



COVID-19 Stressors and Latinx Adolescents' Mental Health Symptomology and School Performance: A Prospective Study

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Abstract

This study addressed the need for research examining impacts of the Coronavirus-19 (COVID) pandemic on Latinx adolescents' adjustment. Survey data for a probability sample of 547 Latinx adolescents ($M_{age} = 13.71$, $SD = 0.86$; 55.2% female) were collected from 2018 to 2021, including two times both prior to, and during, COVID. Independent variables assessed COVID-related household hospitalization, job/income loss, and adolescents' increased childcare responsibility. Structural Equation Model results indicated that COVID-related increases in adolescent childcare responsibility were associated with increased internalizing and externalizing symptoms and declines in school performance. COVID hospitalization and job/income loss were associated indirectly, through childcare responsibilities, to worse adolescent outcomes. Family adversities may harm adolescents' adjustment by burdening adolescents with responsibilities such as caring for children.

Keywords COVID-19 · Stressors · Latinx adolescents · Internalizing and externalizing · School performance

Introduction

Since the onset of today's pandemic, the U.S. Latinx population has experienced disproportionately high rates of COVID-19 illness, hospitalization, and death (APM Research Lab, 2021; Center for Disease Control and Prevention, 2020a) and heightened levels of job loss, financial strain, and childcare burden (Despres, 2021). As with other kinds of adversities, these experiences pose significant threats to the healthy development of adolescents, a group undergoing rapid biological, cognitive, and social changes that heighten vulnerability to stressors. The primacy of

family within Latin American culture (Calzada et al., 2013) raises the possibility that adversities impacting families may be especially harmful to adjustment outcomes for Latinx adolescents. Using four time points of prospective data collected from the Fall of 2018 through the Spring of 2021 from a diverse sample of Latinx adolescents, this study aimed to advance knowledge of the pandemic's consequences for Latinx adolescents' mental health and school performance – critical indicators of adjustment with lasting consequences into adulthood (Maslowsky et al., 2014; Masten et al., 2005). This study described the prevalence of COVID stressors indicated by household hospitalization, household job and income loss, and adolescent increased childcare responsibility. Analytic models were used to examine how these COVID stressors related to changes in Latinx adolescents' mental health symptoms and school performance from before the pandemic's onset to roughly 12 months after the pandemic's onset. In an effort to identify factors that might mitigate stress impacts, this study also investigated the degree to which negative impacts of COVID stressors on Latinx adolescent adjustment were mitigated by adolescent perceptions of parental support. As pandemic-related changes in mental health may differ for adolescent boys versus girls (DeFrance et al., 2021, Hollenstein et al., 2021, Magson et al., 2021), analytic models tested for the significance of gender differences in

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pathways from COVID stressors to changes in adolescent adjustment. By learning about how pandemic-related stressors have affected Latinx adolescents, the present study advances knowledge about how experiences of adversity within families matter for adjustment during the early and middle adolescent years.

The COVID-19 Pandemic and Changes in Adolescent Adjustment

Although long-term impacts of today's pandemic on adolescent adjustment will not be fully realized for years to come, some evidence from early research suggests that the pandemic has been harmful to adolescents' mental health and academic adjustment (Gracia et al., 2021; Alt et al., 2021; Ravens-Sieberer et al., 2021). For example, among a sample of Canadian adolescents, researchers found a significant upward deviation in trajectories of adolescent depressive symptoms tied to the onset of the pandemic (DeFrance et al., 2021). Similarly, research in Finland showed that 84% of middle school students experienced a significant decline in school engagement and increased school burnout from the Fall of 2019 to the Fall of 2020 (Salmela-Aro et al., 2021). In a unique methodological departure from studies examining before-to-during COVID changes in adolescent adjustment, Romm and colleagues studied a cohort of adolescents who all provided Time 1 and Time 2 data prior to COVID's onset but one portion of this sample provided Time 3 data just prior to COVID's onset and the other portion of the sample provided Time 3 data soon after COVID's onset. The team then compared latent change scores for outcomes across these two subsamples. Supporting the idea that COVID led to worse outcomes for adolescents, the researchers found that Time 2 to Time 3 increases in depression, negative affect, and isolation and decreases in positive affect and friendship were significantly stronger for adolescents whose Time 3 data was collected immediately after, as compared to before, the onset of COVID (Romm et al., 2021).

Empirical evidence for the pandemic's negative impacts on adolescents has not been uniform across studies (Collier et al., 2021; Hollenstein et al., 2021). Among a sample of 9- to 15-year-olds in New Haven, Connecticut, for example, adolescents' negative affect increased but their positive affect remained unchanged from before to after the pandemic's onset (through early June of 2020). Mixed findings pertinent to COVID-related changes in adolescent adjustment also were shown in a study of adolescents in Belgium. In that study, researchers found a modest effect size of the pandemic on increased adolescent loneliness, no pandemic-related changes in adolescent stress, and declines in adolescent irritability during the months immediately following the pandemic's onset (Janssens et al., 2021). Finally, in one

of the few studies focused on Latinx adolescents, internalizing and total problems decreased from just prior to the pandemic (January 2020) to just after the onset of COVID (mid-April 2020–May 2020). During that same time frame, Latinx adolescents' externalizing problems also decreased for those with elevated pre-pandemic levels of externalizing problems. Speculating about reasons for improvements to adolescent adjustment shown in early months after COVID's onset, the authors surmised that increased family time, particularly for Latinx populations, and reduced stress from peers conferred by in-person education may have resulted in at least short-term benefits of the pandemic for Latinx adolescents (Penner et al., 2021).

Some researchers have investigated adolescents' perceived stress and worry around the pandemic and found that negative perceptions of the pandemic are related to worse adjustment over time (Campione-Barr et al., 2021; Magson et al., 2021; Skinner et al., 2021). For example, in a study using daily diary data across a 15-day period in April of 2021, levels of same-day and next-day negative affect were higher among adolescents perceiving more stress about things such as getting infected with COVID or the family not having enough food. Perceived stress was not, however, associated with adolescents' positive affect (Wang et al., 2021). Similarly, among a sample of early adolescents in the Netherlands, researchers found that adolescents who were more worried about COVID infection and about COVID being harmful to adolescents' mental and physical health experienced stronger increases in internalizing symptoms during the early months of the pandemic (Bernasco et al., 2021). It is possible that the correlations between adolescents' subjective pandemic-related distress and subjective overall distress (e.g., internalizing symptoms) may be an artifact of measurement bias. This is because individuals with a proclivity toward internalizing symptoms are likely to report more perceived stress than individuals without that tendency. Consistent with the possibility that this sort of measurement bias may affect studies of COVID stress, Bernasco and colleagues found that adolescents' perceived COVID worries were associated positively with adolescent internalizing symptoms assessed by adolescent report but not parent report (Bernasco et al., 2021).

To date, very few studies have examined relatively objective measures of COVID stressors such as a family illness, job loss, and/or financial problems tied to the pandemic. Using 15 days of diary data during May and June of 2020, Wang and colleagues found that parent-reported job loss was related directly to increased adolescent negative affect. Moreover, parental job loss was associated indirectly, through increased parent-adolescent conflict (measured as a composite of parent and adolescent reports), with adolescents' increased negative affect and decreased

positive affect (Wang et al., 2021). As in other studies, evidence for COVID's harmful impacts on adolescent adjustment has not been consistent across studies. DeFrance and colleagues found little evidence linking pandemic experiences of household financial strain, job loss, and/or knowing someone who was hospitalized or ill to short-term changes in adolescent anxiety or depression (DeFrance et al., 2021). Further, among Latinx adolescents in low-income immigrant communities, Penner and colleagues found that family job loss and reduced job hours were associated with more adolescent mental health problems one month after the pandemic's onset (mid-April 2020) but *not* with these same problems reported shortly thereafter, in early May, and again in late May of 2020 (Penner et al., 2021). Given that these studies assessed adolescent outcomes during the initial few months after the onset of COVID, longer-term impacts of these stressors on adolescent mental health symptomology and academic performance remain unknown.

Although empirical investigations examining impacts of COVID stressors on adolescent adjustment have been limited, culturally informed, developmental science strongly supports the idea that pandemic stressors within the family pose risks to Latinx adolescents' adjustment (Kroger, 2007; Smetana & Villalobos, 2009). Adolescents' increasingly sophisticated socio-cognitive skills result in their being included in family conversations about stressful events and facilitate adolescents' understanding of what events such as household illness, job loss, financial strain, and childcare burden mean for adolescents and their families (Kroger, 2007; Smetana & Villalobos, 2009). As with other kinds of stressors, those tied to the pandemic and impacting the family may be especially impactful for Latinx adolescents due to the cultural value of familism, emphasizing the centrality of family and importance of youth fulfilling family obligations (Calzada, et al., 2013; Stein et al., 2014; Tsai et al., 2013). Studies conducted outside of the COVID context have shown that family stressors, such as financial strain and family illness, are associated with Latinx adolescents' worse mental health and greater substance use (Martin et al., 2019; Rubens et al., 2018). Among Mexican-origin families in the Southwest, Delgado and colleagues found that parent reports of economic hardship were associated with adolescents' greater depressive symptoms, and that adolescent reports of economic strain were associated with adolescents' increased engagement in risky behaviors (Delgado et al., 2013). Latinx adolescents, often called upon to help out with family caretaking and responsibilities at home, may experience worse adjustment when the family context is characterized by greater stress. For example, Mexican-origin adolescents' family assistance behaviors, such as childcare, have been associated with greater adolescent internalizing symptoms

in families with more negative life events (Telzer et al., 2015). In Latinx families experiencing chaos and instability from parents' pandemic-related job loss, reduced work hours, financial problems, and/or serious COVID illness, parents may turn to adolescents to help fulfill tasks such as childcare. Adolescents' increased time spent caring for children in this context may interfere with their ability to attend to their own developmental needs, such as spending time with peers and/or engaging in school-related activities. Over the long run, the stress of spending time taking care of children may increase adolescent risks for inward-directed mental health problems (e.g., depression, anxiety), outward-directed problem behaviors (e.g., aggression, rule breaking), and poor school performance.

