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Changes in Family Chaos and Family Relationships during the COVID-19 Pandemic: Evidence from a Longitudinal Study

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Abstract

The purpose of this paper was to explore how family chaos, parenting processes, parent-child relationship qualities, and sibling relationship qualities changed before versus the early months of the COVID-19 pandemic. Participants included one parent and two adolescent-aged children from 682 families (2,046 participants). Parents and youth participating in an ongoing longitudinal study in five Midwestern states in the United States completed an additional web-based assessment of family processes and family relationship qualities during the May-June 2020 pandemic-related shutdowns. A series of two-wave latent change score models indicated that family chaos increased with the onset of pandemic-related shutdowns and that the level of chaos within a family during the shutdowns had implications for changes in several parenting processes and family relationship qualities. Specifically, higher levels of family chaos during the pandemic mitigated observed increases in parental knowledge and were associated with declines in parental autonomy granting. Family chaos during pandemic-related shutdowns also was associated with increases in maternal-child conflict, paternal-child conflict, and sibling conflict as well as decreases in paternal-child intimacy, sibling intimacy, and sibling disclosure. Overall, consistent with a family stress perspective, the onset of the COVID-19 pandemic was associated with increased strain and commotion within many households, and these changes had implications for multiple family relationships.

Keywords

Coronavirus; COVID-19; pandemic; family relationships; parent-child relationship qualities; parenting processes; sibling relationships

During the COVID-19 pandemic, states and communities implemented extraordinary precautionary restrictions as a way to reduce the spread of the virus. Social distancing and quarantine provisions disrupted everyday life as individuals and families were forced to withdraw from critical societal institutions such as school and work (Zhang et al., 2020). In June of 2020, it was estimated that over 1.18 billion students worldwide—or 68% of all learners—were impacted by mandatory school closures (UNESCO, 2020). Approximately 24% of U.S. employed adults switched to telework or work from home options and 9% of employed adults were laid off or furloughed due to the pandemic (USBLS, 2020). Further, those employed in essential professions were forced to work outside the home without access to institutions such as schools and childcare. In short, the pandemic and resultant response significantly disrupted daily family life.

Consistent with family stress theory, the pandemic can be viewed as a stressor, a nonnormative life event with the potential to produce change in the family social system (Patterson, 1988). Further, the disruption to routines, along with resultant financial strains and stress, have likely been crisis events for many families (McCubbin, & Patterson, 1982; 1983). As the pandemic continues to evolve, researchers and policy makers have focused increasingly on the potential for school closures and home confinement to harm youth's academic performance, adjustment, and mental health (e.g., Duan et al., 2020; Golberstein et al., 2020). Such negative impacts may be particularly acute during adolescence given the dramatic changes occurring across life domains (e.g., biological, psychological, social, academic; Liang et al., 2020; Reut et al., 2020). Early research with adults indicated heightened emotional distress during the initial stages of the pandemic (Peng et al., 2020; Rosen et al., 2020; Shanahan et al., 2020; Tang et al., 2020). Within the family context, reports of domestic abuse increased (Usher et al., 2020), while child abuse reports have diminished; however, the latter are likely the result of reduced reporting due to lower contact between children and responsible adults within other institutions (Johnson-Reid et al., 2020). Despite these early findings, the measured impact of the pandemic and resultant societal adaptations on daily family life and family relationships remains largely unknown (Prime, Wade, & Browne, 2020). Changes in family stress and family relationships can only be examined in studies that use data collected *before* and *during* the pandemic. As such, within the context of an ongoing longitudinal study, we implemented a special assessment wave to examine how family life changed by exploring the extent to which the pandemic increased the experience of family chaos and stress. We further examined the degree to which family dynamics, including parenting processes, parent-child relationship qualities, and adolescent sibling relationship qualities, changed during the early months of the pandemic and how household stress and chaos was associated with such changes.

Family Chaos during the Pandemic

Theorists have long recognized the importance of the home environment as a physical setting that not only shapes individual behavior and development, but also as a setting in which family interactions take place (e.g., Bronfenbrenner & Crouter, 1983). Household chaos is a contextual factor characterized by disorganization and instability. Chaos can impede positive, consistent, and supportive interactions within parent-child and sibling relationships. Previous research found higher levels of chaos were associated with lower

mastery and lower quality parent-child relationships (Tucker et al., 2017), whereas lower levels of household chaos were related to better quality sibling relationships (Kretschmer & Pike, 2009).

During the pandemic, parents worldwide experienced major changes in demands on their time and resources. Many workplaces were impacted, with employees suddenly mandated or encouraged to work completely from home, work under conditions involving personal risk, and/or face reduced income or job loss (Kramer & Kramer, 2020; Zhang et al., 2020). Schools abruptly closed to in-person education, with great variations in their ability to launch online learning (Aliyyah et al., 2020; Basilaia & Kvavadze, 2020). Parents, then, had to navigate work and income transitions while simultaneously supporting and supervising school-age children through the day—all without the support of other resources (e.g., sports teams, afterschool programs, community centers). Together with community restrictions and quarantine mandates, parents' contact with children likely increased throughout the day. These changes have implications for chaos at home with more people and noise, and less routine, regularity, and organization.

Family stress theory suggests that as families experience stressors, such as multiple challenges associated with the pandemic, they have demands, resources, and an individualized perception of what the stressors mean for their family (McCubbin, & Patterson, 1982; 1983). In early work on family stress theory, Hill (1958) described stressors as situations in which a family had little or no prior preparation and must therefore be viewed as problematic. In the case of the COVID-19 pandemic, societal institutions and community resources that were once readily available (e.g., school, day care services, sports teams, and after-school activities) were suddenly inaccessible. Further, uncertainty that surrounded the pandemic likely influenced how families perceived their situation. According to family stress theory, families may view stressors positively or negatively and it is posited that stressors interact with the families' crisis-meeting resources. Hill (1958) described family resources as the adequacy or inadequacy of family organization to meet family demands. In the present study, we draw on this perspective to investigate how family stress and chaos during the pandemic shaped changes in family relationships over time. Importantly, given the uniqueness of the disruptions associated with the COVID-19 pandemic (e.g., sudden changes to work and school; quarantines that allowed families to spend more time together), it is possible that appraisals of the stress varied, shaping family relationships in negative or positive directions.

Parenting and Parent-Child Relationships during the Pandemic

Recent cross-sectional research identified that parents who reported higher levels of stress during the pandemic engaged in fewer positive parenting practices (Daks et al., 2020). This study was limited, however, with only parent (primarily mother) reports of two dimensions of parenting (e.g., caustic parenting and constructive parenting) assessed at one time point, early in the pandemic. Additional parenting processes such as autonomy granting, parental knowledge, and educational involvement also may be impacted by pandemic disruptions.

During adolescence, youth typically exhibit increased behavioral autonomy, desires for privacy, and time spent with people outside the family. Pandemic conditions, however, may have implications for the degree to which parents grant autonomy and allow time outside the home. Changes in these parenting processes also may depend on the extent of family chaos in the home. As family stress theory suggests (McCubbin, & Patterson, 1982; 1983), sudden transitions and conflicting responsibilities parents experienced, combined with reduced resources, likely contributed to parents' emotional distress reported in early studies on the pandemic (Daks et al., 2020; Rosen et al., 2020; Tang et al., 2020). Based on family stress theory and recent pandemic-related research, the present study extends this line of inquiry to examine whether household chaos shaped parenting processes as well as parent-child relationships, in potentially positive or negative ways.

On the one hand, rooted in family stress notions that family resources may be characterized by adequacy in family organization, positive, engaged, and autonomy-supportive parenting may have increased for some families, particularly those with low levels of chaos. Parents' confinement with children and decreased access to outside supports may predict greater parental involvement and investment. For example, parents' and adolescents' close proximity and restricted options outside the home during early shutdowns may, out of necessity, have increased parents' knowledge of and involvement in children's daily activities, behaviors, and routines. Parents in households with low chaos may have been better able to engage in effective parenting practices because a less-stressful home environment is more conducive to such parenting practices. Alternatively, as parents struggled to juggle various responsibilities, parents may have granted children more autonomy as a way to cope with increased and conflicting demands on parent time. This idea is consistent with family stress theory which posits that families may adjust to nonnormative events such as the pandemic by attempting to balance available resources and demands. Further, as parents struggle to balance demands on their time, they may allow their children greater autonomy or rely on children to support the family in meaningful ways (Fontanesi et al., 2020). It follows that the pandemic provided new opportunities for parents to engage in parenting characterized by greater involvement and developmentally-appropriate autonomy granting.

