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Latina mothers navigating COVID-19: Within- and between-family stress processes over time

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Abstract

Objective: This study aimed to understand how periodic shifts in financial cutbacks and fears of contracting COVID-19 contributed to children's externalizing behaviors due to increases in maternal stress among low-income Latina mothers during the first 10 months of the COVID-19 pandemic.

Background: The COVID-19 pandemic caused widespread health, economic, and psychological consequences for families and children. The Latino community is particularly vulnerable to the economic and health risks of this pandemic as a consequence of systemic oppression. The family stress model suggests that these family stressors will have psychological repercussions to parents, and downstream behavioral consequences to children.

Method: We examined both the within- and between-person impacts of worry surrounding contracting the virus and the economic consequences of the pandemic on maternal stress and child externalizing behaviors. Participants were 73 Latina mothers who completed assessments an average eight times across the first 10 months of the COVID-19 pandemic. At each assessment time, the mother was asked about worries surrounding contracting the virus, economic cutbacks the family was making, her perceived stress, and her child's externalizing behaviors during a brief phone call.

Results: Between-families, higher economic cutbacks indirectly increased child externalizing behaviors through maternal stress. The within-family model revealed that at assessments when mothers expressed greater worry about contracting the COVID-19 virus, they also reported greater stress. Further, at the within-person level, a mother's greater experience of stress was associated with

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greater reports of child externalizing behaviors, though the indirect association between COVID-19 contract worry and child externalizing behaviors through maternal stress was not significant.

Conclusions: Across the first 10 months of the COVID-19 pandemic, the children in Latino families participating in this research exhibited more externalizing behaviors among families that engaged in more financial cutbacks as a function maternal stress. However, periodic spikes in Latina mothers' fears of contracting COVID-19 contributed to periodic spikes in stress, which predicted periodic spikes in child externalizing behaviors.

Implications: Greater effort toward social policy that provides economic support for vulnerable families before periods of increased societal stress and greater protections for workers with limited sick leave and schedule flexibility will help promote resilience to future crises among low-income Latino families.

The COVID-19 pandemic has contributed to high levels of stress from social isolation, fear of infection, and economic hardship, especially for lower income and minoritized families (Brown et al., 2020). Latinx families in particular have faced the brunt of these hardships with higher rates of unemployment, and morbidity and mortality caused by COVID-19, compared to non-Latinx White individuals (Tai et al., 2021). The family stress model (FSM) describes how stressors such as these have the potential to initiate a cascade of problems for family well-being (Conger et al., 1994). Specifically, stress jeopardizes parents' psychological functioning, undermining parent-child relationship quality and increasing punitive and controlling parenting. Family stress in early childhood due to economic hardship can contribute to the emergence of externalizing behaviors, such as acting out or arguing. Over time, greater incidence of externalizing behaviors can lead to a range of socioemotional issues including delinquency, substance use, and co-occurring internalizing disorders with the possibility of continuing across generations (Conger et al., 2010; Martin et al., 2010; Scaramella et al., 2008; Shi et al., 2020).

This pandemic has been a constantly changing crisis and has caused massive fluctuations in family life, underlining the importance of examining the unique impact of pandemic induced instability on mothers and children. Thus, this study was designed to capture family stress process in the context of COVID-19 by repeatedly assessing family life across the first 10 months of the pandemic. Using repeated measures across 2020, the current study tests a multilevel (between- and within-family), intensive longitudinal model of family stress during the pandemic in a sample of low-income Latino families. Specifically, we examine (a) the impact of mothers' economic cutbacks and worries about contracting the virus on children's externalizing behaviors through increased maternal stress and (b) how these processes unfolded both across and within families during the first 10 months of the pandemic.

Latino families and the economic impacts of the COVID-19 pandemic

Latino families have had disproportionate economic impacts from the COVID-19 pandemic. Institutional barriers and systemic discrimination increase Latino families' risk of economic hardship (Ruiz & Steffen, 2011). The April 2020 jobs report partially highlighted these inequalities at the outset of the pandemic, revealing the unemployment rate for Latinos to be 18.9%

compared to 14.2% for Whites (U.S. Department of Labor, Bureau of Labor Statistics, 2020a). Though the June 2020 jobs report indicated declines in unemployment, importantly, Latino unemployment (14.5%) remained considerably higher than White unemployment (10.1%; U.S. Department of Labor, Bureau of Labor Statistics, 2020b). Data collected during April and May of 2020 showed that Latino families reported more pandemic-related stressors (e.g., parent stress, parent relationship interactions with partner and/or child) than any other racial/ethnic group in the study (Brown et al., 2020). According to the Latino Decisions National Parent Survey, during 2020, Latino families experienced a high level of job loss and business closures, with young parents below the federal poverty level experiencing the most economic stress (Vargas & Sanchez, 2020). The current and historic marginalization of the Latino community in the United States and the compounding economic effects of the COVID-19 pandemic on Latino families has placed these families at increased risk for the negative consequences of chronic and unpredictable economic hardship.

