielded a recommended sample size of $N = 200$ for the present study.

Procedure

All study procedures were approved by the institutional review board at Yale University (protocol exemption request granted) and were executed via online distribution of a Qualtrics survey distributed by Amazon TurkPrime. Participants provided informed consent prior to completing a compiled survey consisting of measures assessing parental assistance with children's execution of specific emotion regulation strategies and child symptomatology (presented in randomized order). Following completion of this survey, participants were presented with a second survey battery consisting of measures of family-level exposure to pandemic-related stressors. Participants completed data quality and attention checks, and were thanked, debriefed, and compensated $8 at the end of the study.

Study Timing

All study data were collected between April 24th and April 26th, 2020. Based on several metrics of the severity of the ongoing COVID-19 pandemic (i.e., daily deaths, daily infections and testing, and overall hospital resource use), the first peak in COVID-19 in the United States occurred between April 14th and April 19th 2020, suggesting that data for the current study were collected immediately following this peak (*IHME | COVID-19 Projections*, 2020). In addition, it is estimated that nearly 90% of Americans were quarantined during the study period (in 38 out of 50 states; Lee et al., 2020), based on data retrieved from local and state governments, executive orders, and local news reports.

Materials

Demographics

Participants were asked to report on their age and sex, the target child's age and sex, their relationship to the target child, the number of children in their family, the age and sex of each child in their family, their marital and parenting (e.g., single) status, and years of education. In addition, parents were asked to report their race and ethnicity, their annual household income and the number of individuals relying on this income, and the number of hours that they currently spend parenting during daytime hours.

Child Symptomatology

Child Behavioral Checklist. (CBCL 1.5–5; CBCL 6–18; Achenbach & Rescorla, 2001). The CBCL 1.5–5 and 6–18 are 99-item parent-report measures of children's behavioral problems. Parents rated items describing children's behavior on a 3-point Likert scale of 0 (*Not true*) to 2 (*Very or often true*). The internalizing and externalizing scales of the CBCL have demonstrated high internal consistency, with alphas ranging from .89 to .92 (Achenbach & Rescorla, 2001). The CBCL has also shown excellent stability over an 8-day period, and high external validity in the form of high correlations between CBCL scores and teacher reports of behavior problems as well as clinician assessment of child psychopathology (Gross et al., 2006). Because we were unable to monitor clinical risk in the context of an online survey, the following items assessing self-harm and suicidality were omitted from the study protocol: "18. Deliberately harms self or attempts suicide," and "91. Talks about killing self." The externalizing (24 items; Cronbach's $\alpha = .91$ for CBCL 1.5–5; 32 items; Cronbach's $\alpha = .94$ for CBCL 6–18) and internalizing problems (36 items, Cronbach's $\alpha = .95$ for CBCL 1.5–5; 31 items, Cronbach's $\alpha = .93$ for CBCL 6–18) scales were used in the present study for both age versions of the measure. Since two age versions of the measure were used (1.5–5 and 6–18), standardized raw scores for both internalizing and externalizing composites were used in order to compare across the two different versions, as in prior work (e.g., Cohodes et al., 2021).

COVID-Related Family Stressors and COVID-19 Exposure

Epidemic-Pandemic Impacts Inventory. (EPII; Grasso et al., 2020). The EPII is a recently developed measure designed to assess the impact of COVID-19 on multiple aspects of personal and family life, ranging from impacts on work and employment to emotional health and well-being. As the EPII was developed in response to the recent COVID-19 outbreak, psychometric information is not yet available. At the end of each list of questions specifically assessing each domain of personal or family life (e.g., work and employment), we added a single question assessing the degree of distress participants felt with regard to this specific domain (e.g., "In general, what is the level of distress you have experienced relating to *employment and financial impacts* due to the COVID-19 outbreak?"), which participants answered using a 7-point Likert scale ranging from 1 (*Mildly distressing*) to 7 (*Highly distressing*), which was modeled after a line of questions included in the COVID-19 and Perinatal Experiences (COPE) study (Thomason et al., 2020). A composite score representing family-level exposure

to COVID-related stressors (henceforth referred to as "COVID-related stress") was calculated by summing the eight items assessing parental distress in response to the impact of COVID-19 on the following domains of family life: work and employment, education and training, home life, social activities, economic wellbeing, emotional health and wellbeing, physical health problems, and physical distancing and quarantine (Cronbach's $\alpha = .86$).

Parental Assistance with Children's Emotion Regulation

Parental Assistance with Child Emotion Regulation Questionnaire. (PACER; Cohodes et al., 2021). The PACER is a 50-item parent-report measure designed to assess parental assistance with children's regulation of their own negative emotions using the following strategies: acceptance, avoidance, behavioral disengagement, distraction, suppression, problem solving, reappraisal, rumination, social support search, and venting. Each item for all strategy-specific scales, with the exception of the avoidance scale, represented a possible response to children's negative emotions (i.e., sentence completions for the phrase "When my child is having negative feelings. . ."). Each item for the avoidance scale represented a possible response to the prospect of a child experiencing negative emotions (i.e., sentence completions for the phrase "Before my child has negative feelings . . . "). Parents rated the degree to which they agreed with all statements (e.g., "When my child is having negative feelings, I help my child see the situation from a different perspective.") on a 7-point Likert-scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Strategy-specific scales were created by summing the five items that correspond to a given scale. The PACER has been shown to have good validity and reliability (Cohodes et al., 2021). In the present sample, all ten PACER scales had high internal consistency reliability (Cronbach's α values in the good to excellent range (>.85).

Analytic Plan

Zero-order correlations were calculated between all study variables. Linear regression analyses were used to test whether parental assistance with children's execution of specific emotion regulation strategies moderated the association between children's exposure to COVID-related stress and child symptomatology. In total, 20 regression models were run to test each of the interaction terms (created by multiplying each hypothesized moderator – parental assistance with child execution of a specific emotion regulation strategy [10 strategies] – by family-level COVID-related stress) as predictors of child internalizing and externalizing symptomatology, respectively. Across all models assessing moderation, predictor and product terms were centered-standardized (Aiken et al., 1991) and standardized beta coefficients were used as an estimate of effect size. All correlation and regression analyses were conducted using SPSS Version 28. Significant interactions were probed and visualized with the interActive data visualization tool (McCabe et al., 2018). Due to the forced-choice nature of all questions presented to participants, there was no missing data for main study variables.

iven age-related changes in parental buffering and normative developmental shifts from reliance on parents for external regulation to more intrinsic emotion regulation (Gee et al., 2014; Hostinar et al., 2015), child age was entered as a covariate in all models. Given the disproportionate impact of pandemic-related stress on racial and ethnic minorities, low-SES families, and single parents, the following covariates were also entered into all models: annual family income, parental racial/ethnic minority status, parental education level, and parental marital status.

Because we were interested in assessing dissociable effects of parental assistance with child execution of a wide range of emotion regulation strategies within this family of regression analyses, *p* values were adjusted for multiplicity using the Benjamini-Hochberg method to control the false discovery rate (Benjamini & Hochberg, 1995); false discovery rates (FDR) of both 10% and 20% were applied (consistent with recommendations in McDonald, 2009); all significant *p* values were retained following correction with a 20% FDR and only two significant *p* values were retained following correction with a 10% FDR.[1] Tests to determine whether the data met the assumption of collinearity indicated that multicollinearity was not a concern (tolerance for all variables across all models > .77, VIF for all variables across all models < 1.30).

Results

Zero-order correlations were examined for all study variables (see Table 2). Table 3 presents descriptive statistics for all main study variables and covariates.

[1]The interaction between parental assistance with suppression and children's exposure to COVID-19-related stress in predicting children's internalizing symptomatology and the interaction between parental assistance with problem solving and children's exposure to COVID-19-related stress in predicting children's internalizing symptomatology were retained following correction with a 10% FDR. Full results with 10% FDR applied are available via OSF.

Table 2. Zero-order correlations among study variables.

