ORIGINAL ARTICLE

Trajectories of parent and child well-being across the pandemic year: Role of financial strain, social distancing, and COVID-19 prevalence

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Funding information

National Institute of Child Health and Human Development, Grant/Award Number: HD058529; Social Science Research Institute, Pennsylvania State University; Huck Institutes of the Life Sciences, Pennsylvania State University

Abstract

Existing research demonstrated large deteriorations in parent, child, and family well-being within 2 months after the onset of the COVID-19 pandemic. Yet, little is known about the trajectories of families' adjustment in the following months, including what risk factors are associated with changes in families' adjustment. The current study examined (1) change in the parent, child, and family well-being over time; (2) associations of pandemic-related stressors, financial and social distancing-associated stress, with well-being between and within families; and (3) the role of local COVID-19 prevalence, prior participation in family-focused prevention, and parent gender. From April 2020 to January 2021, 393 parents from 235 families reported five times on parent mental health, child behavior problems, family relationships, and pandemic-related stressors. Findings indicate that, across all domains of well-being, there was either little change across the 8 months or a small degree of recovery followed by a shift to further deterioration. On average, parents experiencing greater pandemic-related stressors also reported poorer functioning in all domains; monthly fluctuations in pandemic-related stressors were also associated with fluctuations in parent mental health and child behavior problems. In some domains, the links between pandemic-related stressors and parent and child well-being were stronger among families living in areas with overall higher COVID-19 prevalence rates. Parents' experiences during the pandemic did not differ systematically across prior intervention participation or parent gender. Taken together, findings suggest a need for supportive interventions to help families navigate extended periods of crisis.

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K E Y W O R D S COVID-19 pandemic, family adjustment, financial strain, local COVID-19 prevalence, social distancing stress

INTRODUCTION

As demonstrated by cross-sectional and longitudinal studies, the early phase of the COVID-19 pandemic negatively impacted parent and child mental health. Parents reported poorer mental health during the pandemic compared with previously reported population norms (Cameron, Joyce, Delaquis, et al., 2020; Cameron, Joyce, Rollins, & Roos, 2020; Patrick et al., 2020). There were also increases in children's and adolescents' feelings of social isolation, depression, anxiety, and maladaptive behaviors (O'Sullivan et al., 2021). Capitalizing on existing research with a longitudinal sample, we documented large increases in parental depression (Cohen's d[d] = 0.82) and children's internalizing (d = 1.31) and externalizing problems (d = 1.59) and small increases in parental anxiety (d = 0.25) from before to the initial months of the pandemic (Feinberg et al., 2022). This is consistent with Prime et al. (2020)'s conceptual framework that posits that the pandemic might lead to social disruption and in turn negatively impact family members' well-being. Further, the framework theorized that the early impact of the pandemic on family members' mental health would spill over to affect family functioning such as interparental relationships and parenting quality as observed in prior large-scale crises (Conger et al., 2010; Conger & Elder, 1994; Elder & Caspi, 1988). Indeed, we documented deteriorations in coparenting quality (d = -0.40) and warm parenting (d = -0.24) in the early phase of the pandemic (Feinberg et al., 2022). Similarly, a study in Australia found that parents assessed during the pandemic reported greater parenting irritability and lower family positive expressiveness compared to those assessed before the pandemic (Westrupp et al., 2020). However, little is known about the course of the parent, child, and family well-being after the initial months of the pandemic. Understanding whether these initial disruptions were sustained, increased, or decreased over time is critical for estimating the resources and supports families need in future extended crisis situations.

To better understand which families need the most support during such crises, we sought to identify risk factors associated with between-family differences and within-family changes in the parent, child, and family well-being. Prime et al. (2020) suggested that one way through which the COVID-19 pandemic may exert negative impacts on family members' well-being is via social disruption such as job loss and financial insecurity. The COVID-19 pandemic has had major ramifications for the global economy, leaving many people living in poverty for longer (Decerf et al., 2021). As posited in the family stress model and as found in research on past crises (Conger et al., 2002, 2010; Conger & Elder, 1994; Elder & Caspi, 1988), economic hardship leads to parents experiencing financial strain, which undermines parents' mental health and subsequently disrupts family relationships and child adjustment. Several studies have reported that income loss or financial strain during the pandemic have been associated with deteriorations in individual mental health among adults with and without children (Cameron, Joyce, Delaquis, et al., 2020; Cameron, Joyce, Rollins, & Roos, 2020; Hertz-Palmor et al., 2021), increased coparenting conflict (Peltz et al., 2021), and greater child abuse potential (Brown et al., 2020). We focused on financial strain instead of income because it was theorized as the more proximal predictor and often found to be the more robust predictor of individual health outcomes (Conger et al., 2002; Huijts et al., 2015; Tøge, 2016).