The Protective Role of Parental Support

Stressors adversely impacting families may exert less harm for Latinx adolescents who perceive greater parental support. Adolescent perceptions of closeness, warmth and acceptance by parents, or parental support, are important correlates of Latinx adolescents' better school performance (Carlo et al., 2018) and fewer internalizing symptoms (Behnke et al., 2011). Beyond its direct protective effects for adolescents, support within the parent–adolescent relationship may be a critical resource that helps adolescents weather exposures to stress, such as that caused by today's pandemic (Compas et al., 2001). However, empirical evidence for parental support's buffering impacts against stress faced by Latinx adolescents has been mixed. Some research has shown that family support may mitigate the harmful effects of ethnic discrimination on Latinx adolescents' externalizing problems (Park et al., 2018). Other studies, however, find no evidence that parental supports buffers against stressors (Ayón et al., 2010). For example, in research using two time points of data from the *Caminos* project, the source of data for the present study, parental support did not moderate associations between teachers' ethnic discrimination and Latinx adolescents' increased internalizing or externalizing symptoms (Bennett et al., 2020).

Despite limited evidence for parental support as a buffer against stressors impacting Latinx adolescents' adjustment, some research suggests the possibility of parental support as a potential resource that can mitigate pandemic-related risks to adolescent adjustment. Research conducted in the Netherlands, for example, showed that online schooling—presumed to be a more stressful school experience than in person schooling—was less strongly related to adolescent declines in academic motivation after the pandemic's onset if adolescents reported more parental support (Klootwijk et al., 2021). Similarly, among parents of children ranging in age from less than one year to 17 years of age, parent

reports of pandemic-related family stress were less strongly related to children's internalizing symptoms if parents maintained family routines and/or used emotion coaching with their child, practices indicative of parental support (Cohodes et al., 2021). Finally, among adolescents living in Belgium, Janssens and colleagues found that pandemic-related increases in loneliness were magnified for adolescents reporting a lower quality parent–adolescent relationship. Thus, stressors tied to the pandemic may be less harmful to Latinx adolescents' adjustment within the context of a supportive parent–adolescent relationship (Janssens et al., 2021). In examining how parental support and COVID stressors, as well as their interaction, influence adolescent adjustment, it is important to adjust for adolescents' age, maternal educational attainment, and household structure—demographic characteristics salient to perceptions of parental support and adolescents' vulnerability to stressors and adjustment (Conger et al., 1994; Mack et al., 2015; Magson et al., 2021).

The Present Study

The present study addresses critical gaps in knowledge about how the COVID pandemic has affected U.S. Latinx adolescents. First, this research provided much needed information regarding the prevalence of pandemic stressors, including COVID-related hospitalization, job and income loss due to the pandemic, and adolescents' increased childcare responsibility since COVID began, for a school-based probability sample of U.S. Latinx adolescents. Second, using data collected from 2018 through 2021, this study used structural equation modeling techniques to examine pre- to during-COVID changes in *diverse* indicators of Latinx adolescent adjustment including internalizing and externalizing symptomology and grade point average (GPA). It was hypothesized that Latinx adolescents would experience increased symptomology and declines in GPA since the onset of COVID. Third, structural equation models were used to describe how COVID stressors were associated with changes in Latinx adolescents' adjustment from before to during COVID. It was expected that COVID stressors would be associated with adolescent increases in mental health symptomology and declines in GPA. Finally, this research identified the potential of parental support to mitigate harm conferred by COVID stressors on Latinx adolescent adjustment. It was hypothesized that COVID stressors would be less strongly associated with poor adolescent adjustment for adolescents perceiving higher levels of support in the parent–adolescent relationship. Multiple group structural equation models by gender were run to examine possible gender differences in structural pathways. Analytic models regressed COVID stressors and indicators

of adolescent adjustment at the final time point on control variables including adolescent age, maternal education, and household structure.

Method

This research used longitudinal data from the ongoing *Camino*s study (Roche et al., 2020). Using 2017–18 middle school enrollment lists from a school district in suburban Atlanta, Georgia, researchers randomly selected 1105 students listed as “Hispanic” from grade (6th, 7th, 8th) and gender (male, female) strata within schools categorized as having low, moderate, or high “Hispanic” student enrollment. After omitting adolescents with a documented severe emotional or learning disability ($n = 15$), parental permission was obtained for 657 adolescents (76.4% of reachable parents). The research team was able to reach 88.1% ($n = 579$) of these adolescents; among this group, 24 did not provide assent, 6 were ineligible, and 2 dropped out after providing assent. The final sample of 547 adolescents represented a 57.8% overall response rate and a 70.9% response rate among reachable and eligible parents and adolescents. Relevant to the present study, it is worth noting that Georgia did not allow vaccine mandates and did not require that schools implement face mask mandates (Kaiser Family Foundation, 2022). Furthermore, the school district for study participants did not require face masks in school at any time since the pandemic began.

Due to an unexpected request by the school district that field work in the school setting end by May 1, 2018, a “main” sample was recruited via schools from February through April (with survey completion extending into June) of 2018, and a “lagged” sample was recruited via mailings and phone calls to homes from August 2018 to January 2019. Due to the present study's interest in changes occurring from before to after COVID's onset, we merged data from main and lagged samples so that data for each derived from the same time of the calendar year. Thus, we used surveys conducted in Fall of 2018 (Time 1, T1), Fall of 2019 (Time 2, T2), Fall of 2020 (Time 3, T3), and Spring of 2021 (Time 4, T4). All study materials were provided in Spanish and English. The proportion of adolescents completing the surveys in Spanish ranged from 4.6 ($n = 25$) at baseline to 3.5 ($n = 19$) at Time 4. For items originally developed in English only, we used the double-translation and double back-translation method combined with a review team approach (Knight, Roosa, & Umaña-Taylor, 2009). Self-administered surveys were completed online using the *Qualtrics XM Research Core Survey Software* (Qualtrics, 2018) program. Youth were provided gift cards in exchange for participation in surveys. The values of gift cards ranged over time due to varying levels of respondent

burden (e.g., shift out of school setting early in the study; addition of COVID survey items). Over the course of the four study time points, youth received a gift card valued at \$65.00 on average. Study procedures received institutional review board approval from The George Washington University (IRB# 121613).

At baseline, adolescents were an average of 13.73 years old ($SD = 0.91$). Just over half of the sample identified as “female” (55.2%, $n = 302$) and 44.6% ($n = 245$) identified as “male.” The single student who identified their gender as “Latinx,” was coded as “male” based on school enrollment records, resulting in a total of 246 adolescent boys. Almost two-thirds of the adolescents (65.3%) were second-generation immigrants (U.S.-born child of foreign-born parent), 10.4% were first-generation immigrants (both child and parent foreign born), and 24.3% were third or later generation immigrants (both child and parent U.S. born). More than two-thirds of adolescents (67.1%) lived in a two-parent household, 19.4% lived with a single parent, and 13.5% lived in a stepparent household. On average, mothers had attained slightly higher than a high school-level education ($M = 3.18$, $SD = 1.63$).

Measures

COVID Stressors

During Fall of 2020 (T3), roughly 6 months after the pandemic’s onset, adolescents marked responses to survey items inquiring about the occurrence of varied pandemic-related stressors. Household hospitalization was measured by adolescent reports that someone in their household had been hospitalized due to COVID-19 ($0 = no$; $1 = yes$). Household job/income loss was indicated by adolescent reports of two economically related events occurring since news of COVID-19 or the coronavirus. These two items included adolescent reports that (a) someone in their household had lost a job or had their hours reduced and that (b) the family started having more financial problems ($0 = no$; $1 = yes$). Summed scores for job/income loss ranged from 0 to 2. Finally, adolescents’ childcare responsibility was assessed by adolescent reports that, since news of COVID-19 or the coronavirus, the adolescent had more responsibility for caring for children ($0 = no$; $1 = yes$).

Adolescent Mental Health Symptomology

Adolescent reports of past six-month externalizing and internalizing symptoms were assessed using the Youth Self-Report (YSR 11–18; Achenbach, 1991). Assessment time points were utilized to facilitate examining changes in symptomology occurring from before to after reported

COVID stressors provided at T3 during the Fall of 2020. Thus, symptomology measures reflected T1 data collected in the Fall of 2018 (roughly 18 months before the pandemic’s onset in the U.S.); T2 data collected in the Fall of 2019 (roughly 6 months before the pandemic’s onset in the U.S.); and, T4 data collected in the Spring of 2021 (roughly 12 months after the pandemic’s onset). Subscales for the 30-item externalizing symptoms measure included rule-breaking and aggressive behavior; subscales for the 29-item measure of internalizing symptoms included anxious/depressive, withdrawn/depressed, and somatic syndromes. Externalizing and internalizing symptoms scales were shown to be reliable for this sample ($\alpha = 0.88$ – 0.94 across time points across time points).

