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# Economic stress, parenting, and adolescents' adjustment during the COVID-19 pandemic

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## Abstract

**Objective:** This investigation examined pathways through which financial stress impacts parents' and adolescents' well-being during the COVID-19 pandemic.

**Background:** Pandemic-related stress (e.g., financial stress) experienced by parents may indirectly affect adolescents' well-being, although the pathways involved are currently unknown.

**Method:** Families currently living in the United States and having adolescents between 12 and 18 years old participated in this investigation ( $N = 272$ ). Parents responded to questionnaires online about their financial situation, personal well-being, relationship with their oldest typically developing adolescent (12–18 years old;  $M_{\text{age}} = 14.74$ ;  $SD_{\text{age}} = 1.80$ ; 46.4% young women), and their adolescents' well-being.

**Results:** Higher levels of financial stress were related to higher levels of parental psychological distress, higher levels of parenting stress, and higher levels of adolescent loneliness. Higher stay-at-home intensity was related to higher levels of parenting stress, higher levels of parent–adolescent conflict, and poorer adolescent adjustment. Several significant indirect paths were identified between financial stress and adolescents' adjustment. The relationship between financial stress and adolescents' well-being (i.e., internalizing behaviors and loneliness) was mediated by parental psychological distress and parenting stress. When parenting stress was a mediator, the effect was more pronounced the more time families spent at home.

**Conclusion:** Parents who were worried about their financial situation had greater difficulty with psychological distress and parenting stress, especially when parents were spending more time at home.

**Implications:** Understanding the way in which financial stress influences parents' and adolescents' adjustment

during the pandemic will inform and prepare practitioners and policymakers for similar situations in the future.

#### KEYWORDS

adolescence, COVID-19 pandemic, financial stress, parent distress, parenting

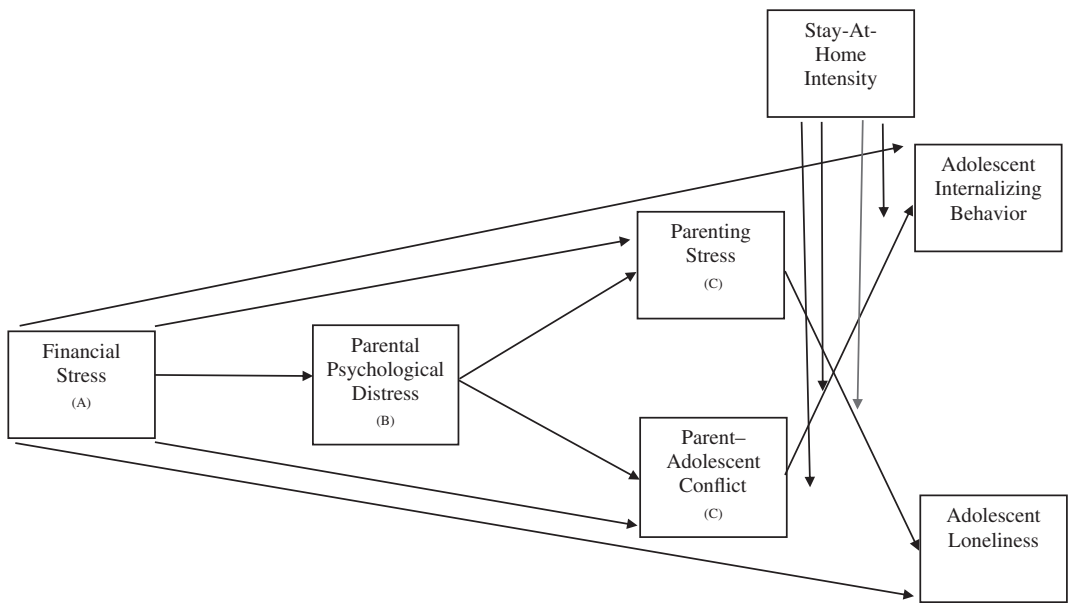
The COVID-19 pandemic has impacted the lives and well-being of families. In the United States, increasing unemployment rates and economic instability have heightened levels of financial stress. As states mandated school closures (Golberstein et al., 2020) and companies required employees to work from home, parents were expected to adapt quickly to their new work and home roles and demands. Limited access to social support and additional concerns about job and financial security exacerbated parents' financial stress levels and psychological distress (Liu & Doan, 2020; Prime et al., 2020). Pandemic-related stress reflects the emotional or physical tensions that arise because of the changes that families experience in their daily lives due to the COVID-19 pandemic.

The adverse effects of financial stress on individual well-being is well established (Kaiser et al., 2017; Lee et al., 2011). However, the pathways in which financial stress relates to parents' and adolescents' psychosocial adjustment during the COVID-19 pandemic have not been explored. Within the context of the COVID-19 pandemic, the sudden economic and social changes have created immediate disruption in daily family functioning. In addition to parents being directly impacted financially and psychologically by the pandemic, adolescents also may experience similar effects (Ellis et al., 2020). Feelings of social isolation may be further exacerbated by reduced opportunities for face-to-face interactions because of social distancing requirements and school closures (Ellis et al., 2020; Oosterhoff et al., 2020; Valkenburg & Peter, 2011), increasing adolescents' susceptibility for developing internalizing behaviors (Ackerman et al., 2004; Schwartz et al., 2012). Thus, adolescents' internalizing behaviors and loneliness were outcome variables of interest in this investigation.

Because adolescents and parents are spending more time together at home, there are two potential "stress contagion" effects—spillover and crossover—that may occur (Liu & Doan, 2020). A spillover effect of parental financial stress on parenting stress may occur such that the effects of work-related or financial issues may spillover to the parenting context. Alternatively, a crossover effect may occur such that negative effects of the COVID pandemic, such as parental psychological distress, might crossover to other members of the family, such as adolescents, and adversely impact their well-being. This investigation adapts portions of the family economic stress model (Conger & Donnellan, 2007) to examine the pathways through which financial stress may be transmitted within the family and thus be associated with adolescents' internalizing behaviors and feelings of loneliness during the COVID-19 pandemic.

