BRIEF REPORT

Parents’ Emotion Suppression Exacerbates the Effect of COVID-19 Stress on Youth Internalizing Symptomatology

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The COVID-19 pandemic has resulted in heightened stress for families in the United States, and exposure to pandemic-related stress has been found to confer risk for mental health problems among both children and parents. To isolate risk and protective factors for children living through the ongoing pandemic, several studies have begun to examine family-level factors that may exacerbate or buffer the impact of exposure to COVID-19-related stress on children’s symptomatology. Building upon the extant literature documenting associations between parents’ emotion regulation and children’s mental health, especially during times of stress, the present study aimed to examine parents’ regulation of their own emotions as a potential moderator of the association between children’s exposure to family-level COVID-19-related stress and internalizing and externalizing problems. Results suggest that parents’ regulation of their own emotions using expressive suppression, specifically, may exacerbate the effect of exposure to pandemic-related stress on children’s internalizing problems, but not externalizing problems. Results highlight the importance of prioritizing parents’ mental health and self-regulation in prevention and intervention efforts aimed at improving family-wide mental health outcomes during public health crises that place family systems under significant stress.

Keywords: parental emotion regulation, suppression, reappraisal, COVID-19, parenting

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The COVID-19 pandemic has resulted in heightened levels of stress for families in the United States (Patrick et al., 2020), and exposure to pandemic-related stress has been found to confer risk for mental health problems among both children (Cohodes et al., 2021) and parents (Alonzo et al., 2021). Studies documenting particularly high levels of COVID-related stress among parents (e.g., Roos et al., 2021)—who have been required to balance work and family responsibilities amid an ongoing public health crisis—motivate an emerging line of research...
examining the effects of parents’ mental health on children’s mental health outcomes during the COVID-19 pandemic (e.g., Cohodes et al., 2021; Shorrer & Leibovich, 2022). The process model of emotion regulation proposes that there are distinct strategies that an individual can use to regulate their emotions (Gross, 2015). Most work in this area has examined implications of the use of distinct strategies on the regulator, but there is increasing interest in examining the effects of an individual’s use of particular strategies on others in the social environment. Recent theoretical models highlight parents’ emotion regulation practices—including reliance on prototypically adaptive or maladaptive emotion regulation strategies—as a primary factor influencing children’s mental health (e.g., Havighurst & Kehoe, 2017), likely via the quality of parents’ emotion socialization behaviors (e.g., Lobo et al., 2021).

Consistent with the literature on adult intrinsic emotion regulation, studies assessing associations between parents’ emotion regulation and youth outcomes have primarily identified correlates of parents’ use of expressive suppression (i.e., suppressing behavioral expression of an emotion) and cognitive reappraisal (i.e., changing the way one is thinking about a situation to change its emotional impact). Parents’ reappraisal has been negatively associated with parents’ expression of negative emotions in parent–child relationships (Havighurst & Kehoe, 2017); conversely, parents’ suppression has been associated with lower positive emotion expression and less engagement in supportive parenting practices (Hughes & Gallone, 2010). Further, parents’ suppression may have particularly detrimental effects on the parent–child relationship in that it may promote lower levels of parental engagement in emotion socialization practices, such as responding to children’s negative emotions (Karnilowicz et al., 2019; Waters et al., 2020).

In the context of stress exposure, substantial evidence highlights parents’ regulation of their own emotions as an important predictor of children’s functioning following stress (e.g., Pat-Horenczyk et al., 2015). Relevant to the current investigation, a recent study examining associations between parents’ emotion regulation and children’s emotional distress in a sample of 2–7-year-olds found that parents’ difficulties regulating their emotions fully mediated the association between children’s exposure to family-level COVID-related stress (henceforth referred to as CRS) and children’s stress-related reactions (Shorrer & Leibovich, 2022). This is the only study to date that has examined the role of parental emotion regulation on children’s functioning during the pandemic. The present study aimed to build on this work by examining whether parents’ regulation of their own emotions—at the strategy-specific level (i.e., using either reappraisal or suppression)—may moderate the association between children’s exposure to CRS and development of internalizing and externalizing symptomatology in a broader age range. We predicted that higher levels of parental regulation of their own emotions using reappraisal would attenuate the association between children’s exposure to CRS and symptomatology, and that, conversely, higher levels of parental regulation of their own emotions using suppression would exacerbate the association between children’s exposure to CRS and symptomatology.

**Method**

**Participants**

Amazon TurkPrime was used to recruit 247 English-speaking parents of children under 18, yielding a final sample of \( N = 200 \). See the online supplemental materials for description of exclusion criteria, TurkPrime features used to ensure data quality, and parents’ selection of a target child. Table S1 provides full descriptive statistics for all demographic variables.