Adolescent School Performance

Owing to the absence of a T1 measure of GPA, measures of school performance were assessed by adolescent reports of their GPA at T2 and T4. These two assessment time points facilitated examining changes in GPA from before to after reported COVID stressors provided at T3 during the Fall of 2020. T2 GPA represented grades received at the end of the Spring 2019 semester, and T4 GPA represented grades received at the end of the Fall 2020 semester. Adolescents reported grades in math, science, history, and English ($0 = F$ to $4 = A$). Letter grades were averaged to indicate the overall GPA. The GPA at each time point corresponded approximately to a B average (T1: $M = 3.17$, $SD = 0.75$; T2: $M = 3.15$, $SD = 0.72$; T4: $M = 3.02$, $SD = 0.85$).

Parental Support

The 8-item Parental Acceptance Scale (Dumka, Roosa, & Jackson, 1997; Schaefer, 1965) was used to assess youth’s perception of warmth and acceptance in the parent–child relationship at T3. Youth reported how often the parent, for example, “makes you feel better after talking over your worries with him or her,” “understands your problems and worries,” and “cheers you up when you are sad.” Response categories range from $0 = almost\ never\ or\ never$ to $5 = almost\ always\ or\ always$. The measure showed high reliability ($\alpha = 0.86$).

Demographic Characteristics

T1 demographics included dummy coded indicators of adolescents’ self-identified gender ($0 = female$, $1 = male$), adolescent immigrant generational status (1^{st} generation, the reference group; 2^{nd} generation; $3^{rd} +$ generation), and household structure (two biological/adoptive parents, the reference group; single parent; and stepparent). Continuous demographic variables included adolescent’s age in years

and maternal education (ranging from 1 = 8th grade or less to 6 = graduate or professional school).

Analysis Plan

Initial analyses focused on examining missing data, sources of attrition bias, and measurement validity for study constructs. To explore the validity of the study's single-item COVID stressors, which were developed uniquely for the present study, we conducted bivariate analyses examining discriminant and convergent validity. For latent constructs (internalizing symptoms, externalizing symptoms, parental support), we ran measurement models using Confirmatory Factor Analyses (CFA). Multiple group models were run to establish measurement invariance across gender and time, evidenced by a change in CFI of less than 0.01 and by the RMSEA remaining within the 95% confidence interval of the preceding model when adding increasing constraints (Putnick & Bornstein, 2016). Finally, the prevalence of COVID stressors was examined through item-level frequencies and proportions, and the related 95% Confidence Interval (CI) for each. Bivariate analyses were run to examine associations among COVID stressors, and associations between these stressors and other study variables including demographic characteristics, adjustment outcomes, and the hypothesized moderator of parental support.

To examine changes in adolescent adjustment occurring from before to during COVID, we tested the significance of change in chi-square model fit by comparing a model where latent means for internalizing and externalizing symptomology and GPA were constrained to be equal over time as compared to a model that freely estimated these means across time. Given the possibility of gender differences in changes over time, changes in model fit were examined in multiple group (gender) models where the significance of gender differences also were assessed. After establishing the stability in means for symptomology measures from T1 to T2 (both pre-COVID), we examined the statistical significance of change in chi-square model fit derived from models where means were constrained to be equal across all time points versus a model where T4 means were allowed to differ from those at T1 and T2.

The next set of structural models examined whether or not COVID stressors were associated with changes in mental health symptomology and GPA. Subsequently, we tested the significance of two-way interactions between parental support and each COVID stressor to examine the potential moderating effect of parental support on associations between COVID stressors and adolescent adjustment. Multiple group models were run to establish structural invariance across adolescent gender and time. Structural invariance was evidenced by the absence of a significant change in model chi-square from constrained to free models

(Putnick & Bornstein, 2016). To address missing data (described in results), we used Full Information Maximum Likelihood (FIML) estimation which accounts for uncertainty as part of the model estimation process and is appropriate under the Missing at Random assumption (Enders, 2010).

Results

Missing Data

Among the 547 participants, the percent of adolescents with missing data due to survey nonresponse was 17.0% ($n = 93$) at T1, 18.3% ($n = 100$) at T2, 26.1% ($n = 143$) at T3, and 20.3% ($n = 111$) at T4.¹ Being in a single or stepparent, as compared to two-parent, household was associated with a significantly higher likelihood of survey nonresponse at each time point. Having a foreign-born parent and having a mother with less education were positively associated with T1 survey nonresponse (reflecting main sample attrition after their baseline survey prior to this study's T1). Finally, T1 and T4 survey nonresponse was more likely for boys than girls, and T2 and T3 survey nonresponse was more likely among older adolescents.

COVID Stressors: Prevalence and Bivariate Associations with Study Variables

Table 1 includes data for the numbers and percent of adolescents reporting each of the three COVID stressors. Results indicated that, among the Latinx adolescents, 10.1% ($n = 41$; 95% CI: 7.4%, 13.3%) reported that a household member had been hospitalized due to COVID. More than a third (35.8%, $n = 147$; 95% CI: 31.1%, 40.6%) had taken on more responsibility for childcare. Almost half (46.9%, $n = 193$; 95% CI: 42.1%, 51.9%) reported that a household member had lost a job/had work hours reduced *or* that the family had more financial problems since the start of the pandemic. And, almost one-fifth (19.2%, $n = 79$; 95% CI: 15.5%, 23.4%) reported both household job loss/reduced work hours *and* increased family financial problems since COVID's onset. Although not included in Table 1, the data for COVID stressors indicated that adolescents were more

¹ As described earlier, data coded as "T1" for the present study were drawn from two sources: the main sample's second assessment and the lagged sample's first assessment for the [blinded name] study. Some missing data due to survey nonresponse exist as early as the present study's T1 because 19.5% of main sample participants had been lost to attrition before their second assessment. (Attrition for the main sample's second assessment was higher than at other time points likely because it was at this time that the school district requested that the [blinded name] study no longer be conducted through schools).

Table 1 Prevalence of COVID stressors by participant demographic characteristics, *N* = 547^a

	COVID stressors										Total ^a
	Hospitalization		Job/income loss			Childcare responsibility			Total ^a		
	No Number (% ^b)	Yes χ^2 (df)	None Number (% ^b)	Moderate	High	High χ^2 (df)	No Number (% ^b)	Yes	Yes χ^2 (df)		
<i>Gender</i>											
Female	214 (89.5)	25 (10.5)	117 (48.3)	70 (28.9)	55 (22.7)	6.51*	154 (63.6)	88 (36.4)	0.091	302 (55.2)	
Male	150 (90.4)	16 (9.6)	101 (59.8)	44 (26.0)	24 (14.2)		110 (65.1)	59 (34.9)		245 (44.8)	
<i>HH Sf</i>											
2 parent	243 (89.0)	30 (11.0)	159 (57.6)	74 (26.8)	43 (15.6)	8.63	187 (67.8)	89 (32.2)	4.64	367 (67.1)	
1 parent	62 (92.5)	5 (7.5)	33 (50.0)	17 (25.8)	16 (24.2)		39 (59.1)	27 (40.9)		106 (19.4)	
Steppar ^c	35 (87.5)	5 (12.5)	15 (37.5)	13 (32.5)	12 (30.0)		21 (52.5)	19 (47.5)		74 (13.5)	
<i>Imm Sf</i>											
1 st /2 nd	277 (90.8)	28 (9.2)	159 (51.8)	89 (29.0)	59 (19.2)	1.04(1)	191 (62.2)	116 (37.8)	2.15(1)	414 (75.7)	
3 rd +	87 (87.0)	13 (13.0)	59 (56.7)	25 (24.0)	20 (19.2)		73 (70.2)	31 (29.8)		133 (24.3)	
	Mean (SD)	F(df)	Mean (SD)	F(df)	Mean (SD)	F(df)	Mean (SD)	F(df)			
M Educ ^c	3.27 (1.64)	2.92 (1.89)	3.47 (1.67)	3.04 (1.67)	2.84 (1.53)	4.55(2)*	3.42 (1.62)	2.86 (1.67)	9.42(1)**	3.18 (1.63)	
Age	13.65 (0.87)	13.93 (0.93)	13.54 (0.86)	13.75 (0.89)	13.99 (0.83)	8.05(2)***	13.64 (0.88)	13.77 (0.87)	2.24(1)	13.73 (0.91)	
<i>N</i> (%) ^a	364 (89.9)	41 (10.1)	218 (53.0)	114 (27.7)	79 (19.2)		264 (64.2)	147 (35.8)			

^aTotal values column for demographics were calculated using data for entire sample (*N* = 547). Total values for COVID stressors shown on bottom row were calculated using data for subset of sample with no Time 3 survey or item-level missing data for hospitalization (*n* = 405) or for income loss and childcare responsibility (*n* = 411)

^bRow percent

^cHH St household structure, Steppar stepparent, Imm St immigrant generational status, M Educ maternal educational attainment

p* < 0.05 *p* < 0.01 ****p* < 0.001

Table 2 Mean (SD) scores for adolescent outcomes and for parental support by COVID stressors, $N = 547^a$