Factor	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(1) COVID-related stress	.35**	−.03	−.03	−.13	.06	−.02	−.07	−.14	.20**	−.01	.12	.06	−.15*	.00	
(2) Externalizing problems (CBCL)	-	.65**	−.07	−.10	.24***	.12	−.03	−.17*	−.16*	.21**	−.08	.08	.14*	−.16*	−.03
(3) Internalizing problems (CBCL)	-	-	−.14	−.22**	−.17*	.21**	−.06	−.16*	−.25***	.34***	−.09	.01	−.27***	−.14	.01
(4) Behavioral disengagement (PACER)	-	-	-	.60**	.41**	−.05	.61**	.59**	.37**	−.17*	.39**	.58**	.01	.03	−.15*
(5) Problem solving (PACER)	-	-	-	-	.57**	−.05	.50**	.68**	.46**	−.29**	.49**	.26**	.02	.01	−.08
(6) Social support search (PACER)	-	-	-	-	-	−.09	.41**	.50**	.36**	−.18*	.43**	.12	−.06	.01	−.03
(7) Rumination (PACER)	-	-	-	-	-	-	−.00	.01	.07	.16*	.00	.07	−.06	−.00	−.02
(8) Distraction (PACER)	-	-	-	-	-	-	-	.49**	.24**	−.04	.36**	.40**	.02	.01	−.07
(9) Reappraisal (PACER)	-	-	-	-	-	-	-	-	.38**	−.17*	.48**	.29**	−.02	.04	−.05
(10) Acceptance (PACER)	-	-	-	-	-	-	-	-	-	−.40**	.56**	.06	.06	.13	−.12
(11) Suppression (PACER)	-	-	-	-	-	-	-	-	-	-	−.27**	.16*	.09	.02	−.06
(12) Venting (PACER)	-	-	-	-	-	-	-	-	-	-	-	.08	−.20**	−.05	−.13
(13) Avoidance (PACER)	-	-	-	-	-	-	-	-	-	-	-	-	.10	−.03	−.14
(14) Child age		-	-	-	-	-	-	-	-	-	-	-		.03	−.12
(15) Family annual income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.33
(16) Parental years of education	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

***$p < .001$, **$p < .01$, *$p < .05$.

Table 3. Descriptive statistics for main study variables and covariates.

Variable	M (SD)	Skewness/Kurtosis
COVID-related stress	27.93 (10.46)	−0.23/-0.77
Externalizing problems (CBCL)	37.73 (8.94)	1.75/3.64
Internalizing problems (CBCL)	40.77 (10.01)	1.74/3.57
Behavioral disengagement (PACER)	27.40 (4.76)	−0.19/-0.09
Problem solving (PACER)	29.65 (4.21)	−0.41/-0.57
Social support search (PACER)	27.88 (5.16)	−0.53/0.85
Rumination (PACER)	17.48 (7.88)	0.29/-0.68
Distraction (PACER)	27.65 (5.22)	−0.25/-0.44
Reappraisal (PACER)	28.84 (4.95)	−0.67/0.69
Acceptance (PACER)	28.33 (5.57)	−0.89/0.86
Suppression (PACER)	13.45 (7.17)	0.66/-0.52
Venting (PACER)	27.61 (5.27)	−0.50/0.01
Avoidance (PACER)	24.70 (7.13)	−0.58/0.04
Child age	8.84 (4.78)	0.09/-1.20
Family annual income	$89,377.50 ($63,121.83)	2.78/14.35
Parental years of education	16.40 (2.91)	−0.04/2.19

Parental Buffering of the Effects of COVID-related Stress on Children's Symptomatology[2]

Consistent with hypotheses related to the potential buffering effect of parental assistance with children's execution of specific prototypically-adaptive emotion regulation strategies in the association between children's exposure to COVID-related stress and youth mental health, there was a significant interaction between parental assistance with acceptance and exposure to COVID-related stress on children's internalizing problems ($B = -.03$, $t(198) = -2.31$, $p = .022$, 95% CI

Table 4. Multiple regression testing parental assistance with acceptance as a moderator of the effect of child exposure to COVID-related stress on child internalizing symptomatology ($N = 200$).

						95% CI for *B*	
Predictor	*B*	*SE(B)*	β	t	Sig. (*p*)	Lower Bound	Upper Bound
Child age	−.53	.13	−.25	−3.91	<.001	−.79	−.26
Parent years of education	−.08	.23	−.02	−.34	.735	−.53	.38
Family income	−.01	.00	−.07	−1.04	.299	.00	.00
Parent racial/ethnic minority status	1.63	1.45	.07	1.13	.261	−1.22	4.48
Parent marital status	2.24	1.92	.08	1.17	.245	−1.55	6.03
COVID-related stress	.32	.06	.34	5.28	<.001	.20	.44
Parental assistance with acceptance	−.32	.12	−.18	−2.77	.006	−.56	−.09
COVID-related stress*Parental assistance with acceptance	−.03	.01	−.15	−2.31	.022	−.05	−.00

[2]The present study utilized CBCL raw scores given the inclusion of children under 18 months of age in the sample. All analyses involving the CBCL were re-run in a sample of children over 18 months of age ($n = 195$). Results of these analyses yielded an identical pattern of results to the regression results presented here.

[−.05, −.00]), but not externalizing problems ($B = -.01$, $t(198) = -.82$, $p = .414$, 95% CI [−.03, .01]), see Table 4. Higher exposure to COVID-related stress was associated with more child internalizing problems for children whose parents engaged in relatively low levels of parental assistance with acceptance, see Figure 1. In contrast, among children whose parents engaged in relatively high levels of parental assistance with acceptance, a significant association between exposure to COVID-related stress and child internalizing problems was not detected.

In addition, there was a significant interaction between parental assistance with problem solving and exposure to COVID-related stress on children's internalizing problems ($B = -.05$, $t(198) = -3.41$, $p < .001$, 95% CI [−.07, −.02]), but not externalizing problems ($B = -.02$, $t(198) = -1.83$, $p = .068$, 95% CI [−.05, .00]), see Table 5. Higher exposure to COVID-related stress was associated with more child internalizing problems for children whose parents engaged in relatively low levels of parental assistance with problem solving, see Figure 2. In contrast, among children whose parents engaged in relatively high levels of parental assistance with problem solving, there was not a significant association between exposure to COVID-related stress and child internalizing problems.

Finally, there was a significant interaction between parental assistance with behavioral disengagement and exposure to COVID-related stress on children's externalizing problems ($B = -.02$, $t(198) = -2.07$, $p = .039$, 95% CI [−.05, −.00]), but not internalizing problems ($B = -.02$, $t(198) = -1.47$, $p = .142$, 95% CI [−.04, .01]), see Table 6. Higher exposure to COVID-

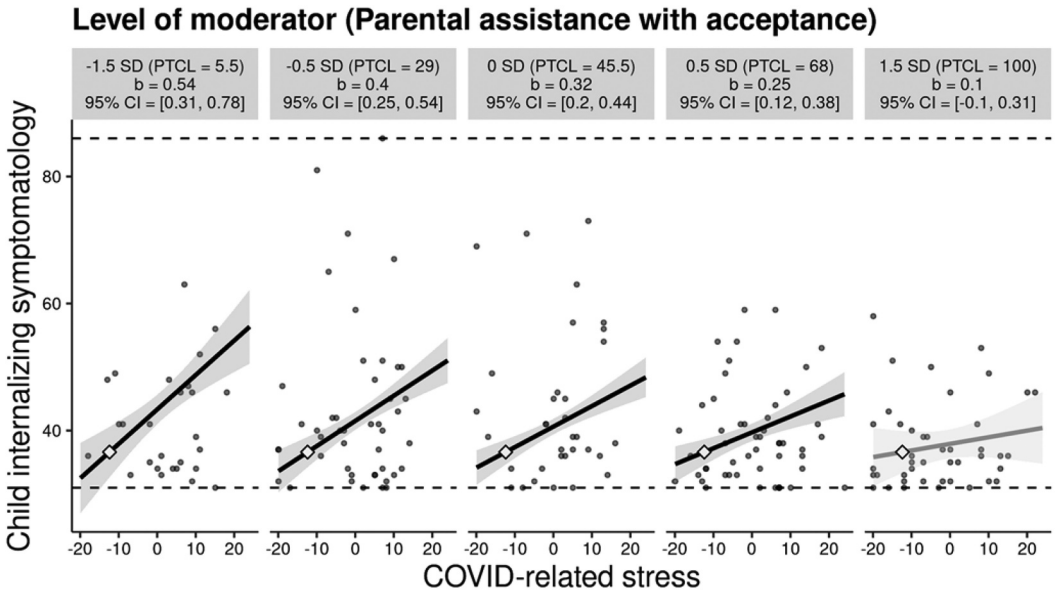

Figure 1. Increases in child internalizing problems were associated with increases in exposure to COVID-related stress for children whose parents engaged in relatively low levels of parental assistance with acceptance (−1.5 SD below the mean, −.5 SD below the mean, at mean levels, and .5 SD above the mean). In contrast, among children whose parents engaged in relatively high levels of parental assistance with acceptance (1.5 SD above the mean), there was not a significant association between exposure to COVID-related stress and child internalizing problems. Figure produced using the interActive data visualization tool (McCabe et al., 2018).