On the other hand and based on family stress ideas that family resources may be characterized by inadequacy in family organization, given the emotional distress associated with uncertainty, economic worry, concerns over family members' health, social isolation, performing multiple roles during the pandemic, and greater household chaos (Fontanesi et al., 2020; Peng et al., 2020; Rosen et al., 2020; Tang et al., 2020), parents may struggle to meet all the increased needs of their adolescent children. Some may even withdraw from their children as a coping mechanism, becoming less engaged and displaying fewer positive parenting practices. Some aspects of parental educational involvement (e.g., home- and school-based) typically decline across adolescence (Bhargava & Witherspoon, 2015). Yet, in the context of challenges associated with multiple roles, parents may become even less involved with their child's education as they adapted to increased competing demands. Indeed, previous work demonstrates negative associations between parental mental health difficulties and positive parenting behaviors (e.g., Lovejoy et al., 2000). Further, positive parenting processes tend to decline in times of economic stress (Schneider et al., 2015;

2017) and family transition (Stallman & Ohan, 2016). As such, the challenges of the pandemic may introduce volatility or even chaos into the home (Daks et al., 2020), which previous research has linked with less positive parenting behaviors (Evans et al., 1999), such as autonomy granting.

Turning to parent-child relationships, the pandemic likely influenced how children perceive their relationships with their parents and subsequently shaped interactions within the family context. Indeed, if reduced activities outside the home during community closures and stay-at-home orders lead family members to spend more time together—even in simple ways (e.g., eating, watching TV, talking)—children may feel more intimacy in their relationships with their parents (Harach et al., 2005). At the same time, as parents attempt to manage work changes, economic insecurity, health fears, and efforts to keep adolescents safe, they may experience increased frustration with their children. Further, as adolescents experience isolation from peers, boredom from lack of activity, restrictions on their social freedoms, and greater parental surveillance, they may react more negatively towards parents. As such, pandemic-related disruptions to the experiences of both parents and adolescents may lead to increases in parent-child conflict and this may be exacerbated in the context of greater household chaos (Marsh, Dobson, & Maddison, 2020).

Sibling Relationships

Another family relationship likely influenced by the pandemic is the relationship between children within the home. With school closures as well as stay-at-home orders, it is likely that youth experienced social withdrawal as in-person interactions with peers were reduced or completely eliminated early in the pandemic (UNESCO, 2020). Although technological innovations provide avenues for contact among adolescents, reductions in direct personal contact with peers may reshape adolescent interactions with siblings. More than 80% of children in the U.S. grow up with at least one sibling in their home (McHale, Updegraff, & Whiteman, 2012). At a time when children and adolescents likely experience social withdrawal and home confinement, they may turn to their sibling(s) to compensate for diminished social contact with peers. In fact, previous research demonstrates that siblings often turn to each other to compensate for low levels of support from parents (Milevsky & Levitt, 2005; Noller, 2005) and peers (Milevsky, 2005). As such, positive interactions between siblings, including critical developmental relational processes such as intimacy and intimate self-disclosure, may have increased during the pandemic. In short, given the lack of in-person availability of peers, youth may turn to their brothers and sisters to share personal details and feelings, as well as appreciate the benefits of shared activities with siblings.

It is also possible that pandemic-related changes have increased sibling conflict. Sibling relationships, perhaps more than any other relationship, have the potential for ambivalence (i.e., experiencing high levels of both intimacy and conflict). Previous research has shown, on the one hand, that siblings who have high levels of contact with each other are more likely to share greater intimacy (Updegraff & Obeidallah, 1999; Whiteman et al., 2007). On the other hand, sibling conflict tends to be the most pervasive form of conflict within families (McHale et al., 2000; Perlman & Ross, 1997), and is especially acute during adolescence. Therefore, during pandemic-related shutdowns when siblings are likely

spending unprecedented amounts of time together, it seems likely that their relationships will not only become more intimate, but they may also become more conflictual. Additionally, changes in sibling relationships may be exacerbated by household chaos. Lower levels of household chaos are associated with better quality sibling relationships (Kretschmer & Pike, 2009), and as such, higher levels of household chaos associated with the pandemic could decrease intimacy and increase sibling conflict.

Present Study

The COVID-19 pandemic has impacted every level of society. Individuals report higher levels of depression, anxiety, and overall distress (Peng et al., 2020; Rosen et al., 2020; Shanahan et al., 2020; Tang et al., 2020). Therefore, family processes and relationships likely experienced important changes. This study investigated how family chaos, parenting processes (i.e., parental knowledge, parental involvement, and autonomy granting), parent-child relationship qualities (i.e., mother-child intimacy, father-child intimacy, mother-child conflict, father-child conflict) and sibling relationships (i.e., sibling intimacy, sibling disclosure, sibling conflict) changed with the onset of the pandemic. Given the multiple abrupt changes associated with the pandemic in early-to-mid 2020, we hypothesized that family chaos would increase during the early months of pandemic when shutdowns were prevalent. Further, consistent with a family stress perspective, we expected that the level of chaos that characterized the family environment during the COVID-19 pandemic would have implications for changes in other family processes and relationships. Given the exploratory nature of the study, we tested competing hypotheses. Community restrictions and home confinement may provide parents with more time to engage with their children, which may predict greater knowledge and involvement, especially in conditions of low chaos. Alternatively, simultaneous engagement in multiple roles (e.g., work, parenting, home teaching) may stress parents' resources, increase chaos, and limit their ability to engage in positive parenting processes. Similarly, for parent-child relationship qualities, the pandemic could stress relationships thus creating less intimacy and more conflict. Conversely, increased availability and time spent together could offer more opportunities for expression of feelings and less fighting. Finally, given the nature of sibling relationships, we expected that these relationships would grow even more ambivalent (i.e., increases in both intimacy and disclosure and increases in conflict). However, consistent with past work, we also anticipated that family chaos associated with the pandemic would dampen intimacy and exacerbate conflict. Importantly, across all of these domains, in addition to family chaos, we explored whether critical personal qualities (e.g., parent and youth gender, youth age, birth order, gender composition of the parent-child or sibling dyad) shown to be influential in the level and developmental trajectories of parenting processes (e.g., Hawkins, Amato, & King, 2006; Raley & Bianchi, 2006; Starrels, 1994), parent-child relationship qualities (e.g., Crouter, Manke, & McHale, 1995; Shanahan, McHale, Osgood, & Crouter, 2007; Shanahan, McHale, Crouter, & Osgood, 2007), and sibling relationship qualities (e.g., Kim, McHale, Osgood, & Crouter, 2006; Solmeyer, McHale, & Crouter, 2014) predicted the level of observed changes.

Method

Participants

The study was designed to assess sibling relationships longitudinally within the family context. Data came from two adolescent-aged siblings and one parent from 682 families (2,046 participants) who participated in the ongoing longitudinal study. At Time 1, older siblings (51% female, 49% male, < 1% transgender) averaged 15.67 ($SD = .68$) years old, younger siblings (48% female, 52% male) averaged 13.14 ($SD = 1.11$) years, and parents (85% mothers, 15% fathers, < 1% transgender; 97% were children's biological parents, 1% stepparents, 1% adopted parents, and 1% other kin) averaged 45.15 ($SD = 5.37$) years. With respect to the gender of sibling pairs, the sample included 173 older sister-younger sister pairs, 172 older sister-younger brother pairs, 155 older brother-younger sister pairs, 180 older brother-younger brother pairs, and two sibling pairs with a transgender older sibling. Ninety-seven percent of siblings were biologically-related, 2% were step-siblings, and 1% were adopted siblings. Eighty-seven percent of parents identified as White, 9% as Black/African American, and 4% as other racial groups. Five percent of parents identified as Latino. At Time 1, 82% of parents were married, 59% worked full-time, 23% worked part-time, 3% were looking for work, 3% were students, 10% were retired/not looking for work, and 2% were disabled. Family socioeconomic status varied from working class to upper class, as indexed by parental education (98% of participating parents were high school graduates, 67% held bachelor's degrees) and household income (21% of parents reported household incomes below \$59,999, 22% reported household incomes between \$60,000 and \$99,999; 27% reported household incomes between \$100,000 and \$149,999; and 30% reported household incomes above \$150,000).