Another major social disruption caused by the pandemic was the implementation of health-protective behaviors such as social distancing. Decisions about adopting and ongoing implementation of such guidelines may evoke stress and conflict among family members, and in turn adversely impact family members' relationships and well-being. For example, personal distancing behavior (Marroquín et al., 2020) and distress related to the restriction of social contacts (Benke et al., 2020) are associated with increases in depression and anxiety. Parents may experience additional stress around social

distancing and other preventive measures due to the need to discuss and negotiate practices with another parent or parenting figure, which can lead to tension and conflicts and undermine interparental relations. It can also be challenging for parents to help children understand the importance of social distancing and ensure that children comply with family rules. The associated stress may also lead to impaired parenting, and in turn, more problems in children.

Finally, informed by Prime et al. (2020)'s framework that highlighted the importance of considering contextual factors, we consider three contextual factors. First, given the substantial geographic differences in confirmed cases from state to state (CDC COVID-19 Response Team, 2020), the prevalence of COVID-19 in a family's community may be of particular relevance. U.S. families living in areas with overall more confirmed cases reported greater fear, worry, and perceived threat of COVID-19 (Fitzpatrick et al., 2020), which may exacerbate the negative impact of pandemic-related stressors on these families. Second, earlier participation in supportive, family-focused prevention programs may have aided the development of resiliency factors that allowed for enhanced coping with pandemic stressors. The sample used in the current study was recruited from a long-term, follow-up study of U.S. families recruited between 2008 and 2012 for a randomized trial of a coparenting-focused prevention program, Family Foundations (FF; Feinberg & Kan, 2008). FF targets expectant parents and seeks to promote the individual family members' well-being and healthy family relationship by focusing on building a strong coparenting relationship. Previous work has documented several benefits for families participating in FF, including enhanced parent mental health, interparental relationship quality, parenting quality, and reduced child mental and behavior problems (Feinberg, 2002; Feinberg & Kan, 2008; Jones et al., 2018; Solmeyer et al., 2014).¹ During the first two months of the pandemic, intervention families in this sample, compared with control families, reported better functioning across several dimensions (Feinberg et al., 2022). It is possible that intervention effects continued over the course of the pandemic, but it is also possible that such effects vanished as the pandemic stressors persisted over a longer duration. Finally, parents' experiences during the pandemic may differ across gender. For families with young children, the pandemic may have placed a disproportionate burden on mothers, who generally tend to adopt greater responsibility than fathers for childcare and educational support (Alon et al., 2020). It is also possible that COVID-19 posed a greater threat to men than women as the proportion of hospitalizations, ICU admissions, and deaths has been higher among men (Global Health 50/50, 2021).

The current study has two aims. Aim 1 explores the trajectories of the parent, child, and family well-being over the first eight months of the pandemic, and moderation by three contextual factors (local COVID-19 prevalence, prior intervention participation, and parent gender). Parent well-being included depression and anxiety, child well-being included internalizing and externalizing problems, and family well-being included warm parenting, harsh parenting, coparenting, and couple relationship satisfaction. Aim 2 examines associations of pandemic-related stressors—financial strain and social distancing-associa stress—with the parent, child, and family well-being between and within families after accounting for the effect of time. Specifically, at the between-person level, we hypothesized that those with greater pandemic-related stressors would report poorer parent, child, and family well-being. At the within-person level, we hypothesized that monthly fluctuations in pandemic-related stressors would be associated with fluctuations in all domains of well-being assessed, such that during months in which pandemic-related stress was greater than usual, parents would report poorer well-being than usual. We also explored the moderating effects of the three contextual factors on these between- and within-person effects.

METHODS

Participants and procedure

Participants were a subsample of 393 U.S. first-time mother-father dyads who were initially recruited between 2008 and 2012 from three mid-Atlantic states and a southern state as part of a randomized trial of a coparenting-focused prevention program for new parents transitioning to parenthood (Feinberg & Kan, 2008). To be eligible for the trial, parents must be 18 years old or above, expecting their first child, and living together. In April and May 2020, participants were contacted to complete optional, online questionnaires regarding their adjustment during the COVID-19 pandemic. They were contacted again roughly one month (in May and June 2020), three months (in July and September 2020), five months (in September and November 2020), and seven months (from December 2020 to January 2021) from their initial assessment. A total of 235 families (intervention = 124, control = 111) including 226 mothers and 167 fathers responded to at least one of the five assessments, with an average of 3.68 and 3.62 assessments completed for mothers and fathers, respectively. Mothers and fathers were on average 38.9 (SD = 4.5) and 40.7 (SD = 5.2) years old. Parents, on average, had 15.7 years of education (SD = 1.5). The sample was predominantly White (83%), with few African American (5.9%), Asian or Pacific Islander (3%), multiracial (3.5%), and others (3%). A small portion (6.6%) identified as Hispanic. During the pandemic, the majority (93.5%) reported having a cohabiting partner and there were on average 2.2 children (SD = 0.89; range = 1-5) in the family with the average age of the oldest child in each family being 9.6 years old (SD = 1.2; 48.5% female). The pretax annual household income in 2019 was missing 4.5% of the sample. The remaining sample reported making less than \$60,000 (10%), \$60000–99,999 (26%), \$100,000–149,999 (32.8%), and \$150,000 and more (31.2%). Informed consent was obtained from all participants. This study was approved by the Institutional Review Board.