Table 5. Multiple regression testing parental assistance with problem solving as a moderator of the effect of child exposure to COVID-related stress on child internalizing symptomatology ($N = 200$).

						95% CI for *B*	
Predictor	*B*	*SE(B)*	β	t	Sig. (*p*)	Lower Bound	Upper Bound
Child age	−.54	.13	−.26	−4.11	<.001	−.80	−.28
Parent years of education	−.01	.23	−.00	−.02	.984	−.45	.44
Family income	−.01	.00	−.09	−1.30	.194	.00	.00
Parent racial/ethnic minority status	2.34	1.41	.10	1.66	.098	−.44	5.11
Parent marital status	1.63	1.87	.06	.87	.386	−2.07	5.32
COVID-related stress	.33	.06	.34	5.48	<.001	.21	.44
Parental assistance with problem solving	−.46	.15	−.19	−3.13	.002	−.75	−.17
COVID-related stress*Parental assistance with problem solving	−.05	.01	−.21	−3.41	<.001	−.07	−.02

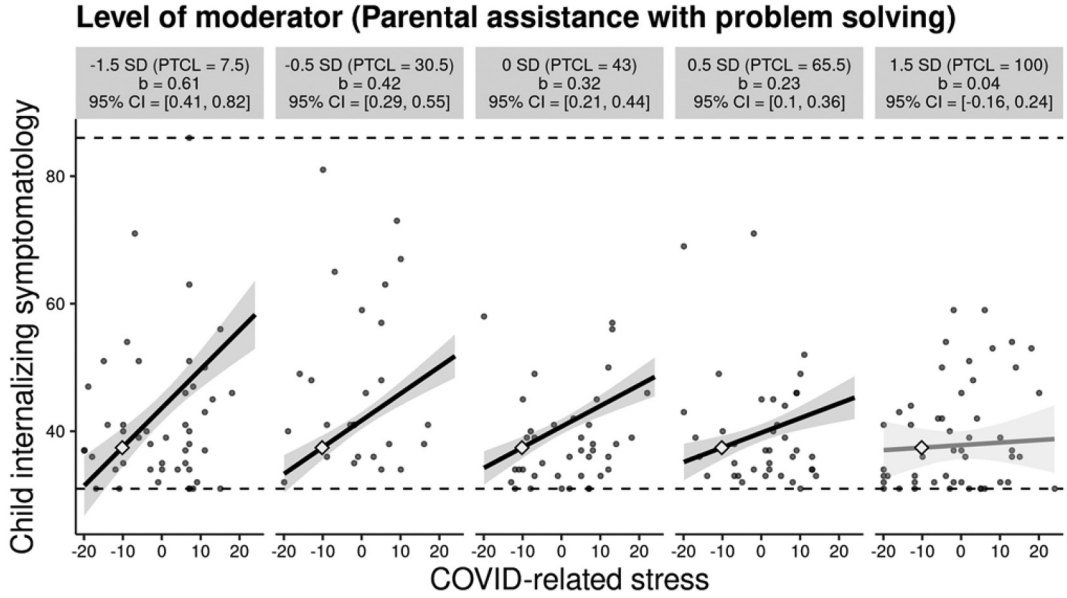

Figure 2. Increases in child internalizing problems were associated with increases in exposure to COVID-related stress for children whose parents engaged in relatively low levels of parental assistance with problem solving (−1.5 SD below the mean, −.5 SD below the mean, at mean levels, and .5 SD above the mean). In contrast, among children whose parents engaged in relatively high levels of parental assistance with problem solving (1.5 SD above the mean), there was not a significant association between exposure to COVID-related stress and child internalizing problems. Figure produced using the interActive data visualization tool (McCabe et al., 2018).

Table 6. Multiple regression testing parental assistance with behavioral disengagement as a moderator of the effect of child exposure to COVID-related stress on child externalizing symptomatology ($N = 200$).

						95% CI for *B*	
Predictor	*B*	*SE(B)*	β	t	Sig. (*p*)	Lower Bound	Upper Bound
Child age	.29	.13	.15	2.30	.022	.04	.53
Parent years of education	.10	.22	.03	.48	.634	−.32	.53
Family income	−.01	.00	−.13	−1.72	.087	.00	.00
Parent racial/ethnic minority status	2.51	1.34	.12	1.88	.061	−.12	5.15
Parent marital status	1.39	1.77	.05	.78	.434	−2.10	4.87
COVID-related stress	.30	.06	.35	5.28	<.001	.19	.41
Parental assistance with behavioral disengagement	−.15	.13	−.08	−1.18	.241	−.40	.10
COVID-related stress*Parental assistance with behavioral disengagement	−.02	.01	−.14	−2.07	.039	−.05	−.00

related stress was associated with more child externalizing problems for children whose parents engaged in relatively low levels of parental assistance with behavioral disengagement, see Figure 3. In contrast, among children whose parents engaged in relatively high levels of parental assistance with behavioral disengagement, a significant association between exposure to COVID-related stress and child externalizing problems was not detected.

We further probed all significant interactions between parental assistance with prototypically-adaptive emotion regulation strategies and children's exposure to COVID-related stress using marginal effects plots (i.e., "region-of-significance" plots; McCabe et al., 2018) to assess the conditional effect of COVID-related stress on child symptomatology across each level of the moderator. Figure 4 depicts the significance, magnitude, and direction of the simple slope of child symptomatology across the hypothetical range of the moderators (i.e., parental assistance with acceptance, parental assistance with problem solving, and parental assistance with behavioral disengagement; mean ±3 SD). The simple slope of COVID-related stress on child internalizing problems is significant for parents whose levels of assistance with acceptance reside at or lower than 1.05 standard deviations above the mean. This range includes 79.5% of observations in the sample. The simple slope of COVID-related stress on child internalizing problems is significant for parents whose levels of assistance with problem solving reside at or lower than 0.95 standard deviations above the mean. This range includes 75% of observations in the sample. Finally, the simple slope of COVID-