Empirical and theoretical evidence suggests that economic hardship can be a powerful disrupter of typical child development through its impact on parenting and parent psychological functioning (Bellair et al., 2019; Masarik & Conger, 2017; Neppl et al., 2016). Specifically, the FSM provides a useful framework to understand the psychological toll on parents of constantly trying, and often failing, to make ends meet. Importantly, this stress and strain interferes with parents' ability to provide consistent positive parenting, which can have downstream impacts for children's socioemotional functioning (Masarik & Conger, 2017). These findings have been replicated in Latino samples in middle childhood with greater economic hardship predicting later externalizing behaviors (Gonzales et al., 2011), and in adolescents predicting substance use (Martin, Conger, & Robins, 2019), externalizing behaviors (White et al., 2015) and conduct disorder/oppositional defiant disorder, and major depression (Zeiders et al., 2011). Investigations of the family stress model among Latino families with younger children have replicated the findings among non-Hispanic White families.

Recent theoretical work from Prime et al. (2020) that expands on the FSM also suggests that disruptions due to the COVID-19 pandemic will impact family functioning through impacts on caregiver mental health, in addition to deteriorated family processes. Emerging cross-sectional and short-term evidence throughout the COVID-19 pandemic from multiple countries has highlighted stress among parents as a potential mechanism through which pandemic-induced hardships (e.g., economic hardship) impact children's mental health (Giannotti et al., 2022; Spinelli et al., 2020; Yeasmin et al., 2020). A daily survey of mothers that were hourly service workers found that caregiver and child mental health worsened at the onset of the pandemic and that more pandemic-induced hardships were associated with worse psychological well-being among caregivers and their children (Gassman-Pines et al., 2020). However, evidence of this process occurring over time during the COVID-19 pandemic and among minoritized communities, such as the Latino community, has been limited. This gap in knowledge is particularly problematic considering the disproportionate economic impact the pandemic has had on the Latino community (Vargas & Sanchez, 2020). Further, the stress from economic hardship during the COVID-19 pandemic differs from previous economic crises due to exacerbation from uncertainty around contracting the virus.

More than an economic crisis: Worries surrounding contracting the virus

Evidence highlights racial/ethnic disparities in contracting the virus as well as health complications from the virus, including higher rates of death (Dalsania et al., 2022). Hispanic/Latino parents are more likely to work in occupations that have limited workplace safety measures (e.g., crop production, hospitality, food service, food manufacturing), and thus have greater vulnerability to contracting the virus (Goldman et al., 2021). Critically, regardless of age,

Hispanics/Latinos are hospitalized for COVID-19 at a rate four times higher than non-Hispanic Whites (Oliver, 2020). A national U.S. study by region revealed that disproportionately Latino counties had higher rates of COVID-19 diagnoses and deaths than counties with Latino populations less than 17.8% (Rodriguez-Diaz et al., 2020). Latino individuals' real and perceived increased threat of mortality for friends, family, and themselves is likely to present strains on their mental health and well-being (Wheaton et al., 2021).

Examining the psychological impact of the pandemic is critical as it is possible that fears surrounding getting sick, getting a loved one sick, or a loved one getting sick cause distress and consume individuals' thoughts (Wheaton et al., 2021). Our preliminary analyses in the Latinx community revealed that worries about contracting the virus contributed to mothers' overall stress (Hibel et al., 2021). Thus, for many Latinx families, the threat of illness collided with a reasonable fear of experiencing sustained economic hardship. As the situation around infection rates, outbreaks, economic stimulus, health guidelines, and employment changed throughout 2020, the stress from the constant tension between maintaining health and economic stability may have had a global effect on families but may have also fluctuated with the ever-changing situation. Altogether, analyses of family stress processes must account for stressors specific to the pandemic such as people's worry about contracting the virus, especially when examining Latino parents, who are disproportionately working in frontline positions (Goldman et al., 2021).

The COVID-19 pandemic has especially pronounced impacts on Latina women, who are simultaneously navigating racism, xenophobia, classism, and sexism in the United States while also assuming the responsibilities of motherhood (Crenshaw, 1991; Power, 2020; Sharma et al., 2020; Torres et al., 2018). Caring for children within the context of COVID-19, among school closure/reopening, handling expenses, and juggling employment, increases the toll on maternal mental health (Calarco et al., 2020). With additional caregiving duties, mothers experience COVID-19 related decreases in mental health at higher rates than fathers (Power, 2020). Further, a survey of pregnant women in northern California between January 2020 and April 2020 revealed that women under 25 years old and Hispanic women had the highest rates of self-reported COVID-19 infections and that rates were higher among women who themselves or their partner experienced a job loss associated with COVID-19 (Ames et al., 2021). By investigating impacts of the pandemic on women, and Latina mothers specifically, research can inform policies aimed at increasing the well-being of Latino families (Wenham et al., 2020). Thus, we aim to examine the impact of contextual stressors of the pandemic (economic hardship, fear of the virus) on maternal functioning (stress) and how these jointly contributed to child externalizing behaviors.