Measures

Parent well-being

To assess how often parents experienced depressive symptoms during the last week, the CES-D Scale (20 items) was used (Radloff, 1977). Items were rated on a 4-point scale from 0 (rarely or none of the time; less than once a week) to 3 (most or all of the time; 5-7 days a week) and averaged. Higher scores indicate more depressive symptoms (reliability = 0.91).

To assess how typically parents experienced worry during the past two weeks, four items from the Penn State Worry Questionnaire (Beck et al., 1995) were used. Items were rated on a 5-point scale from 1 (not at all typical) to 5 (very typical) and averaged. Higher scores indicate more anxiety (reliability = 0.92).

Child well-being

The Strengths and Difficulties Questionnaire was used to assess children's internalizing (6 items; reliability = 0.91) and externalizing (7 items; reliability = 0.94) problems in the past month (Goodman et al., 1998). Items were rated on a 3-point scale from 1 (not true) to 3 (certainly true) and averaged. Higher scores indicate more problems.

Family well-being

Items from the Parental Behavior Inventory (Schwarz et al., 1985) were used to assess parents' warm (3 items; reliability = 0.89) and harsh (2 items; reliability = 0.85) parenting in the past month. Items

were rated on a 5-point scale from 1 (almost never) to 5 (almost always) and averaged. Higher scores indicate more warm/harsh parenting.

The overall quality of the coparenting relationship in the past month was assessed using seventeen items from the Coparenting Relationship Scale (Feinberg et al., 2012). Participants reported regarding their cohabiting partner or the child's other parent if they do not have one. Items were rated on a 7-point scale from 0 (not true of us) to 6 (very true of us) and averaged. Higher scores indicate better coparenting (reliability = 0.96).

Parents rated relationship satisfaction in the past month on a 10-point scale (1 = not at all, 9 = very much) with five items from the Relationships Questionnaire (Braiker & Kelley, 1979). Participants reported regarding their romantic partner or skip the questions if they do not have a partner. Scores were averaged. Higher scores indicate greater satisfaction (reliability = 0.94).

Moderators

Financial strain was assessed with four items that capture parents' degree of current financial hardships and how much they anticipate struggling financially in the next 2 months on a four-point scale (1 = not at all, 4 = a great deal), as well as difficulty living on current income on a five-point scale (1 = not at all difficult, 5 = extremely difficult or impossible; Howe et al., 1995; Kessler et al., 1988).Items were summed. Higher scores indicate greater financial strain (reliability = 0.95).

Social distancing-associated stress was assessed with five items created for this study. Parents reported separately on the extent to which their child and partner, respectively, were upset, and argued with them, about following these recommendations, and the overall stress each parent felt about following the recommendations. All items were rated on a 10-point scale (1 = none at all, 10 = a great deal) and averaged. Higher scores indicate more stress (reliability = 0.81).

To capture the geographic differences in local COVID-19 prevalence, we used data made available by COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (Dong et al., 2020). For each parent at each assessment, based on their zip code, we calculated the corresponding county-level COVID-19 prevalence rate during the two weeks prior to the completion date of each questionnaire. Specifically, for each participant, we first aggregated the total number of confirmed cases in their county over the two weeks prior to the survey response and then divided the total number of confirmed cases by the county population and took the average across all assessments for each participant.

Data analysis

Analyses were conducted in SAS using multilevel modeling (MLM) via PROC MIXED to account for the nested nature of the data. To explore the change trajectories (Aim 1), parallel analyses were conducted for each of the eight outcomes. Both linear and quadratic effects of time were explored in the model. Moderating effects of the three proposed moderators were tested by including their main effect and their interaction with time and time². Local COVID-19 prevalence was grand mean-centered. Intervention (control = -1, intervention = 1) and parent gender (mother = -1, father = 1) were effect coded. Significant interactions with local COVID-19 prevalence were probed at 1 standard deviation (SD) above and below the mean. Significant interactions with intervention or parent gender were probed for specific intervention groups or parent gender. To calculate effect sizes, the turning point was first identified in the trajectory; the amount of change from the first assessment to the turning point and from the turning point to the last assessment was then estimated and divided by baseline SD.