Procedures

To generate the sample, we targeted families with adolescent children from five states within the Midwestern U.S. (Illinois, Indiana, Ohio, Pennsylvania, and Wisconsin). Although unexpected at study initiation, all five states experienced disruptions including school closures or community restrictions during the early stages of the pandemic when the data were collected for the pandemic wave. Names and addresses of families with at least one child in the 8th, 9th, or 10th grade were identified from lists purchased from a survey research firm. Parents from these lists were sent notification letters that described the study purpose (i.e., to understand the connections between adolescents' family relationships and their health), study procedures (i.e., annual web-based surveys), and eligibility criteria (i.e., two adolescent-aged children, with the older sibling being in grades 8 through 10 and a consecutively-born younger sibling enrolled in grades 5 through 9). Each notification letter included a unique eight-digit code for the parent to enter on an eligibility-screening website. On this website, interested parents provided demographic information, and then were provided feedback about eligibility to participate.

If eligible, parents were asked to provide contact information (i.e., email addresses and telephone numbers) for themselves and their two participating children, and then were directed to information about the consent process. Parents provided informed consent for themselves and their children's participation. Upon receipt of consent, the participating

parent and two adolescent children were sent emails containing links to the Time 1 online survey. Youth surveys began with informed assent. In total, 1,448 parents entered into the screening portal and 1,008 of their families were eligible. Of those eligible, 682 families had all three members of the family participate in Time 1 of survey. Surveys were designed to be completed in 30 to 60 minutes ($Mdn = 38$ minutes for parents; $Mdn = 38$ minutes for youth). Each participating member of the family received \$30 for completion of their Time 1 survey. All study procedures for the Parent Adolescent and Sibling Study (PASS) were approved by the Utah State University Institutional Review Board (protocol #8740: Sibling Socialization of Alcohol and Drug Use from Early through Late Adolescence).

Annual survey data for Time 1 were collected between March 2019 and March 2020. Given the pandemic, plans for the second annual assessment were paused until late summer 2020 and a special COVID-19 shutdown assessment of individual and family experiences during the pandemic was conducted between May 1 and June 15, 2020. The same parents and youth from the 682 families who participated in Time 1 were mailed and emailed notification letters about an unplanned special assessment designed to understand how they managed their health as well as their family, work, and school lives during the pandemic. Similar to original procedures, participants were provided with a unique eight-digit code to enter on a screening website and then were asked to provide informed consent (parents) and assent (youth) to participate in this additional survey. Upon receipt of their consent/assent, participants were emailed links to web-based surveys specifically focused on the implications of the pandemic. This survey was shorter to complete than the Time 1 survey ($Mdn = 36$ minutes for parents; $Mdn = 26$ minutes for youth). Each participant received \$20 after completion; all procedures for this special assessment were approved by the Utah State University Institutional Review Board. The special assessment surveys were completed on average five to six months after the Time 1 surveys for parents ($M = 5.35$ months, $SD = 3.31$), older siblings ($M = 5.66$ months, $SD = 3.20$), and younger siblings ($M = 5.69$ months, $SD = 3.22$), respectively.

Of the 2,046 participants from Time 1, 1,622 (79%; 568 parents (85% mothers), 528 older siblings, and 526 younger siblings) completed the shutdown assessment survey. Compared to those who only participated in Time 1 of the study, parents who completed assessments at both time points reported more years of education ($t = 2.97$, $p = .003$, Cohen's $d = .24$) and higher annual incomes ($t = 2.22$, $p = .027$, Cohen's $d = .18$); though, effect size estimates indicated the magnitude of these differences were small. No differences emerged between these groups, however, in terms of parents' age, gender, marital status, employment status, race, or ethnicity, and also no differences in terms of youth age or gender.

To improve interview efficiency and data quality (Raghunathan & Grizzle, 1995) and decrease respondent burden and overall costs (Graham et al., 2006), the study utilized a three-form planned missing data design (Graham et al., 1996; 2001; 2006) at both measurement occasions. Specifically, for scales that included more than four items, 25% of items were planned to be randomly missing across the surveys. This planned missingness introduces no bias, as data are missing completely at random (MCAR; Little & Rubin, 2002). Further, unbiased and efficient regression estimates were obtained through Full Information Maximum Likelihood (FIML) estimation.

Measures

Demographic Information—At Time 1, parents reported key demographic information, including race, ethnicity, parental marital status, employment status, family income, as well as the age, gender, and years of education level of each household member. During the COVID-19 shutdown survey, parents reported on their current work situation and children's schooling context. Eighty-four percent ($n = 346$) of parents continued their employment through the early months of the pandemic, with 70% ($n = 242$) moving to telework conditions. School buildings for 99% of youth in the sample were closed, with 96% of youth engaged in online learning.

Family Chaos—Family and household organization was assessed using the 15-item Confusion, Hubbub, and Order Scale (CHAOS; Matheny, Wachs, Ludwig, & Phillips, 1995) at each occasion of measurement. Utilizing a *True* (0)/*False* (1) response scale, parents indicated the degree to which their home was characterized by different events. Example items included, "There is very little commotion in our home," "The atmosphere in our home is calm," and "It's a real zoo in our home." Positively phrased items were reversed scored so that higher scores indicate more chaos. Across time, parents' reports of family chaos were moderately stable ($r = .36, p < .001$) and the KR20 ranged from .64 to .74.

Parenting Processes

Parental Knowledge. Parents' knowledge of their children's behaviors and everyday activities was assessed using Stattin and Kerr's (2000; Kerr & Stattin, 2000) 20-item measure at each occasion of measurement. On a 5-point scale ranging from 1 (*Almost never*) to 5 (*Almost always*), parents indicated the extent to which they were aware of their children's activities. Example items included, "I know what [*Child's name*] does during his/her free time," and "I know what [*Child's name*] spends his/her money on." Parents completed the measure separately for each child. Items were coded so that higher scores represent greater knowledge. Across time and sibling, parents' reports of knowledge were strongly correlated ($r = .59, p < .001$ for older siblings; $r = .57, p < .001$ for younger siblings) and Cronbach's α ranged from .88 to .89.

Parental Educational Involvement. Parents' involvement in their children's education was measured using items adapted from previous research (Day & Dotterer, 2018; Hill et al., 2018). Specifically, on a 3-point scale ranging from 1 (*Never*) to 3 (*Always*) parents were asked to rate how involved they were in their children's education across seven domains. Example items included, "I help with homework," and "I talk to [*Child's name*] about what he/she is learning in school." Parents completed the measure separately for each child at each time point, with higher scores denoting greater educational involvement. Across time, parents' reports of educational involvement were moderately stable ($r = .47, p < .001$ for older siblings; $r = .45, p < .001$ for younger siblings) and Cronbach's α ranged from .74 to .79.

Autonomy Granting. Parents reported on the amount of autonomy they granted children by answering 10 questions from the Parent Behavior Measure (PBM; Bush et al., 2002). Specifically, on a 4-point scale ranging from 1 (*Strongly disagree*) to 4 (*Strongly agree*) they

rated their agreement with statements such as, “I feel that I give [*Child’s name*] enough freedom” and “I allow [*Child’s name*] to decide what is right and wrong without interfering too much.” Parents completed the measure separately for each child at each occasion, with higher scores denoting greater autonomy provision. Across time, parents’ reports of autonomy granting were moderately correlated ($r = .38, p < .001$ for older siblings; $r = .48, p < .001$ for younger siblings) and Cronbach’s α ranged from .86 to .89.

Parent-Child Relationship Qualities

Parent-Child Intimacy.: Intimacy with both mothers and fathers was rated by each sibling separately, using the eight-item relational intimacy item developed by Blyth and Foster-Clark (1987). On a scale ranging from 1 (*Not at all*) to 5 (*Very much*), youth rated their relational experiences with their parents. Example items included, “How much do you go to your mother/father for advice/support?” and “How much does he/she accept you no matter what you do?” Youth completed the measure separately for each parent at each time point, with higher scores denoting greater relational intimacy. Across time, sibling, and parent, youth’s reports of parental intimacy were strongly correlated (r ’s ranged from .55 to .67, $p < .001$ for all correlations) and Cronbach’s α ranged from .86 to .91.