Families in the context of COVID-19: Using a within-person approach

This pandemic has not been a single event occurrence, but rather a rapidly changing crisis causing massive fluctuations and instability in family life. Short-term, cross-sectional, pre-post, and longitudinal panel studies have provided insight into the experiences of families and children as snapshots in time but have not captured the unpredictable and unstable nature of the pandemic. Specifically, economic instability impacts family routines and increases parent stress, making parents less likely to adapt and cope with changing economic situations, thereby hindering day-to-day parent-child interactions (Emmen et al., 2013). Proper understanding of these dynamic processes requires examining them across time using repeated sampling.

Foundational developmental theories underscore the importance of time, timing, and the degree of stability versus instability with respect to contextual and proximal processes shaping human development. Thus, a proper understanding requires disentangling stable differences that emerge over time from the moment-to-moment fluctuations that might vary within families (Hoffman, 2015). The observed relation between variables at the aggregate level (that is,

across families) does not always replicate at the individual level (Curran & Bauer, 2011). For example, during periods when economic cutbacks increase, it is possible caregiver stress will also increase. However, it is also possible that fluctuations in economic cutbacks might not immediately correspond with caregiver stress, although cumulatively they might have an impact on well-being.

Of course, the between-family and within-family relations may ultimately be the same, but the relation at one level is neither needed nor enough to imply the same relation at another level. Indeed, evidence from a weekly diary study in the early weeks of the pandemic found that financial and work stressors had an impact on family cohesion through coparenting conflict between-families (Peltz et al., 2021). This same study, however, revealed that within-families, a dynamic process emerged between weekly spikes in health stressors, coparenting conflict, and family cohesion among a predominantly White upper-middle-class sample. Therefore, integrating within-person approaches might provide a more accurate account of the cascading pervasive effects of the pandemic in the lives of Latina mothers and their children.

Current study

Altogether, existing studies on families' experiences of stress throughout the COVID-19 pandemic have been useful in highlighting group-level differences at a moment in time, yet they have been limited in their ability to elucidate the dynamic processes that occur due to the fluctuating nature of the pandemic, especially in marginalized families. In the current study, our approach decomposes the stable characteristics between families that emerge over time from the week-to-week fluctuations that may vary within families. Using a repeated-measures design captures the monthly experiences of low-income Mexican heritage mothers and their children during the first 10 months of the COVID-19 pandemic—before vaccines were available. We explored the between- and within-person impacts of economic hardship and fear of contracting the virus on mothers' stress and subsequent child externalizing behaviors.

We hypothesized that more financial cutbacks will contribute to more child externalizing behaviors via mothers' stress. We expect to replicate the family stress process between-families during the context of COVID-19, but we also aim to see whether this process unfolds within-families from occasion to occasion. We also hypothesized worry around contracting the virus to predict child externalizing behaviors via mother's stress cumulatively between-families across the first 10 months of the pandemic and to occur within-families during periods of increased risk of contracting the virus.

METHOD

Participants and procedure

A total of 73 mothers were recruited from an ongoing longitudinal study on stress and resilience within Mexican heritage families with young children ($n = 52$) and a snowball recruitment ($n = 21$) of friends and extended family. On average, mothers were 25.41 years old (range: 18.00–45.75 years, $SD = 4.38$) and the children they reported on were 35.98 months old (range: 9.00–83.00 months, $SD = 17.42$, 41.4% assigned female at birth). Most mothers were married or in a romantic relationship (85%) and had one child in the home (55%). The modal annual household income was \$30,001–\$35,000.

Mothers lived in California's Sacramento and Yolo Counties, where a statewide "shelter in place" mandate went into effect on March 20, 2020. Mothers were called by English/Spanish bilingual research staff between March 20, 2020, to January 31, 2021, and

administered the 15–20 minute survey. Recruitment occurred on a continual basis until the end of September 2020. To increase recruitment, the snowball method was implemented early in the study by having participants refer friends and family. Potential participants were screened to determine whether they met the study criteria. There were no significant differences in number of children, children's age, mothers' age, education, or income between families from the ongoing study and families recruited through the snowball method. Mothers participated in an average of eight calls (range: 1–15 cal). From March 2020 to August 2020, mothers were called every 2 weeks and were compensated \$15. To reduce participant burden, from August 2020 to January 2021 mothers were contacted monthly and compensated \$25 for their time. Most of the surveys were conducted in English, though 7.9% were conducted in Spanish. All items administered in Spanish were translated, back translated, and conducted by native Spanish speakers. All mothers consented to participating in the study in their language of choice, and all measures and procedures were approved by the university's institutional review board.