Effects of financial strain and social distancing-associated stress were further tested in two parallel sets of analyses for each of the eight outcomes (Aim 2). To separate sources of variance in monthly assessments, person averages across assessments were created for each parent and grand mean-centered before being included in the model to capture differences across families on average. To capture the effects of monthly fluctuations within each parent, monthly deviations of the raw score at each assessment from person averages across assessments were included in the model. Significant effects of time and its moderating effects observed in Aim 1 analyses were controlled for in models for Aim 2 but not reported in tables for ease of presentation. Moderating effects of the three moderators were tested similarly as in Aim 1.

Overall, compliance with the protocol was good, with parents completing over 70% of assessments. However, due to missing data, maximum likelihood estimation was used, which provides unbiased estimates under conditions up to missing at random (Hox et al., 2017). Exploratory analyses were conducted to identify variables associated with missingness. Parents in the intervention group and those with more years of education were less likely to have missing data. These variables were included in all models as covariates.

RESULTS

Means and standard deviations for study variables were provided in Table S1. Model results for Aims 1 and 2 were presented in Tables 1–3.

Aim 1: Change trajectories and moderation of these trajectories

Change in parent depression was moderated by local COVID-19 prevalence (Figure S1): In high prevalence areas, parent depression decreased after the first assessment (d = -0.34) but began increasing by 5.12 months (d = 0.11); in low prevalence areas, it remained stable. Harsh parenting decreased after the first assessment (d = -0.33; Figure S2) but began increasing at 4.57 (d = 0.07). Coparenting quality and warm parenting increased at first (ds = 0.06 and 0.11, respectively) but began decreasing at 2.62 and 3.45 months, respectively (ds = -0.05 and -0.12; Figures S3 and S4). Change in child externalizing problems was moderated by intervention status: It remained stable for intervention families but decreased first (d = -0.22) followed by increases at 3.64 months (d = 0.19) for control families (Figure S5). Parent anxiety, relationship satisfaction, and child's internalizing behaviors remained stable.

Aim 2: Associations with pandemic-related stressors and moderation of these effects

Financial strain

At the between-person level, financial strain was significantly and positively associated with parent depression and anxiety, and significantly and negatively associated with coparenting quality and warm parenting. Further, these linkages were significantly stronger among parents in areas with overall higher COVID-19 prevalence. Financial strain was also significantly and negatively associated with relationship satisfaction and significantly and positively associated with child internalizing and externalizing problems. Financial strain was not significantly associated with harsh parenting.

At the within-person level, financial strain was significantly and positively associated with parent depression and anxiety and child externalizing problems. These within-person linkages with parent depression and anxiety were significantly stronger among parents in areas with overall higher COVID-19 prevalence. Parent gender moderated the linkage between parent depression and warm parenting such that financial strain was more strongly associated with depression for mothers than fathers and only significantly and negatively associated with warm parenting for fathers but not

	Depression	Anxiety	Coparenting	Relati	onship satisfaction
	b (SE)	<i>b</i> (SE)	b (SE)	b (SE)	
Intercept	1.152 (0.214)***	2.865 (0.408)***	4.837 (0.426)***	7.884	(0.687)***
Parent Gender	-0.079 (0.021)***	-0.299 (0.045)***	0.127 (0.035)***	0.177	(0.059)**
Intervention Condition	-0.004 (0.026)	0.100 (0.049)*	0.038 (0.059)	0.172	(0.101)
Education	-0.032 (0.014)*	-0.068 (0.026)**	0.001 (0.027)	-0.023	8 (0.043)
Local COVID-19 Prevalence	0.310 (0.194)	0.402 (0.390)	-0.485 (0.348)	-0.343	8 (0.633)
Time	-0.028 (0.011)**	0.025 (0.022)	0.039 (0.018)*	-0.046	5 (0.037)
× Parent Gender	0.000 (0.010)	-0.001 (0.021)	0.008 (0.015)	0.006	(0.030)
× Intervention Condition	0.005 (0.011)	-0.012 (0.022)	-0.003 (0.018)	-0.061	(0.037)
× Local COVID-19 Prevalence	-0.236 (0.112)*	-0.162 (0.225)	0.239 (0.184)	0.393	(0.362)
Time ²	0.003 (0.002)	-0.004 (0.003)	-0.007 (0.002)**	0.005	(0.005)
× Parent Gender	-0.000 (0.001)	-0.001 (0.003)	-0.001 (0.002)	-0.002 (0.004)	
× Intervention Condition	-0.000 (0.001)	0.000 (0.003)	0.001 (0.002)	0.010 (0.005)	
× Local COVID-19 Prevalence	0.030 (0.015)*	0.019 (0.030)	-0.028 (0.025)	-0.052	2 (0.048)
			Internalizing		Externalizing
	Warm parenting	Harsh parenting	problems		problems
	b (SE)	b (SE)	b (SE)		b (SE)
Intercept	3.845 (0.318)***	1.657 (0.320)***	1.780 (0.159)***	4	1.991 (0.180)***
Parent Gender	-0.068 (0.031)*	0.006 (0.032)	-0.018 (0.014)		0.032 (0.014)*
Intervention Condition	0.049 (0.037)	-0.059 (0.042)	0.017 (0.022)		-0.000 (0.025)
Local COVID-19 Prevalence	0.033 (0.288)	0.222 (0.326)	0.023 (0.148)		0.010 (0.153)
Education	0.023 (0.020)	0.024 (0.020)	-0.024 (0.010)*		-0.020 (0.011)
Time	0.041 (0.017)*	-0.106 (0.021)***	-0.008 (0.009)		-0.036 (0.009)***
× Parent Gender	0.004 (0.016)	-0.007 (0.018)	-0.000 (0.007)		-0.007 (0.007)
× Intervention Condition	-0.024 (0.016)	0.035 (0.020)	0.006 (0.009)		0.015 (0.009)
× Local COVID-19 Prevalence	0.137 (0.172)	0.027 (0.205)	-0.020 (0.088)		0.021 (0.086)
Time ²	-0.006 (0.002)*	0.012 (0.003)***	0.001 (0.001)		0.004 (0.001)***