Parent-Child Conflict.: Youth reported on the frequency of conflicts with their mothers and fathers separately utilizing a measure adapted from Smetana (1988). Specifically, using a 6-point scale ranging from 1 (*Not at all*) to 6 (*Several times a day*), older and younger siblings rated the frequency of conflict that they experienced with mothers and fathers (separately) across 12 domains (e.g., chores, appearance, homework and schoolwork, and social life). Youth completed the measure separately for each parent at each time point, with higher scores representing greater conflict frequency. Across time, sibling, and parent, youth’s reports of conflict with parents were moderately correlated (r ’s ranged from .49 to .51, $p < .001$ for all correlations) and Cronbach’s α ranged from .86 to .91.

Sibling Relationship Qualities

Sibling Intimacy.: At both time points, intimacy in the sibling relationship was rated by older and younger siblings using the same 8-item relational intimacy questionnaire from Blyth and Foster-Clark (1987) that was used to index parent-child intimacy. Targets for these items were changed to reflect interest in sibling intimacy. Example items included, “How much does [*Sibling’s name*] accept you no matter what?” and “How important is [*Sibling’s name*] to you?” Youth completed the measure at each occasion of measurement, with higher scores denoting greater relational intimacy. Older and younger siblings’ reports of intimacy were moderately correlated at Time 1 ($r = .53, p < .001$) and Time 2 ($r = .44, p < .001$). Across time and sibling, youth’s reports of sibling intimacy were strongly correlated ($r = .57, p < .001$ for older siblings; $r = .61, p < .001$ for younger siblings) and Cronbach’s α ranged from .85 to .88.

Sibling Disclosure.: Youth disclosure of behaviors and activities to their sibling was indexed using 11 items from Campione-Barr and colleagues (2015) measure of relational disclosure. On a scale ranging from 1 (*Never tell*) to 5 (*Always tell*), youth rated the degree to which they shared their behaviors with their sibling. Example items included, “What I talk about

with my friends,” “Whether I smoke cigarettes or vape,” and “Whether I stay out late.” Youth completed the measure at each time point, with higher scores denoting greater disclosure. Older and younger siblings’ reports of disclosure were modestly correlated at Time 1 ($r = .35, p < .001$) and Time 2 ($r = .33, p < .001$). Across time and sibling, youth’s reports of disclosure were strongly correlated ($r = .58, p < .001$ for older siblings; $r = .48, p < .001$ for younger siblings) and Cronbach’s α ranged from .94 to .96.

Sibling Conflict. Sibling conflict was rated by each sibling using five items from the Revised Network of Relationships Inventory (Furman & Buhrmester, 2009). On a 5-point scale, ranging from 1 (*Not at all*) to 5 (*Very much*), youth rated the frequency of their negative and antagonistic interactions with their sibling. Example items included, “How much do you and [*Sibling’s name*] get upset or mad at each other?” and “How much do you and [*Sibling’s name*] disagree or quarrel?” Youth completed the measure at each time point, with higher scores denoting greater conflict. Older and younger siblings’ reports of sibling conflict were moderately correlated at Time 1 ($r = .53, p < .001$) and Time 2 ($r = .56, p < .001$). Across time and sibling, youth’s reports of sibling conflict were strongly correlated ($r = .62, p < .001$ for older siblings; $r = .64, p < .001$ for younger siblings) and Cronbach’s α ranged from .94 to .96.

Analytic Plan

To investigate how family relationships changed with the onset of pandemic-related shutdowns, change across time was modeled using a two-wave latent change score model (Henk & Castro-Schilo, 2016) for family chaos, parenting, and each relationship domain separately. This approach allowed us to model change scores directly, accommodate item-level data with measurement models, and account for planned missing and other item missing data using FIML. A path diagram of the model is provided in Figure 1. The model forms two latent variables (i.e., y_1 and y_2) from the items indexing the construct (i.e., $Y_{11} \dots Y_{1k}; Y_{21} \dots Y_{2k}$) at each wave. Factor loadings and item intercepts were constrained across waves, in accordance with measurement invariance. The model then creates a change score by taking the difference between these two latent variables. The mean of this change score represents the average change across waves, accounting for covariates. Parents’ income (continuous), education (continuous from 11 “less than high school graduate” to 18 “post-graduate degree”), race (0 = White, 1 = non-White), and marital status (0 = married; 1 = not married) as well as household size (continuous) were included as control variables at each wave for all dependent variables.

For parenting and parent-child relationship qualities the amount of time between assessments (in months), youth age (continuous), youth gender (0 = female; 1 = male), birth order (0 = earlier-born; 1 = later-born), parent gender (0 = female; 1 = male), the gender constellation of the parent-child dyad (0 = same-gender; 1 = mixed-gender), and a latent factor of family chaos during the early pandemic assessment (Time 2) were modeled as predictors (i.e., moderators) of the change score. For example, if significant, effects associated with family chaos would indicate that the level of change in parenting and family relationships over time depended upon the level of chaos in the family during the pandemic-related shutdowns. For sibling relationship qualities, the amount of time

between assessments (in months), youth age (continuous), birth order (0 = earlier-born; 1 = later-born), sibling age-difference (continuous), youth gender (0 = female; 1 = male), gender constellation of the sibling dyad (0 = same-gender; 1 = mixed-gender), and a latent factor of family chaos during the early pandemic assessment (i.e., Time 2) were modeled as predictors (i.e., moderators) of the change score. Clustering (siblings within families) was accounted for via multilevel structural equation models, all of which were fit in *Mplus* (Muthén & Muthén, 1998–2017).

Results

Correlations between all dependent variables at Time 1 are presented in Table 1. Among key study variables, r 's ranged from .08 to .63. For the pandemic related shutdown surveys, r 's ranged from $-.09$ to $.58$ (see Supplemental Table 1). With a few exceptions (e.g., maternal and paternal conflict) associations between dependent variables were modest in size and suggest that they represent independent constructs and have been analyzed accordingly.

Family Chaos

Consistent with the notion that the pandemic increased stress and strain within families, results from the two-wave latent change score model for family chaos revealed that parents' reports of chaos significantly increased ($B = 2.79$, $SE = .96$, $p < .01$) after accounting for covariates. Although no covariates were significantly related to changes in chaos, at both time points, family income (T1: $B = -.06$, $SE = .02$, $p < .001$; T2: $B = -.06$, $SE = .02$, $p < .01$) and parents' education (T1: $B = -.10$, $SE = .03$, $p < .001$; T2: $B = -.09$, $SE = .03$, $p < .001$) were negatively associated with family chaos, and at Time 1, household size was positively linked ($B = .30$, $SE = .05$, $p < .001$) with family chaos.

Parenting Processes

Results from the two-wave latent change score models for the three parenting processes are presented in Table 2. Accounting for the influence of demographic factors, the latent change model revealed significant change in parents' knowledge of their offspring's everyday behaviors ($B = 1.61$, $SE = .82$, $p = .05$). In short, there was a mean increase of 1.61 standard deviations in parental knowledge across time with the onset of the pandemic. This change effect, however, was moderated by associations with several variables. First, a significant association with months between assessments ($B = -.03$, $SE = .01$, $p = .03$) revealed greater increases in parental knowledge when assessments were closer together. Second, a significant association with parent gender ($B = -.73$, $SE = .13$, $p < .001$) denoted that knowledge gains were lower for fathers as compared to mothers. Third, a significant association with child gender ($B = -.27$, $SE = .10$, $p = .01$) indicated that parent knowledge increased less about sons as compared to daughters. Fourth, significant effects for birth order ($B = .25$, $SE = .04$, $p < .001$) and youth age ($B = -.10$, $SE = .04$, $p = .01$) indicated that parental knowledge gains were greater for younger siblings and youth at younger ages. Finally, a significant association with family chaos ($B = -.30$, $SE = .04$, $p < .001$) revealed that parents' gains in knowledge were reduced in conditions of greater family chaos during the shutdown.