Measures

Worry about contracting the virus

Mothers were asked five items assessing how worried they were about themselves, their child(ren), family members, their partner, and other people in the home contracting the virus. Mothers' responses were measured on a 5-point Likert scale ranging from *Not at all worried* (1) to *Extremely worried* (5). Items were averaged to create a summary scale. The scale demonstrated good internal consistency reliability ($\alpha = .94$).

Financial cutbacks

Mothers were asked to indicate whether or not they made any of the following 12 financial cutbacks in response to the COVID-19 pandemic: fall behind on paying bills, fall behind on medical bills, fall behind on rent, change living situation because of not being able to pay, shut down the heat or air conditioning to save money even though it made the house uncomfortable, fall behind on car payments, lose car, buy less food, skip meals, buy less clothes, sold possessions even though they wanted to keep them, and asked relatives or friends for money or food to help them get by. Items were based on the financial cutbacks subscale of the Economic Pressures Scale (Conger & Conger, 2002; Landers-Potts et al., 2015; Taylor et al., 2012). Mothers' (yes = 1, no = 0) responses were summed for total financial cutbacks at each assessment. About 54% of mothers reported making at least one cutback during the 10-month assessment period. The most common cutbacks were buying less clothes followed by buying less food.

Stress

Mothers' perceived stress was measured using the four-item Perceived Stress Scale-Short Form (Cohen et al., 1983). For example, mothers were asked how often they felt unable to control the important things in their life or that difficulties were piling up so high they could not overcome them. Mothers' responses were measured using a 5-point Likert scale from *Never* (1) to *Very often* (5). A higher sum score indicates higher perceived stress. The scale demonstrated acceptable internal consistency reliability ($\alpha = .73$).

Externalizing behaviors

Maternal reports of children's externalizing behaviors were measured using two items adapted from the National Survey of Children's Health (2007) measures of child outcomes (Moore et al., 2011). Specifically, mothers reported on the frequency of children's disobedience and arguing too much. These items were selected based on their appropriateness for early childhood behaviors. Responses were measured using a 5-point Likert scale from *Never true* (1) to *Always true* (5). Scores on these two items were averaged with higher scores indicating more externalizing behaviors.

Analytic strategy

Financial cutbacks, contract worry, perceived stress, and child externalizing behaviors were nested within families, with unequal time intervals between assessments and unbalanced observations between families. To account for the nested structure of our data and model multivariate relations of change, we used multilevel mediation models (Hoffman, 2015) with Mplus (Version 7.4; Muthén & Muthén, 1998–2015) using maximum likelihood estimation with robust standard errors to account for variable skewness. We chose to look at mediation at each level (i.e., a $1 \rightarrow 1 \rightarrow 1$ mediation model examining how monthly fluctuations in the variables are associated across time within families and a $2 \rightarrow 2 \rightarrow 2 \rightarrow 2$ mediation model examining how stable levels of the variables are associated between the families) due to each of our variables of interest being time-varying and expected mediation to be contained within each level (Bolger & Laurenceau, 2013; Hoffman, 2015; Preacher et al., 2010).

Modeling between- and within-person direct and indirect effects

The effects of financial cutbacks and contract worry were partitioned into their Level-2 (between-person) and Level-1 (within-person) effects. The Level-2 effects of financial cutbacks and contract worry reflected each individual's mean scores across all assessments, and were centered at the grand mean, such that zero represents the sample average. Level-1 effects were the person-mean-centered values of financial cutbacks and contract worry on each occasion, such that for every mother, each occasion represents a deviation from her own mean. This same type of variance partitioning was accomplished within the model estimation for the continuous Level-1 outcomes of perceived stress, such that random intercept variances were estimated at Level 2 (between-person), and residual variances were estimated at Level 1 (within-person).

Fixed effects at Level 1 indicate within-person effects, and Level-2 fixed effects reflect the between-person effects of predictors after controlling for fluctuations in each predictor at a given occasion. Model-implied between-person effects (effects of predictors overall across time) and indirect effects were obtained using MODEL CONSTRAINT (Hoffman, 2015). In our model, a significant, positive indirect effect represents the amount of change in children's externalizing behaviors in response to changes in mothers' stress, which are expected to increase with every unit of increase in financial cutbacks or contract worry (Rucker et al., 2011).

The chronicity of the pandemic was expected to exert a toll on families, and thus, days since the shelter-in-place order was issued was included as a Level-1 indicator of time since the beginning of the pandemic. Days since the shelter-in-place order (hereby referred to as *time*) was included as a Level-1 variable as the time that had passed since that order would differ within each person from call to call. Parent and child age, child sex, family income, and number of calls were time-invariant covariates and were, therefore, included as predictors of both perceived stress and child externalizing behaviors in the Level-2 model only. All covariates were included in the initial model, but all nonsignificant covariates were removed from the final model for parsimony.