TABLE 1 Results of models assessing change trajectories in the parent, child and family well-being during the first year of the pandemic and moderation of these trajectories

Note: ****p*<0.001, ***p*<0.01, **p*<0.05.

× Intervention Condition

× Parent Gender

× Local COVID-19

Prevalence

mothers (B = -0.085, SE = 0.030, p = 0.004). Financial strain was not associated with within-person fluctuations in coparenting, relationship satisfaction, harsh parenting, or child internalizing problems.

-0.000(0.003)

-0.004(0.003)

-0.007(0.03)

-0.000(0.001)

-0.001(0.001)

0.004 (0.012)

0.000 (0.001)

-0.003(0.01)

-0.002 (0.001)*

Stress associated with social distancing

-0.000(0.002)

0.003 (0.002)

-0.009(0.023)

At the between-person level, social distancing-associated stress was significantly and positively associated with parent depression, anxiety, child internalizing problems, and harsh parenting, and

TABLE 2 Results of models assessing within- and between-person effects of financial strain and moderation of these effects

	Depression	Anxiety	Coparenting	Relationship satisfaction
	b (SE)	b (SE)	b (SE)	<i>b</i> (SE)
Intercept	0.867 (0.194)***	2.467 (0.385)***	5.117 (0.401)***	8.141 (0.667)***
Parent Gender	-0.074 (0.017)***	-0.301 (0.036)***	0.134 (0.031)***	0.161 (0.049)**
Intervention Condition	0.002 (0.019)	0.064 (0.039)	0.044 (0.046)	0.143 (0.085)
Local COVID-19 Prevalence	0.239 (0.183)	0.051 (0.236)	-0.057 (0.250)	-0.090 (0.431)
Education	-0.014 (0.012)	-0.042 (0.024)	-0.015 (0.025)	-0.044 (0.042)
WP Financial Strain	0.068 (0.011)***	0.145 (0.022)***	-0.010 (0.018)	-0.014 (0.038)
× Parent Gender	-0.023 (0.011)*	-0.031 (0.022)	0.019 (0.018)	0.035 (0.036)
× Intervention Condition	0.008 (0.011)	0.040 (0.022)	-0.015 (0.018)	0.018 (0.040)
× Local COVID-19 Prevalence	0.403 (0.111)***	1.169 (0.216)***	-0.009 (0.182)	0.243 (0.416)
BP Financial Strain	0.113 (0.013)***	0.155 (0.026)***	-0.230 (0.028)***	-0.259 (0.064)***
× Parent Gender	0.015 (0.012)	0.032 (0.025)	-0.001 (0.022)	-0.000 (0.040)
× Intervention Condition	0.016 (0.012)	0.039 (0.025)	0.031 (0.027)	0.112 (0.059)
× Local COVID-19 Prevalence	0.320 (0.071)***	0.476 (0.139)***	-0.428 (0.136)**	-0.326 (0.241)