With respect to parents' educational involvement, accounting for covariates, a significant effect of change was found ($B = 2.02$, $SE = 1.03$, $p = .05$), such that parents' educational involvement increased 2.02 standard deviations across occasions of measurement. This change effect, however, was moderated by associations with other variables. First, a significant association with parent gender ($B = -.73$, $SE = .13$, $p < .001$) denoted that involvement gains were lower for fathers compared to mothers. Second, a significant association for parent-child gender composition ($B = .23$, $SE = .11$, $p = .05$) indicated that parents' involvement increased more in same-gendered parent-child dyads (i.e., mother with daughter; father with son) as compared to opposite-gendered parent-child dyads (i.e., mother with son; father with daughter). Finally, a significant effect for birth order ($B = .18$, $SE = .05$, $p = .001$) revealed that parents became more educationally involved with younger siblings compared to older siblings. Family chaos was not significantly associated with changes in parents' educational involvement.

For parents' autonomy granting, although there was not significant overall mean level change with the onset of the pandemic, the pattern of change in autonomy granting was qualified by associations with other variables. First, a significant association with child gender ($B = -.26$, $SE = .10$, $p = .009$) revealed that parents granted more autonomy to daughters as compared to sons from before to during the onset of the pandemic. Second, a significant association with the gender composition of the parent-child dyad ($B = .25$, $SE = .10$, $p = .01$) indicated that parents granted significantly greater autonomy to same-gendered children compared to opposite-gendered children over time. Third, significant effects for birth order ($B = -.14$, $SE = .05$, $p = .002$) and youth age ($B = .09$, $SE = .04$, $p = .01$) indicated that during the pandemic parents granted more autonomy to older siblings and to youth at older ages. Finally, a significant association with family chaos ($B = -.16$, $SE = .05$, $p = .001$) revealed that greater family chaos during the pandemic was associated with declines in autonomy granting over time.

Parent-Child Relationship Qualities

Results from the two-wave latent change score models for the indicators of parent-child relationship qualities are presented in Table 3. Although there was no significant mean level change in youths' reports of maternal intimacy across time, this change effect was qualified by a significant association with birth order ($B = .15$, $SE = .06$, $p = .02$). Specifically, younger siblings reported greater intimacy with mothers over time as compared to older siblings. Family chaos was not associated with changes in maternal intimacy.

With respect to paternal intimacy, there was no overall mean change across time in youths' reported intimacy with their fathers. However, the pattern of change in paternal intimacy was moderated by associations with other predictor variables. First, an association with parent gender ($B = .29$, $SE = .12$, $p = .01$) indicated that when the participating parent in the study was the youths' father (15% of cases), youth reported gains in paternal intimacy over time as compared to youth whose mothers participated in the study. Second, a significant association with family chaos ($B = -.20$, $SE = .04$, $p < .001$) revealed that greater family chaos during the pandemic was linked to declines in father-child intimacy over time.

Turning to parent-child conflict, although there was no main effect for mean change in youth's reports of conflict with mothers across time, there pattern of change was qualified by associations with other predictor variables. First, a significant association with months between assessments ($B = .03$, $SE = .01$, $p = .03$) revealed slightly larger increases in mother-child conflict over time when assessments were further apart. Second, a significant association with family chaos ($B = .27$, $SE = .04$, $p < .001$) revealed that higher levels of family chaos during the pandemic were linked to increases in mother-child conflict over time.

Similar to mother-child conflict, there was no overall mean level change in youth's reports of conflict with fathers across time; however, the pattern of change was moderated by several associations with other predictor variables. First, a significant association with months between assessments ($B = .03$, $SE = .01$, $p = .007$) revealed slightly larger increases in father-child conflict when assessments were further apart. Second, a significant effect of child gender ($B = .22$, $SE = .09$, $p = .01$) indicated that sons, compared to daughters, reported more conflict with fathers over time. Finally, a significant association with family chaos ($B = .25$, $SE = .04$, $p < .001$) denoted that greater family chaos during the pandemic was linked to increases in father-child conflict over time.

Sibling Relationship Qualities

Results from the two-wave latent change score models for the indicators of sibling relationship qualities are presented in Table 4. Although the main effect for overall mean level change in youth's reports of sibling intimacy across time was not significant; the pattern of change, however, was qualified by associations with other key variables. First, a significant association with youth gender ($B = -.25$, $SE = .08$, $p = .001$) indicated that boys reported declines in intimacy with their siblings from before to during the pandemic as compared to girls. Second, a significant association with birth order ($B = .13$, $SE = .06$, $p = .02$) revealed that younger siblings reported increases in intimacy with their older siblings over time. Finally, a significant association with family chaos ($B = -.36$, $SE = .05$, $p = .01$) denoted that increased family chaos during the pandemic was linked to decreases in sibling intimacy over time.

For sibling disclosure, there was no overall mean level change; however, the pattern of change was qualified by associations with key variables. First, a significant association with youth gender ($B = -.40$, $SE = .09$, $p < .001$) indicated that boys reported decreases in disclosure with their siblings from before to during the pandemic as compared to girls. Second, a significant association with gender composition of the sibling dyad ($B = -.48$, $SE = .10$, $p < .001$) denoted that sibling disclosure declined over time among mixed-gender dyads as compared to same-gender dyads. Third, a significant association with sibling age-spacing ($B = -.11$, $SE = .05$, $p = .02$) revealed that sibling disclosure declined over time more so for siblings who were further apart in age. Finally, a significant association with family chaos ($B = -.14$, $SE = .05$, $p = .003$) denoted that increased family chaos during the pandemic was linked to reduced sibling disclosure over time.

Finally, turning to sibling conflict, the effect for mean level change across time was not significant. The pattern of change over time, however, was qualified by several associations

with other key variables. First, a significant association with birth order ($B = -.10$, $SE = .05$, $p = .03$) denoted that younger siblings reported declines in conflict with their older siblings from before to during the pandemic as compared to older siblings. Second, a significant association with youth age ($B = -.09$, $SE = .04$, $p = .02$) indicated that older youth reported less change in conflict with their siblings over time than younger youth. Finally, a significant association with family chaos ($B = .31$, $SE = .05$, $p < .001$) revealed that greater family chaos during the pandemic was linked to increases in sibling conflict over time.

Discussion

Taking advantage of a special assessment embedded within an ongoing longitudinal study focused on family dynamics in families with adolescents, the present study explored whether key family dynamics, including family chaos, parenting processes, parent-child relationship qualities, and sibling relationship qualities changed during Spring 2020 shutdowns associated with the onset the COVID-19 pandemic. This focus is consistent with recent calls to understand how the unprecedented measures taken to mitigate the spread of COVID-19, including community restrictions and stay-at-home policies, shaped family processes (Prime et al., 2020) in addition to individuals' mental health and adjustment.

Family stress theory suggests that nonnormative life events, such schools closing and families being confined to the home caused by efforts to combat a worldwide pandemic, can cause change in the family system (McCubbin, & Patterson, 1982; 1983; Patterson, 1988). This possibility was explored in the present study by examining the extent to which family stress and chaos increased with the onset of the pandemic. Chaos at home includes high levels of noise, crowding, disorganization, and instability and is a threat to optimal family functioning (Marsh et al., 2020). The stay at home orders associated with the pandemic during Spring 2020 meant that many family members found themselves confined to one space and experienced disrupted routines as parents and children worked and learned from home. Findings from the present investigation are in line with family stress theory and confirmed that household chaos increased with the onset of the pandemic.

In an effort to further understand how family dynamics changed during this period and how chaos experienced during the pandemic shutdowns may have further shaped them, we investigated whether parenting processes and family relationship qualities changed with the onset of the pandemic. Parents increased in both parental knowledge and educational involvement during the early months of the pandemic. Extant work on parents' knowledge and monitoring indicates that a primary way that parents "know" what is happening in their children's lives is through adolescents' self-disclosure (e.g., Kerr & Stattin, 2000; Smetana, 2008; Stattin & Kerr, 2000). Stay-at-home policies associated with the pandemic not only may have reduced the number of activities outside of the home parents needed to be knowledgeable about, but also provided youth with more opportunities to disclose to their parents. Additionally, stay-at-home policies may have afforded greater face-to-face opportunities for parents to observe and engage with their children, yielding increased knowledge. Further, findings that mothers' knowledge of children's activities increased more than fathers' knowledge is consistent with work denoting that mothers are more knowledgeable in general as well as that youth engage in greater self-disclosure with

mothers (Crouter et al., 2005). Importantly, gains in knowledge were less in families who reported higher levels of chaos. Consistent with family stress theory, greater disorganization and disruption at home interferes with positive parenting, including parents' awareness of and knowledge about their children's daily lives.