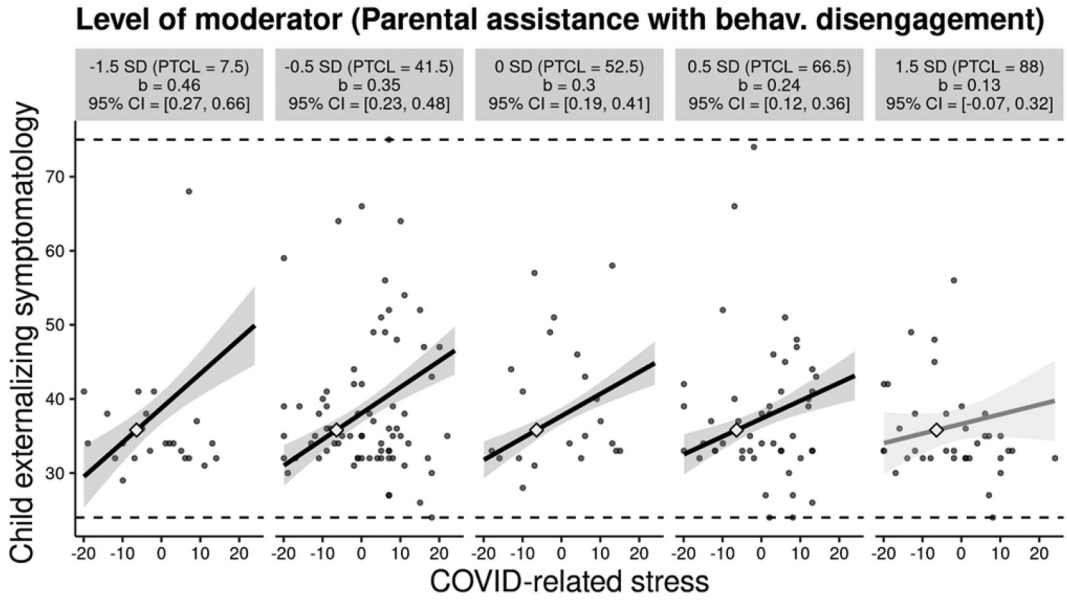

Figure 3. Increases in child externalizing problems were associated with increases in exposure to COVID-related stress for children whose parents engaged in relatively low levels of parental assistance with behavioral disengagement (−1.5 SD below the mean, −.5 SD below the mean, at mean levels, and .5 SD above the mean). In contrast, among children whose parents engaged in relatively high levels of parental assistance with behavioral disengagement (1.5 SD above the mean), there was not a significant association between exposure to COVID-related stress and child externalizing problems.

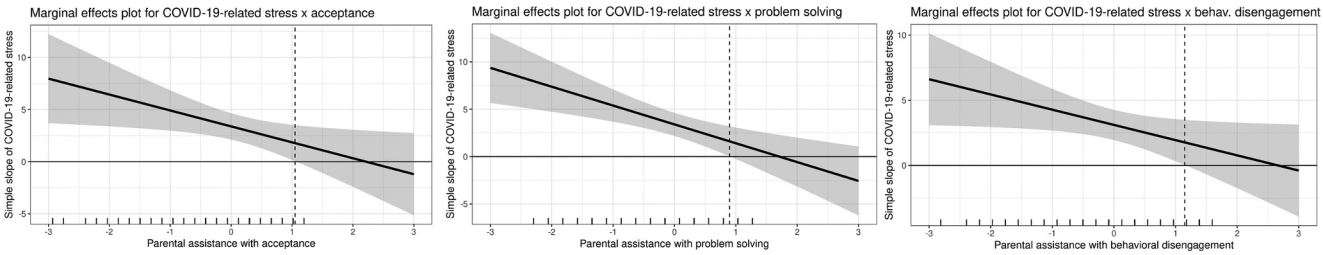

Figure 4. Marginal effects plots depicting regions of significance for all significant interactions between parental assistance with prototypically-adaptive emotion regulation strategies and COVID-related stress. Figure produced using the interActive data visualization tool (McCabe et al., 2018).

related stress on child externalizing problems is significant for parents whose levels of assistance with behavioral disengagement reside at or lower than 1.15 standard deviations above the mean. This range includes 82% of observations in the sample.

Parental Exacerbation of the Effects of COVID-related Stress on Children's Symptomatology

Consistent with hypotheses related to the potential exacerbating effect of parental assistance with children's execution of specific prototypically-maladaptive

Table 7. Multiple regression testing parental assistance with suppression as a moderator of the effect of child exposure to COVID-related stress on child internalizing symptomatology ($N = 200$).

						95% CI for *B*	
Predictor	*B*	*SE(B)*	β	t	Sig. (*p*)	Lower Bound	Upper Bound
Child age	−.59	.13	−.28	−4.63	<.001	−.85	−.34
Parent years of education	.11	.22	.03	.51	.608	−.32	.54
Family income	−.01	.00	−.09	−1.32	.187	.00	.00
Parent racial/ethnic minority status	1.31	1.37	.06	.95	.342	−1.40	4.02
Parent marital status	.32	1.79	.01	.18	.861	−3.22	3.85
COVID-related stress	.28	.06	.30	4.86	<.001	.17	.40
Parental assistance with suppression	.34	.09	.24	3.78	<.001	.16	.51
COVID-related stress*Parental assistance with suppression	.03	.01	.22	3.52	<.001	.01	.05

emotion regulation strategies, there was a significant interaction between parental assistance with suppression and exposure to COVID-related stress on children's internalizing problems ($B = .03$, $t(198) = 3.52$, $p < .001$, 95% CI [.01, .05]), but not externalizing problems ($B = .01$, $t(198) = 1.48$, $p = .142$, 95% CI [−.00, .03]), see Table 7. Higher exposure to COVID-related stress was associated with more child internalizing problems for children whose parents engaged in relatively high levels of parental assistance with suppression, see Figure 5. In contrast, among children whose parents engaged in relatively low levels of parental assistance with suppression, there was not a significant association between exposure to COVID-related stress and child internalizing problems. In addition, there was a significant interaction between parental assistance with rumination and exposure to COVID-related stress on both children's internalizing problems ($B = .02$, $t(198) = 2.96$, $p = .003$, 95% CI [.01, .04]) and externalizing problems ($B = .02$, $t(198) = 2.06$, $p = .040$, 95% CI [.00, .03]), see Tables 8 and 9. Higher exposure to COVID-related stress was associated with more child externalizing problems for children whose parents engaged in relatively high levels of parental assistance with rumination, see Figure 6. In contrast, among children whose parents engaged in relatively low levels of parental assistance with rumination, there was not a significant association between exposure to COVID-related stress and child externalizing problems. Similarly, higher exposure to COVID-related stress was associated with more child internalizing problems for children whose parents engaged in relatively high levels of parental assistance with rumination, see Figure 7. In contrast, among children whose parents engaged in relatively low levels of parental

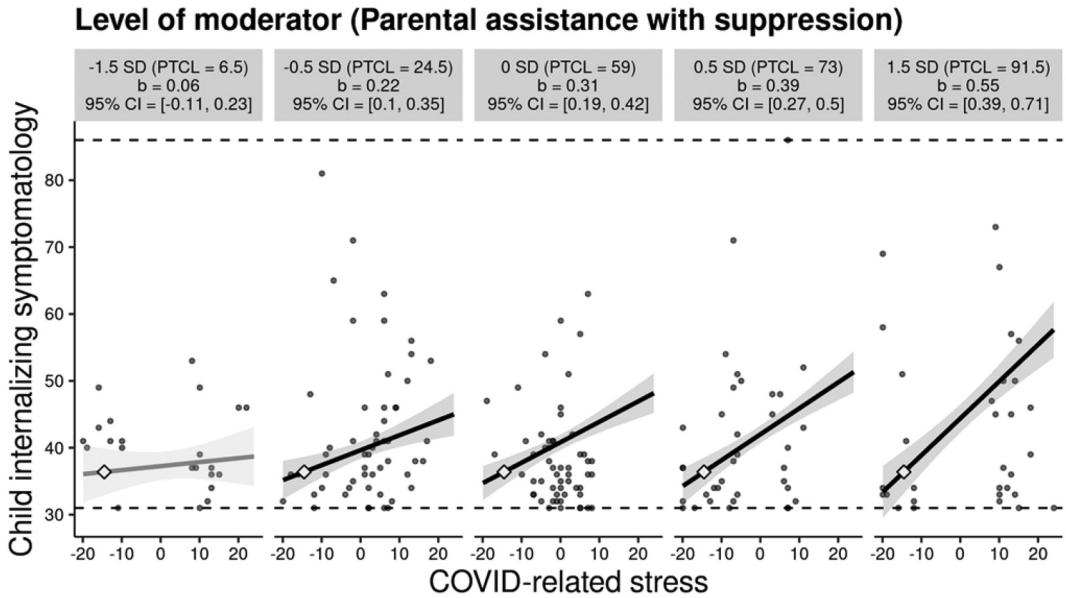

Figure 5. Increases in child internalizing problems were associated with increases in exposure to COVID-related stress for children whose parents engaged in relatively high levels of parental assistance with suppression (−.5 SD below the mean, at mean levels, .5 SD above the mean, and 1.5 SD above the mean). In contrast, among children whose parents engaged in relatively low levels of parental assistance with suppression (−1.5 SD below the mean), there was not a significant association between exposure to COVID-related stress and child internalizing problems. Figure produced using the interActive data visualization tool (McCabe et al., 2018).