Variables		COVID stressors									Total ^a	
		Hospitalization			Job/income loss				Childcare responsibility			
		No	Yes	F(df)	None	Moderate	High	F(df)	No	Yes		F(df)
<i>Internalizing</i>												
Mean	T1	13.22	18.05	7.60(1)**	11.76	15.38	17.31	9.30(2)***	12.91	15.33	4.58(1)*	13.97
(SD)		(10.47)	(10.61)		(8.71)	(11.92)	(12.04)		(10.22)	(10.95)		(10.77)
	T2	13.42	17.55	4.60(1)*	12.50	14.84	16.21	3.46(2)*	13.25	14.91	1.90(1)	13.60
		(10.61)	(10.67)		(10.71)	(11.75)	(12.02)		(11.19)	(11.53)		(11.27)
	T4	15.09	19.46	4.63(1)*	14.18	16.08	19.11	4.57(2)*	13.83	18.90	15.88(1)***	15.64
		(12.18)	(10.63)		(11.41)	(12.44)	(12.92)		11.30	12.87		(12.01)
<i>Externalizing</i>												
Mean	T1	8.67	11.60	6.53(1)*	8.17	8.34	8.77	3.73(2)*	8.65	9.52	1.41(1)	9.29
(SD)		(6.94)	(6.16)		(5.96)	(8.22)	(7.17)		(6.76)	(6.77)		(7.17)
	T2	8.45	11.16	3.99(2)*	9.45	8.48	9.07	1.68(2)	8.34	9.47	1.77(1)	8.74
		(8.02)	(7.05)		(7.25)	(6.44)	(7.12)		(7.85)	(8.09)		(7.87)
	T4	8.92	11.15	3.30(1)	10.57	10.30	10.59	1.64(2)	8.53	10.40	5.71(1)*	9.32
		(7.29)	(7.16)		(7.90)	(9.01)	(8.06)		(7.37)	(7.15)		(7.41)
<i>GPA^c</i>												
Mean	T2	3.19	3.13	0.21	3.19	3.20	3.17	0.08	3.20	3.16	0.29	3.15
(SD)		(0.69)	(0.72)		(0.63)	(0.76)	(0.66)		(0.68)	(0.66)		(0.72)
	T4	3.05	3.07	0.01	3.06	3.06	3.00	0.16	3.12	2.93	4.38*	3.02
		(0.86)	(0.64)		(0.82)	(0.84)	(0.89)		(0.79)	(0.91)		(0.85)
<i>Parental support</i>												
Mean	T3	3.81	3.75	0.15	3.91	3.72	3.67	2.18	3.91	3.63	7.05**	3.81
(SD)		(1.03)	(0.97)		(1.04)	(1.04)	(0.95)		(0.98)	(1.09)		(1.03)
Total	N	364	41		218	114	79		264	147		
	(%)	(89.9)	(10.1)		(53.0)	(27.7)	(19.2)		(64.2)	(35.8)		

^aMean (SD) Column values for adolescent outcomes calculated using complete case data for the respective time point ($n = 405$ for hospitalization; $n = 411$ for income loss and childcare burden)

^bTotal values column for COVID stressors were calculated using data for subset of sample with no Time 3 survey or item-level missing data M

^cInt Internalizing symptoms, Ext Externalizing symptoms, GPA grade point average. GPA was not available in the Time 1 data.

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

likely to report increased childcare responsibility if they reported health and economic COVID stressors. Specifically, among adolescents reporting that a household member had been hospitalized, 63% indicated that they had taken on more childcare responsibility since the pandemic's onset, compared to 32% of those who did not report hospitalization ($\chi^2(2) = 15.55, p < 0.001$). Childcare responsibility also was more prevalent among adolescents reporting both economic stressors (52%) or a single economic stressor (40%), compared to no economic stressors (32%; $\chi^2(2) = 16.44, p < 0.001$).

Demographic differences in COVID stressors shown in Table 1 indicated that household job/income loss due to COVID was significantly more prevalent among adolescents who were older, who were female, and whose mothers had less education. In addition, adolescents' increased

childcare responsibility due to COVID was more prevalent among adolescents whose mothers had less education. There were no gender differences in reports of a household hospitalization or increased responsibility for childcare.

Table 2 presents differences in mean scores for adolescent adjustment and parental support by COVID stressors. Adolescents had higher levels of internalizing symptoms both before and during COVID when reporting any of the three stressors—household hospitalization, job/income loss, and increased childcare responsibility. Adolescents pre-COVID levels of externalizing symptoms also were higher for adolescents reporting hospitalization and job/income loss (for job/income loss, only T1 pre-COVID externalizing symptoms were higher). Finally, during COVID, adolescents reported higher externalizing symptoms, a lower GPA, and less parental support if they had

experienced increased childcare responsibility since the pandemic's onset.

Measurement Validity

COVID Stressors

Because the COVID stressors were a phenomenon that had not been measured previously when we went into the field, we had to quickly develop a new measure for this study (a challenge multiple research teams faced). Given this measure's centrality to our analyses, we report preliminary data supporting its validity. Specifically, we tested bivariate associations between our new items and other variables from the parent data set that were not included in this study's primary analytic models. As evidence of discriminant validity, adolescents' increased childcare responsibility due to COVID was associated with adolescent reports of a household member's hospitalization but not with reports of a *non-household* family member's hospitalization. While 63% of adolescents reporting a household member's COVID hospitalization reported increased childcare responsibility, just 39% of those reporting a *non-household* members' COVID hospitalization reported this stressor. Support for convergent validity was indicated by associations between adolescents' pandemic-related increased childcare responsibility and their engagement in family assistance behaviors during the prior two weeks (responses ranged from 0 to 14 days; Telzer & Fuligni, 2009). Specifically, mean scores for childcare-related family assistance behaviors, such as caring for siblings, running errands for the family, and helping siblings and family members with homework, were significantly higher for adolescents reporting COVID-related childcare responsibility. However, mean scores for items assessing non-childcare related family assistance behaviors, such as cleaning, cooking, and helping parents at work, were not associated with adolescent reports of childcare responsibility. Evidence for the validity of COVID-related household job/income loss was indicated by data linking financial impacts of the pandemic and adolescents living in families of lower socioeconomic status. Specifically, mothers' educational attainment was significantly lower among adolescents reporting household job loss *or* family financial problems ($M = 3.04$, $SD = 1.67$) and among adolescents reporting *both* household job loss *and* financial problems ($M = 2.84$, $SD = 1.53$), than for adolescents reporting neither stressor ($M = 3.47$, $SD = 1.67$). Finally, the validity of reports of a household member's hospitalization due to COVID was supported by adolescent reports of a household death due to COVID (an outcome that was too rare to be included in analyses). Specifically, 100% of adolescents reporting a household death due to COVID

($n = 18$, 3.3%) had reported a household member's hospitalization due to COVID.

Measurement Model for Latent Constructs

The measurement model with latent constructs for T1, T2, and T4 externalizing and internalizing symptoms and T3 parental support indicated acceptable model fit ($\chi^2 = 240.510$, $df = 111$, $p < 0.001$; RMSEA = 0.048, 90% CI [0.040–0.056]; CFI = 0.979; TLI = 0.971; SRMR = 0.037). Standardized factor loadings across time points ranged from 0.70 to 0.90 for internalizing symptoms, from 0.73 to 0.87 for externalizing symptoms, and from 0.93 to 0.95 for parental support. Changes in model fit statistics indicated measurement invariance across gender and time (results available from authors).

Adolescent Adjustment Changes from Before to During COVID

Change in chi-square model fit indicated no significant changes in internalizing and externalizing symptoms from T1 to T2 (pre-COVID time points). Thus, the subsequent analyses examined changes in adolescent adjustment from before COVID (T1 and T2) to during COVID (T4), by comparing chi-square fit statistics for a model in which means for internalizing and externalizing symptoms were constrained to be equal over time ($T1 = T2 = T4$), versus a model where the means for these outcomes were allowed to differ at Time 4 ($T1 = T2 \neq T4$). In the case of GPA, which was not assessed at T1, changes in chi-square model fit compared a model with GPA constrained to be equal versus freed at T2 and T4. Due to significant gender differences in changes over time (full results available for the authors), multiple group models were run by gender. Results indicated that Latina adolescent girls experienced significant increases in internalizing symptoms ($\Delta\chi^2$ (Δdf) = 14.20 (1), $p < 0.001$) and declines in GPA ($\Delta\chi^2$ (Δdf) = 9.47 (1), $p < 0.01$) from before to during COVID. Latent mean scores for girls' internalizing symptoms increased from 0.57 (SE = 0.02) to 0.66 (SE = 0.03) and mean GPA scores declined from 3.22 (SE = 0.04) to 3.01 (SE = 0.06). There were no significant changes in externalizing symptoms for adolescent girls or in any indicators of adjustment for adolescent boys.