In addition to increased parental knowledge, parents reported increased involvement in their adolescent children's education during the shutdown compared to the prior wave, on average five months earlier. Clearly, school closures and at-home education could promote greater parent involvement given complex new needs for families to manage schedules, technology, and motivation, and, in many cases, for parents to help with classwork and serve as a teacher. In fact, a recent study found that 78% of parents reported educating their child at home due to COVID-19 (Lee et al., 2020). Consistent with previous work regarding variations by family context, changes in educational involvement depended, to some extent, on parent/child gender and youth age. For example, early work indicates that mothers are bearing the brunt of childcare-related tasks, including homeschooling (Petts, Carlson, & Pepin, 2020), and results from the current study showed that increases in educational involvement were greater for mothers compared to fathers. Somewhat surprisingly, family chaos was not associated with changes in educational involvement and might reflect the necessity of this essential task following abrupt school closures.

Parents reported granting children more autonomy during the pandemic under certain conditions, for example, to daughters and older-born siblings. However, higher levels of family chaos during the pandemic were associated with relative declines over time in autonomy granting. On the one hand, decreased autonomy granting amidst higher levels of chaos during the pandemic is consistent with previous work suggesting that parents decrease their use of authoritative parenting behaviors during periods of stress (Prime et al., 2020; Schneider et al., 2015, 2017). On the other, providing daughters and older children with more freedom and autonomy may have been especially adaptive during this shutdown given parents' sudden needs to carry out multiple roles simultaneously (e.g., worker, parent, teacher) without other supports such as childcare or after-school programs and sports. Gender differences in autonomy granting may reflect differences in parents' involvement with same-gendered children (Tucker et al., 2003) as well as the enacting of traditional gender roles within families (Bumpus et al., 2001).

Turning to parent-child relationship qualities, with the exception of maternal intimacy, changes in parent-child relationship quality were associated with family chaos such that more family chaos during the pandemic was linked to decreases in paternal intimacy and increases in mother- and father-child conflict. With more noise, crowding, and disruption at home during the pandemic, parents and children seemed to have experienced difficulty in their relationships with each other. These results are consistent with conceptualizations highlighting family chaos as a risk factor that can threaten family adaptation/cohesion (Evans & Wachs, 2010; Fiese & Winter, 2010).

Given previous research on sibling relationships compensating for deficits in other close relationships (e.g., Milevsky, 2005; Milevsky & Levitt, 2005; Noller 2005) as well as the assumption that extended periods in home confinement would increase opportunities for

conflict, we hypothesized that sibling relationships would grow more ambivalent during the pandemic. Findings revealed no significant overall mean changes in youth's relationships with their brothers and sisters. However, along with structural patterns related to changes shown consistently in previous work on sibling relationships (e.g., sisters reporting more intimacy and disclosure than brothers; younger siblings reporting more intimacy and conflict; for a review see McHale et al., 2012), the level of family chaos during the pandemic was significantly associated with patterns of change. Similar to parenting processes and parent-child relationship qualities, increased family chaos was associated with diminished sibling intimacy and disclosure as well as increased sibling conflict during the Spring 2020 shutdown. These results further emphasize the interconnectedness of multiple family subsystems and demonstrate how challenges in one subsystem may reverberate throughout the entire family and shape relationships and ultimately functioning.

Limitations and Future Directions

Despite many strengths, including a longitudinal within-family design and examining changes in multiple family relationship processes (i.e., parenting processes, parent-child relationships, and sibling relationships) from the perspective of multiple reporters, the present study was limited by a number of factors. First, the analytic strategy captured patterns of mean change over time and may have failed to capture the heterogeneity in family experiences across the pandemic. Although we included numerous covariates and predictors of change, including family chaos, it is critical for research to explore how factors like family income and parents' employment conditions directly shaped family's responses to the pandemic. Pattern-analytic techniques like latent profile analysis and mixture modeling could identify different relational trajectories with the onset of the pandemic.

Second, our special assessment of families occurred between May 1 and June 15, 2020. This period was nearly two months after the World Health Organization declared COVID-19 a pandemic (March 11, 2020) and the U.S. Centers for Disease Control declared a national emergency (March 13, 2020). How the early months versus later periods differ in their impact on families and adolescent development remains unknown. Challenges to individuals and families may have been acute and impactful early in the pandemic, but family dynamics might have stabilized as parents and youth developed new daily rhythms in response to school closures and stay-at-home policies. Yet, this would make our findings on the pandemic's impact conservative. Further, family relationship processes, including parenting, likely continued to change in response to ongoing escalation of COVID-19, economic challenges, alternate (e.g., virtual) and alternating (e.g., closed, hybrid, open) school formats, and continued health and economic uncertainty. As suggested by the double ABC-X model of family stress theory, the unpredictability and recurrence of major stressors may have been especially difficult for families; therefore, it is important to examine how family relational qualities change over a variety of time frames. Intensive longitudinal assessments nested with longer-term developmental studies will provide invaluable insights into how the pandemic shaped family lives, how families adapted, and which families are most in need of support going forward.

Third, our sample was overrepresented by White families and the pandemic may have had different implications for underrepresented groups. The pandemic exacerbated existing inequalities (Ray & Rojas, 2020). For example, ethnic minority and low-income families had a higher likelihood of containing an essential worker, losing income, living in overcrowded homes, being infected with COVID-19, lack of access to testing and health care, and serious complications including death. These greater significant challenges undoubtedly have implications for family relationships. Additionally, given the two occasions of measurements as well as the focus of this investigation (i.e., the degree to which family relational qualities changed over the course of the pandemic), it was not possible to examine how previous relational qualities, such as parental intimacy before the pandemic, shaped adaptation during the pandemic-related shutdowns.

Fourth, results generally indicated that increased stress and chaos within the family during the pandemic was associated with less optimal parenting processes (i.e., less knowledge and autonomy granting) and family relationship qualities (i.e., less intimacy and greater conflict). Stated differently, however, these results also suggest that families that successfully managed the multiple transitions associated with pandemic and reported less chaos experienced positive changes in their parenting practices and family relationship qualities. It will be critical for future research to explore the characteristics and processes within families that promoted resilience in the face of the multiple challenges and uncertainties associated with pandemic.

Notwithstanding these limitations, the present study contributes to an emerging body of work focusing on the implications of the pandemic for parents and children through its use of longitudinal data and exploring how multiple family relationships evolved across time. On average, findings suggest that families experienced increases in chaos with the onset of the pandemic, and chaos, in turn, was related to negative changes in multiple family dynamics, including parenting processes, parent-child relationships, and sibling relationships.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

- Aliyyah RR, Rachmadtullah R, Samsudin A, Syaodih E, Nurtanto M, & Tambunan ARS (2020). The Perceptions of Primary School Teachers of Online Learning during the COVID-19 Pandemic Period: A Case Study in Indonesia. *Journal of Ethnic and Cultural Studies*, 7(2), 90–109. 10.29333/ejecs/388
- Basilaia G, & Kvavadze D (2020). Transition to online education in schools during a SARS-CoV-2 coronavirus (COVID-19) pandemic in Georgia. *Pedagogical Research*, 5(4), 1–9. 10.29333/pr/7937