Table 8. Multiple regression testing parental assistance with rumination as a moderator of the effect of child exposure to COVID-related stress on child internalizing symptomatology ($N = 200$).

						95% CI for *B*	
Predictor	*B*	*SE(B)*	β	t	Sig. (*p*)	Lower Bound	Upper Bound
Child age	−.56	.13	−.27	−4.18	<.001	−.82	−.29
Parent years of education	.03	.23	.01	.15	.883	−.41	.48
Family income	−.01	.00	−.08	−1.16	.247	.00	.00
Parent racial/ethnic minority status	1.80	1.44	.08	1.25	.212	−1.03	4.63
Parent marital status	1.01	1.90	.04	.53	.598	−2.75	4.76
COVID-related stress	.34	.06	.35	5.57	<.001	.22	.46
Parental assistance with rumination	.17	.08	.13	2.02	.045	.00	.33
COVID-related stress*Parental assistance with rumination	.02	.01	.19	2.96	.003	.01	.04

Table 9. Multiple regression testing parental assistance with rumination as a moderator of the effect of child exposure to COVID-related stress on child externalizing symptomatology ($N = 200$).

						95% CI for *B*	
Predictor	*B*	*SE(B)*	β	t	Sig. (*p*)	Lower Bound	Upper Bound
Child age	.28	.12	.15	2.27	.024	.04	.53
Parent years of education	.10	.21	.03	.49	.627	−.31	.52
Family income	−.01	.00	−.12	−1.65	.100	.00	.00
Parent racial/ethnic minority status	2.17	1.34	.11	1.62	.107	−.47	4.80
Parent marital status	1.25	1.77	.05	.70	.482	−2.25	4.75
COVID-related stress	.31	.06	.36	5.49	<.001	.20	.42
Parental assistance with rumination	.07	.08	.06	.96	.336	−.08	.22
COVID-related stress*Parental assistance with rumination	.02	.01	.14	2.06	.040	.00	.03

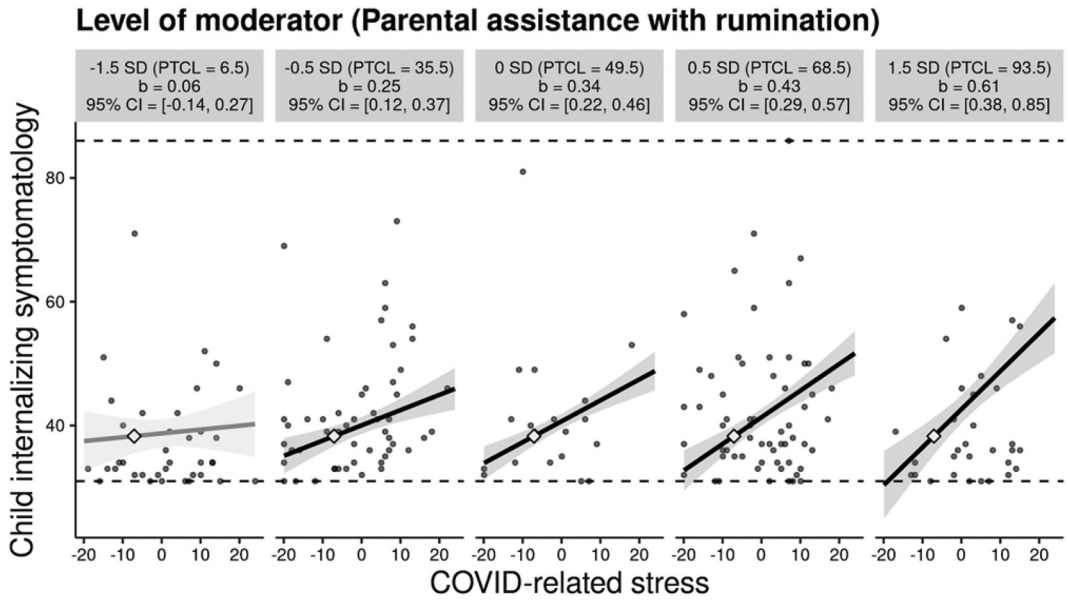

Figure 6. Increases in child externalizing problems were associated with increases in exposure to COVID-related stress for children whose parents engaged in relatively high levels of parental assistance with rumination (−.5 SD below the mean, at mean levels, .5 SD above the mean, and 1.5 SD above the mean). In contrast, among children whose parents engaged in relatively low levels of parental assistance with rumination (−1.5 SD below the mean), there was not a significant association between exposure to COVID-related stress and child externalizing problems. Figure produced using the interActive data visualization tool (McCabe et al., 2018).

assistance with rumination, there was not a significant association between exposure to COVID-related stress and child internalizing problems.

We further probed all significant interactions between parental assistance with prototypically-maladaptive emotion regulation strategies and children's exposure to COVID-related stress using marginal effects plots (i.e., "region-of-significance" plots; McCabe et al., 2018) to assess the conditional effect of COVID-related stress on child symptomatology across each level of the moderator. Figure 8 depicts the significance, magnitude, and direction of the simple slope of child symptomatology across the hypothetical range of the moderators (i.e., parental assistance with suppression; parental assistance with rumination; mean ±3 SD). The simple slope of COVID-related stress on child internalizing symptomatology is significant for parents whose assistance with suppression resides at or higher than 0.95 standard deviations below the mean. This range includes 87% of observations in the sample. The simple slope of COVID-related stress on child internalizing symptomatology is significant for parents whose assistance with rumination resides at or higher than 0.95 standard deviations below the mean. This range includes 81.5% of observations in the sample. Finally, the simple slope of COVID-related stress on child externalizing symptomatology is significant for parents whose assistance with rumination resides at or higher than 1.2 standard deviations below the mean. This range includes 88% of observations the sample.

Contrary to hypotheses, there was no significant interaction between parental assistance with social support search and exposure to COVID-related stress on children's internalizing problems ($B = -.02$, $t(198) =$

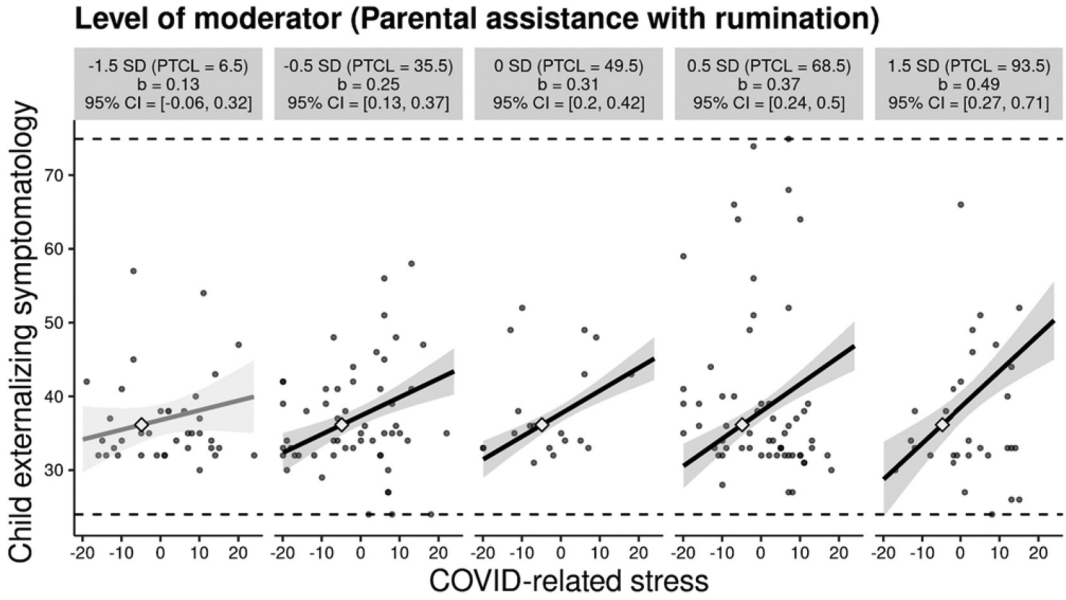

Figure 7. Increases in child externalizing problems were associated with increases in exposure to COVID-related stress for children whose parents engaged in relatively high levels of parental assistance with rumination (−.5 SD below the mean, at mean levels, .5 SD above the mean, and 1.5 SD above the mean). In contrast, among children whose parents engaged in relatively low levels of parental assistance with rumination (−1.5 SD below the mean), there was not a significant association between exposure to COVID-related stress and child externalizing problems. Figure produced using the interActive data visualization tool (McCabe et al., 2018).