COVID Stressors and Changes in Adolescent Adjustment

Structural equation model results shown in Table 3 were based on models run using the entire sample due to the lack of statistically significant gender differences from multiple group models. Results indicated that adolescents' greater

Table 3 Direct and indirect effects: associations between COVID stressors and changes in Latinx adolescents' adjustment over time ($N = 547$)^{a,b}

	β (SE)	95% CI ^{c,d}
<i>Direct Effects of COVID Stressors</i>		
Childcare responsibility		
→ Internalizing	0.15** (0.04)	0.05, 0.17
→ Externalizing	0.09* (0.04)	0.004, 0.08
→ GPA	-0.09* (0.04)	-0.31, -0.005
Hospitalization		
→ Childcare responsibility	0.18*** (0.05)	0.14, 0.44
Job/income loss		
→ Childcare responsibility	0.15** (0.05)	0.04, 0.154
<i>Indirect Effects of COVID Stressors</i>		
Hospitalization		
→ Childcare responsibility → Internalizing	0.03	0.01, 0.05
→ Childcare responsibility → Externalizing	0.02	0.00, 0.04
→ Childcare responsibility → Grade point average	-0.02	-0.04, 0.00
Job/income loss		
→ Childcare responsibility → Internalizing	0.02	0.01, 0.05
→ Childcare responsibility → Externalizing	0.01	0.00, 0.03
→ Childcare responsibility → Grade point average	-0.01	-0.03, 0.00

^aEstimates for statistically significant direct and indirect effects, controlling for Times 1 and 2 adolescent adjustment and Time 1 adolescent gender, adolescent age, household structure, and maternal education

^bStandardized coefficients are provided

^cCI = 95% confidence interval

^dBecause indirect effects are not normally distributed, significance is evaluated using estimates for the CI from a bootstrapped ($n = 5000$) model. Model fit statistics: $\chi^2 = 661.016$, $df = 230$, $p < 0.001$; RMSEA = 0.059, 90% CI [0.053–0.064]; CFI = 0.918; TLI = 0.090; SRMR = 0.074.

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

childcare responsibility since COVID was associated with increased internalizing ($\beta = 0.15$, $SE = 0.04$, $p < 0.01$) and externalizing ($\beta = 0.09$, $SE = 0.04$, $p < 0.05$) symptoms and declines in GPA ($\beta = -0.09$, $SE = 0.04$, $p < 0.05$) from before to during COVID. Effect sizes for childcare coefficients, assessed by calculating the *Cohen's d*, indicated moderate effects of childcare responsibility on internalizing symptoms (0.32) and small effects of childcare responsibility on externalizing symptoms (0.19) and GPA (0.16). There were no statistically significant direct paths from household hospitalization and family job/income loss to changes in Latinx adolescent adjustment. At each time point, there were positive associations between internalizing

and externalizing symptoms. Furthermore, at T4, a higher GPA was associated with lower scores for internalizing and externalizing symptoms. Finally, none of the parental support X COVID stressor interaction terms demonstrated a significant association with adolescents' internalizing symptoms, externalizing symptoms or GPA at T4. Thus, there was no evidence to suggest that parental support moderated associations between COVID stressors and T4 adolescent outcomes.

Post hoc Analyses

A noteworthy finding from the structural models was the fact that adolescent childcare responsibility was the sole COVID stressor associated with increased mental health symptomology and worse GPA. Moreover, bivariate results showed that adolescents reporting household hospitalization and those reporting household job/income loss were significantly more likely to than others to report having taken on greater responsibility for childcare since COVID's onset. The salience of adolescent childcare responsibility to COVID health and income stressors and adolescent adjustment, coupled with research reviewed earlier noting the importance of Latinx youth's assistance with family responsibilities (Stein et al., 2014; Tsai et al., 2013), led to our conducting post hoc analyses exploring pathways from COVID stressors to adjustment outcomes. Specifically, we examined the potential indirect effects of COVID-related household hospitalization and job/income loss on adolescent adjustment through adolescents' childcare responsibility. Indirect effects were examined by estimating total, direct, and indirect effects using a bias-corrected bootstrapping procedure with $n = 5,000$ draws, which resulted in point estimates and 95% confidence intervals. A 95% confidence interval of the indirect effect pathway that does not include zero indicates a significant mediating effect (Preacher & Hayes, 2008).

As shown in Fig. 1, hospitalization and job/income loss were associated with adolescents' greater childcare responsibility since the onset of COVID. Statistically significant indirect paths were shown from household hospitalization and job/income loss to increased internalizing symptoms through childcare responsibility. The same indirect paths were marginally statistically significant predictors of increased externalizing symptoms and decreased GPA. The final indirect model demonstrated strong model fit ($\chi^2 = 661.016$, $df = 230$, $p < 0.001$; RMSEA = 0.059, 90% CI [0.053–0.064]; CFI = 0.918; TLI = 0.090; SRMR = 0.074).

Alternate Models

Alternate models strengthened the validity of findings for direct and indirect effects described above. First, structural

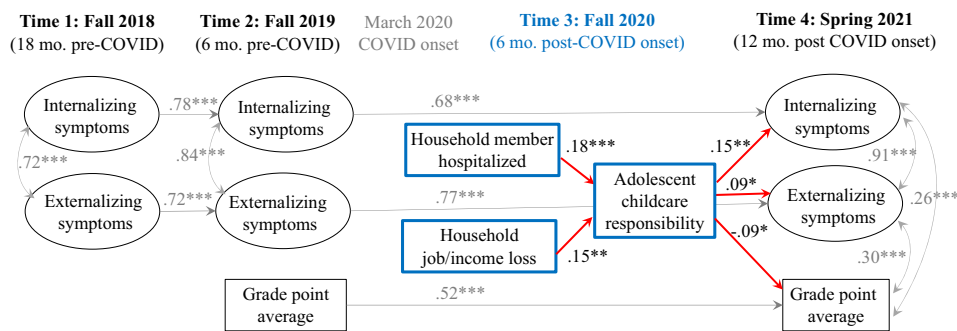


Fig. 1 Longitudinal associations between COVID stressors and changes in Latinx adolescent adjustment from before to during COVID, $N = 547$. Unstandardized coefficients shown; only statistically significant ($p < 0.05$) paths shown. Models adjust for adolescent

gender, age, household structure, and maternal education. Model fit statistics: $\chi^2 = 661.016$, $df = 230$, $p < 0.001$; RMSEA = 0.059, 90% CI [0.053–0.064]; CFI = 0.918; TLI = 0.090; SRMR = 0.074. * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

model results remained essentially unchanged when run omitting adolescents whose data were missing due to attrition (i.e., not addressed using FIML). Second, associations between COVID stressors and adolescent outcomes held across adolescent ages and across levels of maternal education, as indicated by the lack of significant interaction terms between COVID stressors and these demographic variables. Finally, the structural-model results persisted in models that included an indicator of the adolescent being in the lagged (versus main) sample and of the school having a moderate or high concentration of Latinx students, compared to a low concentration of Latinx students.

Discussion

The present study addressed several gaps in research examining how the COVID pandemic has affected adolescent adjustment. First, very few studies on COVID have focused on Latinx adolescents, a group whose families and communities have been especially hard hit by health, economic, and social stressors tied to the pandemic (APM Research Lab, 2021; CDC, 2020; Despres, 2021). Second, studies to date mostly have been informative about short-term changes in adolescent adjustment, leaving important gaps in knowledge about adjustment outcomes occurring many months after the pandemic's onset. Third, few studies have documented the prevalence of specific COVID stressors such as household hospitalization, household job and income loss, and increased childcare responsibility, especially for Latinx adolescents. Fourth, it has not been known how these COVID-related stressors matter for changes in adolescent adjustment. Finally, it has been unclear if and how family protective factors, such as a supportive parent–child relationship, may help buffer adolescents from harmful impacts of COVID stressors on adolescents' adjustment. Using data collected from 2018 through 2021 for a probability sample of Latinx adolescents, the present

study described COVID-related changes in adolescent adjustment and the prevalence of COVID stressors, associations between COVID stressors and changes in adolescent adjustment occurring from 6 months before to 12 months after the pandemic's onset, and moderating impacts of parental support on associations between COVID stressors and changes in adolescent outcomes. Study results suggest that adolescents' greater childcare burden due to COVID may have led to significant increases in mental health symptomology and declines in school performance among U.S. Latinx adolescents.

Pre- to During COVID Changes in Latinx Adolescent Adjustment

Consistent with research conducted among adolescents living in Europe (Alt, Reim, & Walper, 2021; Gracia et al., 2021; Salema-Ara et al., 2021), Canada (DeFrance et al., 2021) and in low-risk communities in the U.S. (e.g., Deng et al., 2021; Romm et al., 2021), our results offer some, albeit limited, evidence suggesting COVID-related declines in adolescent well-being. Among this school-based, probability sample of Latinx adolescents, girls experienced increased internalizing symptoms and worse school performance from before to after the onset of the pandemic. There were no significant changes in girls' externalizing behaviors during this time frame. Thus, while the social isolation resulting from COVID shutdowns and restricted social activities may increase Latina girls' symptoms of depression and anxiety and problems focusing on schoolwork, it may also limit opportunities for unsupervised peer contact, an important precursor of externalizing behaviors (Pettit et al., 1999). As in other studies (e.g., Deng et al., 2021; Lane et al., 2021), pandemic-related changes in adolescent adjustment are not universal. It remains unclear why pre- to during-COVID changes in adjustment were shown only among girls, especially since girls did not report greater childcare responsibility than boys. One

possible explanation is that limited social connections exacerbate adolescent girls' pre-existing vulnerabilities to internalizing symptoms (Magson et al., 2021) and, by extension, may compromise their ability to successfully carry out schoolwork.

This study's findings for pre- to during COVID changes in adolescent adjustment differ in important ways from those shown in the only other study of which we are aware focused specifically on U.S. Latinx young adolescents (Penner et al., 2021). In that research, adolescents experienced significant *declines* in internalizing and externalizing symptoms from before to during COVID. Importantly, the data used in that study were collected approximately just one month into the pandemic. Increased family time and less stress in the school environment may have benefitted adolescents in the early weeks following COVID's onset, but shutdowns and restrictions over time could elevate adolescent problems in adjustment. Until a larger body of research examining the pandemic's long-term impacts on adolescents becomes available, findings about pandemic-related changes in adolescent adjustment remain fairly inconclusive. There is value, however, in considering how adversities experienced in families may lead to initial short-term benefits for adolescents as families rally together to cope, but to longer term harm as families and adolescents become less able to cope.

