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Empirical Research

Psychological flexibility and inflexibility as sources of resiliency and risk during a pandemic: Modeling the cascade of COVID-19 stress on family systems with a contextual behavioral science lens

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ABSTRACT

Background: The coronavirus disease (COVID-19) pandemic and the historic economic shutdown and stay-at-home efforts to slow its spread have radically impacted the lives of families across the world, completely disrupting routines and challenging them to adjust to new health risks as well as to new work and family demands. The current study applied a contextual behavioral science lens to the spillover hypothesis of Family Systems Theory to develop a multi-stage mechanistic model for how COVID-19 stress could impact family and child functioning and how parents' psychological flexibility could shape those processes.

Methods: A total of 742 coparents (71% female; 84% Caucasian, 85% married, $M = 41$ years old) of children (ages 5–18, $M = 9.4$ years old, 50% male) completed an online survey from March 27th to the end of April 2020.

Results: Path analyses highlighted robust links from parent inflexibility to all components of the model, predicting: greater COVID-19 stress, greater coparenting discord and family discord, greater caustic parenting, and greater parent and child distress. Parent flexibility was associated with greater family cohesion, lower family discord and greater use of constructive parenting strategies (inductive, democratic/autonomy supportive, positive). Results further suggested that COVID-19 stressors predicted greater family and coparent discord, which in turn predicted greater use of caustic parenting (reactive, inconsistent, aggressive), which in turn predicted greater child and parent distress.

Conclusions: The current results highlight parental flexibility and inflexibility as key points of intervention for helping families navigate the current global health crisis, highlighting the crucial role they play in the lives of families.

A broad literature has documented the adverse impact that both acute and chronic stress can have on adults (e.g., Hammen, Kim, Eberhart, & Brennan, 2009; Thoits, 2010), children and adolescents (Compas et al., 2001, Connor-Smith, Saltzman, Thomsen, & Wadsworth,; Low et al., 2012) as well as families (e.g., Nelson, O'Brien, Blankson, Calkins, & Keane, 2009). In the midst of the coronavirus disease (COVID-19) pandemic, families are suddenly and unexpectedly facing a multitude of stressors (e.g., financial stress, additional parenting burdens, childcare, homeschooling demands) that could have downstream effects on their own individual health and well-being, in addition to their family's and child's well-being. Consistent with this notion, research has shown that prior acute health crises such as Severe Acute Respiratory Syndrome (SARS) can have significant psychological impacts, particularly on

parents who are worried about infecting family members, facing severe financial consequences, and who are struggling with health concerns for themselves and their family (e.g., Lau et al., 2005; Wong, Lee, Tsang, & Wong, 2004). Given the high lethality of COVID-19 (e.g., Zhou et al., 2020) and its high communicability (e.g., Kucharski et al., 2020), countries and local municipalities have taken drastic steps rarely seen in the last 100 years (i.e., stay at home orders and social distancing policies) to address this public health crisis. Although this has served to slow the rate of transmission, it has also represented a massive upheaval in the economic and day-to-day lives of families, including schools closing, many parents working from home for the first time, and parents facing furloughs and job loss. Thus, the COVID-19 pandemic could represent a similar burden to the lives of individuals and families as that

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seen for families challenged with chronic health conditions, in the form of increased psychological distress, parenting distress, poorer co-parental functioning, and increased levels of family chaos and child distress (e.g., Chi et al., 2015; Moore, Rauch, Baer, Piri & Muriel, 2015). The current study integrated a contextual behavioral science lens with Family Systems Theory (Broderick, 1993; Minuchin, 1985) to examine the impact of the COVID-19 pandemic on families in the United States.

1. Conceptual frameworks

Psychological Flexibility as a Source of Resilience. Emerging from the tenets of Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001) and Acceptance and Commitment Therapy (ACT; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes Strosahl, & Wilson, 2011), psychological flexibility is conceptualized as a set of skills individuals can use to respond to challenging and difficult thoughts, feelings, and experiences (e.g., developing tolerance and acceptance for challenging experiences, allowing them to gently pass, maintaining a broader perspective in the midst of them). In contrast, psychological inflexibility is a set of rigid and maladaptive responses to challenging experiences that serve to enhance distress (e.g., actively avoiding unwanted/difficult feelings, getting stuck or fusing with them, judging or shaming oneself for having them). Thus, ACT-based interventions aim to decrease these inflexible responses, while simultaneously promoting flexible and adaptive responses to life's challenging moments. Supported by the broader literature on the widespread benefits of ACT-based interventions (see A-Tjak et al., 2015; Hayes et al., 2006 for reviews), analyses of the mediators of ACT treatment effects have highlighted that drops in psychological inflexibility and gains in psychological flexibility across treatment help to explain improvement in depressive and anxiety symptoms and psychological distress (e.g., Fledderus, Bohlmeijer, Fox, Schreurs, & Spinhoven, 2013; Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Waters, Frude, Flaxman, & Boyd, 2018), suggesting that these processes represent key treatment mechanisms. At a broader level (beyond the context of ACT-based interventions), research has highlighted that psychological flexibility likely represents a fundamental set of skills critical to developing and maintaining well-being across many life domains (see Kashdan & Rotenberg, 2010 for a review). For example, bolstering psychological flexibility has been shown to reduce work-related stress (Wersebe, Lieb, Meyer, Hofer, & Gloster, 2018). Consistent with this, a growing number of studies have linked psychological flexibility in parents to more kind and compassionate family interactions (e.g., MacDonald, Hastings, & Fitzsimons, 2010; Wong, Mak, & Liao, 2016), more adaptive parenting practices (e.g., Burke & Moore, 2015; McCaffrey, Reitman, & Black, 2017; Moreira & Canavarro, 2017), and greater individual well-being for both children (e.g., Henrichs, van den Heuvel, Witteveen, Wiltschut, & Van den Bergh, 2019) and for the parents themselves (e.g., Neff & Faso, 2015). To build on this work, the current study sought to apply this conceptual framework toward understanding the possible impact of COVID-19 on families during this worldwide crisis, positing that parental psychological flexibility might serve as a key source of resilience within families.

Distinguishing psychological flexibility from inflexibility. Recent measurement work in large online samples has suggested that psychological flexibility and inflexibility are likely distinct yet related constructs (e.g., Rogge, Daks, Dubler, & Saint, 2019; Rolffs, Rogge, & Wilson, 2018). Analyses in those studies revealed only moderate correlations between dimensions of flexibility and inflexibility, suggesting that individuals could be both fairly flexible and fairly inflexible across contexts and specific situations in their day-to-day lives and that flexibility and inflexibility could change independently across time. For example, results of a case study of a female client who completed a brief ACT-based group showed that her greatest pre-post treatment gains were accounted for by drops across dimensions of inflexibility (e.g., global inflexibility, self-as-content and lack of contact with values),

without clear corresponding improvements on dimensions of flexibility (Rogge et al., 2019). Notably, the quantitative findings uncovering reliable change only for inflexibility aligned with clinical observations noted by the client's therapist. Taken together, these results provide clinically relevant justification for measuring and modeling psychological flexibility and inflexibility as distinct processes within families facing the COVID-19 pandemic.