	Warm parenting	Harsh parenting	Internalizing problems	Externalizing problems
	b (SE)	b (SE)	b (SE)	<i>b</i> (SE)
Intercept	4.029 (0.32)***	1.592 (0.318)***	1.722 (0.159)***	1.964 (0.181)***
Parent Gender	-0.063 (0.026)*	-0.017 (0.024)	-0.022 (0.011)*	0.011 (0.012)
Intervention Condition	0.026 (0.031)	-0.011 (0.035)	0.022 (0.019)	-0.001 (0.025)
Local COVID-19 Prevalence	0.535 (0.181)**	0.113 (0.196)	-0.004 (0.097)	0.018 (0.108)
Education	0.013 (0.020)	0.028 (0.020)	-0.021 (0.010)*	-0.02 (0.011)
WP Financial Strain	-0.027 (0.018)	0.029 (0.022)	0.002 (0.009)	0.021 (0.009)*
× Parent Gender	-0.0578 (0.018)**	0.017 (0.021)	-0.003 (0.009)	0.006 (0.008)
× Intervention Condition	-0.014 (0.017)	-0.022 (0.021)	0.011 (0.009)	-0.002 (0.009)
× Local COVID-19 Prevalence	0.136 (0.181)	-0.316 (0.215)	-0.090 (0.089)	0.046 (0.086)
BP Financial Strain	-0.042 (0.020)*	0.033 (0.022)	0.032 (0.011)**	0.031 (0.013)*
× Parent Gender	-0.005 (0.018)	-0.003 (0.018)	-0.005 (0.008)	-0.001 (0.009)
× Intervention Condition	0.037 (0.020)	0.035 (0.021)	-0.002 (0.011)	0.017 (0.012)
× Local COVID-19 Prevalence	-0.341 (0.115)**	0.009 (0.117)	0.052 (0.056)	0.005 (0.061)

Note: ****p*<0.001, ***p*<0.01, **p*<0.05.

Abbreviations: BP, between-person; WP, within-person.

significantly and negatively associated with warm parenting and coparenting quality. The linkage with parent depression was significantly stronger among parents in areas with overall higher COVID-19 prevalence. Parent gender moderated the linkages with coparenting and relationship satisfaction such that the linkage with coparenting was stronger for fathers and the linkage with relationship satisfaction was only significant for fathers (B = -0.335, SE = 0.061, p = <0.001). Prior intervention participation significantly moderated the linkage with child externalizing problems such that a significant and positive association was only found for intervention families (B = 0.064, SE = 0.018, p < 0.001).

At the within-person level, social distancing-associated stress was significantly and positively associated with parent depression and anxiety and child internalizing problems. The within-person

	Depression	Anxiety	Coparenting	Relationship satisfaction
	b (SE)	b (SE)	b (SE)	<i>b</i> (SE)
Intercept	1.056 (0.200)***	2.757 (0.396)***	4.798 (0.428)***	7.991 (0.689)***
Parent Gender	-0.082 (0.017)***	-0.310 (0.036)***	0.140 (0.031)***	0.170 (0.047)***
Intervention Condition	0.012 (0.020)	0.091 (0.039)*	0.034 (0.053)	0.120 (0.091)
Local COVID-19 Prevalence	0.303 (0.189)	0.297 (0.251)	-0.110 (0.267)	-0.083 (0.449)
Education	-0.026 (0.013)*	-0.060 (0.025)*	0.004 (0.027)	-0.035 (0.044)
WP Stress About SD	0.23 (0.007)**	0.067 (0.013)***	-0.015 (0.012)	-0.014 (0.023)
× Parent Gender	-0.001 (0.007)	0.002 (0.014)	-0.008 (0.012)	0.008 (0.023)
× Intervention Condition	-0.001 (0.007)	0.004 (0.014)	-0.011 (0.011)	-0.054 (0.023)*
× Local COVID-19 Prevalence	0.178 (0.085)*	0.077 (0.170)	-0.093 (0.136)	-0.075 (0.295)
BP Stress About SD	0.103 (0.014)***	0.219 (0.027)***	-0.143 (0.030)***	-0.227 (0.049)***
× Parent Gender	-0.008 (0.013)	-0.031 (0.026)	0.052 (0.024)*	0.108 (0.038)**
× Intervention Condition	0.003 (0.013)	-0.032 (0.027)	-0.014 (0.029)	0.063 (0.049)
× Local COVID-19	0.280 (0.092)**	0.259 (0.188)	-0.198 (0.191)	-0.088 (0.328)

TABLE 3 Results of models assessing within- and between-person effects of social distancing-associated stress and moderation of these effects