The Prevalence of COVID Stressors Among Latinx Adolescents

Validating existing research (Penner et al., 2021) as well as nonscientific reports (Krogstad & Lopez, 2020; Lopez, Rainie, & Budiman, 2020), COVID-related stressors appear to be fairly prevalent among U.S. Latinx adolescents and their families. Six months into the pandemic, 1 in 10 Latinx adolescents in this probability sample reported that a household member had been hospitalized due to COVID, over one-third had taken on greater responsibility for childcare, and almost half reported that a household member had experienced job loss/reduced work hours *or* that the family had experienced increased financial problems since the start of the pandemic. Consistent with findings from prior research showing stronger increases in perceived stress for adolescents in low to moderate education families, as compared to high education families (Collier Villaume et al., 2021), we find a higher prevalence of pandemic stressors for adolescents of low education mothers. Specifically, mothers' educational attainment was significantly lower among adolescents reporting COVID-related increases in adolescent childcare responsibility and household job and income loss. Our research also indicates that adolescent reports of household job and income loss due to COVID are more prevalent among older adolescents and female

adolescents. These gender and age differences may reflect the more mature brain development of older adolescents and of adolescent girls, compared to adolescent boys. For example, advances in cognition and social perception facilitate understanding others and being aware of others' experience of stressors (Kroger, 2007; Orben, Tomova, & Blakemore, 2020). Relatedly, parents are more likely to include their cognitively mature adolescents in family conversations about serious issues such as those occurring as result of today's pandemic (Smetana & Villalobos, 2009). It is noteworthy that adolescent reports of COVID-related hospitalizations, an event any adolescent would easily observe regardless of cognitive development, did not differ by any demographic characteristics.

Impacts of COVID Stressors on Changes in Latinx Adolescents' Mental Health and School Performance

Although we expected that a household member's COVID hospitalization and job and income loss would contribute directly to adolescents' poor outcomes, adolescents' increased childcare responsibility was the only COVID stressor to show a direct association with changes in Latinx adolescent adjustment. Even after controlling for demographic characteristics and pre-COVID levels of adolescent symptomatology and school performance, adolescents' greater childcare responsibility was associated with increased internalizing and externalizing symptoms and declines in grade point average from before to during COVID. In this regard, our findings align with Telzer and colleagues' pre-COVID daily diary research indicating that Latinx adolescents' family assistance behaviors were associated with increased internalizing symptoms on days when parents reported more psychological distress and physical symptoms of stress (Telzer et al., 2015). In our study, adolescent's increased childcare responsibility, one form of family assistance behaviors, appears to have contributed to increased internalizing *and* externalizing symptoms and to worse school performance since the pandemic's onset, an acute stressor for many Latinx families. Adolescents' shift in attention toward childcare may compromise mental health and school performance by disrupting adolescents' own self-development processes including identity development, establishment of autonomy, and time spent with peers. Time spent caring for children also can limit adolescents' available time and energy for completing their own homework and for participating in healthy coping strategies such as social and/or physical activities.

Given that families, especially those from Latin American countries, play a critical role in facilitating adolescent resilience (Cardoso & Thompson, 2010), COVID stressors were anticipated to be less harmful to adolescent adjustment within a context of greater parental support. Prime and

colleagues offer that close family relationships and family beliefs can help facilitate children's growth and connection that, in turn enhance children's ability to cope with pandemic-related threats (Prime, Wade, & Browne, 2020). For adolescents in this study, however, parental support did not moderate associations between the three COVID stressors and indicators of adolescent adjustment. These null findings align with those of Eales and colleagues who found that COVID-related events were associated with increased distress among young children and were not mitigated by positive parenting behaviors or improvements in family dynamics. Speculating about reasons for the lack of buffering effects from parental support, we consider the unique nature of adolescents' increased childcare responsibility. Adolescents who take on increased childcare responsibility experience a direct infringement on their own autonomy development and time with peers most likely *because* their parent is no longer able to fulfill this responsibility. In this scenario, the material demands that a parent places on their adolescent child's time and attention far outweigh any emotional support that may occur through parents' warmth, understanding, and attentiveness.

Although the present study did not identify parental support as significant moderator of COVID-related stressors on adolescent adjustment, prior research suggests the potential value of other individual, family and community factors helping adolescents cope with adversity. Individual adolescent traits may help lessen impacts of pandemic stressors on adolescent adjustment (Alt et al., 2021). Salmela-Arlo and colleagues found that adolescents' socio-emotional skills, such as curiosity, grit, and social engagement, were related to improvements in academic well-being (i.e., school engagement and less burnout) from before to after the onset of COVID (Salmela-Arlo et al., 2021). At the family-level, it may be useful to consider the degree to which other adults are available to help fulfill family responsibilities when health or economic stressors interfere with parents' ability to carry out these tasks themselves. Some research also suggests the potentially unique support that may come from fathers. Researchers found, for example, that positive relationships with fathers, but not mothers, related to better youth adjustment over time during the pandemic (Campione-Barr et al., 2021). Finally, it is important to consider that communities and governments supporting families experiencing health, economic, and childcare strains may go a long way in helping to mitigate risks to adolescent adjustment (Eales et al., 2021).

Our understanding of the direct effects of COVID stressors on changes in adolescent adjustment would be incomplete without a consideration of indirect effects shown in post hoc analyses. Here, we find that COVID-related household hospitalization and household job/income

loss did predict internalizing and externalizing symptoms and grade point average, albeit indirectly, through adolescents' increased childcare responsibility (the statistical significance of indirect effects for the latter two outcomes was marginal based on 95% confidence intervals reaching a value of zero). Thus, adolescents' increased responsibility for childcare since the pandemic's onset may be a mechanism through which COVID-related household hospitalization and job and income loss are harmful to Latinx adolescents' internalizing symptoms and, to a lesser extent, adolescents' externalizing symptoms and school performance. Our findings align with the Latino cultural value of familism, emphasizing the primacy of family over self. In the face of family experiences that may place a strain on family routines and functions, such as the ability to take care of children, Latinx adolescents appear to take on an increased burden for family caretaking. For instance, 63% of adolescents reporting a household member's COVID hospitalization took on more responsibility for childcare, compared to just 32% of adolescents not reporting a hospitalization. Similarly, 52% of adolescents reporting both of the COVID economic stressors (i.e., job/income loss and increased financial problems) took on greater childcare responsibility, compared to 40% of adolescents reporting one economic stressor and 28% of adolescents reporting no economic stressors.

Findings for indirect effects linking health and economic stress through adolescent childcare responsibility to adolescent outcomes bear some resemblance to findings from studies informed by the family stress model. Family stress model research has shown that stressors, such as family financial strain and/or neighborhood danger, may disrupt effective parenting processes and, as a result, lead to worse outcomes for adolescents, including those in Latinx families (Martin et al., 2019; White et al., 2015, 2019). Our research suggests the value of expanding the family stress model beyond its current focus on parenting processes as intervening variables. It may be that stressors also affect adolescents' roles and responsibilities, such as providing childcare assistance, and that this, in turn, can cause adolescents to experience increased emotional distress, worse school performance, and elevated problem behaviors.

Strengths and Limitations

Novelty and scientific rigor represent notable strengths of the present study. With four time points of data following a probability sample of Latinx adolescents from 2018 to 2021, our research was able to identify *changes* in diverse indicators of adjustment occurring after the onset of COVID stressors. Moreover, whereas much of the prior research has assessed perceived stress and worry about the pandemic,

our study measured COVID-related household hospitalization, job/income loss, and childcare responsibility which can be objectively self-reported more easily than pandemic-related emotions and worries. Finally, our findings offer a unique look at how Latinx adolescents are faring one year into the pandemic. In doing so, our findings expand on prior studies that have focused primarily on adjustment outcomes occurring within the first few months of the pandemic's onset (e.g., Penner et al., 2021; Romm et al., 2021).

Despite its many strengths, our study has some important limitations. First, COVID stressors were all reported at a single time point (T3, Fall 2020), making it difficult to identify which stressors temporally preceded and potentially caused others. Although we suspect that reported household hospitalization and job/income loss may cause adolescents to take on more childcare responsibility, we cannot be certain that health and economic stressors were the precipitating factor leading to changes in adolescents' childcare responsibility. Measurement validity also is a concern given the use of single-item, 0/1 COVID stressor measures overlooking more nuanced aspects of COVID stressors. For example, it would be valuable to know more about the nature of our participants' increased childcare responsibilities, such as the ages of other children living at home, and whether adolescents were caring for their own siblings or relatives at home, for children living with family outside the home, or for children in their community. Given the centrality of childcare responsibility for explaining pandemic effects on adolescents' adjustment, future research would be well served to examine how the pandemic's childcare crisis has affected adolescent children. Finally, given the present study's focus on adolescents from a single school district and living in a new immigrant area, study findings may not generalize to Latinx adolescents nationally or to those living in more established immigrant areas.