Family Systems Theory. To ground the contextual behavioral science lens within the complexity of family dynamics, we drew upon Family Systems Theory (Broderick, 1993; Minuchin, 1985). Family Systems Theory suggests that families are comprised of sub-systems (e.g., coparent unit, parent-child unit, and each individual comprising that unit), nested within the larger family unit, that interact with and influence the unit as a whole (Cox & Paley, 1997; Peltz, Rogge, & Sturge-Apple, 2018). Central to the notion of families as systems, this theory suggests that external perturbations to the system can serve to disrupt homeostasis within families (Minuchin, 1985). In fact, a robust body of research has linked environmental stressors (e.g., increased work demand and concerns related to illness) with global family functioning (see Allen, Herst, Bruck, & Sutton, 2000; Pedersen & Revenson, 2005 for reviews), family functioning with parenting behaviors (see Krishnakumar & Buehler, 2000 for a review) and parenting behaviors with child functioning (e.g., Bayer, Sanson, & Hemphill, 2006; Brassell et al., 2016; Buehler, Benson, & Gerard, 2006). One example of this pattern of influence is demonstrated by the spillover hypothesis, which suggests that negative affect or behavior transfers directly from one relationship to another within a family system (Erel & Burman, 1995; Krishnakumar & Buehler, 2000). Applying the principles of the spillover hypothesis, the Family Stress Model (Conger et al., 1992; Conger, Rueter, & Conger, 2000) posits that external stressors, such as financial uncertainty, negatively affect child well-being through disruptions in parental well-being (e.g., depressed mood), the coparent relationship (e.g., marital conflict) the parent-child relationship (e.g., parent-adolescent conflict), and harsher parenting behaviors (e.g., parent hostility). Empirical tests of this model show that external pressures erode family dynamics in a step-wise fashion in which disruptions to the family and coparenting relationships disrupt parenting behaviors, which in turn disrupt child well-being (e.g., Conger et al., 1994; Conger et al., 2002). Bringing this process into the context of the COVID-19 pandemic, one could imagine a parent who is generally more rigid and psychologically inflexible in their day-to-day life who, within a matter of days is now thrust into a two-parent telework situation and seemingly overnight now has to assist with their child(ren)'s new virtual school curriculum. The most immediate change evident within those families would likely be the extra disruption and chaos that would be present from both parents as well as the child(ren) living, working, and learning in the same confined space (see Fig. 1B). Struggling to adjust to the growing chaos and demands of a makeshift two-person home office and classroom, demands of balancing telework, homeschooling, helping child(ren) remain focused within their virtual classrooms while also minimizing disruptions for the workday, parents are likely to be on a much shorter fuse, and may react in a harsh manner, potentially snapping or yelling at their child when he/she misbehaves and/or interrupts a zoom meeting (rather than using a more compassionate parenting strategy). Even if such harsh responses are effective at curbing disruptive behavior in the short-term, they would likely leave both the parent and the child feeling upset, leading to greater levels of distress over time. This cascade of stressors rippling down through various levels of the family unit is what informed our conceptualization of spillover effects within the family system as operating in a top-down manner. We viewed global family dynamics (i.e., the homeostatic balance) as setting the overall tone for family interactions and therefore presumed that stress associated with the COVID-19 pandemic might be linked to more negative family dynamics (i.e., a disruption of that balance), which then might spill over to other family sub-systems, thereby engendering more hostile and less adaptive parenting strategies (e.g., Dumas et al., 2005), and

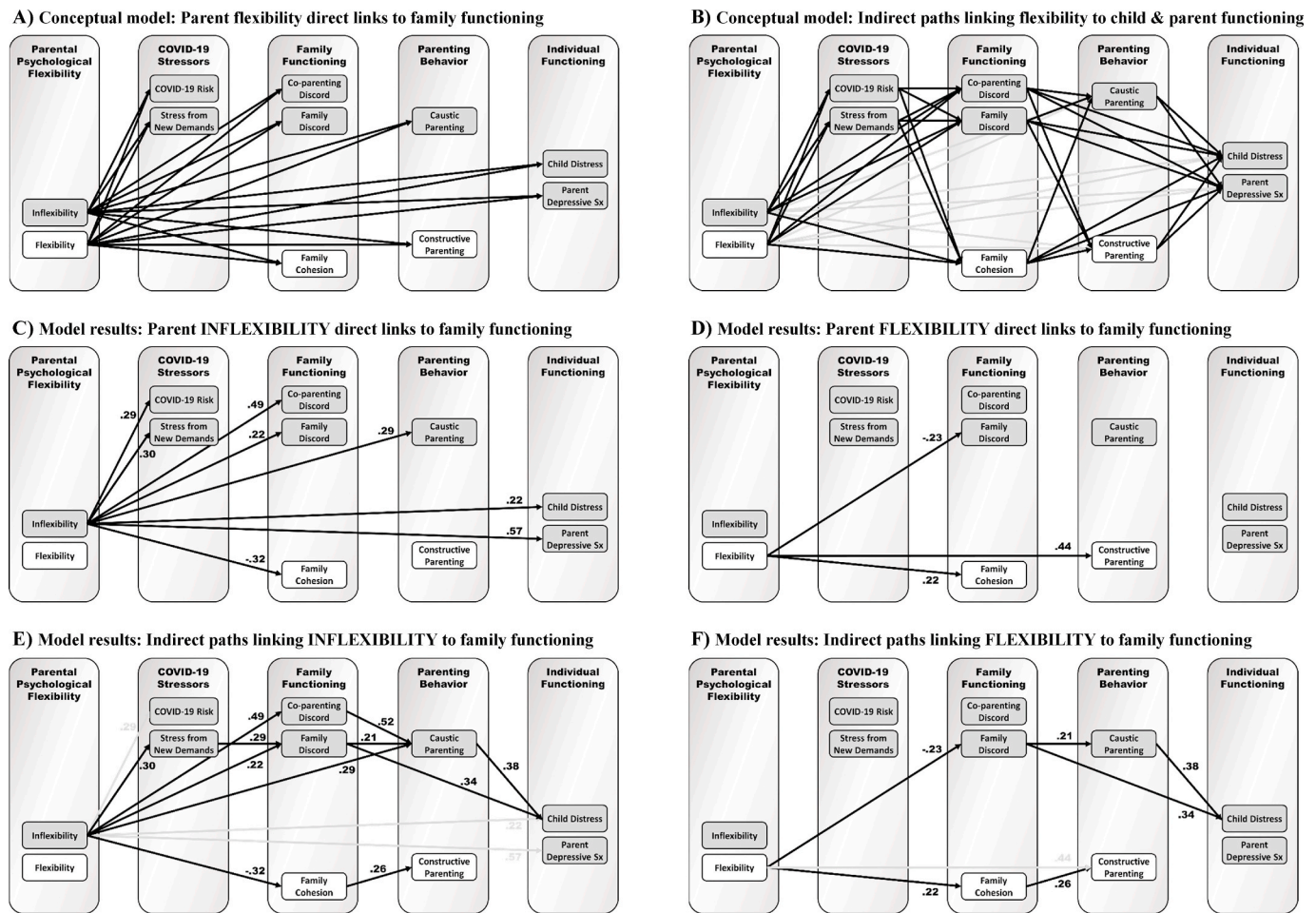


Fig. 1. Proposed Path Model to be Tested (panels A & B) and Path Model Results (panels C, D, E, & F). NOTE: To focus on the most robust paths emerging within the model, only paths significant at $p < .0005$ and with absolute values ≥ 0.20 are shown. B) Conceptual model: Indirect paths linking flexibility to child & parent functioning A) Conceptual model: Parent flexibility direct links to family functioning D) Model results: Parent FLEXIBILITY direct links to family functioning C) Model results: Parent INFLEXIBILITY direct links to family functioning F) Model results: Indirect paths linking FLEXIBILITY to family functioning E) Model results: Indirect paths linking INFLEXIBILITY to family functioning.

poorer levels of both child (see Pinquart, 2017 for a review) and parent well-being (e.g., Brown, Whittingham, & Sofronoff, 2015; Lloyd & Hastings, 2008).