## FAMILY ECONOMIC STRESS MODEL

The family economic stress model illustrates the way in which financial stress impacts adolescents' well-being directly and indirectly through parental well-being, marital conflict, and parenting behaviors (see Figure 1; Conger & Donnellan, 2007). Financial stress arises from having difficulty in fulfilling basic material needs, such as having enough food and paying bills (see Figure 1; Box A). Low-income families are more likely to hold jobs in areas most affected by the pandemic and thus experience greater financial stress (Douglas et al., 2020; Dunn et al., 2020). Families may also experience other employment-related concerns, such as unemployment. The sudden employment transitions that occurred during the pandemic may not have



**FIGURE 1** Adapting the family economic stress model to examine economic stress, parenting and adolescent well-being during COVID-19. *Note.* Pathways for each model were examined separately using PROCESS model 87

given families sufficient time to adapt to the changes, exacerbating feelings of financial stress. The pandemic may have had varying impacts on families' financial situations, highlighting the importance of assessing subjective financial stress among families from different backgrounds (Ponnet, 2014). Therefore, financial stress assessed in this investigation reflected families' subjective financial difficulties during the COVID-19 pandemic.

The family economic stress model suggests that financial stress may also impact adolescents indirectly through family processes. The first pathway in this model predicts that parent psychological distress, including depression and anxiety, arises from financial stress (see Figure 1, Box B; Conger & Donnellan, 2007). However, limited research has focused on the association between financial stress and parental psychological distress during the COVID-19 pandemic.

Parental psychological distress is characterized by feeling agitated, easily upset and impatient and having difficulty relaxing (Lovibond & Lovibond, 1995), which may be prominent when parents experience heightened levels of financial stress and are thinking about solutions to their financial difficulties. In addition, parent psychological distress may limit the ability of parents to navigate stressors successfully. When parents are preoccupied with these stressors, they may be less responsive to the needs of their children, which may undermine relationship quality (Evans et al., 2008) and the effectiveness of parenting behaviors (Prime et al., 2020). Conger and Donnellan (2007) proposed that parents' psychological well-being can influence parenting behaviors both directly and indirectly through marital quality. In this investigation, the focus was on examining the direct impact of parents' psychological distress on parenting behaviors (see Figure 1, Box C; Conger & Donnellan, 2007; Prime et al., 2020). More specifically, parenting stress and parent-adolescent conflict were the two parenting behaviors explored in this investigation.

Parenting stress reflects psychological or emotional tensions that arise when parents believe that they do not have sufficient resources to meet the demands associated with parenting (Cooper et al., 2009; Lovejoy et al., 2000; Putnick et al., 2010). Even though parenting stress has typically been examined among younger children (Crnic & Low, 2002), research with

adolescents underscores that existence of parenting stress when parenting adolescents. Associations between parenting stress and adolescents' psychosocial outcomes are proposed to be mediated through parenting behavior (Huth-Bocks & Hughes, 2008; Rodriguez, 2011). Higher levels of parenting stress may result in parents engaging in parenting behaviors that do not meet the needs of adolescents, increasing the risk for poor adolescent psychological outcomes (Forman & Davies, 2003). Although direct associations between parenting stress and child outcomes have been established, the focus has primarily been on preschool children (Anthony et al., 2005; Crnic et al., 2005), with limited research on adolescence. Therefore, the current investigation extends the literature by exploring the direct association between parenting stress and adolescents' psychosocial outcomes during the COVID-19 pandemic.

In addition to parenting stress, the COVID-19 pandemic might set the stage for increases in parent–adolescent conflict due to parents' increased levels of stress, potentially contributing to poor adolescent psychological outcomes (Costa et al., 2006; Vierhaus et al., 2013). Parent–adolescent conflicts reflect the disagreements that parents and adolescents have about day-to-day issues (Mounts, 2011). Parents who are experiencing greater psychological distress may become easily irritated with their adolescent. Instead of working out any disagreements with their adolescent amicably, parents may become impatient and respond more harshly. Because parent–adolescent interactions become more hostile when greater conflict is experienced (Putnick et al., 2010), adolescents may perceive the parent–adolescent relationship more negatively and become less willing to disclose personal information or seek help from their parents (Keijsers & Poulin, 2013). As adolescents detach themselves emotionally from their family (De Los Reyes & Ohannessian, 2016), this may increase their risk for developing psychological symptoms (Nelemans et al., 2016).

Although it is well established that parent–adolescent conflicts are related to poor adolescent outcomes (Branje, 2018), research has yet to explore these patterns of associations during the COVID-19 pandemic. Because parents and adolescents are spending more time in the same physical space and adolescents have limited access to alternative sources of support (e.g., peers), the impact of experiencing more frequent conflict on adolescents' psychological well-being may become more pronounced.

## CURRENT INVESTIGATION

In the current investigation, the family economic stress model (Conger & Donnellan, 2007) was adapted to examine the direct and indirect pathways between financial stress during the COVID-19 pandemic and adolescents' well-being (see Figure 1). Three research questions were of interest. First, what is the relationship between financial stress and adolescents' psychosocial adjustment (i.e., internalizing behavior and loneliness)? Adolescents' psychosocial well-being is directly impacted by economic adversity (Golberstein et al., 2020). However, Golberstein et al. (2020) also suggested that this association may be affected by other factors, such as parental distress and parent–child relationships.

Second, is the association between financial stress and adolescents' psychosocial adjustment serially mediated by parental psychological distress, and parenting (i.e., parenting stress and parent–adolescent conflict)? Finally, are the parenting effects in the serially mediated model moderated by stay-at-home intensity?

There are significant numbers of families who experienced financial stress during the COVID-19 pandemic. Unlike the research on family economic stress model, however, the COVID-19 pandemic has an added stressor of long stay-at-home mandates for families. Stay-at-home recommendations were made to mitigate the spread of COVID-19 (Oosterhoff et al., 2020). Yet stay-at-home mandates present additional stress to families of adolescents due to fewer opportunities for adolescents to socialize outside of the home. In addition, families

with more limited physical space in their homes might not have the ability to afford adolescents privacy in their day-to-day living or in their online interactions with friends. Because the proposed mediated relationship between financial stress and adolescents' well-being may be influenced by the need to stay home during the COVID-19 pandemic (Oosterhoff et al., 2020), stay-at-home intensity (i.e., the degree to which families are spending time at home) was included as a moderator in the serial mediation analyses. Past research has shown that parents differ in their parenting behaviors toward their sons and daughters (Starrels, 1994), and gender differences in adolescents' internalizing behaviors and loneliness are present (Avison & McAlpine, 1992). Thus, gender was included in the models.