- Bhargava S, & Witherspoon DP (2015). Parental involvement across middle and high school: Exploring contributions of individual and neighborhood characteristics. *Journal of Youth and Adolescence*, 44, 1702–1719. 10.1007/s10964-015-0334-9 [PubMed: 26215379]
- Blyth DA, & Foster-Clark FS (1987). Gender differences in perceived intimacy with different members of adolescents' social networks. *Sex Roles*, 17, 689–718. 10.1007/bf00287683
- Bronfenbrenner U, Crouter AC (1983). The evolution of environmental models in developmental research. In Kessen W (Ed.), *Handbook of Child Psychology*, (pp. 357–414). Wiley, New York.
- Bumpus MF, Crouter AC, & McHale SM (2001). Parental autonomy granting during adolescence: Exploring gender differences in context. *Developmental Psychology*, 37, 163–173. 10.1037/0012-1649.37.2.163 [PubMed: 11269385]
- Bush KR, Peterson GW, Cobas JA, & Supple AJ (2002). Adolescents' perceptions of parental behaviors as predictors of adolescent self-esteem in mainland China. *Sociological Inquiry*, 72, 503–526. 10.1111/1475-682x.00031
- Campione-Barr N, Lindell AK, Giron SE, Killoren SE, & Greer KB (2015). Domain differentiated disclosure to mothers and siblings and associations with sibling relationship quality and youth emotional adjustment. *Developmental Psychology*, 51, 1278. 10.1037/dev0000036 [PubMed: 26192042]
- Crouter AC, Bumpus MF, Davis KD, & McHale SM (2005). How do parents learn about adolescents' experiences? Implications for parental knowledge and adolescent risky behavior. *Child Development*, 76, 869–882. 10.1111/j.1467-8624.2005.00883.x [PubMed: 16026502]
- Crouter AC, Manke BA, & McHale SM (1995). The family context of gender intensification in early adolescence. *Child Development*, 66, 317–329. 10.2307/1131580 [PubMed: 7750368]
- Day E, & Dotterer AM (2018). Parental involvement and adolescent academic outcomes: Exploring differences in beneficial strategies across racial/ethnic groups. *Journal of Youth and Adolescence*, 47, 1332–1349. 10.1007/s10964-018-0853-2 [PubMed: 29671243]
- Daks JS, Peltz JS, & Rogge RD (2020). Psychological flexibility and inflexibility as sources of resiliency and risk during a pandemic: Modeling the cascade of COVID-19 stress on family systems with a contextual behavioral science lens. *Journal of Contextual Behavioral Science*, 18, 16–27. 10.1016/j.jcbs.2020.08.003 [PubMed: 32834972]
- Duan L, Shao X, Wang Y, Huang Y, Miao J, Yang X, & Zhu G (2020). An investigation of mental health status of children and adolescents in china during the outbreak of COVID-19. *Journal of Affective Disorders*, 275, 112–118. 10.1016/j.jad.2020.06.029 [PubMed: 32658812]
- Evans GW, Maxwell LE, & Hart B (1999). Parental language and verbal responsiveness to children in crowded homes. *Developmental Psychology*, 35, 1020–1023. 10.1037/0012-1649.35.4.1020 [PubMed: 10442870]
- Evans GW, & Wachs TD (2010). *Chaos and its influence on children's development*. Washington, DC: American Psychological Association.
- Fiese BH, & Winter MA (2010). The dynamics of family chaos and its relation to children's socioemotional well-being. In Evans GW & Wachs TD (Eds.), *Chaos and its influence on children's development: An ecological perspective* (pp. 49–66). American Psychological Association. 10.1037/12057-004
- Fontanesi L, Marchetti D, Mazza C, Di Giandomenico S, Roma P, & Verrocchio MC (2020). The effect of the COVID-19 lockdown on parents: A call to adopt urgent measures. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12, S79–S81. 10.1037/tra0000672
- Furman W, & Buhrmester D (2009). Methods and measures: The network of relationships inventory: Behavioral systems version. *International Journal of Behavioral Development*, 33(5), 470–478. 10.1177/0165025409342634 [PubMed: 20186262]
- Golberstein E, Wen H, & Miller BF (2020). Coronavirus disease 2019 (COVID-19) and mental health for children and adolescents. *JAMA Pediatrics*, 174(9), 819–820. 10.1001/jamapediatrics.2020.1456 [PubMed: 32286618]
- Graham JW, Hofer SM, & MacKinnon DP (1996). Maximizing the usefulness of data obtained with planned missing value patterns: An application of maximum likelihood procedures. *Multivariate Behavioral Research*, 31, 197–218. 10.1207/s15327906mbr3102_3 [PubMed: 26801456]

- Graham JW, Taylor BJ, & Cumsille PE (2001). Planned missing-data designs in analysis of change. In Collins LM & Sayer AG (Eds.), *New Methods for the Analysis of Change: Decade of Behavior* (pp. 335–353). American Psychological Association. 10.1037/10409-011
- Graham JW, Taylor BJ, Olchowski AE, & Cumsille PE (2006). Planned missing data designs in psychological research. *Psychological Methods*, 11, 323–343. 10.1037/1082-989X.11.4.323 [PubMed: 17154750]
- Hamilton JL, Nesi J, & Choukas-Bradley S (2020). Teens and social media during the COVID-19 pandemic: Staying socially connected while physically distant. *PsyArXiv Preprints*. 10.31234/osf.io/5stx4
- Harach LD, & Kuczynski LJ (2005). Construction and maintenance of parent–child relationships: Bidirectional contributions from the perspective of parents. *Infant and Child Development: An International Journal of Research and Practice*, 14(4), 327–343. 10.1002/icd.393
- Harkness A, Behar-Zusman V, & Safren SA (2020). Understanding the Impact of COVID-19 on Latino Sexual Minority Men in a US HIV Hot Spot. *AIDS and Behavior*, 1–7. 10.1007/s10461-020-02862-w [PubMed: 30903450]
- Hawkins DN, Amato PR, & King V (2006). Parent-adolescent involvement: The relative influence of parent gender and residence. *Journal of Marriage and Family*, 68, 125–136. 10.1111/j.1741-3737.2006.00238.x
- Henk CM, & Castro-Schilo L (2016). Preliminary detection of relations among dynamic processes with two-occasion data. *Structural Equation Modeling*, 23, 180–193. 10.1080/10705511.2015.1030022
- Hill R (1958). Generic features of families under stress. *Social Casework*, 39, 139–150. 10.1177/1044389458039002-318
- Hill NE, Witherspoon DP, & Bartz D (2018). Parental involvement in education during middle school: Perspectives of ethnically diverse parents, teachers, and students. *The Journal of Educational Research*, 111, 12–27. 10.1080/00220671.2016.1190910
- Jonson-Reid M, Drake B, Cobetto C, & Ocampo M (2020). Child abuse prevention month in the context of COVID-19. Center for Innovation in Child Maltreatment Policy, Research and Training, Washington University in St. Louis. <https://cicm.wustl.edu/child-abuse-prevention-month-in-the-context-of-covid-19>
- Kerr M, & Stattin H (2000). What parents know, how they know it, and several forms of adolescent adjustment: Further support for a reinterpretation of monitoring. *Developmental Psychology*, 36, 366–380. 10.1037/0012-1649.36.3.366 [PubMed: 10830980]
- Kramer A, & Kramer KZ (2020). The potential impact of the Covid-19 pandemic on occupational status, work from home, and occupational mobility. *Journal of Vocational Behavior*, 119, 103442. 10.1016/j.jvb.2020.103442 [PubMed: 32390661]
- Kretschmer T, & Pike A (2009). Young children’s sibling relationship quality: Distal and proximal correlates. *Journal of Child Psychology and Psychiatry*, 50(5), 581–589. 10.1111/j.1469-7610.2008.02016.x [PubMed: 19236529]
- Kim JY, McHale SM, Osgood DW, & Crouter AC (2006). Longitudinal course and family correlates of sibling relationships from childhood through adolescence. *Child Development*, 77, 1746–1761. 10.1111/j.1467-8624.2006.00971.x [PubMed: 17107458]
- Lee SJ, Ward KP, Chang OD, & Downing KM (2020). Parenting activities and the transition to home-based education during the COVID-19 pandemic. *Children and Youth Services Review*. 10.1016/j.childyouth.2020.105585
- Liang L, Ren H, Cao R, Hu Y, Qin Z, Li C, & Mei S (2020). The effect of COVID-19 on youth mental health. *Psychiatric Quarterly*, 91, 841–852. 10.1007/s11126-020-09744-3
- Little RJA, & Rubin DB (2002). *Statistical analysis with missing data*. Hoboken, NJ: Wiley.
- Lovejoy MC, Graczyk PA, O’Hare E, & Neuman G (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*, 20(5), 561–592. 10.1016/s0272-7358(98)00100-7 [PubMed: 10860167]
- Marsh S, Dobson R, & Maddison R (2020). The relationship between household chaos and child, parent, and family outcomes: a systematic scoping review. *BMC Public Health*, 20, 1–27. 10.1186/s12889-020-08587-8 [PubMed: 31898494]