Prevalence

	Warm parenting	Harsh parenting	Internalizing problems	Externalizing problems
	b (SE)	<i>b</i> (SE)	b (SE)	<i>b</i> (SE)
Intercept	4.088 (0.318)***	1.488 (0.312)***	1.777 (0.155)***	1.973 (0.182)***
Parent Gender	-0.055 (0.026)*	-0.019 (0.023)	-0.021 (0.011)*	0.009 (0.012)
Intervention Condition	0.024 (0.032)	-0.001 (0.035)	0.021 (0.019)	0.000 (0.025)
Local COVID-19 Prevalence	0.460 (0.193)*	0.042 (0.202)	0.002 (0.098)	-0.043 (0.113)
Education	0.010 (0.020)	0.034 (0.020)	-0.025 (0.010)*	-0.019 (0.012)
WP Stress About SD	0.009 (0.011)	0.032 (0.013)*	0.018 (0.005)***	0.005 (0.005)
× Parent Gender	0.011 (0.012)	0.029 (0.013)*	0.003 (0.006)	0.006 (0.005)
× Intervention Condition	-0.013 (0.010)	0.023 (0.013)	0.006 (0.005)	-0.004 (0.005)
× Local COVID-19 Prevalence	-0.252 (0.126)*	0.196 (0.156)	-0.069 (0.067)	0.061 (0.064)
BP Stress About SD	-0.092 (0.022)***	0.081 (0.022)***	0.047 (0.011)***	0.038 (0.012)**
× Parent Gender	-0.022 (0.020)	0.001 (0.019)	-0.009 (0.008)	-0.011 (0.010)
× Intervention Condition	-0.014 (0.020)	0.007 (0.021)	-0.001 (0.010)	0.026 (0.012)*
× Local COVID-19 Prevalence	-0.097 (0.138)	-0.241 (0.146)	0.127 (0.069)	-0.035 (0.079)

Note: ****p*<0.001, ***p*<0.01, **p*<0.05.

Abbreviations: BP, between-person; SD, social distancing; WP, within-person.

linkage with parent depression was significantly stronger among parents in areas with overall higher COVID-19 prevalence. Local COVID-19 prevalence also moderated the linkage with warm parenting such that a significant and positive association was found among those in areas with an overall lower prevalence (B = 0.055, SE = 0.026, p = 0.038). Parent gender moderated the linkage with harsh parenting such that a significant and positive association was found only for fathers (B = 0.061, SE = 0.022, p = 0.006). Prior intervention participation significantly moderated the linkage with relationship satisfaction such that a significant and negative association was only found for intervention families (B = -0.069, SE = 0.031, p = 0.026). Social distancing-related stress was not associated with within-person fluctuations in child externalizing problems or coparenting.

DISCUSSION

This is the first study that has followed families with young children for most of the first year of the pandemic assessing change in the parent, child, and family well-being and its association with pandemic-related risk factors. The moderating role of local COVID-19 prevalence, prior participation in family-focused prevention, and parent gender were also explored. Findings suggested either a lack of change or small degrees of recovery followed by deterioration in the parent, child, and family well-being. Further, findings supported that families with higher levels of financial strain or social distancing-associated stress or living in areas with overall higher COVID-19 prevalence rates were at a higher risk of poorer adjustment.

Some degree of recovery was observed in parental depression and child externalizing problems two of the domains with the greatest deterioration in the first two months of the pandemic (Feinberg et al., 2022). Yet, the size of the recovery appears limited relative to the initial deterioration. Moreover, there was a reversal of recovery and a return to deterioration after 4–5 months. A similar trajectory was observed for harsh parenting. Notably, despite the large increases in child internalizing problems early in the pandemic (Feinberg et al., 2022), levels of child internalizing problems remained stable across the study period. Previous work also documented initial moderate-sized deteriorations in warm parenting, coparenting quality, and parental anxiety (Feinberg et al., 2022). Minimum changes were observed in these domains by the end of our assessment period. Relationship satisfaction also remained stable over the study period. However, it is difficult to discern the short- and long-term impacts of the pandemic on parents' romantic relationship satisfaction because previous work with the same sample did not examine how it changed early in the pandemic (Feinberg et al., 2022).

As expected, short- and longer-term exposure to pandemic-related stressors (i.e., financial strain and social distancing-associated stress) also played a role. Monthly fluctuations in pandemic-related stressors were mostly associated with monthly fluctuations in parent and child well-being rather than family relationships. The social-economic disruption resulting from the pandemic was theorized to directly impact caregiver mental health and child adjustment, and indirectly impact family relationships (Prime et al., 2020). Thus, it may take longer for these disruptions to manifest in family relationships, which may explain why immediate changes in these domains were not observed from month to month. Further, overall, families exposed to greater pandemic-related stressors reported poorer functioning in all domains assessed. These between-family differences may suggest adverse impacts of longer-term exposure to these stressors independent of short-term exposure (i.e., fluctuations from month to month).