1.1. The current study

The current study sought to examine the links between parents’ psychological flexibility/inflexibility and family functioning in the midst of the upheaval associated with the COVID-19 pandemic. Thus, we collected data from 742 coparents within the United States in March and April of 2020, starting the study on March 27th as the national response was ramping up within the US (after roughly 10 days of press briefings by the White House Coronavirus Task Force and after over half of the states had enacted formal stay-at-home orders). As shown in Fig. 1A and B, we then tested a path model integrating a contextual behavioral science lens with a Family Systems Theory-informed mechanistic model detailing a potential progression by which COVID-19 stress might impact family and child functioning. Consistent with recent measurement work (Rogge et al., 2019; Rolffs et al., 2018), the current study conceptualized psychological flexibility and psychological inflexibility as distinct skills that would show unique patterns of association with family and individual functioning (rather than conceptualizing them as opposite extremes of a single construct).

Hypothesis 1. Parental flexibility and inflexibility as fundamental

processes. We conceptualized parental flexibility as a critical process that would underly and have the power to shape interactions and dynamics throughout all of the family sub-systems. We therefore hypothesized that parent psychological flexibility (Hypothesis 1A) would show strong links to healthy functioning at all levels of the family system, linking to greater global family functioning, more adaptive parenting behaviors, and to lower levels of their own distress and lower levels of distress in their children. We hypothesized that parent inflexibility would correspondingly be linked to poorer functioning across all of those areas (Hypothesis 1B).

Hypothesis 2. Parent flexibility buffering stress. Consistent with previous work on other forms of stress (e.g., Pakenham & Fleming, 2011), we conceptualized parent psychological flexibility as a source of resilience, allowing parents to adopt a more accepting, compassionate, and non-judgmental approach to the upheaval in their lives. In this light, they might be more likely to experience those difficult and challenging changes without clinging to them or losing sight of their own deeper perspective and priorities in the process, and experience less subjective stress in the context of the COVID-19 pandemic. We therefore hypothesized that parent psychological flexibility would be linked to lower levels of subjective stress associated with the COVID-19 pandemic (Hypothesis 2A), whereas parent inflexibility would be linked to higher levels of subjective stress from COVID-19 (Hypothesis 2B) as the use of rigid and inflexible responses would likely exacerbate the stress

experienced in relation to the COVID-19 pandemic.

Hypothesis 3. The cascade of COVID-19 stress on the family system. Consistent with the spillover hypothesis of Family Systems Theory, we conceptualized COVID-19 stress as having its most proximal links to family functioning, souring the global dynamic of the family (i.e., disrupting the homeostatic balance), which would then trickle down to other sub-systems within the family. We therefore hypothesized that poorer family functioning would, in turn, be directly linked to the use of more caustic and less constructive parenting behaviors, which would, in turn, be linked to poorer child functioning and parent functioning.

2. Method

2.1. Procedures

All procedures and materials for this study was approved by an Institutional Review Board and informed consent was obtained from all participants. Respondents needed to be at least 18 years of age, have a child between the ages of 5–18 living in their home to participate (to help capture the challenges of having a school-aged child suddenly at home during the COVID-19 shutdowns), and be raising that child with the help of another adult living in the home (to allow us to model coparenting as a family process). The survey was hosted online via [SurveyGizmo.com](https://www.surveygizmo.com) and took approximately 35–45 min to complete.

Recruitment. Participants were recruited through online platforms including ResearchMatch (50.8%), email (17%) Reddit forums (13.5%), Amazon.com's Mechanical Turk service (10.4%), social media posts (e.g., facebook, twitter, 7.3%), and local news articles (1%). The survey was advertised as "The Social Distancing and Family Dynamics Study." Recruitment materials highlighted that the study was voluntary and offered participants individualized feedback on a number of domains of individual functioning as well as the chance to win a \$250 [amazon.com](https://www.amazon.com) gift card. Participants recruited through Mechanical Turk also received \$0.75 of [Amazon.com](https://www.amazon.com) store credit.

2.2. Participants

A total of 742 coparents (97% from the United States) completed an online survey from March to April of 2020. The participants were predominately female (71%) and Caucasian (84%), with 5% African American, 4% Latino/Hispanic, 2% Asian/Pacific Islander, 2% Native American, and 3% other/biracial. Respondents were an average of 41 years old ($SD = 8.13$) with average incomes of \$82,435 ($SD = \$27,604$). Roughly 21% of respondents completed some college or trade school, 32% had bachelor's degrees, 43% graduate degrees, and 4% had only a high school level of education.

2.3. Measures

Unless indicated otherwise, the survey questions were: (1) written in the past tense, (2) focused on the last week, (3) answered on common 6-point Likert scales (e.g., "never true" to "always true," "not at all" to "extremely"), and (4) scores were created by averaging responses so that higher scores reflected greater amounts of the construct being assessed.

Psychological flexibility/inflexibility. Respondents completed the items of the 60-item Multidimensional Psychological Flexibility Inventory (MPFI; [Rolfes et al., 2018](#)) on a 6-point scale ("never TRUE" to "always TRUE"). Responses on the 30 flexibility items (e.g., "When I had an upsetting thought or emotion, I tried to give it space rather than ignoring it," "I was in tune with my thoughts and feelings from moment to moment," "I tried to keep perspective even when life knocked me down") were averaged to create a flexibility score ($\alpha = .965$). Similarly, scores on the 30 inflexibility items (e.g., "Negative experiences derailed me from what's really important," "It was very easy to get trapped into unwanted thoughts and feelings," "When times got tough, it was easy to forget about what I truly

value") were averaged to create an inflexibility score ($\alpha = 0.961$).

COVID-19 risk. Respondents completed 3 items, written for this study, on a 6-point response scale (1 = "not at all", to 6 = "extremely") to assess perceptions of oneself and/or their social/familial network's risk of contracting COVID-19 (e.g., "How much did you feel that YOU were at risk for contracting COVID-19," "How much did you feel that YOUR CHILD (REN) were at risk for contracting COVID-19," "How much did you feel that YOUR FRIENDS & FAMILY were at risk for contracting COVID-19;" $\alpha = 0.817$).

Stress from new demands. Respondents completed 3 items, written for study, on a 6-point response scale (1 = "not at all", to 6 = "extremely") to assess stress resulting from new work and parenting demands (e.g., "How much were you worried or stressed about adjusting to new working conditions (telecommuting, working from home)," "How much were you worried or stressed about ongoing work demands," "How much were you worried or stressed about new parenting demands (home schooling, lack of childcare);" $\alpha = 0.719$).

Family discord. Respondents completed 5 items of the Confusion, Hubbub, and Order Scale (CHAOS; [Matheny, Wachs, Ludwig & Phillips, 1995](#)) on a 6-point response scale (1 = "strongly disagree", to 6 = "strongly agree") to assess family chaos/disorder (e.g., "You couldn't hear yourself think in our home;" $\alpha = 0.771$). Respondents also completed 9 items of the Parenting Hassles Scale (PHS; [Stoneman & Gavidia-Payne, 1994](#)) on a 6-point response scale (1 = "never", to 6 = "constantly") to assess parenting burden due to childcare needs (e.g., "continually cleaning up messes of toys or food," "the kids resisted or struggled over bedtime with you;" $\alpha = .898$). Given their similarity of focus and fairly strong correlations/collinearity in the current sample, scores on these two scales were averaged to represent overall family discord ($\alpha = 0.902$).