Missing data, number of calls

Due to our recruitment of families occurring on a rolling basis, the number of observations between participants was unbalanced with some families participating in more calls than others. On average, families were called eight times (range 1–15), and we had 592 observations. Two families were not included in the final model due to missing data. The final model included 530 observations—89.52% of the original sample. All Level 2 between-person effects are after controlling for Level 1 within-person fluctuations. Families with more calls inherently had more variability than families with fewer calls. Therefore, we accounted for the number of calls in our model to control for the variance attributed to differences in calls. Because the total number of calls each mother participated in only varied between-person, it was included only at Level 2 in the analytical model. Number of calls was not significantly correlated with externalizing behaviors ($r = .02, p = .89$), maternal stress ($r = .02, p = .84$), contract worry ($r = .19, p = .10$), or financial cutbacks ($r = .01, p = .98$). We included participants ($n = 5$) with only one measurement as they are still useful for estimating between-person associations in our models (Schafer & Graham, 2002).

RESULTS

Levels of COVID-19 stressors, maternal stress, and child adjustment

Means, standard deviations, intercorrelations among study variables, and intraclass correlations for repeated measures are presented in Table 1. Child externalizing behaviors were normally distributed with children exhibiting moderate overall levels of externalizing behaviors. Mothers reported an overall moderate level of stress with mean scores ranging from no stress to very stressed. Mothers exhibited moderate levels of contract worry overall with some mothers not exhibiting any worry and some mothers being extremely worried about contracting COVID-19. Over the duration of the study, 23 families (29%) had either the mother or another member of their household diagnosed with COVID-19.

Bivariate correlations revealed maternal stress was positively associated with financial cutbacks and child externalizing behaviors but was not associated with contract worry. Financial cutbacks were positively associated with contract worry but were not associated with child externalizing. There was no significant association between contract worry and child externalizing. Intraclass correlations demonstrated that within-person variability explained 44% of the variance in child externalizing, 43% of the variance in maternal stress, 28% of the variance in contract worry, and 51% of the variance in financial cutbacks. Children's externalizing behaviors, maternal stress, and financial cutbacks varied from each call while also maintaining individual differences in typical levels. On the other hand, contract worry remained relatively stable across persons and had only minor within-person fluctuations.

Main analyses

Stable between-family associations

As seen in Figure 1, at Level 2, there were no significant between-person effects of any control variables on perceived stress or externalizing behaviors. Financial cutbacks demonstrated a positive between-person effect on mothers' stress ($b = 0.98, SE = 0.26, p < .001$, confidence interval CI [0.56, 1.40]), indicating that stress was significantly higher in mothers making more financial cutbacks on average across the 10 months. Contract worry had a nonsignificant effect

TABLE 1 Descriptive statistics of study variables, intercorrelations, and intraclass correlation coefficients

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | ICC |
|--------------------|-------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|-----|
| 1. Externalizing | | | | | | | | | .56 |
| 2. Stress | .40** | | | | | | | | .57 |
| 3. Cutbacks | -.10 | .37** | | | | | | | .49 |
| 4. Contract worry | .13 | .13 | .22 | | | | | | .72 |
| 5. Number of calls | .08 | .01 | -.03 | .09 | | | | | |
| 6. Child age | .41* | .01 | -.11 | .06 | -.17 | | | | |
| 7. Mom age | -.09 | -.10 | .17 | .09 | -.07 | .23* | | | |
| 8. Mom education | -.06 | -.13 | -.08 | .01 | .16 | -.17 | .07 | | |
| <i>M (SD)</i> | 2.43 (0.87) | 5.04 (2.44) | 0.79 (0.95) | 2.93 (0.96) | 8.11 (4.17) | 35.98 (17.42) | 25.40 (4.38) | 5.07 (1.58) | |
| Minimum | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 9.00 | 18.00 | 3.00 | |
| Maximum | 4.83 | 11.13 | 4.00 | 4.80 | 15.00 | 83.00 | 45.72 | 9.00 | |

Note: ICC = intraclass correlation coefficient. Child age is measured in months. Mother's age is measured in years.

* $p < .05$. ** $p < .01$.