We also found some evidence suggesting that the negative short- and longer-term impact of pandemic-related stressors may be exacerbated among families living in communities with overall higher COVID-19 prevalence across the study period. Parents in higher-prevalence communities perceive a greater threat of COVID-19 and experience greater fear and worry (Fitzpatrick et al., 2020), which may have depleted their cognitive and psychological coping resources, leading to greater vulnerability to pandemic-related stressors. Parents in these communities may also have experienced greater disruptions in schooling and childcare, stricter physical distancing and other preventative measures, and more closure of nonessential businesses and services.

Overall, experiences during the pandemic did not differ systematically across prior intervention participation. Further, research and public discussion have focused on how the pandemic may exacerbate inequalities in employment for women, especially for working mothers (Alon et al., 2020; Petts et al., 2021). Yet, little is known about whether there are gender differences in parents' well-being and experiences as partners and parents. A gender difference was not found in our prior work on the initial impact of the pandemic (Feinberg et al., 2022). Among the handful gender differences observed in the current study, there was no consistent evidence suggesting disproportionate impacts on one parent gender over the other. Taken together, these findings suggested overall similar pandemic impacts on mothers and fathers in the domains assessed.

Findings in the current study provide several clinical implications for helping families navigate extended periods of crisis such as the COVID-19 pandemic. First, given the relatively minimal recovery observed in the domains assessed, additional efforts are needed to help families recover from the initial and potentially ongoing impact of the crisis. For example, screening of children and families and enhanced supports and therapeutic resources should be provided even during the later stages of this pandemic and persistently in future long-time crises. Second, targeting resources may be based on evidence that families experiencing greater pandemic-related stressors or living in areas with higher COVID-19 prevalence are in greatest need of support. Finally, supportive interventions that help families navigate crises like the pandemic should be made available to both mothers and fathers, given that they were comparably impacted by the pandemic. Moreover, a growing body of literature before the pandemic has documented the importance of coparenting quality for parent mental health, family relationships, and children's adjustment (Feinberg, 2002; Feinberg & Kan, 2008; Jones et al., 2018; Solmeyer et al., 2014). Thus, interventions engaging all parenting figures and providing them with skills to navigate the pandemic together as a coparenting team may be an effective approach. Specifically, skills in emotion regulation, communication, conflict management, and problem-solving may be particularly beneficial in helping parents and coparents cope with pandemic-related stressors.

There are some important limitations to acknowledge. First, the current sample was not representative of the U.S. population. Despite the wide income range, the median household income of the current sample (\$100k) is higher than the U.S. population in the same year. Thus, our findings, especially ones pertaining to the impact of financial strain, may not be generalizable to families at much lower incomes. Further, the sample was predominantly white. Thus, our results are not generalizable to racial/ethnic minorities who were more disproportionately affected by the pandemic (Abedi et al., 2021; Tai et al., 2021). Future studies should try to understand how more diverse populations, both financially, with racial/ethnic identification, and their intersections, are impacted by the pandemic as they are often faced with a myriad of stressors yet have either less access to healthcare or encounter more barriers engaging in healthcare. Second, we were not able to compare with a sample of families who did not experience the pandemic to discern the unique impact of the pandemic. Third, it is possible that links between pandemic-related stressors and individual and family well-being were due to one or more third factors. Individuals with certain sociodemographic, psychological, and health risk factors are more likely to be exposed to daily stressors and/or more reactive to these stressors (Almeida, 2005). These risk factors may lead to poorer individual adjustment and family relationships and independently to greater exposure to pandemic-related stressors. Similarly, it is possible that families in communities with overall higher COVID-19 prevalence are subject to other risk factors that were not assessed in the current study that may explain the moderating effect of local COVID-19 prevalence.

Despite the limitations, the current study is the first that has followed families with young children for most of the first year of the pandemic assessing parent, child, and family well-being. Findings suggest a need for interventions to help families recover from the initial impact of the pandemic and cope with persisting and fluctuating levels of pandemic-related stressors. Targeting families in communities with higher COVID-19 prevalence, engaging both parents, and providing them with resources that help cope with pandemic-related stressors and manage family relations as a couple (i.e., coparenting) may be particularly helpful.

ACKNOWLEDGEMENTS

This research was supported by a grant from the National Institute of Child Health and Development (NICHD; HD058529), Mark Feinberg, Principal Investigator. Data collection during the pandemic was supported by grants from the Huck Institutes of the Life Sciences, Pennsylvania State University, and Social Science Research Institute, Pennsylvania State University. We also wish to acknowledge Dr. Michelle Hostetler and Joseph Cifelli for their help with the co-ordination of the Family Foundations project and data collection during the pandemic.

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SUPPORTING INFORMATION

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How to cite this article: Le Y., Mogle J. A., & Feinberg, M. E. (2022). Trajectories of parent and child well-being across the pandemic year: Role of financial strain, social distancing, and COVID-19 prevalence. *Family Process*, 00, 1–13. https://doi.org/10.1111/famp.12823