Coparenting discord. Respondents completed 4 items of the Coparental Interaction Scale ([Ahrons, 1981](#)) on a 6-point response scale (1 = "never", to 6 = "always") to assess coparent conflict (e.g., "When you and your coparent discussed parenting issues how often did an argument result;" $\alpha = 0.849$). Respondents completed 12 items primarily from the conflict and triangulation subscales of the Coparenting Questionnaire (CQ; [Margolin, 1992; Margolin, Gordis, & John, 2001](#)) on a 6-point response scale (1 = "never", to 6 = "always") to assess coparent triangulation (e.g., "My coparent tried to get our child(ren) to take sides when we argue," "My coparent undermined my parenting," "My coparent used our child(ren) to irritate or upset me;" $\alpha = 0.954$). Lastly, respondents completed 4 items primarily from the conflict subscale of the Coparenting Questionnaire (CQ; [Margolin, 1992; Margolin et al., 2001](#)) on a 6-point response scale (1 = "never", to 6 = "always") to assess coparent disagreement (e.g., "My coparent and I disagreed on how to parent our child(ren)," "My coparent and I had different standards for our child(ren)'s behavior;" $\alpha = 0.861$). Given their similarity of focus and fairly strong correlations/collinearity in the current sample, scores on these three scales were averaged to represent overall coparent discord ($\alpha = 0.963$).

Family cohesion. Respondents completed 6 items of the Family Assessment Device scale (FAD; [Epstein, Baldwin, & Bishop, 1983](#)) on a 6-point response scale (1 = "strongly disagree" to 6 = "strongly agree") to assess family cohesion (e.g., "In my family in times of crisis we could turn to each other for support;" $\alpha = 0.822$).

Caustic Parenting. Respondents completed the items of the Parenting Practices Questionnaire (PPQ; [Robinson, Mandelco, Olsen, & Hart, 1995](#)) and the Alabama Parenting Questionnaire (APQ; [Shelton, Frick, & Wootton, 1996](#)) on a 6-point response scale (1 = "never", to 6 = "always") to assess forms of parenting. A set of 6 internally-consistent items of the PPQ assessed hostile and reactive parenting (e.g., "I scolded or criticized when our child(ren)s behavior didn't meet our expectations," "I demanded that our child(ren) do things;" $\alpha = 0.869$). Similarly, a 6-item APQ subscale assessed inconsistent discipline (e.g., "You threatened to punish your children and then did not punish him/her," "The punishment you gave your child(ren) depended on your mood;" $\alpha = 0.847$). Lastly, 5 items of the PPQ assessed aggressive parenting and physical

discipline (e.g., “I spanked our child(ren) when s/he/they were disobedient,” “I grabbed our child(ren) when s/he/they were being disobedient;” $\alpha = 0.922$). Given their similarity of focus and fairly strong correlations/collinearity in the current sample, scores on these three scales were averaged to represent overall caustic parenting ($\alpha = 0.933$).

Constructive parenting. Another set of items drawn largely from the APQ and PPQ assessed more constructive forms of parenting. Thus, respondents completed 6 items of the reasoning/induction subscale of the PPQ (Robinson et al., 1995) to assess inductive parenting behaviors (e.g., “I explained the consequences of our child(ren)’s behavior;” “I gave our child(ren) reasons why rules should be obeyed;” $\alpha = 0.866$). Respondents also completed 7 items (largely from the PPQ) assessing democratic parenting practices (e.g., “I took into account our child(ren)’s preferences in making plans for the family;” “I allowed our child(ren) to give input into family rules;” “I gave our child(ren) options and choices whenever possible;” $\alpha = 0.841$). Lastly, respondents completed 5 items of the positive parenting subscale of the APQ to assess positive and reinforcing parenting practices (e.g., “You hugged or kissed your child when s/he did something well;” “You praised your child when s/he behaved well;” $\alpha = 0.867$). Given their similarity of focus and fairly strong correlations/collinearity in the current sample, scores on these three scales were averaged to represent overall constructive parenting ($\alpha = 0.904$).

Child distress. Respondents completed 26 items of the Child Behavior Checklist (CBCL; Achenbach, 2001) on a 6-point response scale (“not true (so far as you know),” to “always true”) to assess parents’ reports of current child functioning. Thus, parents completed 10 items of the CBCL Anxious/Depressed subscale (e.g., “My child(ren) was too fearful or anxious;” “My child(ren) felt worthless or inferior;” $\alpha = 0.916$), 10 items of the Attention Problems subscale (e.g., “My child(ren) couldn’t concentrate, couldn’t pay attention for long;” “My child(ren) failed to finish things he/she/they started;” $\alpha = 0.905$), and 6 items of the Aggressive behavior subscale (e.g., “My child(ren) destroyed things belonging to others;” “My child(ren) screamed a lot;” $\alpha = 0.901$). Given their similarity of focus and fairly strong correlations/collinearity in the current sample, scores on these three scales were averaged to represent overall child distress ($\alpha = 0.952$).

Parent depressive symptoms. Respondents completed 9 items of the Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001) on the original 4-point response scale (1 = not at all, to 6 = nearly every day) to assess parents’ depressive symptoms over the last two weeks (e.g., “How often have you been bothered by the following problems: feeling down, depressed, or hopeless;” $\alpha = 0.890$). For the PHQ-9 we created both an average score (used in our path analyses to ensure that PHQ-9 scores were not ill scaled in comparison to the other variables in the model) and a total score using the standard scoring method (to take advantage of previously validated clinical thresholds; see Kroenke et al., 2001).

2.4. Data analysis

In developing our conceptual model, constructs with a fairly similar focus that demonstrated strong correlations with one another (e.g., family chaos and parenting hassles) were averaged to represent an overall construct (e.g., family discord). This allowed the authors to present a more parsimonious model and reduce excessive collinearity within the model. To test our conceptual model (Fig. 1A and B), path analyses were run in Mplus 7.2. To concentrate our analyses on the prediction between variables at different stages of the model, all constructs within the same stage of the model were allowed to correlate with each other. Given the large number of paths being estimated in the current model, only path coefficients significant at $p < .0005$ and with estimates whose absolute values were greater than or equal to 0.20 were examined for interpretation, thereby focusing the narrative on the robust paths that are more likely to replicate in future samples. To ensure our sample provided adequate power for the proposed model, we ran power analyses using the Piface applet (Lenth, 2006). With 11

variables in the model, a variance inflation factor of 5.0 (reflecting moderate levels of collinearity), roughly 0.5 SD’s of error variance for each measure, and a sample of 742 parents, these analyses suggested that we had a power of .9411, or a 94% chance of identifying a meaningful path coefficient with an absolute standardized value of 0.20 as significant at the 0.001 level. Indirect paths were specified and estimated using model constraints in Mplus and their confidence intervals were estimated in 10,000 bootstrapped samples. Missing data was rare (0.9%) and Little’s MCAR test failed to identify significant deviations from randomness in the patterns of missing data ($X^2(154) = 128.5, p = .934$), suggesting that the data could be considered to be missing completely at random within the current sample. Therefore, Full Information Maximum Likelihood (FIML) estimation was used to handle missing data. The model demonstrated adequate fit ($\chi^2(8) = 32.6, p < .0001, CFI = 0.993, SRMR = 0.018, RMSEA = 0.065, 95\% \text{ confidence interval } LL = 0.043, UL = 0.089$).

3. Results

3.1. Families in the sample

Table 1 presents a detailed view of the demographics of the families in our sample. Our sample drew respondents from across the United States with 31% living in the Northeast, 30% living in the South, 20% living in the Midwest, and 19% living in the West. A majority of our respondents were female (71%), Caucasian (84%), in romantic relationships (97%), and married (85%). They tended to be in their 30’s and 40’s, had been with their partners an average of 15 years, and were raising an average of 2 children together ($M = 9.4$ years old, $SD = 5$ years; 50% male). Although 92% of the children living in the home were the biological child of at least one of the coparents, only 47% of the children were the biological children of both parents. Thus, a majority of the families were blended. Approximately 28% of our sample utilized childcare services for an average of 25.3 h per week (prior to COVID-19) and just 3.5 h per week in the week prior to completing the survey (since stay-at-home orders were put in place), suggesting a fairly radical shift in childcare dynamics above and beyond school-aged children no longer attending school each day. Approximately 70% of our sample reported working from home (39% full time) in the last week. When asked separately about working away from home (allowing individuals to endorse both types of work), 32% of our sample reported physically leaving the house for work in the past week (18% full time). The parents in the sample reported on average spending 3.5 h homeschooling their children ($SD = 3.8$) each day and another 5.5 h entertaining their children ($SD = 4.2$) each day, further suggesting a fairly significant impact of COVID-19 stay-at-home orders on the daily lives of these families.