## METHOD

### Participants

Two hundred and seventy-two parents ( $M_{\text{age}} = 40.70$  years old,  $SD_{\text{age}} = 6.32$ ; women = 74.4%) participated in the online questionnaire investigation. All parents had at least one child between 12 and 18 years old. The majority of parents identified as White/European (78.9%) with the remaining parents identifying as African American/African/Black (4.8%), Asian/Asian American (2.6%), Hispanic/Latino/a (10%), Native American (0.4%), and belonging to more than one racial/ethnic group (3.3%). Most parents were married or in a committed relationship (81.5%). Parents' highest level of education varied: 10.4% received a high school education or less, 25.9% received some college, 33% achieved a 4-year college degree, 30.8% attended school beyond college. The mean number of people living in the households was 3.75 ( $SD = 1.03$ ) people, and the mean number of children living in the households was 1.80 ( $SD = .94$ ). Approximately 42.2% of parents worked full-time or part-time outside of the home, 43.3% of parents reported working full-time or part-time remotely, and 14.6% were unemployed. Most parents reported that their children engaged in e-learning with the school district since the COVID-19 pandemic began (93.7%).

Parents also responded to several questions about the impact of the COVID-19 pandemic on their families' lifestyles and routines. At the time of their participation, 67.7% of families reported currently living in a state with stay-at-home recommendations. The majority of parents reported wearing a face mask outside of their home (91.5%). Families differed in their approach to the COVID-19 pandemic: 23.6% stayed at home most of the time and rarely went out, 15.1% stayed at home for part of the day and spent time outside their home for work or socializing purposes, and 1.5% did not limit their time outside of their home because of the pandemic. Among families who reported being at home most of the time and only going out for essential errands, 42.1% did so on their own and 17.7% were accompanied by a family member. Families also varied in the ways that they obtained essential supplies (e.g., groceries and household items). Some families reported having their groceries and supplies delivered (4.1%) or using a combination of both online delivery services and going to the grocery store (5.6%). Among families who purchased essential items directly from the grocery store, the frequency of their trips varied from being more than once a week (18.1%), once a week (38.9%), once every 2 weeks (25.6%), to once a month (7.8%).

### Procedure

Families currently living in the United States and who had an adolescent between 12 and 18 years of age participated in the online survey using the Qualtrics platform. The study was advertised through social media (Facebook, Instagram, Reddit) and online research groups.

Parents provided written consent and were given an opportunity to enter their name in a drawing for Amazon gift cards. Study procedures were approved by the university's institutional review board. Data collection began in early June 2020 and ended mid-November 2020.

Given the online nature of the data collection, data screening procedures were performed to check for careless responding among participants. Item response time and longstring values (defined below) were the two methods used. The response time for each item reflects the duration (in seconds) to complete each item (Curran, 2016; DeSimone & Harms, 2018). Low scores implied that less time was taken to respond to each item and indicated low-quality data. Huang et al.'s (2012) suggestion of screening participants who completed items in less than 2 seconds per item was used in this investigation. Longstring values reflected the number of times participants selected the same option for consecutive items within a measure (DeSimone et al., 2015). This pattern of responding may indicate a lack of effort in reading the question carefully and suggest low-quality data. Longstring and average longstring values were calculated in R using the 'Careless' package (Yentes & Wilhem, 2018). Using these criteria as a guide, several respondents were eliminated from the sample. The original sample consisted of 285 families, and the final sample consisted of 272 families.

## Measures

Parents completed questionnaires about their personal well-being and financial situation. The measure of stay-at-home intensity was specifically focused on the pandemic, whereas the remaining measures were existing measures with well-established psychometric properties. The parents also completed questionnaires about their relationship with their oldest typically developing adolescent (between 12 and 18 years old) and their adolescents' psychosocial well-being; 46.4% of the adolescents that parents reported on were young women ( $M_{\text{age}} = 14.74$ ,  $SD_{\text{age}} = 1.80$ ).

### Financial stress

The Financial Stress Questionnaire (Conduct Problems Prevention Research Group, 1994) assessed family's financial stress with a focus on whether families are able to afford basic necessities. There were seven items, and each item was rated on a 5-point scale (0 = *strongly agree* to 5 = *strongly disagree*). An example item is "My family has enough money to afford the kind of home we would like to have." Cronbach's alpha was .92. Items were reversed coded, and mean scores were calculated. Higher scores reflected higher levels of financial stress. Financial Stress is indicated as FS in models.

### Parental psychological distress

The Depression, Anxiety, and Stress Scale-21 (Lovibond & Lovibond, 1995) contained 21 items that assessed parental depression, anxiety, and stress. Each item was rated on a 4-point scale (0 = *Did not apply to me at all*, 1 = *Applied to me some degree or some of the time*, 2 = *Applied to me a considerable degree or a good part of the time*, and 3 = *Applied to me very much of most of the time*). Parental psychological distress, a seven-item subscale, assessed the frequency that parents reported experiencing feelings of stress over the past week. An example item is "I found it hard to wind down." Cronbach's alpha was .86. Mean scores were calculated. Higher scores reflected higher levels of parental psychological distress. Parental Psychological Distress is indicated as PSYDIS in models.

## Parenting behaviors

### *Parenting stress*

The Parental Stress Scale (Berry & Jones, 1995) contained 18 items that assessed how parents perceived and felt about their role as a parent. Each item was rated on a 5-point scale from (0 = *strongly disagree* to 5 = *strongly agree*). An example item is “Caring for my child(ren) sometimes takes more time and energy than I typically have to give.” Eight items were reverse coded before calculating the mean value of the variable. An example of an item that was reverse coded is “I am happy in my role as a parent.” Cronbach’s alpha was .76. Mean scores were calculated. Higher scores reflected higher levels of parenting stress. Parenting Stress is indicated as PARSTR in the models.

### *Parent–adolescent conflict*

Parents completed the Parent–Adolescent Conflict measure (adapted from Mounts, 2007) which contained 12 items that assessed how frequently parents and adolescents had different opinions regarding household (e.g., chores, homework, hygiene) and peer-related issues within the past week. Each item was rated on a 6-point scale (0 = *zero times* to 6 = *five or more times*). An example item is “Select the number that represents how often you and your adolescent had a difference of an opinion about homework in the past week.” Cronbach’s alpha was .92. Mean scores were calculated. Higher scores reflected higher levels of conflict between parent and adolescent. Parent–Adolescent Conflict is indicated as PACON in the models.