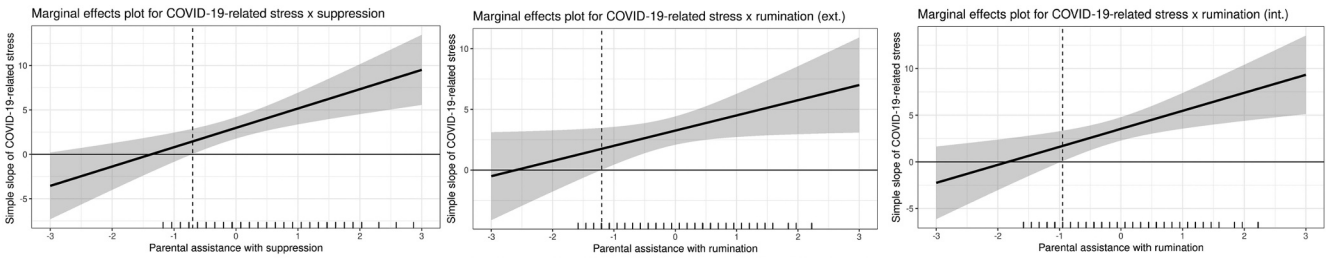

Figure 8. Marginal effects plots depicting regions of significance for all significant interactions between parental assistance with prototypically-maladaptive emotion regulation strategies and COVID.

−1.80, $p = .074$, 95% CI [−.05, .00]) or externalizing problems ($B = -.02$, $t(198) = -1.63$, $p = .105$, 95% CI [−.04, .00]). There was no significant interaction between parental assistance with avoidance and exposure to COVID-related stress on children's internalizing problems ($B = -.00$, $t(198) = -.34$, $p = .736$, 95% CI [−.02, .02]) or externalizing problems ($B = -.01$, $t(198) = -.96$, $p = .337$, 95% CI [−.02, .01]). There was no significant interaction between parental assistance with venting and exposure to COVID-related stress on children's internalizing problems ($B = -.00$, $t(198) = -.18$, $p = .856$, 95% CI [−.02, .02]) or externalizing problems ($B = .01$, $t(198) = .98$, $p = .330$, 95% CI [−.01, .03]). Similarly, there was no significant interaction between parental assistance with reappraisal and exposure to COVID-related stress on children's internalizing problems ($B = -.01$, $t(198) = -1.07$, $p = .287$, 95% CI [−.03, .01]) or externalizing problems ($B = -.02$, $t(198) = -1.67$, $p = .097$, 95% CI [−.04, .00]). Finally, there was no significant interaction between parental assistance with distraction and exposure to COVID-related stress on children's internalizing problems ($B = -.01$, $t(198) = -.51$, $p = .608$, 95% CI [−.03, .02]) or externalizing problems ($B = -.02$, $t(198) = -1.49$, $p = .137$, 95% CI [−.04, .01]).

Discussion

The present study provides initial evidence that parental assistance with children's emotion regulation has the potential to buffer or exacerbate the effects of children's exposure to COVID-related stress. Specifically, parental assistance with acceptance, problem solving, and

behavioral disengagement – prototypically-adaptive emotion regulation skills – emerged as potential buffers of the effect of children's exposure to COVID-related stress on youth symptomatology. Children of parents who reported relatively high levels of assistance with their children's use of acceptance, problem solving, and behavioral disengagement to regulate their negative emotions exhibited lower levels of symptomatology amidst exposure to pandemic-related stress. Conversely, children of parents who engaged in relatively high levels of parental assistance with rumination and suppression – prototypically-maladaptive strategies – exhibited higher levels of symptomatology. Though the data utilized in the present study are cross-sectional and therefore preclude conclusions about the long-term effect of parental assistance with children's execution of specific emotion regulation strategies on the association between exposure to COVID-related stress and children's development of symptomatology, results suggest that parents' assistance with specific emotion regulation strategies can both buffer and exacerbate the effects of COVID-related stress on youth symptomatology.

We note that, inconsistent with hypotheses, parental assistance with reappraisal did not emerge as a significant moderator of associations between children's exposure to COVID-related stress and youth functioning. Though a substantial body of work underscores reappraisal as a resilience-promoting factor in the context of both acute (Jamieson et al., 2013) and chronic (Troy et al., 2010) stress exposure, it is possible that reappraisal may function differently in the context of parent-child relationships and in the context of the unique challenges inherent to the ongoing pandemic (e.g., lockdown, isolation, heightened parenting stress). Notably, as the emerging theory of regulatory flexibility posits, traits inherent to an individual likely interact with specific attributes of a given situation to inform whether reliance on a particular emotion regulation strategy is likely to be beneficial or detrimental (Bonanno & Burton, 2013). The extant literature has yet to examine the role of parental assistance of children's development of regulatory flexibility, and additional work is needed to elucidate the role of parental assistance with regulation strategies that are considered to be prototypically-adaptive in novel contexts.

Parental Emotion Socialization During the COVID-19 Pandemic

The findings of the present study add to an emerging literature highlighting specific elements of parental emotion socialization that may moderate the effect of children's exposure to COVID-related stress on youth functioning (Cohodes et al., 2021; Spinelli et al., 2020). To our knowledge, the present study represents the first study to examine parental assistance with children's emotion regulation – at the strategy-specific level – in the context of the ongoing COVID-19 pandemic. More broadly, given that examination of parental assistance with children's emotion regulation at the strategy-specific level is a relatively novel line of inquiry facilitated by recent developments in assessment of parental emotion socialization (Cohodes et al., 2021), this study represents the first examination of parental assistance with children's emotion regulation – at the strategy-specific level – in the context of stress.

Implications for Policy and Practice

Findings of the present study contribute to a more nuanced understanding of the role of parents in supporting children during an evolving stressor such as the ongoing pandemic. Though previous studies have documented that generalized parental emotion coaching (i.e., parental identification of and respect for children's emotions, tendency to play an active role in emotion-eliciting situations) may buffer children from the financial, educational, and health-related stressors associated with the ongoing pandemic (Cohodes et al., 2021; Lobo et al., 2021), findings of the present study are poised to inform more specific recommendations for parents supporting children during global events that result in significant family-level stress. Prevention and intervention programs targeting youth mental health during the pandemic (e.g., Boldt et al., 2021) should focus on bolstering parents' capacity to support children's problem solving, acceptance, and behavioral disengagement of negative emotions, and on discouraging parents from facilitating children's suppression and rumination of negative emotions.