3.2. Correlations among study variables

Descriptive statistics and intercorrelations among key study variables are presented in Table 2. Although both parent psychological flexibility and inflexibility showed moderate associations in the expected directions with family discord (i.e., family chaos/discord and parenting burden) and family cohesion, parent flexibility and inflexibility showed varying patterns of association with the remaining variables in our model. For example, parent inflexibility showed small to moderate associations in the expected direction with COVID-19 stressors, co-parenting discord (i.e., coparent conflict, coparent triangulation, and coparent disagreement), caustic parenting (i.e., hostile and reactive parenting, inconsistent discipline, and aggressive parenting/use of physical discipline), and child distress (i.e., anxiety/depressive symptoms, attention problems, and aggressive behavior) while parent flexibility was not associated with these sets of variables. In contrast, parent flexibility showed moderate associations in the expected direction with constructive parenting (i.e., inductive parenting,

Table 1
Demographics of the Families Represented in the Sample.

Broader class of variables	Broader class of variables	Specific demographic category	Group or statistics
Subgroup	% or M (SD)	Subgroup	% or M (SD)
Parent demographics		Coparent Relationships	
Parent Gender		Parent Relationship Length	
Cis-female	71%	Together M & (SD)	14.5yrs (7.7yrs)
Cis-male	27%	Married M & (SD)	12.8yrs (7yrs)
Transgender	1%	Type of coparents*	
Other	1%	Romantic partner	96%
Parent Age		Other adult in the home (own parent, sibling, friend, ex-partner, other)	11%
Mean and (SD)	40.7yrs (8.1yrs)	Did not specify type of coparent	1%
22-29yo	7%	Family demographics	
30-39yo	41%	Number of Children	
40-49yo	38%	M & (SD)	1.9 (1.1)
50-85yo	14%	One child	38%
Parent Race / Ethnicity		Two children	40%
Caucasian	84%	Three children	14%
African-American	5%	Four or more	8%
Hispanic		Genders of children	
Latino	4%	Male	50%
Asian-Pacific Islander	2%	Female	50%
Other	5%	Ages of children	
Parent Education Level		M & (SD)	9.4yrs (5yrs)
High School or less	4%	Children's relations to respondent*	
Some college/trade school	21%	Biological child of at least 1 coparent	92%
Bachelor's degree	32%	Parent's own biological child	84%
Graduate degree	43%	Coparent's biological child	55%
Parent Income		Biological child of both coparents	47%
Mean and (SD)	\$82,435 (\$27,604)	Own biological relative (nephew, grandchild)	3%
0 to \$20k	3%	Own adopted child	3%
\$20k to \$60k	20%	Foster child	1%
\$60k to \$100k	30%	Child Care	
over \$100k	47%	Routinely use child care	28%
Coparent Relationships		Typical hours per week of childcare beyond school (among parents reporting childcare use)	
Parent Relationship Status		M & (SD)	25.3hrs (16.2hrs)
In a relationship	97%	Hours of childcare in last week	
Married / Engaged	86%	M & (SD)	3.5hrs (10.7hrs)
Committed relationship	11%		
Single / Dating	3%		

NOTE: * These are not mutually exclusive categories and therefore the percentages add up to a number greater than 100%.

democratic parenting, and positive/reinforcing parenting practices) while parent inflexibility was not associated with this parenting behavior. Lastly, though both parent flexibility and inflexibility were associated with parent depressive symptoms in the expected directions, parent inflexibility was more strongly linked with this construct. Given the differing patterns of these associations in both direction and magnitude, these results support the discriminant validity of psychological flexibility and inflexibility and thereby suggest that the

constructs were reasonably conceptually distinct from one another. Taken together, these results support the theoretical associations between sets of variables in this model and suggested appropriately modest amounts of collinearity, supporting the testing of the proposed multivariate model.

3.3. Testing the path model

Parental inflexibility predicts family functioning. As seen in Table 3 and Fig. 1C, parent psychological inflexibility showed direct links to all levels of family functioning. This provided support for Hypotheses 1 B, highlighting the central nature of parental inflexibility within the lives of families. Specifically, higher levels of parent inflexibility were predictive of higher levels of family discord (i.e., family chaos/discord and parenting burden), higher levels of coparenting discord (i.e., coparent conflict, coparent triangulation, and coparent disagreement) and lower levels of family cohesion, suggesting that parents engaging rigid and inflexible responses to difficult and challenging experiences might sow discord into the broader family environment, particularly in the midst of a pandemic. Parental inflexibility was further predictive of parents using more caustic (i.e., reactive, inconsistent, and aggressive) forms of parenting. Finally, parental inflexibility directly predicted both greater parental depressive symptoms and greater child distress (i.e., anxiety/depressive symptoms, attention problems, and aggressive behavior), highlighting that parental inflexibility might impact the functioning of all individuals within the family. Thus, parental inflexibility demonstrated clear links to all levels of family and individual functioning examined.

Parental flexibility predicts family functioning. As seen in Fig. 1D, after controlling for those paths, parental flexibility was uniquely predictive of lower family discord and greater family cohesion, highlighting its potential role as a source of resilience within the larger family unit. Parental flexibility was also linked to parents using more constructive (i.e., inductive, democratic/autonomy supportive, & positive) forms of parenting. Thus, parental flexibility potentially might have empowered parents to select kinder and more compassionate responses to challenging and difficult child behavior (e.g., providing children with options, explaining the logic underlying rules, and providing positive reinforcement) rather than simply engaging in hostile and reactive forms of parenting. Although parental flexibility yielded fewer significant predictive paths than parental inflexibility in the final model, consistent with Hypothesis 1 A, the paths that did emerge served to highlight the potential for parental flexibility to improve the tone of dynamics within families.

Parental inflexibility predicts COVID-19 stress. As seen in Table 3 and Fig. 1C, and consistent with Hypothesis 2 B, higher levels of psychological inflexibility were predictive of parents experiencing higher levels of COVID-19 related stressors (i.e., COVID-19 risk and stress from new demands). Thus, parents who tended to respond to difficult or challenging experiences in rigid and inflexible ways (e.g., experientially avoiding them, becoming stuck in them, judging and shaming themselves for those difficult experiences) also tended to perceive themselves as well as their family and friends at higher risk for contracting COVID-19 and tended to worry more about new demands from work, homeschooling and childcare. Although parent psychological flexibility was predictive of more adaptive family processes, after controlling for the other paths in the model, parental flexibility did not emerge as a significant predictor of COVID-19 related stress (Fig. 1D), failing to offer support for Hypothesis 2 A. Thus, although parental flexibility seemed to promote healthier family dynamics, it did not serve to reduce the acute levels of stress parents were experiencing as the COVID-19 pandemic first broke across the western world.

COVID-19 stressors predicted poorer family functioning. As seen in Fig. 1E and consistent with Hypothesis 3, greater levels of COVID-19 related stress seemed to potentially impact families in a top-down manner. Thus, stress associated with the new demands placed on

Table 2
Bivariate Associations among the Variables in the Study.