## Adolescents’ psychological well-being

### *Adolescents’ internalizing behavior*

Parents reported their perception of adolescents’ internalizing behavior using The Revised Child Anxiety and Depression Scale (Chorpita et al., 2000). This measure assessed parents’ perceptions of their adolescents’ feelings of anxiety and depression. The anxiety subscale included 15 items. An example item is “My child worries what other people think of him/her.” The depression subscale contained 10 items. An example item is “My child feels worthless.” All items were rated on a 4-point scale (0 = *never* to 3 = *always*). The high correlation between both subscales ( $r = .89$ ) prompted the creation of a composite variable representing the mean score of adolescents’ internalizing behavior. Cronbach’s alpha was .96. High scores reflected higher levels of internalizing behaviors. Adolescents’ internalizing behavior is represented by IB in the models.

### *Adolescents’ loneliness*

Parents reported their perceptions of adolescents’ experience of loneliness using the UCLA Loneliness Scale (Russell et al., 1978). This measure contained 20 items that assessed parents’ reports of their adolescents’ feelings of loneliness and social isolation. Each item was rated on a 4-point scale (0 = *never* to 3 = *often*). An example item is “My child’s social relationships are superficial.” Cronbach’s alpha is .96. Mean scores were calculated. Higher scores reflected higher levels of loneliness. Adolescents’ loneliness is represented by L in the models.

## Stay-at-home intensity

Stay-at-home intensity assessed the degree to which families were spending time at home during the COVID-19 pandemic. Parents were asked to select the response that best described their approach to COVID-19 and were presented the following options: “I stay in my house most of



the time and rarely go out,” “I stay in my house most of the time but go out for essential errands (e.g., groceries) on my own,” “I stay in my house most of the time but go out for essential errands with a family member,” “I stay in my house for part of the day but spend time outside the home (e.g., work, socializing,” and “I don’t limit my time out of my home because of COVID-19.” Responses were reverse-coded such that higher stay-at-home duration values suggested that families were spending most of their time at home.

## RESULTS

### Descriptive analyses

Means, standard deviations, and bivariate correlations of the major variables are presented in Table 1. Independent samples *t*-tests assessing gender differences for the major variables were conducted. Significant gender differences were found for parenting stress,  $t(247) = 2.45, p = .02$ . Parents of young men ( $M = 2.50, SD = .55$ ) reported experiencing higher levels of parenting stress compared with parents of young women ( $M = 2.32, SD = .61$ ). There also were gender differences in levels of parent–adolescent conflict,  $t(244) = 3.66, p < .01$ , such that conflict was reported to be higher among parents of young men ( $M = 1.81, SD = 1.03$ ) compared with parents of young women ( $M = 1.31, SD = 1.13$ ). Correlational analyses suggested that higher stay-at-home intensity was related to higher levels of parenting stress ( $r = .23, p < .01$ ), higher levels of parent-adolescent conflict ( $r = .22, p < .01$ ), higher reports of adolescent internalizing behavior ( $r = .28, p < .01$ ), and higher reports of adolescent loneliness ( $r = .22, p < .01$ ). In addition, higher financial stress was related to higher levels of parental psychological distress ( $r = .24, p < .01$ ), higher levels of parenting stress ( $r = .21, p < .01$ ) and higher reports of adolescent loneliness ( $r = .13, p < .05$ ).

### Moderated mediation analyses

Given that our models examined observed variables rather than latent variables, moderated mediation analyses were conducted using PROCESS Model 87 (Hayes, 2018) in which 5,000 bootstrap samples were used in all analyses. Adolescents’ sex (0 = young men, 1 = young women) and age were included as covariates in all analyses. Financial stress was entered as the predictor variable. Parental psychological distress was included as the first mediator. Parenting (i.e., parenting stress or parent–adolescent conflict) was included as the second mediator. One

**TABLE 1** Descriptive statistics of the major variables

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Stay-at-home intensity	-	-	-						
2. Financial stress	1.49	.98	.11 <sup>+</sup>	-					
3. Parental psychological distress	1.22	.71	-.05	.24 <sup>**</sup>	-				
4. Parenting stress	2.41	.59	.23 <sup>**</sup>	.21 <sup>**</sup>	.43 <sup>**</sup>	-			
5. Parent–adolescent conflict	1.57	1.11	.22 <sup>**</sup>	.12 <sup>+</sup>	.53 <sup>**</sup>	.68 <sup>**</sup>	-		
6. Adolescent internalizing behavior	.95	.73	.28 <sup>**</sup>	.12 <sup>+</sup>	.56 <sup>**</sup>	.70 <sup>**</sup>	.81 <sup>**</sup>	-	
7. Adolescent loneliness	.98	.74	.22 <sup>**</sup>	.13 <sup>*</sup>	.57 <sup>**</sup>	.68 <sup>**</sup>	.72 <sup>**</sup>	.90 <sup>**</sup>	-

<sup>+</sup> $p < .10$ .

<sup>\*</sup> $p < .05$ .

<sup>\*\*</sup> $p < .01$ .

of the two adolescent outcome variables reported by parents (i.e., internalizing behavior or loneliness) was entered as the dependent variable. Stay-at-home intensity was included as a moderator between parenting stress/parent–adolescent conflict and the outcome variable. Analysis for each moderated serial multiple mediation pathway was performed separately.

## Parenting stress as the second mediator

In the first set of moderated mediation analyses, parenting stress is included as the second mediator in the analyses.

### *Adolescents' internalizing behavior*

In the first analysis (see Table 2), higher levels of financial stress were related to higher levels of parental psychological distress ( $b = .18, p < .01$ ), higher levels of parenting stress ( $b = .09, p = .01$ ), and parents' reports of lower levels of internalizing behaviors ( $b = -.08, p = .03$ ). In addition, parents who reported feeling more psychological distress were more likely to report greater parenting stress ( $b = .38, p < .01$ ) and reported higher levels of internalizing behaviors in their adolescents ( $b = .33, p < .01$ ). Stay-at-home intensity moderated the relationship between parenting stress and adolescents' internalizing behavior ( $b = .12, p = .02$ ). The Johnson–Neyman technique indicated that this interaction was significant when parenting stress was greater than 2.14. As reflected by the shaded region in Figure 2, higher levels of parenting stress were related to reports of higher levels of adolescents' internalizing behavior when stay-at-home intensity levels were 1 *SD* below the mean ( $b = .54, p < .01$ ), at the mean ( $b = .67, p < .01$ ), and 1 *SD* above the mean ( $b = .79, p < .01$ ) with more pronounced effects for higher stay-at-home intensity.