Conclusion

Although a growing number of studies have investigated adolescent adjustment within the context of today's pandemic, a critical gap in this research has been limited inquiry into impacts of COVID-related health, economic, and social stressors on adolescents' adjustment, especially within the hard-hit Latinx community. For a probability sample of Latinx adolescents, the present study examined how experiences of COVID-related household hospitalization, job and income loss, and adolescents' increased childcare responsibility were associated with changes in adolescents' internalizing and externalizing symptoms and GPA from before to one year after the pandemic's onset. The study's results suggest that Latina adolescent girls experienced significant increases in internalizing symptoms

and declines in GPA from before to during COVID and that increased childcare responsibility due to COVID was associated with adolescent girls' and boys' increased internalizing and externalizing symptoms and declines in GPA. Although household hospitalization and job and income loss due to COVID did not have direct effects on adolescent adjustment, these household stressors appeared to have been harmful indirectly to adolescents' adjustment, especially internalizing symptoms, through increases in adolescents' childcare responsibility. Taken together, these findings point to the critical importance of research on seemingly benign experiences, such as adolescents' childcare responsibility, to better understand how environmental stressors impacting families may compromise adolescent adjustment. As adversities including, but not limited to, the COVID pandemic continue to unfold and affect families, researchers must consider the ways in which adversity-related demands placed on adolescents affect their mental health, behavioral risks, and school performance.

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Data Sharing Declaration After the final time point of data collection (2026) and after investigators have completed analyses addressing primary study aims, this manuscript's data will be available upon request to the study's first author.

Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

Ethical Approval The research has been approved by the IRB from the George Washington University. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all parents/guardians of participants, and assent was obtained from all participants included in the study.

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References

- Achenbach, T. M. (1991). *Manual for the Youth Self-Report Form and 1991 Profile*. Burlington, VT: Department of Psychiatry, University of Vermont.
- Alt, P., Reim, J., & Walper, S. (2021). Fall from grace: Increased loneliness and depressiveness among extraverted youth during the German COVID-19 lockdown. *Journal of Research on Adolescence*, 31(3), 678–691. <https://doi.org/10.1111/jora.12648>.
- APM Research Lab. (2021, March 5). *The color of coronavirus: COVID-19 deaths by race and ethnicity in the U.S.* Retrieved February 14, 2021, from <https://www.apmresearchlab.org/covid/deaths-by-race>.
- Ayón, C., Marsiglia, F. F., & Bermudez-Parsai, M. (2010). Latino family mental health: Exploring the role of discrimination and familismo. *Journal of Community Psychology*, 38(6), 742–756. <https://doi.org/10.1002/jcop.20392>.
- Behnke, A. O., Plunkett, S. W., Sands, T., & Bámaca-Colbert, M. Y. (2011). The relationship between Latino adolescents' perceptions of discrimination, neighborhood risk, and parenting on self-esteem and depressive symptoms. *Journal of Cross-Cultural Psychology*, 42(7), 1179–1197. <https://doi.org/10.1177/0022022110383424>.
- Bennett, M., Roche, K. M., Huebner, D. M. & Lambert, S. F. (2020). School discrimination and changes in Latinx adolescents' internalizing and externalizing symptoms. *Journal of Youth and Adolescence*, 49(10), 2020–2033. <https://doi.org/10.1007/s10964-020-01256-4>.
- Bernasco, E. L., Nelemans, S. A., van der Graaff, J., & Branje, S. (2021). Friend support and internalizing symptoms in early adolescence during COVID-19. *Journal of Research on Adolescence*, 31(3), 692–702. <https://doi.org/10.1111/jora.12662>.
- Calzada, E. J., Tamis-Lemonda, C. S., & Yoshikawa, H. (2013). Familismo in Mexican and Dominican families from low-income, urban communities. *Journal of Family Issues*, 34(12), 1696–1724. <https://doi.org/10.1177/0192513x12460218>.
- Campione-Barr, N., Rote, W., Killoren, S. E., & Rose, A. J. (2021). Adolescent adjustment during COVID-19: The role of close relationships and COVID-19-related stress. *Journal of Research on Adolescence*, 31(3), 608–622. <https://doi.org/10.1111/jora.12647>.
- Cardoso, J. B., & Thompson, S. J. (2010). Common themes of resilience among Latino immigrant families: A systematic review of the literature. *Families in Society*, 91(3), 257–265. <https://doi.org/10.1606/1044-3894.4003>.
- Carlo, G., White, R. M. B., Streit, C., Knight, G. P., & Zeiders, K. H. (2018). Longitudinal relations among parenting styles, prosocial behaviors, and academic outcomes in U.S. Mexican adolescents. *Child Development*, 89(2), 577–592. [gc722w](https://doi.org/10.1111/cdev.12722).
- Center for Disease Control and Prevention (2020a). *Demographic trends of COVID-19 cases and deaths in the US reported to CDC*. Retrieved May 22, 2021 from <https://covid.cdc.gov/covid-data-tracker/#demographics>.
- Cohodes, E. M., McCauley, S., & Gee, D. G. (2021). Parental buffering of stress in the time of COVID-19: Family-level factors may moderate the association between pandemic-related stress and youth symptomatology. *Research on Child and Adolescent Psychopathology*, 49(7), 935–948. <https://doi.org/10.1007/s10802-020-00732-6>.
- Collier Villaume, S., Stephens, J. E., Nwafor, E. E., Umaña-Taylor, A. J., & Adam, E. K. (2021). High parental education protects against changes in adolescent stress and mood early in the COVID-19 pandemic. *The Journal of Adolescent Health*, 69(4), 549–556. <https://doi.org/10.1016/j.jadohealth.2021.06.012>.
- Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*, 127(1), 87–127.
- Conger, R. D., Ge, X., Elder, Jr, G. H., Lorenz, F. O., & Simons, R. L. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Development*, 65(2 Spec No), 541–561.
- De France, K., Hancock, G. R., Stack, D. M., Serbin, L. A., & Hollenstein, T. (2021). The mental health implications of COVID-19 for adolescents: Follow-up of a four-wave longitudinal study during the pandemic. *American Psychologist*. Advance online publication. <https://doi.org/10.1037/amp0000838>.
- Delgado, M., Killoren, S., & Updegraff, K. (2013). Economic hardship and Mexican-origin adolescents' adjustment: Examining adolescents' perceptions of hardship and parent-adolescent relationship quality. *Journal of Family Psychology*, 27(5), 827–837. <https://doi.org/10.1037/a0033737>.
- Deng, W., Gadassi Polack, R., Creighton, M., Kober, H., & Joormann, J. (2021). Predicting negative and positive affect during COVID-19: A daily diary study in youths. *Journal of Research on Adolescence*, 31(3), 500–516. <https://doi.org/10.1111/jora.12646>.
- Despres, C. (2021, May 1). *Update: Coronavirus case rates and death rates for Latinos in the United States*. *Salud-America*. Retrieved May 22, 2021 from <https://salud-america.org/coronavirus-case-rates-and-death-rates-for-latinos-in-the-united-states/>.
- Dumka, L. E., Roosa, M. W., & Jackson, K. M. (1997). Risk, conflict, mothers' parenting, and children's adjustment in low-income, Mexican immigrant, and Mexican American families. *Journal of Marriage and the Family*, 309–323. <https://doi.org/10.2307/353472>.
- Eales, L., Ferguson, G. M., Gillespie, S., Smoyer, S., & Carlson, S. M. (2021). Family resilience and psychological distress in the COVID-19 pandemic: A mixed methods study. *Developmental Psychology*, 57(10), 1563–1581. <https://doi.org/10.1037/dev0001221>.
- Enders, C. K. (2010). *Applied Missing Data Analysis*. New York: Guilford Press.
- Gracia, R., Pamiás, M., Mortier, P., Alonso, J., Pérez, V., & Palao, D. (2021). Is the COVID-19 pandemic a risk factor for suicide attempts in adolescent girls? *Journal of Affective Disorders*, 292, 139–141. <https://doi.org/10.1016/j.jad.2021.05.044>.
- Hollenstein, T., Colasante, T., & Loughheed, J. P. (2021). Adolescent and maternal anxiety symptoms decreased but depressive symptoms increased before to during COVID-19 lockdown. *Journal of Research on Adolescence*, 31(3), 517–530. <https://doi.org/10.1111/jora.12663>.
- Janssens, J. J., Achterhof, R., Lafit, G., Bamps, E., Hagemann, N., Hiekkaranta, A. P., Hermans, K., Lecei, A., Myin-Germeys, I., & Kirtley, O. J. (2021). The impact of COVID-19 on adolescents' daily lives: The role of parent-child relationship quality. *Journal of Research on Adolescence*, 31(3), 623–644. <https://doi.org/10.1111/jora.12657>.
- Kaiser Family Foundation (2022). *State COVID-19 Data and Policy Actions*. Published on February 22, 2022. Accessed on March 5, 2022 from <https://www.kff.org/report-section/state-covid-19-data-and-policy-actions-policy-actions/#socialdistancing>.
- Klootwijk, C., Koele, I. J., van Hoorn, J., Güroğlu, B., & van Duijvenvoorde, A. (2021). Parental support and positive mood buffer adolescents' academic motivation during the COVID-19 pandemic. *Journal of Research on Adolescence*, 31(3), 780–795. <https://doi.org/10.1111/jora.12660>.