Class of Variables	Descriptive Statistics				Correlations among Variables															
	Possible Range		M	SD	FLEX INFLEX		COVID-19 Stressors		Family Functioning			Parenting Behaviors		Ind Fn						
	MIN	MAX			1	2	3	4	5	6	7	8	9		10					
Specific Variable																				
Psychological Flexibility/Inflexibility																				
1	Flexibility	1	6	3.93	0.78															
2	Inflexibility	1	6	2.65	0.86	-.31														
COVID-19 Stressors																				
3	Perceived risk of contracting COVID-19	1	6	3.04	1.15	.03	.26													
4	Stress of new work/childcare demands	1	6	3.24	1.35	-.06	.29	.26												
Family functioning																				
5	Co-parenting discord	1	6	2.16	0.86	.01	.50	.26	.30											
6	Family discord	1	6	2.88	0.94	-.31	.38	.16	.38	.41										
7	Family cohesion	1	6	4.97	0.85	.32	-.42	-.11	-.20	-.59	-.47									
Parenting behavior																				
8	Caustic parenting	1	6	2.11	0.79	-.03	.58	.21	.30	.73	.48	-.45								
9	Constructive parenting	1	6	4.40	0.69	.45	-.09	.05	.06	-.11	-.15	.34	-.16							
Individual functioning																				
10	Child distress	1	6	2.03	0.83	-.04	.58	.28	.37	.64	.61	-.47	.74	-.08						
11	Parent depressive symptoms	1	4	1.86	0.68	-.22	.68	.29	.32	.46	.43	-.41	.44	.00						.55

NOTE: Ind Fn = Individual functioning. Correlations with absolute values $\geq .076$ were significant at $p < .05$. All correlations with absolute values $\geq .20$ have been bolded for ease of interpretation. Subscales sharing a similar focus with strong correlations/collinearity were averaged to represent an overall construct. Thus, Co-parenting discord is a composite of coparent conflict, coparent triangulation, and coparenting disagreement. Family Discord is a composite of family chaos/disorder and parenting burden due to childcare demands. Caustic parenting is a composite of hostile and reactive parenting, inconsistent discipline, and aggressive parenting/physical discipline. Constructive parenting is a composite of inductive parenting behaviors, democratic parenting practices, and positive and reinforcing parenting practices. Child distress is a composite of anxiety/depressive symptoms, attention problems, and aggressive behavior.

parents from the stay-at-home orders associated with the COVID-19 pandemic predicted higher levels of family discord, which in turn, predicted parents using more caustic forms of discipline and correspondingly higher levels of child distress. Greater coparenting discord was also predictive of greater caustic parenting (Fig. 1E) whereas greater family cohesion was predictive of greater constructive parenting (Fig. 1F). Thus, consistent with Family Systems Theory, the results of the model offered partial support for COVID-19 related stress potentially impacting child and parent functioning by sending ripples down through the various family systems.

Family distress and caustic parenting might serve as key mechanisms. As seen in Table 4 and Figures 1E and F, 10 indirect paths emerged as statistically significant based on their bootstrapped confidence intervals, providing additional support for the proposed model. Thus, although parent inflexibility demonstrated direct links to child distress, both parent flexibility and inflexibility demonstrated fairly robust links to child distress via the indirect paths suggested by the model. Our results highlight that a majority of these indirect links (7 out of 10) were predicted by parental inflexibility, highlighting that a parent’s rigid and inflexible responses to stressors in the midst of a pandemic may be the catalyst for the cascade of dysfunctional relationship processes that can occur within families under intense upheaval and stress. These results more specifically highlight family discord and caustic parenting as key mechanisms explaining those links. Thus, the results would suggest that parents engaging rigid and inflexible responses to difficult or challenging thoughts, feelings, and experiences might lower child functioning primarily by (1) exacerbating reactions to acute stressors (like those of a pandemic), (2) souring family dynamics to feel more burdensome and conflictual, and (3) promoting the use of more reactive and harsh forms of parenting. In contrast, parents engaging in a more flexible and compassionate manner to difficult thoughts, feelings and experiences might reduce child distress and promote family well-being by (1) reducing global family chaos and parenting burden, and thereby (2) lessening the use of harsh, reactive and inconsistent parenting practices, and instead (3) improving family members’ sense of being able to rely on each other for support in times of crises, thereby (4) promoting more constructive parenting practices.

4. Discussion

This study sought to introduce a contextual behavioral science lens toward understanding the various impacts of the COVID-19 pandemic on children and families. Drawing upon Family Systems Theory as an organizing framework, the study is one of the first to examine a wide range of family systems/processes within a comprehensive, stepwise, mechanistic path model, thereby integrating previous work and providing greater insights into how parental flexibility might impact family functioning in the midst of a pandemic. Thus, analyses in a large, online sample of parents uncovered robust links between parental psychological flexibility and inflexibility and all levels of family functioning examined, supporting Hypothesis 1. The results went on to offer support for the proposed top-down model in which parental inflexibility seemed to promote greater COVID-19 related stress (Hypothesis 2), which in turn seemed to have worsened family dynamics, reverberating throughout all levels of family functioning to reduce both child and parent well-being (Hypothesis 3). Thus, the current findings are some of the first to augment a comprehensive family systems perspective with a contextual behavioral science lens, thereby highlighting parental flexibility and inflexibility as prime points of intervention for improving family functioning and more specifically for helping families navigate the challenges of large-scale crises like the COVID-19 pandemic.

4.1. Implications

Parental inflexibility may represent a key risk factor. Consistent with the tenets of ACT, the results suggested that parental inflexibility was predictive of greater levels of COVID-19-related stress. This offers support for Hypothesis 2 and highlights how routinely using rigid and inflexible responses to difficult or challenging experiences (e.g., experiential avoidance, fusion, self-as-content) likely exacerbates the stress experienced by parents from a global crisis like the COVID-19 pandemic. The stress from new demands generated by the COVID-19 pandemic was, in turn, uniquely predictive of greater family discord even after controlling for the direct link between parent inflexibility and family discord. That suggests that the acute stress generated by the COVID-19 pandemic seemed to adversely impact family functioning above and

Table 3
Standardized Path Coefficients from the Model.

CLASS OF OUTCOMES Specific outcome being predicted Class of predictors Specific predictors	(R ²) or β	P	CLASS OF OUTCOMES Specific outcome being predicted Class of predictors Specific predictors	(R ²) or β	p
INDIVIDUAL FUNCTIONING OUTCOMES					
Predicting child psychological distress	.687		FAMILY DYNAMICS	.223	
<i>with parenting behaviors</i>			Predicting family cohesion		
Constructive parenting	.017	.489	<i>with COVID-19 related stress</i>		
Caustic parenting	.382	<.0005	Perceived risk of contracting COVID-19	-.013	.707
<i>with family dynamics</i>			Stress of new work/parenting demands	-.086	.014
Family cohesion	-.068	.022	<i>with parent psychological flexibility</i>		
Co-parenting discord	.073	.038	Global flexibility	.223	<.0005
Family discord	.339	<.0005	Global inflexibility	-.318	<.0005
<i>with parent psychological flexibility</i>			.311		
Global flexibility	.158	<.0005	Predicting co-parenting discord		
Global inflexibility	.216	<.0005	<i>with COVID-19 related stress</i>		
Predicting parental depressive symptoms	.524		Perceived risk of contracting COVID-19	.096	.003
<i>with parenting behaviors</i>			Stress of new work/parenting demands	.142	<.0005
Constructive parenting	.110	<.0005	<i>with parent psychological flexibility</i>		
Caustic parenting	-.083	.055	Global flexibility	.168	<.0005
<i>with family dynamics</i>			Global inflexibility	.485	<.0005
Family cohesion	-.086	.018	Predicting family discord	.272	
Co-parenting discord	.126	.004	<i>with COVID-19 related stress</i>		
Family discord	.172	<.0005	Perceived risk of contracting COVID-19	.034	.309
<i>with parent psychological flexibility</i>			Stress of new work/parenting demands	.292	<.0005
Global flexibility	-.015	.656	<i>with parent psychological flexibility</i>		
Global inflexibility	.572	<.0005	Global flexibility	-.232	<.0005
PARENTING BEHAVIORS					
Predicting constructive parenting	.270		Global inflexibility	.216	<.0005
<i>with family dynamics</i>			COVID-19 RELATED STRESS		
Family cohesion	.258	<.0005	Predicting perceived risk of contracting COVID-19	.077	
Co-parenting discord	-.077	.095	<i>with parent psychological flexibility</i>		
Family discord	.061	.107	Global flexibility	.115	.002
<i>with parent psychological flexibility</i>			Global inflexibility	.290	<.0005
			Predicting stress of new work/	.087	