The bootstrapped confidence interval (CI) for the index of mediation of the FS → PSYDIS → IB was entirely above zero ( $b = .06, 95\% \text{ CI} = [.02, .10]$ ), indicating a significant indirect effect of financial stress on parents' reports of adolescents' internalizing behavior through parental psychological distress. The bootstrapped CI for the index of moderated mediation of the FS → PARSTR → IB was also entirely above zero ( $b = .01, 95\% \text{ CI} = [.00, .03]$ ), indicating a significant moderated mediation effect. The bootstrapped CI for the index of moderated mediation for the full model (FS → PSYDIS → PARSTR → IB) was entirely above zero ( $b = .01, 95\% \text{ CI} = [.00, .02]$ ), indicating a significant moderated mediation effect. Findings from the simple slopes analysis suggested that higher levels of financial stress were related to higher levels of adolescent internalizing behavior, which were mediated through higher levels of parental psychological distress and higher levels of parenting stress when stay-at-home intensity was 1 *SD* below the mean ( $b = .04, 95\% \text{ CI} = [.01, .06]$ ), at the mean ( $b = .05, 95\% \text{ CI} = [.02, .08]$ ), and 1 *SD* above the mean ( $b = .05, 95\% \text{ CI} = [.02, .09]$ ) with the most pronounced effects when stay-at-home intensity was above the mean.

### *Adolescents' loneliness*

In the second analysis (see Table 3), as reported in the previous analysis, higher levels of financial stress were related to higher levels of parent psychological distress ( $b = .18, p < .01$ ) and higher levels of parenting stress ( $b = .09, p = .01$ ). Parents who reported feeling more distressed were more likely to experience greater parenting stress ( $b = .39, p < .01$ ) and report that their adolescents experienced greater loneliness ( $b = .35, p < .01$ ). Stay-at-home intensity did not moderate the relationship between parenting stress and adolescents' loneliness ( $b = .09, p = .13$ ).

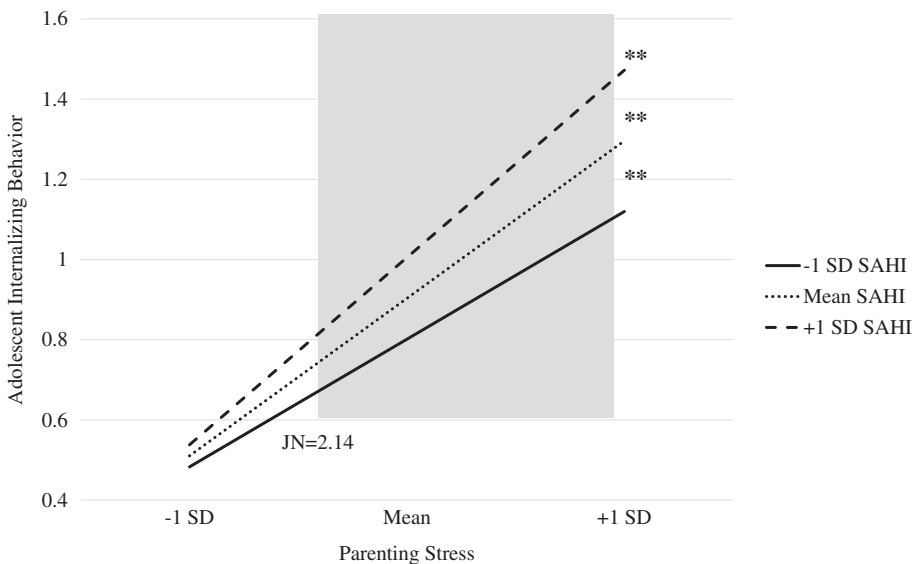
The bootstrapped CI for the index of mediation of the FS → PSYDIS → L was entirely above zero ( $b = .06, 95\% \text{ CI} = [.03, .11]$ ), indicating a significant indirect effect of financial stress on parents' reports of adolescents' loneliness through parent psychological distress. The bootstrapped CI for the index of moderated mediation of the FS → PARSTR → L was not

**TABLE 2** Moderated mediation analyses for parenting stress as the second mediator and internalizing behavior as the outcome variable

Variable	<i>B</i>	<i>SE</i>	<i>p</i>	95% CI
Outcome: Parental psychological distress				
Sex	.10	.09	.26	[−.08, .28]
Age	−.01	.03	.57	[−.06, .04]
Financial stress	<b>.18</b>	<b>.05</b>	<b>.00</b>	<b> [.09, .27]</b>
Outcome: Parenting stress				
Sex	−.17	.07	.01	<b> [−.30, −.04]</b>
Age	−.03	.02	.13	[−.06, .01]
Financial stress	<b>.09</b>	<b>.04</b>	<b>.01</b>	<b> [.02, .16]</b>
Parental psychological distress	<b>.38</b>	<b>.05</b>	<b>.00</b>	<b> [.28, .48]</b>
Outcome variable: Internalizing behavior				
Sex	.04	.06	.57	[−.09, .16]
Age	.01	.02	.42	[−.02, .05]
Financial stress	−.08	.03	.03	<b> [−.14, −.01]</b>
Parental psychological distress	<b>.33</b>	<b>.05</b>	<b>.00</b>	<b> [.22, .43]</b>
Parenting stress	.22	.20	.27	[−.17, .60]
Stay-at-home intensity	−.20	.13	.13	[−.45, .06]
Parenting stress × Stay-at-home intensity	<b>.12</b>	<b>.05</b>	<b>.02</b>	<b> [.02, .23]</b>
Indirect effects				
FS → PSYDIS → IB	<b>.06</b>	<b>.02</b>		<b> [.02, .10]</b>
FS → PARSTR → IB <sup>a</sup>	<b>.01</b>	<b>.01</b>		<b> [.00, .03]</b>
Index of moderated mediation (full model)	<b>.01</b>	<b>.00</b>		<b> [.00, .02]</b>

Note: CI = confidence interval; FS = financial stress; IB = internalizing behavior; PSYDIS = parental psychological distress; PARSTR = parenting stress.