Limitations and Future Directions

Data for the present study were collected in April 2020, which represents a relative peak of the severity of the ongoing pandemic in the United States. In the spring of 2020, it became increasingly clear that the pandemic would have widespread effects on family life, and our team aimed to conduct a rapid-response study to assess family-level processes during an unfolding public health crisis. Given the nature of this study's conception, results must be interpreted in the context of several key methodological limitations. Data utilized in the present study are cross-sectional in nature, which limits our ability to

infer long-term effects of parental assistance with emotion regulation – at the strategy-specific level – on child symptomatology during an ongoing pandemic and across development. Parental involvement in children's emotion regulation during exposure to stress likely exerts differential influences on children's symptom presentation as a function of children's developmental stage given dynamic changes in both parenting practices and children's intrinsic emotion regulation across development (e.g., Herd et al., 2021). Parents in the sample had focal children in developmental stages ranging from infancy to adolescence; thus it is crucial that additional studies aim to disentangle the ways in which parental assistance with specific emotion regulation strategies exert differential influences on children across development. Though we covaried for child age in moderation analyses, we were unfortunately not powered to detect three-way interactions between child age, parental assistance with specific emotion regulation strategies, and COVID-related stress in predicting child symptomatology in the present study. Beyond moderation analyses, future studies should aim to employ longitudinal methods to fully capture the ways in which parental involvement in regulatory processes fluctuate as children mature and parents' role as a source of extrinsic regulation wanes. Current theory posits that children's capacity for intrinsic emotion regulation emerges in the context of early attachment relationships with caregivers (Kiel & Kalomiris, 2015; Waters et al., 2010), and, further, cross-species studies examining the neurobiological underpinnings of the impact of parental presence on children's self-regulation suggest that the impact of parental presence on children's capacity for regulation may peak in childhood (Gee et al., 2014; Hostinar et al., 2014). Therefore, broad parental involvement in children's execution of emotion regulation strategies may peak relatively early in development, with a transition to more selective parental assistance with more sophisticated strategies. Future studies should employ measures like the PACER to understand how this mechanistic developmental process unfolds as it relates to parental support of particular prototypically-adaptive and -maladaptive emotion regulation strategies.

There may be a bidirectional association between levels of child symptomatology and the degree to which parents engage in assisting their children with emotion regulation strategies. Future studies that aim to delineate the ways in which parental assistance with children's use of specific emotion regulation strategies differs as a function of children's distress in the context of stress exposure – ideally using a longitudinal design – will substantially contribute to our understanding of the evolution of coregulation during stress. Further, parents were sole reporters of all variables of interest; parents' perception of family-level exposure to COVID-related stress – as well as parental symptomatology – may have impacted their report of child symptomatology and stress. Though every effort was made to ensure accuracy of data collection (i.e., use of attention checks, inclusion of workers with high approval ratings), we relied on an online convenience sample due to quarantine and social distancing mandates. Disparate access to the technological resources that were required for parents' study participation (i.e., stable internet connection) likely contributed to disproportionate representation of individuals most affected by "digital inequality" during the pandemic (Roubinov et al., 2020). The majority of study participants were non-Hispanic and White and reported being married and co-parenting; results may not generalize to a more diverse sample, especially in light of the disproportionate pandemic-related stress experienced by communities of color (Fortuna et al., 2020), single parents (Hertz et al., 2021), and low-income families (Alonzo et al., 2021). Results of the present study should augment additional studies that utilize more extensive data collection procedures (e.g., online parent and child report, ecological momentary assessment) and that include a more diverse sample of participants.

In conclusion, the present study contributes to an emerging literature highlighting parental assistance with children's emotion regulation – using specific strategies – as moderators of the association between children's exposure to COVID-related stress and youth mental health. Findings underscore the importance of supporting parents – in their critical role of supporting children – during public health crises such as the ongoing pandemic.

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Disclosure Statement

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References

Achenbach, T. M., & Rescorla, L. (2001). *Manual for the ASEBA school-age forms & profiles: An integrated system of multi-informant assessment*. ASEBA.

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. Sage.

Aldao, A., & Nolen-Hoeksema, S. (2010). Specificity of cognitive emotion regulation strategies: A transdiagnostic examination. *Behaviour Research and Therapy*, *48*(10), 974–983. https://doi.org/10.1016/j.brat.2010.06.002

Alonzo, D., Popescu, M., & Zubaroglu Ioannides, P. (2021). Mental health impact of the Covid-19 pandemic on parents in high-risk, low income communities. *The International Journal of Social Psychiatry*, 0020764021991896. https://doi.org/10.1177/0020764021991896

Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B (Methodological)*, *57*(1), 289–300. https://doi.org/10.1111/j.2517-6161.1995.tb02031.x

Boldt, K., Coenen, M., Movsisyan, A., Voss, S., Rehfuess, E., Kunzler, A. M., Lieb, K., & Jung-Sievers, C. (2021). Interventions to ameliorate the psychosocial effects of the COVID-19 pandemic on children—A systematic review. *International Journal of Environmental Research and Public Health*, *18*(5), 2361. https://doi.org/10.3390/ijerph18052361

Bonanno, G. A., & Burton, C. L. (2013). Regulatory flexibility: An individual differences perspective on coping and emotion regulation. *Perspectives on Psychological Science*, *8*(6), 591–612. https://doi.org/10.1177/1745691613504116

Cohodes, E., Chen, S., & Lieberman, A. (2017). Maternal meta-emotion philosophy moderates effect of maternal symptomatology on preschoolers exposed to domestic violence. *Journal of Child and Family Studies*, *26*(7), 1831–1843. https://doi.org/10.1007/s10826-017-0699-3

Cohodes, E. M., McCauley, S., & Gee, D. G. (2021). Parental buffering of stress in the time of COVID-19: Family-level factors may moderate the association between pandemic-related stress and youth symptomatology. *Research on Child and Adolescent Psychopathology*, *49*(7), 935–948. https://doi.org/10.1007/s10802-020-00732-6

Cohodes, E. M., Preece, D. A., McCauley, S., Rogers, M. K., Gross, J. J., & Gee, D. G. (2021). Development and validation of the Parental Assistance with Child Emotion Regulation (PACER) questionnaire. *Research on Child and Adolescent Psychopathology*. https://doi.org/10.1007/s10802-020-00759-9

Eisenberg, N., & Fabes, R. A. (1994). Mothers' reactions to children's negative emotions: Relations to children's temperament and anger behavior. *Merrill-Palmer Quarterly*, *40*(1), 138–156.

Ellis, B. H., Alisic, E., Reiss, A., Dishion, T., & Fisher, P. A. (2014). Emotion regulation among preschoolers on a continuum of risk: The role of maternal emotion coaching. *Journal of Child and Family Studies*, *23*(6), 965–974. https://doi.org/10.1007/s10826-013-9752-z

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Fortuna, L. R., Tolou-Shams, M., Robles-Ramamurthy, B., & Porche, M. V. (2020). Inequity and the disproportionate impact of COVID-19 on communities of color in the United States: The need for a trauma-informed social justice response. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(5), 443–445. https://doi.org/10.1037/tra0000889

Garnefski, N., & Kraaij, V. (2007). The cognitive emotion regulation questionnaire. *European Journal of Psychological Assessment*, *23*(3), 141–149. https://doi.org/10.1027/1015-5759.23.3.141

Gee, D. G., Gabard Durnam, L., Telzer, E. H., Humphreys, K. L., Goff, B., Shapiro, M., Flannery, J., Lumian, D. S., Fareri, D. S., Caldera, C., & Tottenham, N. (2014). Maternal buffering of human amygdala-prefrontal circuitry during childhood but not during adolescence. *Psychological Science*, *25*(11), 2067–2078. https://doi.org/10.1177/0956797614550878

Glynn, L. M., Davis, E. P., Luby, J. L., Baram, T. Z., & Sandman, C. A. (2021). A predictable home environment may protect child mental health during the COVID-19 pandemic. *Neurobiology of Stress*, *14*, 100291. https://doi.org/10.1016/j.ynstr.2020.100291

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology*, *10*(3), 243. https://doi.org/10.1037/0893-3200.10.3.243

Gottman, J. M., Katz, L. F., & Hooven, C. (1997). *Meta-emotion: How families communicate*. Routledge.

Grasso, D. J., Briggs-Gowan, M. J., Ford, J. D., & Carter, A. S. (2020). *The epidemic–pandemic impacts inventory (EPII)*. University of Connecticut School of Medicine.