**Procedure**

All study procedures were approved by the institutional review board at Yale University and distributed via Qualtrics on Amazon TurkPrime. Participants provided informed consent before completing measures assessing parents’ emotion socialization practices and child symptomatology (presented in randomized order), followed by measures of CRS. Participants completed data quality and attention checks, and were thanked, debriefed, and compensated $S8. See the online supplemental materials for a statement regarding transparency and openness and a description of study timing in the context of the ongoing COVID-19 pandemic and for full details on all measures.

**Analytic Plan**

Hierarchical multiple linear regression analyses were used to test whether parents’ regulation of their own emotions—using either reappraisal or suppression—moderated the association between children’s exposure to CRS and child symptomatology. The following covariates were also entered into all models: child age, annual family income, parental racial/ethnic minority status, parental education level, parental marital status, and parental depressive symptomatology. See the online supplemental materials for additional information regarding model parameters and for a description of a priori power calculations.

**Results**

Bivariate correlations for all study variables are presented in Table S2. Parents’ reliance on suppression to regulate their own emotions emerged as a significant moderator of the association between CRS and children’s symptomatology. Specifically, the interaction between parents’ use of suppression and children’s exposure to CRS was significantly associated with children’s internalizing problems (\( B = .14, t(198) = 2.33, p = .021, 95\% \text{ CI} [.00, .04] \)), but not externalizing problems (\( B = .05, t(198) = .79, \text{ ns}, 95\% \text{ CI} [-.01, .02] \); see Table S3 and S4, respectively. As depicted in Figure 1, increases in exposure to CRS were associated with increases in child internalizing problems for children whose parents engaged in relatively high levels of suppression during the pandemic. In contrast, among children whose parents engaged in relatively low levels of suppression, there was not a significant association between exposure to CRS and child internalizing problems. The interaction between parents’ use of reappraisal and children’s exposure to CRS was not significantly associated with children’s internalizing problems (\( B = .03, t(198) = -.53, \text{ ns}, 95\% \text{ CI} [-.01, .02] \)), nor externalizing problems (\( B = -.00, t(198) = -.07, \text{ ns}, 95\% \text{ CI} [-.01, .01] \)), see Table S5 and S6, respectively.

The significant interaction between parental suppression and children’s exposure to CRS was further probed using marginal effects plots (i.e., “region-of-significance” plots; McCabe et al., 2018) to assess the conditional effect of CRS on child symptomatology across each level of the moderator. The simple slope of
CRS on child internalizing problems is significant and positive when parental suppression resides at or higher than .15 standard deviations above the mean. This range includes 45.5% of observations in the sample; see Figure 2.

Discussion

We present initial evidence that parents’ use of suppression exacerbates the association between children’s exposure to CRS and internalizing problems. Results underscore that parental reliance on suppression to regulate their own emotions may be uniquely associated with more profound impacts of CRS on children’s internalizing problems. Parental suppression may limit the degree to which they engage in supportive parenting and emotion socialization practices (Hughes & Gullone, 2010; Karnilowicz et al., 2019), and these processes may be further pronounced during times of stress.

Consistent with the positive correlations between CRS and children’s internalizing and externalizing symptomatology, it is important to ground the moderation finding in the context of previous literature documenting the direct, deleterious effects of CRS on youth internalizing symptomatology (e.g., Cohodes et al., 2021; Graupensperger et al., 2022; McLaughlin et al., 2022). The primary goal of prevention and intervention efforts aimed at reducing the effects of the COVID-19 pandemic on children’s mental health should focus on increasing systems-level structural supports (e.g., increasing access to high quality childcare, paid sick leave, direct financial assistance, access to health care)—with a focus on the primary roles of racism and income level in driving inequities in service provision (e.g., Chen et al., 2022)—in order to alleviate the impact of CRS on children and families.

Findings may contribute to more nuanced policy and practice recommendations related to the importance of reducing parents’ use of suppression to regulate their own emotions. Among families seeking clinical services, reducing parental use of suppression may minimize the impact of public health emergencies on youth mental health. These results echo a rich literature underscoring parents’ psychopathology and self-regulation as primary intervention targets for youth mental health outcomes (see Beardslee et al., 2011 for a review), particularly in the context of stress (Scheering & Zeanah, 2001), but examine these mechanisms in light of COVID-19. There is increasing attention to the severity of worsening parental mental health during the pandemic and downstream direct effects of parents’ mental health problems on children’s wellbeing (Roos et al., 2021); screening for parents’ emotion regulation tendencies (and particularly, reliance on suppression) when assessing for mental health risk among families affected by a global stressor may identify children at family-level risk for developing symptomatology. Further, parents should have access to low-cost mental health services that alleviate parenting stress and bolster parents’ capacity to support children via effective regulation of their own emotions using prototypically adaptive strategies.