<sup>a</sup>Moderated by stay-at-home-intensity.



**FIGURE 2** Relationship between parenting stress and adolescent internalizing behavior moderated by stay-at-home intensity Note. JN = Johnson-Neyman value; SAHI = stay-at-home intensity. <sup>+</sup>*p* < .10. <sup>\*</sup>*p* < .05. <sup>\*\*</sup>*p* < .01

**TABLE 3** Moderated mediation analyses for parenting stress as the second mediator and loneliness as the outcome variable

Variable	<i>B</i>	<i>SE</i>	<i>p</i>	95% CI
Outcome: Parental psychological distress				
Sex	.09	.09	.34	[−.09, .27]
Age	.00	.03	.92	[−.05, .05]
Financial stress	<b>.18</b>	<b>.05</b>	<b>.00</b>	<b> [.09, .27]</b>
Outcome: Parenting stress				
Sex	−.16	.07	.02	<b>[−.29, −.03]</b>
Age	−.03	.02	.08	[−.07, .00]
Financial stress	<b>.09</b>	<b>.04</b>	<b>.01</b>	<b> [.02, .16]</b>
Parental psychological distress	<b>.39</b>	<b>.05</b>	<b>.00</b>	<b> [.29, .49]</b>
Outcome variable: Loneliness				
Sex	.04	.07	.57	[−.10, .18]
Age	.01	.02	.47	[−.02, .05]
Financial stress	−.07	.04	.07	[−.14, .01]
Parental psychological distress	<b>.35</b>	<b>.06</b>	<b>.00</b>	<b> [.24, .47]</b>
Parenting stress	.37	.21	.09	[−.05, .79]
Stay-at-home intensity	−.15	.14	.29	[−.43, .13]
Parenting stress × Stay-at-home intensity	.09	.06	.13	[−.02, .20]
Indirect effects				
FS → PSYDIS → L	<b>.06</b>	<b>.02</b>		<b> [.03, .11]</b>
FS → PARSTR → L <sup>a</sup>	.01	.01		[−.00, .02]
Index of moderated mediation (full model)	<b>.01</b>	<b>.00</b>		<b> [.00, .02]</b>

Note: CI = confidence interval; FS = financial stress; L = loneliness; PARSTR = parenting stress; PSYDIS = parental psychological distress.

<sup>a</sup>Moderated by stay-at-home-intensity.

entirely above zero ( $b = .01$ , 95% CI = [−.00, .02]), indicating no significant moderated mediation effect. The bootstrapped CI for the index of moderated mediation for the full model (FS → PSYDIS → PARSTR → L) was entirely above zero ( $b = .01$ , 95% CI = [.00, .02]), indicating a significant moderated mediation effect. Findings from the simple slopes analysis suggested that higher levels of financial stress were related to reported higher levels of adolescent loneliness, which were mediated through higher levels of parent psychological distress and higher levels of parenting stress when stay-at-home intensity was 1 *SD* below the mean ( $b = .04$ , 95% CI = [.02, .08]), at the mean ( $b = .05$ , 95% CI = [.02, .09]), and 1 *SD* above the mean ( $b = .06$ , 95% CI = [.02, .10]) with more pronounced effects for higher stay-at-home intensity.

## Parent–adolescent conflict as the second mediator

In the second set of moderated mediation analyses, parent–adolescent conflict is included as the second mediator in the analyses.

### Adolescents' internalizing behavior

In the third analysis (see Table 4), parents who experienced more distress reported more frequent conflict with their adolescents ( $b = .84$ ,  $p < .01$ ) and reported higher levels of internalizing

**TABLE 4** Moderated mediation analyses for parent–adolescent conflict as the second mediator and internalizing behavior as the outcome variable

Variable	<i>B</i>	<i>SE</i>	<i>p</i>	95% CI
Outcome: Parental psychological distress				
Sex	.10	.09	.30	[−.09, .28]
Age	−.01	.03	.57	[−.06, .04]
Financial stress	<b>.18</b>	<b>.05</b>	<b>.00</b>	<b> [.08, .27]</b>
Outcome: Parent–adolescent conflict				
Sex	<b>−.49</b>	<b>.12</b>	<b>.00</b>	<b> [−.73, −.26]</b>
Age	<b>−.08</b>	<b>.03</b>	<b>.02</b>	<b> [−.14, −.01]</b>
Financial stress	.03	.06	.60	[−.09, .16]
Parental psychological distress	<b>.84</b>	<b>.09</b>	<b>.00</b>	<b> [.67, 1.00]</b>
Outcome variable: Internalizing behavior				
Sex	<b>.16</b>	<b>.06</b>	<b>.00</b>	<b> [.05, .27]</b>
Age	.03	.01	.07	[−.00, .06]
Financial stress	−.02	.03	.44	[−.08, .03]
Parental psychological distress	<b>.19</b>	<b>.05</b>	<b>.00</b>	<b> [.09, .28]</b>
Parent–adolescent conflict	<b>.32</b>	<b>.11</b>	<b>.00</b>	<b> [.11, .54]</b>
Stay-at-home intensity	.03	.05	.56	[−.07, .13]
Parent–adolescent conflict × Stay-at-home intensity	.04	.03	.14	[−.01, .10]
Indirect effects				
FS → PSYDIS → IB	<b>.03</b>	<b>.01</b>		<b> [.01, .06]</b>
FS → PACON → IB <sup>a</sup>	.00	.00		[−.00, .01]
Index of moderated mediation (full model)	.01	.00		[−.00, .02]

Note: CI = confidence interval; FS = financial stress; IB = internalizing behavior; PACON = parent–adolescent conflict; PSYDIS = parental psychological distress.