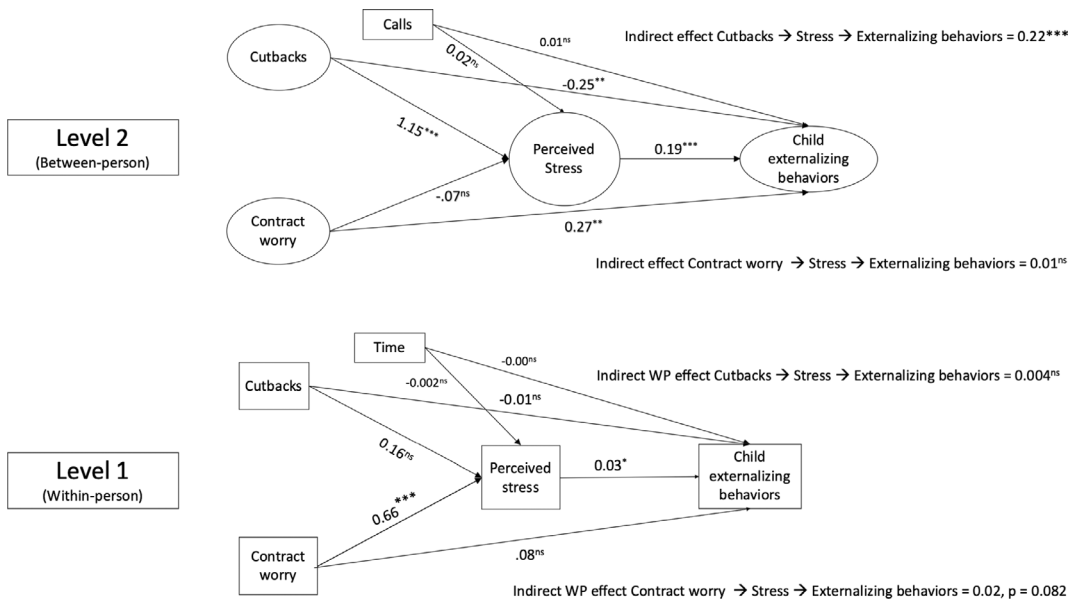


FIGURE 1 Multilevel mediation model predicting children's externalizing behavior from family financial cutbacks, maternal COVID-19 contract worry, and maternal stress. *Note.* BP = between-person; WP = within-person. * $p < .05$. ** $p < .01$. *** $p < .001$

on mothers' stress ($b = -0.59$, $SE = 0.35$, $p = .093$, $CI [-1.17, 1.40]$). Financial cutbacks had a negative significant effect on children's externalizing behaviors ($b = -0.24$, $SE = 0.10$, $p = .015$, $CI [-0.40, -0.08]$), indicating fewer cutbacks on average were related to more externalizing behaviors. Conversely, contract worry was not associated with child externalizing ($b = 0.19$, $SE = 0.13$, $p = .153$, $CI [-0.29, 0.41]$). Financial cutbacks indirectly increased children's externalizing behaviors, through maternal stress. Specifically, the significant indirect between-person effect of financial cutbacks ($b = 0.16$, $SE = .06$, $p = .003$, $CI [0.07, 0.25]$) indicates that with every unit increase in financial cutbacks, mothers' stress increased by 1.14, which then explained an increase of 0.22 in child externalizing behaviors. The between-person indirect effect of contract worry on child externalizing behaviors through perceived stress was not significant ($b = 0.01$, $SE = 0.06$, $p = .820$, $CI [-0.08, 0.10]$).

Monthly fluctuations within families and concurrent associations

Time had no significant effect on perceived stress ($b = -0.01$, $SE = 0.01$, $p = .171$, $CI [-0.01, 0.01]$) or externalizing behaviors ($b = 0.01$, $SE = 0.01$, $p = .730$, $CI [-0.01, 0.01]$). The positive within-person effect of pandemic worry on perceived stress ($b = 0.66$, $SE = 0.18$, $p < .001$, $CI [-0.01, 0.01]$) indicated that mothers' greater concern about getting sick during a given period predicted greater perceived stress during that period. The within-person effect of mothers' stress on externalizing behaviors was significant and positive ($b = 0.03$, $SE = 0.01$, $p < .001$, $CI [0.01, 0.05]$), indicating that during periods when mothers were more stressed than usual, they reported that their children engaged in more externalizing behaviors than usual. There was a marginal within-person indirect effect of pandemic worry on externalizing behaviors through perceived stress ($b = 0.02$, $SE = 0.01$, $p = .089$, $CI [0.01, 0.04]$). There were no significant within-person effects of cutbacks on perceived stress or externalizing behaviors.

DISCUSSION

The goal of this study was to examine how contextual stressors due to and exacerbated by the COVID-19 pandemic impacted family stress processes both between and within a cohort of Latino families using a repeated sampling design. Based on the family stress model and Prime et al.'s (2020) model of family processes during COVID-19, we expected financial cutbacks and virus contract worry to indirectly contribute to children's externalizing behaviors through increased stress among young, lower income Latino mothers. We interviewed families biweekly from mid-March through August 2020 and monthly from September 2020 to January 2021 to capture the volatile nature of the pandemic and its effects on their family processes. Further, we examined these processes among Latino families due to the disproportionate impact of the pandemic on the health and economic security among minoritized communities in the United States (Rodriguez-Diaz et al., 2020; Vargas & Sanchez, 2020). Our results indicate that financial cutbacks contributed to increases in mothers' reports of child externalizing behaviors through increases in maternal stress between-families overall, but that changes in contract worry from each interview period contributed to this stress process within-families.