Table 3 (continued)

CLASS OF OUTCOMES Specific outcome being predicted Class of predictors Specific predictors	(R ²) or β	P	CLASS OF OUTCOMES Specific outcome being predicted Class of predictors Specific predictors	(R ²) or β	p
parenting demands					
Global flexibility	.438	<.0005	parenting demands		
Global inflexibility	.173	<.0005	<i>with parent psychological flexibility</i>		
Predicting caustic parenting	.624		Global flexibility	.032	.389
<i>with family dynamics</i>			Global inflexibility	.303	<.0005
Family cohesion	.037	.238			
Co-parenting discord	.524	<.0005			
Family discord	.205	<.0005			
<i>with parent psychological flexibility</i>					
Global flexibility	.099	<.0005			
Global inflexibility	.286	<.0005			

NOTE: The model demonstrated adequate fit: $\chi^2(8) = 33.6, p < .0001, CFI = .993, TLI = .954, SRMR = .018, RMSEA = .061, 90\%CI LL = .041, UL = .084$. Given the size of the sample, most path coefficients emerged as statistically significant. To take a conservative approach, we only interpreted standardized path coefficients with absolute values $\geq .20$ to focus our results narrative on the more robust effects that are likely to replicate in future samples. These path coefficients have been bolded for ease of interpretation. Subscales sharing a similar focus with strong correlations/collinearity were averaged to represent an overall construct. Thus, Co-parenting discord is a composite of coparent conflict, coparent triangulation, and coparenting disagreement. Family Discord is a composite of family chaos/disorder and parenting burden due to childcare demands. Caustic parenting is a composite of hostile and reactive parenting, inconsistent discipline, and aggressive parenting/physical discipline. Constructive parenting is a composite of inductive parenting behaviors, democratic parenting practices, and positive and reinforcing parenting practices. Child distress is a composite of anxiety/depressive symptoms, attention problems, and aggressive behavior.

beyond what could be expected from parental inflexibility alone, highlighting the pandemic’s unique impact on families. Although the current study was focused on the acute forms of stress resulting from COVID-19, it is likely that the current results will generalize to other forms of acute and chronic stress experienced by parents. This is consistent with previous research highlighting the role of psychological flexibility in the experience of other stressful life circumstances, such as chronic pain and work stress. For example, Timmers et al., 2019 demonstrated links between parental inflexibility and adolescent-reported distress, pain catastrophizing, and functional disability in a sample of 578 pediatric chronic pain patients. Similarly, Lloyd, Bond, and Flaxman (2013) demonstrated that a 3-session workplace ACT intervention targeting inflexibility led to sustained decreases in emotional exhaustion (one indicator of workplace burnout) after six-months in a randomized clinical trial of government workers from the United Kingdom. The current results build on studies like these by demonstrating that the stressors unique to the COVID-19 pandemic (and the consequences of the resulting stay-at-home orders that were put in place) might show similar links to individuals’ general psychological inflexibility. Taken together, these findings begin to underscore the potential benefits of using ACT-based interventions targeting psychological inflexibility (e.g., FACE COVID; Harris, 2020) with parents in an effort to strengthen families and buffer them from the impact of stress.

Table 4
Bootstrapped Estimates of the Indirect Paths that Emerged within the Model.

Variables being Indirectly Linked Specific Indirect Paths Examined	est	99% CI	
		LL	UL
Global Inflexibility-> Child Distress			
Sum of major indirect paths examined	.323	.188	.499
Inflexibility-> Co-parenting discord-> Caustic parenting-> Child distress	.094	.056	.143
Inflexibility-> Stress from new demands-> Family discord-> Caustic parenting-> Child distress	.007	.003	.012
Inflexibility-> Family discord-> Caustic parenting-> Child distress	.016	.008	.030
Inflexibility-> Caustic parenting-> Child distress	.106	.062	.164
Inflexibility-> Stress from new demands-> Family discord-> Child distress	.029	.018	.045
Inflexibility-> Family discord-> Child distress	.071	.041	.105
Global Flexibility-> Child Distress			
Sum of major indirect paths examined	-.103	-.162	-.060
Flexibility-> Family discord-> Caustic parenting-> Child distress	-.019	-.035	-.010
Flexibility-> Family discord-> Child distress	-.084	-.127	-.050
Global Inflexibility-> Constructive Parenting			
Inflexibility-> Family cohesion-> Constructive parenting	-.065	-.112	-.030
Global Flexibility-> Constructive Parenting			
Flexibility-> Family cohesion-> Constructive parenting	.051	.022	.091

NOTE: These estimates are based on the results from 10,000 bootstrapped samples and represent the unstandardized indirect effects. Subscales sharing a similar focus with strong correlations/collinearity were averaged to represent an overall construct. Thus, Co-parenting discord is a composite of coparent conflict, coparent triangulation, and coparenting disagreement. Family Discord is a composite of family chaos/disorder and parenting burden due to childcare demands. Caustic parenting is a composite of hostile and reactive parenting, inconsistent discipline, and aggressive parenting/physical discipline. Constructive parenting is a composite of inductive parenting behaviors, democratic parenting practices, and positive and reinforcing parenting practices. Child distress is a composite of anxiety/depressive symptoms, attention problems, and aggressive behavior.

Parental flexibility is critical to family functioning. Even after controlling for the links between all of the separate family systems examined within the current comprehensive model, parental flexibility and inflexibility demonstrated unique links to a majority of those processes. These results are consistent with previous studies demonstrating the benefits of ACT-based interventions for children, adolescents and parents (see Coyne, McHugh, & Martinez, 2011; Murrell & Scherbarth, 2006, for reviews). More specifically, ACT-based interventions have been shown to reduce parental distress among parents of children with autism (Blackledge & Hayes, 2006), to reduce both the use of lax parenting and child behavior problems in families with children with cerebral palsy (Whittingham, Sanders, McKinlay, & Boyd, 2014), and to reduce distress and PTSD symptoms among parents of children with life-threatening illnesses (Burke et al., 2014). Expanding beyond ACT, other therapeutic approaches like Mentalization-based Family Therapy (Asen & Fonagy, 2012) and Attachment-Based Family Therapy (e.g., Diamond, 2014; Diamond, Russon, & Levy, 2016) specifically target family discord as critical process in treatment. The current findings help to highlight why that might be a particularly effective strategy as improving those dynamics would be predicted to have positive ripple effects throughout the other areas of family functioning. Interestingly, some of ACT’s core mechanisms (e.g., defusion, self-as-context) appear to parallel mechanisms proposed within Mentalization-based Family Therapy (Asen and Fonagy, 2012), which, among other therapeutic tasks, encourages family members to remain curious and open to both their own and other family members’ thoughts and feelings and to take into consideration factors or life experiences that may have brought about those emotions. Future research could examine both conceptual and empirical overlap between these proposed mechanisms of change.