<sup>a</sup>Moderated by stay-at-home-intensity.

behavior in their adolescents ( $b = .19, p < .01$ ). Higher levels of conflict between parent and adolescent were related to higher levels of adolescents' internalizing behavior ( $b = .32, p < .01$ ). The bootstrapped confidence interval for the index of mediation of the FS → PSYDIS → IB was entirely above zero ( $b = .03, 95\% \text{ CI} = [.01, .06]$ ), indicating a significant indirect effect of financial stress on adolescents' internalizing behavior through parent psychological distress. The bootstrapped CI for the index of moderated mediation of the FS → PACON → IB was not entirely above zero ( $b = .00, 95\% \text{ CI} = [−.00, .01]$ ), indicating no significant moderated mediation effect. The bootstrapped CI for the index of moderated mediation for the full model (FS → PSYDIS → PACON → IB) was also not entirely above zero ( $b = .01, 95\% \text{ CI} = [−.00, .02]$ ), indicating no significant moderated mediation effect. However, results of follow-up analyses suggested that the bootstrapped CI for the index of serial mediation (with no moderation; FS → PSYDIS → PACON → IB) was entirely above zero ( $b = .10, 95\% \text{ CI} = [.04, .17]$ ), providing support for the serial mediation model from financial stress to parents' reports of adolescent internalizing problems, through parent psychological distress and parent–adolescent conflict.

### Adolescents' loneliness

In the final analysis (see Table 5), parents who reported feeling more psychological distress were more likely to experience more frequent conflict with their adolescents ( $b = .85, p < .01$ ) and report that their adolescents experienced higher levels of loneliness ( $b = .28, p < .01$ ). Higher levels of conflict between parent and adolescent were related to higher levels of adolescents'

**TABLE 5** Moderated mediation analyses for parent–adolescent conflict as the second mediator and loneliness as the outcome variable

<i>Variable</i>	<i>B</i>	<i>SE</i>	<i>p</i>	<b>95% CI</b>
Outcome: Parental psychological distress				
Sex	.08	.09	.38	[−.10, .26]
Age	.00	.03	.93	[−.05, .05]
Financial stress	<b>.18</b>	<b>.05</b>	<b>.00</b>	<b> [.09, .27]</b>
Outcome: Parent–adolescent conflict				
Sex	<b>−.49</b>	<b>.12</b>	<b>.00</b>	<b> [−.72, −.25]</b>
Age	<b>−.08</b>	<b>.03</b>	<b>.02</b>	<b> [−.14, −.01]</b>
Financial stress	.03	.06	.58	[−.09, .16]
Parental psychological distress	<b>.85</b>	<b>.09</b>	<b>.00</b>	<b> [.67, 1.02]</b>
Outcome variable: Loneliness				
Sex	.12	.07	.08	[−.02, .26]
Age	.02	.02	.27	[−.02, .06]
Financial stress	−.02	.04	.63	[−.09, .05]
Parental psychological distress	<b>.28</b>	<b>.06</b>	<b>.00</b>	<b> [.16, .40]</b>
Parent–adolescent conflict	<b>.33</b>	<b>.14</b>	<b>.02</b>	<b> [.06, .61]</b>
Stay-at-home intensity	.04	.06	.56	[−.09, .16]
Parent–adolescent conflict × Stay-at-home intensity	.02	.04	.60	[−.05, .09]
Indirect effects				
FS → PSYDIS → L	<b>.05</b>	<b>.02</b>		<b> [.02, .09]</b>
FS → PACON → L <sup>a</sup>	.00	.00		[−.00, .01]
Index of moderated mediation (full model)	.00	.01		[−.01, .01]

Note: CI = confidence interval; FS = financial stress; L = loneliness; PACON = parent–adolescent conflict; PSYDIS = parental psychological distress.

<sup>a</sup>Moderated by stay-at-home-intensity.

loneliness ( $b = .33, p = .02$ ). Stay-at-home intensity did not moderate the relationship between reports of parent–adolescent conflict and adolescents' loneliness ( $b = .02, p = .60$ ). The bootstrapped CI for the index of mediation of the FS → PSYDIS → L was entirely above zero ( $b = .05, 95\% \text{ CI} = [.02, .09]$ ), indicating a significant indirect effect of financial stress on parents' reports of adolescents' loneliness through parental psychological distress. The bootstrapped CI for the index of moderated mediation of the FS → PACON → L was not entirely above zero ( $b = .00, 95\% \text{ CI} = [−.00, .01]$ ), indicating no significant moderated mediation effect. The bootstrapped CI for the index of moderated mediation for the full model (FS → PSYDIS → PACON → L) was not entirely above zero ( $b = .00, 95\% \text{ CI} = [−.01, .01]$ ), indicating no significant moderated mediation effect. Results of follow-up analyses suggested that the bootstrapped CI for the index of serial mediation (with no moderation; FS → PSYDIS → PACON → IB) was entirely above zero ( $b = .09, 95\% \text{ CI} = [.04, .14]$ ), providing support for the serial mediation model from financial stress to reports of adolescent loneliness, through parental psychological distress and parent–adolescent conflict.

## DISCUSSION

According to Golberstein et al. (2020), adolescents' psychosocial adjustment is directly impacted by economic adversity and may be affected by other factors and contexts. To understand how

families are coping during the COVID-19 pandemic, the current investigation extended Conger and Donnellan's (2007) family economic stress model to explore the direct and indirect pathways between financial stress and adolescents' well-being. Similar to the farm crisis of the 1980s, families experienced financial stress during the COVID-19 pandemic. In contrast to earlier research on the family economic stress model, the COVID-19 pandemic occurred with an additional stressor of long duration stay-at-home mandates for families.

As hypothesized, there was a significant relation between higher financial stress and higher parental psychological distress, higher parenting stress, and parents' reports of higher levels of adolescent loneliness. The relationship between financial stress and parental psychological distress was consistent with previous investigations (Kaiser et al., 2017; Lee et al., 2011) of non-COVID situations and supports the family economic stress model. Higher levels of parental psychological distress were related to reports of higher levels of parenting stress, higher levels of parent-adolescent conflict, higher levels of adolescents' internalizing behavior, and higher levels of adolescent loneliness. It may be that when parents were experiencing psychological distress, they are unable to hide these experiences from their adolescents, creating a crossover effect (Liu & Doan, 2020) whereby the parents' stress adversely impacted adolescents' adjustment. In this investigation, higher stay-at-home intensity was related to higher levels of parenting stress, higher levels of parent-adolescent conflict, and poorer adolescent adjustment, suggesting that staying at home during the pandemic was stressful for families. Stay-at-home mandates likely interfered with opportunities for adolescents to socialize outside of the home at a time when they may have been experiencing stress and would benefit from peer interactions. In addition, the lack of privacy in day-to-day living or in online interactions with friends during the stay-at-home mandates may have contributed to higher levels of parenting stress, higher parent-adolescent conflict, and poorer adolescent outcomes.