Gross, J. J. (1998). Antecedent-and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology*, *74*(1), 224. https://doi.org/10.1037/0022-3514.74.1.224

Gross, J. J. (2015). The extended process model of emotion regulation: Elaborations, applications, and future directions. *Psychological Inquiry*, *26*(1), 130–137. https://doi.org/10.1080/1047840X.2015.989751

Gross, D., Fogg, L., Young, M., Ridge, A., Cowell, J. M., Richardson, R., & Sivan, A. (2006). The equivalence of the child behavior checklist/1 1/2-5 across parent race/ethnicity, income level, and language. *Psychological Assessment*, *18*(3), 313. https://doi.org/10.1037/1040-3590.18.3.313

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, *85*(2), 348. https://doi.org/10.1037/0022-3514.85.2.348

Hauser, D. J., & Schwarz, N. (2016). Attentive turkers: MTurk participants perform better on online attention checks than do subject pool participants. *Behavior Research Methods*, *48*(1), 400–407. https://doi.org/10.3758/s13428-015-0578-z

Herd, T., Brieant, A., King-Casas, B., & Kim-Spoon, J. (2021). Associations between developmental patterns of negative parenting and emotion regulation development across adolescence. *Emotion (Washington, D C)*, No Pagination Specified-No Pagination Specified, *22*(2), 270–282. https://doi.org/10.1037/emo0000997

Hertz, R., Mattes, J., & Shook, A. (2021). When paid work invades the family: Single mothers in the COVID-19 pandemic. *Journal of Family Issues*, *42*(9), 2019–2045.

Hofer, M. A. (1994). Early relationships as regulators of infant physiology and behavior. *Acta Paediatrica*, *83*(s397), 9–18. https://doi.org/10.1111/j.1651-2227.1994.tb13260.x

Hostinar, C. E., Johnson, A. E., & Gunnar, M. R. (2015). Parent support is less effective in buffering cortisol stress reactivity for adolescents compared to children. *Developmental Science*, *18*(2), 281–297. https://doi.org/10.1111/desc.12195

Hostinar, C. E., Sullivan, R. M., & Gunnar, M. R. (2014). Psychobiological mechanisms underlying the social buffering of the hypothalamic–pituitary–adrenocortical axis: A review of animal models and human studies across development. *Psychological Bulletin*, *140*(1), 256–282. https://doi.org/10.1037/a0032671

IHME | COVID-19 Projections. (2020). *Institute for Health Metrics and Evaluation*. https://covid19.healthdata.org/

Izadpanah, S., Barnow, S., Neubauer, A. B., & Holl, J. (2019). Development and validation of the Heidelberg form for emotion regulation strategies (HFERST): Factor structure, reliability, and validity. *Assessment*, *26*(5), 880–906. https://doi.org/10.1177/1073191117720283

Jamieson, J. P., Mendes, W. B., & Nock, M. K. (2013). Improving acute stress responses: The power of reappraisal. *Current Directions in Psychological Science*, *22*(1), 51–56. https://doi.org/10.1177/0963721412461500

Jiao, W. Y., Wang, L. N., Liu, J., Fang, S. F., Jiao, F. Y., Pettoello-Mantovani, M., & Somekh, E. (2020). Behavioral and emotional disorders in children during the COVID-19 epidemic. *The Journal of Pediatrics*, *221*, 264–266.e1. https://doi.org/10.1016/j.jpeds.2020.03.013

Johnson, V., & Lieberman, A. (2007). Variation in behavior problems of preschoolers exposed to domestic violence: The role of mother's attunement to children's emotional experiences. *Journal of Family Violence*, *22*(5), 297–308. https://doi.org/10.1007/s10896-007-9083-1

Katz, L. F., & Windecker-Nelson, B. (2006). Domestic violence, emotion coaching, and child adjustment. *Journal of Family Psychology*, *20*(1), 56. https://doi.org/10.1037/0893-3200.20.1.56

Kiel, E. J., & Kalomiris, A. E. (2015). Current themes in understanding children's emotion regulation as developing from within the parent–child relationship. *Current Opinion in Psychology*, *3*, 11–16. https://doi.org/10.1016/j.copsyc.2015.01.006

Lee, J. C., Mervosh, S., Avila, Y., Harvey, B., & Matthews, A. L. (2020, June 18). See how all 50 states are reopening (and closing again). *The New York Times*. https://www.nytimes.com/interactive/2020/us/states-reopen-map-coronavirus.html

Liu, C. H., & Doan, S. N. (2020). Psychosocial stress contagion in children and families during the COVID-19 pandemic. *Clinical Pediatrics*, 0009922820927044. https://doi.org/10.1177/0009922820927044

Lobo, F. M., Lunkenheimer, E., Lucas-Thompson, R. G., & Seiter, N. S. (2021). Parental emotion coaching moderates the effects of family stress on internalizing symptoms in middle childhood and adolescence. *Social Development*, *30*(4), 1023–1039. https://doi.org/10.1111/sode.12519

McCabe, C. J., Kim, D. S., & King, K. M. (2018). Improving present practices in the visual display of interactions. *Advances in Methods and Practices in Psychological Science*, *1*(2), 147–165. https://doi.org/10.1177/2515245917746792

McDonald, J. H. (2009). *Handbook of biological statistics* (Vol. 2). Sparky House Publishing.

Newlove Delgado, T., McManus, S., Sadler, K., Thandi, S., Vizard, T., Cartwright, C., & Ford, T. (2021). Child mental health in England before and during the COVID-19 lockdown. *The Lancet Psychiatry*, *8*(5), 353–354. https://doi.org/10.1016/S2215-0366(20)30570-8

Pfefferbaum, B., & North, C. S. (2020). Mental health and the COVID-19 pandemic. *The New England Journal of Medicine*, *383*(6), 510–512. https://doi.org/10.1056/NEJMp2008017

Racine, N., Cooke, J. E., Eirich, R., Korczak, D. J., McArthur, B., & Madigan, S. (2020). Child and adolescent mental illness during COVID-19: A rapid review. *Psychiatry Research*, *292*, 113307. https://doi.org/10.1016/j.psychres.2020.113307

Roos, L. E., Salisbury, M., Penner-Goeke, L., Cameron, E. E., Protudjer, J. L. P., Giuliano, R., Afifi, T. O., Reynolds, K., & Na, K.-S. (2021). Supporting families to protect child health: Parenting quality and household needs during the COVID-19 pandemic. *Plos One*, *16*(5), e0251720. https://doi.org/10.1371/journal.pone.0251720

Roubinov, D., Bush, N. R., & Boyce, W. T. (2020). How a pandemic could advance the science of early adversity. *JAMA Pediatrics*, *174*(12), 1131. https://doi.org/10.1001/jamapediatrics.2020.2354

Shorer, M., & Leibovich, L. (2020). Young children's emotional stress reactions during the COVID-19 outbreak and

their associations with parental emotion regulation and parental playfulness. *Early Child Development and Care*, 1–11. https://doi.org/10.1080/03004430.2020.1806830

Spinelli, M., Lionetti, F., Pastore, M., & Fasolo, M. (2020). Parents' stress and children's psychological problems in families facing the COVID-19 outbreak in Italy. *Frontiers in Psychology*, *11*, 11. https://doi.org/10.3389/fpsyg.2020.01713

Thomason, M. E., Graham, A., & Vantieghem, M. R. (2020). COPE: Coronavirus Perinatal Experiences - Impact Survey (COPE-IS). Retrieved from https://osf.io/uqhcv/

Troy, A. S., Wilhelm, F. H., Shallcross, A. J., & Mauss, I. B. (2010). Seeing the silver lining: Cognitive reappraisal ability moderates the relationship between stress and depressive symptoms. *Emotion (Washington, D C)*, *10*(6), 783–795. https://doi.org/10.1037/a0020262

Waters, S. F., Virmani, E. A., Thompson, R. A., Meyer, S., Raikes, H. A., & Jochem, R. (2010). Emotion regulation and attachment: Unpacking two constructs and their association. *Journal of Psychopathology and Behavioral Assessment*, *32*(1), 37–47. https://doi.org/10.1007/s10862-009-9163-z

Wu, Q., Feng, X., Yan, J., Hooper, E. G., Gerhardt, M., & Ku, S. (2020). Maternal emotion coaching styles in the context of maternal depressive symptoms: Associations with preschoolers' emotion regulation. *Emotion (Washington, D C)*, *22*(6), 1171–1184. https://doi.org/10.1037/emo0000916