Consistent with previous investigations of family stress process among Latino families, children exhibited more externalizing behaviors on average among families experiencing more overall financial cutbacks as a function of maternal stress (Taylor et al., 2012). Our findings support previous cross-sectional examinations of family stress processes during COVID-19 demonstrating maternal stress as a key mechanism explaining how economic stress impacts child emotional development (Giannotti et al., 2022). Unlike previous studies of family stress during COVID-19, our model was longitudinal and provided a more comprehensive account of the family's experiences during the first 10 months of the pandemic, up until vaccines were made available to the public. Our results indicate that the economic fallout from the pandemic may have initiated a process of stress spillover in these families' mother-child relationship that not only contributed to an increase in their child's externalizing behaviors but may also permeate throughout the mother-child relationship much farther beyond the duration of this study (Berryhill & Durtschi, 2017). Our model is buttressed by previous intensive longitudinal research from the first 5 weeks of the pandemic that found deteriorations in family functioning due to stable between-family differences in COVID-19-related financial stress and weekly spikes in COVID-19 health stress among an affluent White sample (Peltz et al., 2021).

Perhaps most strikingly, mothers' contract worry had a significant impact on maternal stress, but only at the within-person level. Thus, fluctuations in mothers' concern about her or her family becoming infected with the virus, and not in financial cutbacks, spurred fluctuations in her stress. The repeated sampling design and within-family analysis allowed for this association to emerge. Had this study been carried out using cross-sectional data or only examining differences between families, there would have been no association between mothers' fears of themselves, their partners, or other relatives of getting sick and mothers' stress. The threat of illness might be a particularly potent stressor for Latinx mothers who are more likely to depend on family for social support (Zeiders et al., 2011) and who might be at a higher risk of contracting the virus due to working conditions (Goldman et al., 2021). Unlike in Peltz et al. (2021), the direct effect of contract worry on child externalizing within families was not significant; the indirect effect on child externalizing through maternal stress was marginal within families and nonsignificant across families. These findings suggest that worry about contracting the virus may impact these mothers' stress without spilling over into parent-child interactions. Conversely, spikes in health-related stressors may have a more proximal impact on the interparental relationship than parent-child interactions.

The effects of financial cutbacks on children's externalizing behaviors through mothers' stress manifested between-families but had no significant effect on family stress processes at the within-person level. This effect was surprising given that half of the variance in financial

cutbacks among the sample was attributed to within-person differences. In the current sample, the financial cutbacks measured varied in their severity, but most families reported less severe cutbacks (e.g., buying less clothes). As previous studies had examined persistent periods of low household income-to-needs and an inability to obtain basic needs, the less severe cutbacks families made more frequently in the current study may not have had an effect on short-term perceptions of stress (Saasa et al., 2021). Potentially, the latency period for the effects of financial cutbacks to influence children through their parents may have been longer than the interval between calls or the level or chronicity of economic hardship may need to reach a certain threshold (Bolger et al., 1995). Lower incidences of more severe cutbacks may also be due to the Coronavirus Aid, Relief, and Economic Security (CARES) Act economic impact payments and extended unemployment insurance as well as access to social services provided by the state of California (CalMatters, 2020; Parolin et al., 2020). However, previous work with this sample showed that the economic impact payments failed to reduce maternal stress during the first California shelter-in-place order (Hibel et al., 2021).

Contrary to our expectations and prior literature (e.g., Conger et al., 2010), more financial cutbacks were associated with lower externalizing behaviors in our sample. In other words, at the between-family level, financial cutbacks demonstrated an inverse direct effect on child externalizing behaviors yet the indirect effect through maternal stress was positive. Although the indirect effect was consistent with the family stress model, the direct effect was contradictory to previous studies. In other words, our model showed that when maternal stress was not impacted by cutbacks, higher cutbacks actually contributed to lower overall child externalizing behaviors. Thus, many families may have been resilient to the harmful downstream effects of economic hardship on family stress processes, suggesting some sort of moderated process. This finding supports previous work showing that increased financial stress contributed to greater feelings of family cohesion among Mexican American fathers (Behnke et al., 2008), potentially creating a valuable source of stress-reducing social support (Racine et al., 2019) for the mothers in the current study. Likewise, involvement of community level mobilization of resources during the crisis could have also provided the social support needed to buffer mothers' experience of stress (Raikes & Thompson, 2005), even in the face of hardship. Overall, the pandemic might have created a unique experience for low-income Latino families on a whole as they were able to draw from resilience factors to either protect against the stress of the economic crisis, or even promote child well-being (Masten, 2021).