Significant indirect associations between financial stress and adolescent well-being through parental psychological distress were identified. These results suggest that when parents are experiencing financial stress, this likely creates more general psychological distress in the parent, which subsequently might undermine adolescents' adjustment (Prime et al., 2020). In addition, there was a significant indirect effect of financial stress on parents' reports of adolescents' internalizing behavior through parenting stress (moderated by stay-at-home-intensity), which is consistent with previous investigations (e.g., Huth-Brocks & Hughes, 2008), suggesting a spillover effect (Liu & Doan, 2020). Taken together, these results provide further support for the family economic stress model (Conger & Donnellan, 2007).

Consistent with the hypothesized model, results from the moderated mediation analyses suggested that there was a significant mediated relation between greater financial stress and poorer adolescent well-being through parental psychological distress and a moderation effect of stay-at-home intensity on parenting stress. Previous research that has examined parenting stress suggested that parenting stress influences child outcomes through parenting behaviors (e.g., Huth-Brocks & Hughes, 2008), which is consistent with results from this investigation. Stay-at-home intensity moderated indirect pathways with parenting stress as the second mediator for both internalizing behavior and loneliness. During the pandemic, many parents transitioned to working from home while adolescents were participating in online learning, increasing the amount of time that parents and adolescents were spending at home. Taking on two roles while being in the same physical space (i.e., an employee [or employer] and a parent) blurs the line between the work and home environment. This might increase the likelihood that work-related stressors that parents experienced may be carried over to their interactions with their adolescents, supporting previous research that distress may be transmitted from one context to another through a spillover effect (Liu & Doan, 2020).

Consistent with expectations, higher levels of parent-adolescent conflict were related to parent reports of adolescents' higher levels of internalizing behavior and loneliness. Results are consistent with previous investigations documenting that higher levels of parent-adolescent

conflicts are related to poorer adjustment in adolescents (Branje, 2018). It may be that conflict between adolescents and their parents is more directly experienced by the adolescent than parenting stress and thus may have a significant impact on adolescent outcomes. Contrary to expectations, the moderated mediation model was not supported for parent–adolescent conflict. It may be that higher levels of parent–adolescent conflict, regardless of the stay-at-home intensity, have a negative relationship with adolescent adjustment. Indeed, the indirect effect of financial stress on adolescents' internalizing and loneliness through parent psychological distress and parent–adolescent conflict was significant, lending support for this speculation and providing support for a spillover effect (Liu & Doan, 2020).

## Limitations and future directions

One limitation of this investigation was the reliance on parental reports. Although mean scores were used to reduce issues arising from mono-informant bias (Sourander et al., 1999), parents might have reported more favorably on certain measures. If parents have existing mental health issues, this may influence their perception of their adolescents' psychosocial well-being, thus impacting the accuracy of their reports. Because adolescents may not fully disclose personal information to their parents even though they are spending more time at home, the lack of parental knowledge about their adolescents' well-being may influence the accuracy of their responses (Barry et al., 2008; Keijsers & Poulin, 2013).

Another limitation of the data collection process was the online format of the investigation, increasing the possibility for careless responding. Even though data screening measures were performed, external influences (e.g., environmental distractions) that might have influenced the accuracy of responses could not be controlled. Future research should include several types of informant reports and consider alternative online data collection methods to alleviate potential bias and limitations (e.g., retrospective responding) that arise when only self-report questionnaires are used.

An additional limitation of the investigation was that most participants identified as European American. As suggested by Parke et al. (2004), pathways in the family stress model may function differently for European American and Mexican American families. Neighborhood characteristics may impact families' financial situation before and during the pandemic as well as the availability of opportunities for social support (e.g., childcare). Thus, future research should use an ethnically diverse sample to examine these pathways among families of different ethnic backgrounds. Other demographic characteristics of the family (e.g., number of children living in the family, household size, parents' highest education level) might also have influenced families' financial stress levels. Because there was limited variability of these characteristics among the participants in our sample, these variables were not included as covariates in the analyses. However, future research should consider examining how financial stress levels may be influenced by these variables.

Although results of this investigation suggested that poor adolescent outcomes arise when parents and adolescents spend more time together in the same physical space, negative parenting behaviors were examined in this investigation. Different patterns of association may be established if positive parenting behaviors (e.g., parental warmth or parental support) were examined. Thus, future research should also assess positive parenting behaviors within the same investigation to attain a holistic perspective on the way in which positive and negative parenting behaviors in a higher stay-at-home intensity influences adolescents' internalizing behaviors and loneliness. Finally, the data that were collected were all cross-sectional, which prevented an examination of changes in behavior that might occur over time. The analytic approach (Hayes, 2018) suggests a mediated pattern of relationships. Nevertheless, longitudinal investigations are needed to allow for a stronger test of the moderated mediation model.



## Implications

The COVID-19 pandemic has impacted family well-being in several areas through economic challenges experienced by families and through the extended stay-at-home mandates that families endured. Economic changes are directly influencing parents' financial stress levels. However, this also spills over to other aspects of family functioning, such as parental well-being, parenting, and adolescents' psychosocial adjustment, and is affected by the intensity of stay-at-home policies. Results highlight the importance of practitioners considering the ways in which the simultaneous occurrence of several stressors is associated with family well-being. That is, practitioners should be mindful of the synergy in which the pandemic effects were exacerbated by stay-at-home mandates that were imposed for long periods of time. Intervention measures during these challenging situations might focus on parents as well as other family members (e.g., adolescent) as spillover and crossover effects may have an adverse impact on adjustment for multiple family members (Liu & Doan, 2020). Although the sudden changes and disruptions to routines that occurred when the pandemic first began may have greatly impacted families because of the uncertainty involved and the limited time to adapt to these changes, the pandemic is still evolving. Thus, practitioners should consider the long-term implications of financial stress on family well-being as well as assisting families with interactions during extended in-home stays. This might include helping families identify strategies for creating a feeling of boundaries for adolescents and a feeling of private spaces for adolescents in homes, even in homes with limited physical space. Not only will this help families navigate the changes that they are currently experiencing, but it will also equip them with necessary skills and tools to navigate potential challenges that may arise in long-term crises.

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