- Knight, G. P., Roosa, M. W., & Umaña-Taylor, A. J. (2009). *Studying Ethnic Minority and Economically Disadvantaged Populations: Methodological Challenges and Best Practices*. Washington, DC: American Psychological Association.
- Kroger, J. (2007). *Identity Development: Adolescence through Adulthood, 2nd ed.* Thousand Oaks, CA, US: Sage Publications, Inc.
- Krogstad J. M., Lopez M. H. (2020, August 4). Coronavirus economic downturn has hit Latinos especially hard. Pew Research Center website. Retrieved October 5, 2020 from <https://www.pewresearch.org/hispanic/2020/08/04/coronavirus-economic-downturn-has-hit-latinos-especially-hard/>.
- Lane, J., Therriault, D., Dupuis, A., Gosselin, P., Smith, J., Ziam, S., Roy, M., Roberge, P., Drapreau, M., Morin, P., Berrigan, F., Thibault, I., & Dufour, M. (2021). The impact of the COVID-19 pandemic on the anxiety of adolescents in Québec. *Child & Youth Care Forum*, 1–23. Advance online publication. <https://doi.org/10.1007/s10566-021-09655-9>.
- Lopez M. H., Rainie L., Budiman A. (2020, May 5). *Financial and health impacts of COVID-19 vary widely by race and ethnicity*. Pew Research Center. Retrieved July 30, 2020 from <https://www.pewresearch.org/fact-tank/2020/05/05/financial-and-health-impacts-of-covid-19-vary-widely-by-race-and-ethnicity/>.
- Mack, K. Y., Peck, J. H., & Leiber, M. J. (2015). The effects of family structure and family processes on externalizing and internalizing behaviors of male and female youth: A longitudinal examination. *Deviant Behavior*, 36(9), 740–764.
- Magson, N. R., Freeman, J., Rapee, R. M., Richardson, C. E., Oar, E. L., & Fardouly, J. (2021). Risk and protective factors for prospective changes in adolescent mental health during the COVID-19 pandemic. *Journal of Youth and Adolescence*, 50(1), 44–57. <https://doi.org/10.1007/s10964-020-01332-9>.
- Martin, M. J., Conger, R. D., & Robins, R. W. (2019). Family stress processes and drug and alcohol use by Mexican American adolescents. *Developmental Psychology*, 55(1), 170–183. <https://doi.org/10.1037/dev0000629>.
- Maslowsky, J., Schulenberg, J. E., & Zucker, R. A. (2014). Influence of conduct problems and depressive symptomatology on adolescent substance use: Developmentally proximal versus distal effects. *Developmental Psychology*, 50(4), 1179–1189.
- Masten, A. S., Roisman, G. I., & Long, J. D., et al. (2005). Developmental cascades: Linking academic achievement and externalizing and internalizing symptoms over 20 years. *Developmental Psychology*, 41(5), 733–746.
- Orben, A., Tomova, L., & Blakemore, S. J. (2020). The effects of social deprivation on adolescent development and mental health. *The Lancet: Child & Adolescent Health*, 4(8), 634–640. [https://doi.org/10.1016/S2352-4642\(20\)30186-3](https://doi.org/10.1016/S2352-4642(20)30186-3).
- Park, I., Wang, L., Williams, D. R., & Alegría, M. (2018). Coping with racism: Moderators of the discrimination-adjustment link among Mexican-origin adolescents. *Child Development*, 89(3), e293–e310. <https://doi.org/10.1111/cdev.12856>.
- Penner, F., Hernandez Ortiz, J., & Sharp, C. (2021). Change in youth mental health during the COVID-19 pandemic in a majority Hispanic/Latinx US sample. *Journal of the American Academy of Child and Adolescent Psychiatry*, 60(4), 513–523. <https://doi.org/10.1016/j.jaac.2020.12.027>.
- Pettit, G. S., Bates, J. E., Dodge, K. A., & Meece, D. W. (1999). The impact of after-school peer contact on early adolescent externalizing problems is moderated by parental monitoring, perceived neighborhood safety, and prior adjustment. *Child Development*, 70(3), 768–778. <https://doi.org/10.1111/1467-8624.00055>.
- Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *The American Psychologist*, 75(5), 631–643. <https://doi.org/10.1037/amp0000660>.
- Preacher, K. J. & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891.
- Putnick, D. L., & Bornstein, M. H. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review*, 41, 71–90. <https://doi.org/10.1016/j.dr.2016.06.004>.
- Qualtrics X. M. Research Core Survey Software. (2018) [Computer software]. Provo, UT: Qualtrics.
- Ravens-Sieberer, U., Kaman, A., Erhart, M., Otto, C., Devine, J., Löffler, C., Hurrelmann, K., Bullinger, M., Barkmann, C., Siegel, N. A., Simon, A. M., Wieler, L. H., Schlack, R., & Hölling, H. (2021). Quality of life and mental health in children and adolescents during the first year of the COVID-19 pandemic: Results of a two-wave nationwide population-based study. *European Child & Adolescent Psychiatry*, 1–14. Advance online publication. <https://doi.org/10.1007/s00787-021-01889-1>.
- Roche, K. M., White, R. M. B., Lambert, S. F., Schulenberg, J., Calzada, E. J., Kuperminc, G. P., & Little, T. D. (2020). Association of family member detention or deportation with Latino or Latina adolescents' later risks of suicidal ideation, alcohol use, and externalizing problems. *JAMA Pediatrics*, 174(5), 478–486. <https://doi.org/10.1001/jamapediatrics.2020.0014>.
- Romm, K. F., Park, Y. W., Hughes, J. L., & Gentzler, A. L. (2021). Risk and protective factors for changes in adolescent psychosocial adjustment during COVID-19. *Journal of Research on Adolescence*, 31(3), 546–559. <https://doi.org/10.1111/jora.12667>.
- Rubens, S. L., Gudiño, O. G., Fite, P. J., & Grande, J. M. (2018). Individual and neighborhood stressors, sleep problems, and symptoms of anxiety and depression among Latino youth. *The American Journal of Orthopsychiatry*, 88, 161–168. <https://doi.org/10.1037/ort0000234>.
- Salmela-Aro, K., Upadyaya, K., Vinni-Laakso, J., & Hietajärvi, L. (2021). Adolescents' longitudinal school engagement and burn-out before and during COVID-19: The role of socio-emotional skills. *Journal of Research on Adolescence*, 31(3), 796–807. <https://doi.org/10.1111/jora.12654>.
- Schaefer, E. S. (1965). A configurational analysis of children's reports of parent behavior. *Journal of Consulting Psychology*, 29(6), 552–557. <https://doi.org/10.1037/h0022702>.
- Skinner, A. T., Godwin, J., Alampay, L. P., Lansford, J. E., Bacchini, D., Bornstein, M. H., Deater-Deckard, K., Di Giunta, L., Dodge, K. A., Gurdal, S., Pastorelli, C., Sorbring, E., Steinberg, L., Tapanya, S., & Yotanyamaneewong, S. (2021). Parent-adolescent relationship quality as a moderator of links between COVID-19 disruption and reported changes in mothers' and young adults' adjustment in five countries. *Developmental Psychology*, 57(10), 1648–1666. <https://doi.org/10.1037/dev0001236>.
- Smetana, J. G., & Villalobos, M. (2009). Social cognitive development in adolescence. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of Adolescent Psychology*. 3rd ed. (pp. 187–228). Hoboken, NJ: John Wiley & Sons, Inc.
- Stein, G. L., Cupito, A. M., Mendez, J. L., Prandoni, J., Huq, N., & Westerberg, D. (2014). Familism through a developmental lens. *Journal of Latino Psychology*, 2(4), 224–250. <https://doi.org/10.1037/lat0000025>.
- Telzer, E. H., & Fuligni, A. J. (2009). Daily family assistance and the psychological well-being of adolescents from Latin American, Asian, and European backgrounds. *Developmental Psychology*, 45(4), 1177–1189. <https://doi.org/10.1037/a0014728>.
- Telzer, E. H., Tsai, K. M., Gonzales, N., & Fuligni, A. J. (2015). Mexican American adolescents' family obligation values and behaviors: Links to internalizing symptoms across time and context. *Developmental Psychology*, 51(1), 75–86. <https://doi.org.proxygw.wrlc.org/10.1037/a0038434>

- Tsai, K., Telzer, E., Gonzales, N., & Fuligni, A. (2013). Adolescents' daily assistance to the family in response to maternal need. *Journal of Marriage and Family*, 75(4), 964–980. <https://doi.org/10.1111/jomf.12035>.
- Wang, M. T., Henry, D. A., Del Toro, J., Scanlon, C. L., & Schall, J. D. (2021). COVID-19 employment status, dyadic family relationships, and child psychological well-being. *The Journal of Adolescent Health*, 69(5), 705–712. <https://doi.org/10.1016/j.jadohealth.2021.07.016>.
- Wang, M. T., Toro, J. D., Scanlon, C. L., Schall, J. D., Zhang, A. L., Belmont, A. M., Voltin, S. E., & Plevniak, K. A. (2021). The roles of stress, coping, and parental support in adolescent psychological well-being in the context of COVID-19: A daily-diary study. *Journal of Affective Disorders*, 294, 245–253. <https://doi.org/10.1016/j.jad.2021.06.082>.
- White, R., Pasco, M. C., Gonzales, N. A., Knight, G. P., & Burleson, E. (2019). U.S. Mexican parents' use of harsh parenting in the context of neighborhood danger. *Journal of Family Psychology*, 33(1), 77–87. <https://doi.org/10.1037/fam0000447>.
- White, R. M., Liu, Y., Nair, R. L., & Tein, J. Y. (2015). Longitudinal and integrative tests of family stress model effects on Mexican origin adolescents. *Developmental Psychology*, 51(5), 649–662. <https://doi.org/10.1037/a0038993>.

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