Counter to hypotheses, parents’ use of reappraisal did not moderate associations between children’s exposure to CRS and youth...
functioning. Hypotheses regarding reappraisal were based on evidence that parental reappraisal is associated with reduced expression of negative emotion in the context of parent–child relationships (Havighurst & Kehoe, 2017). However, this literature is rather limited, and the majority of studies examining effects of parental emotion regulation on child functioning has focused on correlates of parental use of prototypically maladaptive strategies. Though the extant literature highlights reappraisal as a resilience-promoting factor in the context of both acute (Jamieson et al., 2013) and chronic (Troy et al., 2010) stress exposure among adults, and there is reason to believe that these effects may “trickle” down to positively affect children exposed to family-level stress, parental use of reappraisal may not exert direct influences on child functioning or may function differently in the context of the unique challenges posed by the ongoing pandemic. Our lack of findings related to reappraisal are also consistent with evidence that associations between emotion regulation—broadly—and symptomatology are more robust for greater use of suppression and other prototypically maladaptive strategies than for lesser use of reappraisal and other prototypically adaptive strategies (e.g., Aldao et al., 2010). Further, emerging research suggests that the degree to which reappraisal functions as an adaptive regulation strategy is likely context-dependent (e.g., depending on whether a stressor is controllable or uncontrollable; Ford & Troy, 2019; Troy et al., 2013). Studies should aim to further examine mechanisms by which parents’ regulation using prototypically adaptive strategies may impact children’s functioning in the context of a multifaceted stressor such as the ongoing pandemic. In addition, findings of the present study are specific to children’s internalizing problems, suggesting that parental use of specific emotion regulation strategies may not moderate associations between children’s exposure to stress and symptomatology universally. These results echo findings of a recent meta-analysis demonstrating less consistent associations between parental emotion regulation and children’s externalizing, relative to internalizing, symptomatology (Zimmer-Gembeck et al., 2022). Additional research is needed to examine symptom-specific pathways by which parental emotion regulation relates to children’s reactions to stress.

Given this study’s conception in rapid response to the emerging pandemic in the spring of 2020, we note several methodological limitations. Parents were sole reporters of all variables of interest; parents’ perception of CRS or their own internalizing symptomatology may have impacted their report of their children’s functioning (Renouf & Kovacs, 1994). Parents’ selection of a single child as the “target child” may have introduced systematic bias in that parents may have routinely chosen their oldest or youngest child, or the child whom they perceived to require the most active parental involvement. Shared genetic variance between parents and children may further explain risk for developing internalizing symptomatology in the context of exposure to CRS (e.g., van Dijk et al., 2021), and we were not positioned to examine such mechanisms in the present study. Although we made a concerted effort to ensure accuracy of data collection, we utilized an online convenience sample due to quarantine and social distancing mandates. Future studies should also examine the potential moderating role of a more diverse array of parental emotion regulation strategies in the association between children’s exposure to CRS and symptomatology.

Finally, we note several important limitations regarding the demographic distribution of the present sample. The current study included parents of children in a wide developmental range, and it is likely that the hypothesized moderating effect of parental regulation varies across different developmental stages. Though we covaried for child age in all moderation analyses, we were not powered to detect three-way interactions between child age, parental regulation of their own emotions using specific strategies, and CRS in predicting child symptomatology. Disparate access to the technological resources required for

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**Figure 2**

*Marginal Effects Plot Depicting Region of Significance (in Red [White]) for Significant Interaction Between Family-Level COVID-Related Stress and Parental Suppression*

![Marginal effects plot for significant interaction](image)

*Note.* Figure produced using the interactive data visualization tool (McCabe et al., 2018). See the online article for the color version of this figure.
parents’ study participation likely contributed to disproportionate lack of representation of individuals most affected by “digital inequality” during the pandemic (Roubinov et al., 2020). The majority of 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 should not be overinterpreted and should inform future research that includes a more diverse sample of participants.

In conclusion, the present study highlights that parents’ regulation of their own emotions—specifically using suppression—may exacerbate the association between children’s exposure to CRS and mental health. Results suggest that primary prevention and intervention efforts aimed at reducing the impacts of stress related to public health emergencies on youth functioning should include targeted intervention for parents’ regulation of their own emotions, in addition to broad, structural supports and systems-level interventions to reduce family-level stress during public health crises. Specifically, prevention and intervention efforts should include support for parents to minimize reliance on expressive suppression to regulate their emotions and to establish a repertoire of prototypically adaptive emotion regulation strategies in the context of exposure to ongoing stressors.

References


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