The current results further extend this work by demonstrating that even outside of the context of family treatment, parental flexibility and inflexibility represent key strengths and weaknesses (respectively) that parents bring into their daily lives and interactions within their families. Taken together, this body of work suggests that, consistent with the tenets of ACT, parental flexibility might represent a set of vital skills that serve to shape parents’ behavior across all interactions within the family, effectively setting the tone of those interactions and thereby impacting all levels of family functioning.

The current results offer a comprehensive model. Although previous studies have linked parental flexibility and inflexibility to individual family processes like global family functioning (e.g., Corthorn, C., & Millicic, 2016), parenting behavior (e.g., Gouveia, Carona, Canavaro, & Moreira, 2016), and both child distress (e.g., Brassell et al., 2016) and parental distress (e.g., Neff & Faso, 2015), this is one of the first studies to try to integrate those findings into a more comprehensive family systems model. Consistent with Hypothesis 3, the current results supported a mechanistic model in which global family functioning (family cohesion, family discord, coparenting discord) represents a broader family system, setting the interpersonal tone in the family and thereby shaping the use of various parenting behaviors used by the parents, which in turn is directly linked to their child(ren)’s levels of distress as well as their own. Thus, the current results would suggest that a relatively rigid and inflexible parent may often respond in a harsh and reactive manner when disagreeing with their coparent, potentially having difficulty yielding to a compromise and possibly even trying to gain their children’s alliance against their coparent (i.e., engaging in triangulation). These dysfunctional patterns of interactions would likely resonate down to the parent-child interactions, prompting this parent to respond to child misbehavior with harsh, critical, and even physical punishments, promoting distress in both the parent and the child. These links are consistent with studies that have shown how extremely difficult situations can strain family functioning (e.g., Allen et al., 2000; Pedersen & Revenson, 2005), which in turn impacts parenting behaviors (e.g., Krishnakumar & Buehler, 2000), which is ultimately linked to individual distress (e.g., Bayer et al., 2006). Taken as a set, this body of findings could start to provide family therapists with a hierarchy of intervention points. For example, the current results suggest that (in addition to promoting psychological flexibility) addressing family and coparenting discord within treatment and engaging in activities to foster deeper family cohesion (i.e., targeting global family functioning) would likely have secondary benefits as that would likely also serve to promote more adaptive and less caustic parenting, thereby easing both child and parent distress.

Parent flexibility as a form of resilience. After controlling for the other effects in the model, parent psychological flexibility was not directly predictive of lower COVID-19 related stress. This would suggest that in the face of a pandemic infecting millions of individuals and killing hundreds of thousands of individuals worldwide, even psychologically flexible parents experienced stress as the United States went into stay-at-home shutdowns in an effort to slow the spread. However, even after controlling for all of the other paths in the model, parent flexibility was predictive of greater family cohesion, lower family discord, and greater use of constructive parenting. Thus, these results highlight that although parental psychological flexibility might not have served to reduce the overall stress parents faced in the early stages of the pandemic, it seemed to promote kinder and more compassionate and supportive interactions at all levels of family functioning. For example, a more psychologically flexible parent may have both contributed to and experienced their family as a strong support network of people who could turn to one another in the throes of a global crisis, and given this overall supportive environment, this may have allotted parents the needed cognitive and emotional resources to respond to their children with (1) warm displays of their affection by giving them a hug and a kiss when they did something well (rather than allow that moment to pass with little or no acknowledgment), (2) autonomy-supportive options

(asking children to contribute to family activities/rules rather than enforcing pre-determined family rules), and (3) reasons for why other rules needed to be followed (e.g., taking time to explain why they may not be able to have regularly-scheduled playdates with friends rather than just telling them “no”). Correspondingly, parental flexibility also promoted lower family discord, thereby promoting lower caustic parenting and lower child distress. Thus, parental psychological flexibility might have helped parents to be their better selves across more of their family interactions as they struggled to find a new normal and face the challenges of the new demands placed on them by social distancing and stay-at-home orders.

Parental flexibility in blended families. Over half of the families in the sample were blended in structure. The research on blended families has suggested that although they face unique challenges as they grow to become a family unit, it is localized family processes like effective communication (e.g., Braithwaite, Olson, Golish, Soukup, & Turman, 2001; Golish, 2003), constructive parenting (e.g., Fisher, Leve, O’Leary, & Leve, 2003; Jenkins, Simpson, Dunn, Rasbash, & O’Connor, 2005), family conflict/discord (e.g., Jenkins et al., 2005), and the quality of interactions within specific relationships (e.g., Lansford, Ceballo, Abbey, & Stewart, 2001) that determine the long-term well-being of those families and children. These results are highly consistent with the Family Systems Theory model as well as the current findings. Thus, parental flexibility and the family processes modeled in the current study might have been particularly salient for the blended families navigating the COVID-19 pandemic within the current sample. Future work could extend the current findings by examining the roles of parental flexibility and inflexibility within the developmental process of joining two family units together.

4.2. Strengths, limitations, and future directions

The current study collected data from a robust sample of US coparents at a pivotal point in history, just as the COVID-19 pandemic was impacting all levels of society with the United States, thereby allowing us to model some of its immediate impacts on families. The current study was also one of the first studies to introduce a contextual behavioral science lens within a comprehensive model of family functioning based on the spillover hypothesis of Family Systems Theory. The results were therefore able to highlight key points of intervention for families as they struggle to adapt to the new demands of a post-COVID-19 world. Despite these strengths, several limitations in the current study should be acknowledged. First, our model was tested in a cross-sectional dataset, rendering the direction of causality unclear. Although previous research supports the directionality of the links tested, it is possible that many of the links examined in the current study will be transactional (i.e., bi-directional) in nature, as these processes could reciprocally influence one another across time (e.g., Peltz, Rogge, & O’Connor, 2019). Thus, future studies should examine these results longitudinally to further clarify the underlying directions of causality. Second, our study was geared towards coparenting families so we could examine the role of coparenting dynamics within the family system. Future studies should aim to examine this model across diverse family structures (e.g., single parents) to determine the generalizability of these findings. Third, data were gathered entirely via parent’s report, limiting the obtained information to that of a single family member. Future studies could extend the current work by collecting data from both parents as well as from children to provide a more robust perspective on the dynamics within each family. Fourth, our study relied solely on self-report data, potentially limiting the data collected by parents’ varying levels of insight and varying levels of willingness to disclose the more difficult dynamics that might exist. For example, as there are strong social desirability pressures to present oneself as a “good” parent, using self-report data might have served to lower the amounts of hostile parenting and child distress reported within the sample, potentially attenuating the range of variance captured and thereby weakening the strength of the associations

observed for those variables. Although the parents in the current sample reported sufficient amounts of negative family dynamics to support meaningful findings, future studies could extend this work by diversifying the types of data collected (e.g., including behavioral coding of family interaction and parenting tasks) to address this concern. Fifth, the sample was predominantly female, Caucasian, and well educated, potentially limiting the generalizability of the findings. Future studies should explore this model in samples with greater demographic diversity to more thoroughly explore the limits of generalizability. Finally, although the study drew parents fairly evenly across the United States, regional differences in public health messaging and policies emerged within specific states as the COVID-19 pandemic spread, which could have led to some families being more or less severely impacted. Future work could build on the current study by examining the more precise impacts of shifting public health policies within specific states. Despite these limitations, the current results offer initial evidence for the key role that parent psychological flexibility plays in the lives of families enduring a global crisis.

Author contributions

Jennifer S. Daks. approval, and programmed the online survey. recruited the sample, cleaned the data, ran the analyses, and prepared the tables and figures drafted the first draft of the manuscript and all three authors edited and approved the final manuscript. All three authors affirm the accuracy of the numeric results presented, Jack S. Peltz, obtained IRB approval, and programmed the online survey. Ronald D. Rogge, designed the study, recruited the sample, cleaned the data, ran the analyses, and prepared the tables and figures

Declaration of competing interest

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

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