Although a family stress process emerged across the sample overall, evidence of resiliency against economic hardship emerged at both the between- and within-person levels among these families. Qualitative data from an investigation of coping among a community sample of Latinx families during 2020 similarly revealed that despite Latinx families experiencing significant stressors from the COVID-19 pandemic, they showed substantial resiliency due to cultural and contextual factors (Garcini et al., 2022). Throughout numerous examinations of the family stress model among Latino families, cultural factors and neighborhood and family cohesion have emerged as important buffers against family stress processes (e.g., Behnke et al., 2008; Saasa et al., 2021; Zeiders et al., 2011).

Similarly, Cardoso and Thompson (2010) identified individual characteristics, family support, cultural strengths, and community and social support as the four primary overlapping factors that promote resilience in Latino families. In any decomposition of resiliency factors, individual characteristics are an important component, yet these are informed by aspects of other more distal systems in the ecology (Bronfenbrenner & Morris, 2006). Among Latino families, perceptions of self-esteem and personal agency in the face of adversity are informed by intergenerational values rooted in culture and family practices (Bermudez & Mancini, 2013). These familial strengths driven by a cultural emphasis on *familismo*/familism—a value involving interdependence among family members—may have helped parents cope with stress from economic hardship and fears of illness during the pandemic (Garcini et al., 2022). Importantly,

many of the mothers in the study were second generation and likely held a bicultural identity, which can present opportunities for acculturative stress but also can help foster positive familial and community relationships (Cabrera & Padilla, 2004; Driscoll & Torres, 2020). Of course, this hypothesis requires careful empirical research to be supported or falsified. Future work with Latino families should examine how these unique resiliency factors promote family well-being in the context of the continuing nature of the COVID-19 pandemic. Further research should attempt to uncover how resilience factors unique to Latino communities can be mobilized to enact culturally relevant prevention and intervention strategies when dealing with future economic and public health crises.

Limitations

The current study is not without limitations. Our participants are restricted to a single geographic area, which is known for the high cost of living, though with extensive social service networks. These two factors, plus differences across state and city COVID-19 guidelines and positivity rates, likely influenced the experience of these mothers, and our results might not be generalizable to other Latino families living in the United States. Throughout this study, mothers reported on their economic hardship, threat of illness, mental health, and child behaviors, potentially biasing model parameters. Mothers' experiences of stress may influence how they report children's problems and might not reflect the experience of fathers or other adults. Further, to reduce the length of each data collection call and overall attrition, measures were kept as short as possible and thus the measure of externalizing behaviors only contained two items. All data were collected prior to the availability of COVID-19 vaccines, however, with disparate vaccination rates and the emergence of variants, levels and fluctuations of virus contract worry may continue to differ between and within families (Masten, 2021). All associations in the study are contemporaneous, and we did not test for lagged effects because the lag or time between calls varied across participants. Thus, fluctuations may reflect maternal influence on the child, child influence on the mother, or bidirectional influences between mother and child. Our study design, both because of sample size and long and unequal intervals between calls, might make it difficult to test this because we cannot assume time is discrete.

Conclusions and implications for policy

This study provides not only a glimpse into COVID-19 pandemic-related stress experienced by Latino families but also the unique ways that stress unfolded over time and how families adapted. The findings suggest that structural disparities in economic mobility and health outcomes made Latino families particularly vulnerable to the volatile nature of the pandemic. Throughout the pandemic, federal and state aid provided a lifeline to families who were struggling to make ends meet, yet Latino families experienced fewer improvements in economic conditions compared to non-Latino White families. Despite this lessening of economic hardship among predominantly non-Latino White families (Cassinat et al., 2021), our findings indicate that these measures were not enough to reduce family stress processes among vulnerable Latino families. Existing safety net programs that are contingent on wages or employment provide limited support against family stress for low-income families (Doan & Evans, 2020), and future research should consider how the design and implementation of COVID-19 cash transfer relief programs can be modified for future crises.

By employing an intensive longitudinal design across the first 10 months of the pandemic, we were able to examine not only changes in family economic security and periodic family functioning but also how these family processes changed due to fluctuations in the threat of illness.

Many families in this study had at least one essential worker in the home, had limited paid sick leave, and were less likely to be in occupations that allowed them to work from home (Hibel et al., 2021). Thus, each day these families were employed in situations that increased the risk of illness, the greater stress that placed upon mothers, which explained more behavior problems from their children. Had these parents been guaranteed better paid sick leave, the periods during which virus cases were increasing may not have created the same levels of stress in mothers that spilled over into their family relationships. Without greater effort to provide economic support for vulnerable families against periods of increased societal stress and greater protections for workers with limited sick leave and schedule flexibility, the downstream impacts on vulnerabilities may continue to grow and disparities will widen even more during the next crisis.

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