- Matheny AP Jr, Wachs TD, Ludwig JL, & Phillips K (1995). Bringing order out of chaos: Psychometric characteristics of the confusion, hubbub, and order scale. *Journal of applied developmental psychology*, 16(3), 429–444. 10.1016/0193-3973(95)90028-4
- McCubbin H, & Patterson J (1982). Family adaptation to crises. In McCubbin H, Cauble A, & Patterson J (Eds.), *Family stress, coping and social support*. Springfield, IL: C.C. Thomas.
- McCubbin HI, & Patterson JM (1983). The family stress process: The double ABCX model of adjustment and adaptation. *Marriage & Family Review*, 6(1–2), 7–37. 10.1300/j002v06n01_02
- McHale SM, Updegraff KA, & Whiteman SD (2012). Sibling relationships and influences in childhood and adolescence. *Journal of Marriage and Family*, 74, 913–930. 10.1111/j.1741-3737.2012.01011.x [PubMed: 24653527]
- Milevsky A (2005). Compensatory patterns of sibling support in emerging adulthood: Variations in loneliness, self-esteem, depression and life satisfaction. *Journal of Social and Personal Relationships*, 22, 743–755. 10.1177/0265407505056447
- Milevsky A, & Levitt MJ (2005). Sibling support in early adolescence: Buffering and compensation across relationships. *European Journal of Developmental Psychology*, 2(3), 299–320. 10.1080/17405620544000048
- Muthén LK and Muthén BO (1998–2017). *Mplus User's Guide*. Eighth Edition. Los Angeles, CA: Muthén & Muthén
- Noller P (2005). Sibling relationships in adolescence: Learning and growing together. *Personal Relationships*, 12(1), 1–22. 10.1111/j.1350-4126.2005.00099.x
- Peng M, Mo B, Liu Y, Xu M, Song X, Liu L, Fang Y, Guo T, Ye J, Yu Z, Deng Q, Deng Q, & Zhang X, (2020). Prevalence, risk factors and clinical correlates of depression in quarantined population during the COVID-19 outbreak. *Journal of Affective Disorders*, 275, 119–124. 10.1016/j.jad.2020.06.035 [PubMed: 32658813]
- Petts RJ, Carlson DL, & Pepin JR (2020). A Gendered Pandemic: Childcare, Homeschooling, and Parents' Employment During COVID-19. *Gender, Work & Organization*. 10.1111/gwao.12614
- Prime H, Wade M, & Browne DT (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist*, 75, 631–643. 10.1037/amp0000660
- Putnick DL, Bornstein MH, Hendricks C, Painter KM, Suwalsky JT, & Collins WA (2008). Parenting stress, perceived parenting behaviors, and adolescent self-concept in European American families. *Journal of Family Psychology*, 22(5), 752–762. 10.1037/a0013177 [PubMed: 18855511]
- Raghunathan TE, & Grizzle JE (1995). A split questionnaire survey design. *Journal of the American Statistical Association*, 90, 54–63. <https://www.jstor.org/stable/2291129>
- Raley S, & Bianchi S (2006). Sons, daughters, and family processes: Does gender of children matter? *Annual Review of Sociology*, 32, 401–421. 10.1146/annurev.soc.32.061604.123106
- Ray R, & Rojas F (2020). Race, gender, and new essential workers during COVID-19. *Contexts: Sociology for the Public* [blog]. <https://contexts.org/blog/inequality-during-the-coronavirus-pandemic/>. Accessed September 28, 2020.
- Reut G, Saha S, Somerville G, Boursier J, & Wise MS (2020, online first). The Impact of COVID-19 related school shutdown on sleep in adolescents: A natural experiment. *Sleep Medicine*. 10.1016/j.sleep.2020.09.015
- Rosen Z, Weinberger-Litman SL, Rosenzweig C, Rosmarin DH, Muennig P, Carmody ER, ... & Litman L (2020). Anxiety and distress among the first community quarantined in the US due to COVID-19: Psychological implications for the unfolding crisis. 10.31234/osf.io/7eq8c
- Schneider W, Waldfogel J, & Brooks-Gunn J (2015). The Great Recession and behavior problems in 9-year old children. *Developmental Psychology*, 51, 1615–1629. 10.1037/dev0000038 [PubMed: 26347985]
- Schneider W, Waldfogel J, & Brooks-Gunn J (2017). The Great Recession and risk for child abuse and neglect. *Children and Youth Services Review*, 72, 71–81. 10.1016/j.childyouth.2016.10 [PubMed: 28461713]
- Shanahan L, McHale SM, Crouter AC, & Osgood DW (2007). Warmth with mothers and fathers from middle childhood to late adolescence: Within- and between-families comparisons. *Developmental Psychology*, 43, 551–563. 10.1037/0012-1649.43.3.551 [PubMed: 17484570]

- Shanahan L, McHale SM, Osgood DW, & Crouter AC (2007). Conflict frequency with mothers and fathers from middle childhood to late adolescence: Within-and between-families comparisons. *Developmental Psychology*, 43, 539–550. 10.1037/0012-1649.43.3.539 [PubMed: 17484569]
- Shanahan L, Steinhoff A, Bechtiger L, Murray AL, Nivette A, Hepp U, Ribeaud D, & Eisner M (2020). Emotional distress in young adults during the COVID-19 pandemic: Evidence of risk and resilience from a longitudinal cohort study. *Psychological Medicine*, 1–10. 10.1017/S003329172000241X
- Smetana JG (1989). Adolescents' and parents' reasoning about actual family conflict. *Child Development*, 60, 1052–1067. 10.1111/j.1467-8624.1989.tb03536.x [PubMed: 2805883]
- Smetana JG (2008). “It’s 10 o’clock: Do you know where your children are?” Recent advances in understanding parental monitoring and adolescents’ information management. *Child Development Perspectives*, 2, 19–25. 10.1111/j.1750-8606.2008.00036.x
- Solmeyer AR, McHale SM, & Crouter AC (2014). Longitudinal associations between sibling relationship qualities and risky behavior across adolescence. *Developmental Psychology*, 50, 600–610. 10.1037/a0033207 [PubMed: 23772819]
- Stallman HM, & Ohan JL (2016). Parenting Style, Parental Adjustment, and Co-Parental Conflict: Differential Predictors of Child Psychosocial Adjustment Following Divorce. *Behaviour Change*, 33(2). 10.1017/bec.2016.7
- Starrels ME (1994). Gender differences in parent-child relations. *Journal of Family Issues*, 15, 148–165. 10.1177/019251394015001007
- Stattin H, & Kerr M (2000). Parental monitoring: A reinterpretation. *Child Development*, 71(4), 1072–1085. 10.1111/1467-8624.00210 [PubMed: 11016567]
- Tang F, Liang J, Zhang H, Kelifa MM, He Q, & Wang P (2020). COVID-19 related depression and anxiety among quarantined respondents. *Psychology & Health*, 1–15. 10.1080/08870446.2020.1782410
- Tucker CJ, McHale SM, & Crouter AC (2003). Dimensions of mothers' and fathers' differential treatment of siblings: Links with adolescents' sex-typed personal qualities. *Family Relations*, 52, 82–89. 10.1111/j.1741-3729.2003.00082.x
- Tucker CJ, Sharp EH, Van Gundy K, & Rebellon C (2017). Household chaos, relationships with parents, and adolescents' future beliefs. *Journal of Family Studies*, 23, 229–242. 10.1080/13229400.2015.1090327
- UNESCO. (2020, 9 8). Education: From disruption to recovery. <https://en.unesco.org/covid19/educationresponse>
- USBLS. (2020, 9 4). Data tables. U.S. Bureau of Labor Statistics. <https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm>
- Updegraff KA, & Obeidallah DA (1999). Young adolescents' patterns of involvement with siblings and friends. *Social Development*, 8(1), 52–69. 10.1111/1467-9507.00080
- Usher K, Bhullar N, Durkin J, Gyamfi N, & Jackson D (2020). Family violence and COVID-19: Increased vulnerability and reduced options for support. *International Journal of Mental Health Nursing*, 29, 549–552. 10.1111/inm.12735 [PubMed: 32314526]
- Whiteman SD, McHale SM, & Crouter AC (2007). Explaining sibling similarities: Perceptions of sibling influences. *Journal of Youth and Adolescence*, 36(7), 963–972. 10.1007/s10964-006-9135-5
- Zhang SX, Wang Y, Rauch A, & Wei F (2020). Unprecedented disruption of lives and work: Health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak. *Psychiatry Research*, 288, 112958. 10.1101/2020.03.13.20034496 [PubMed: 32283450]

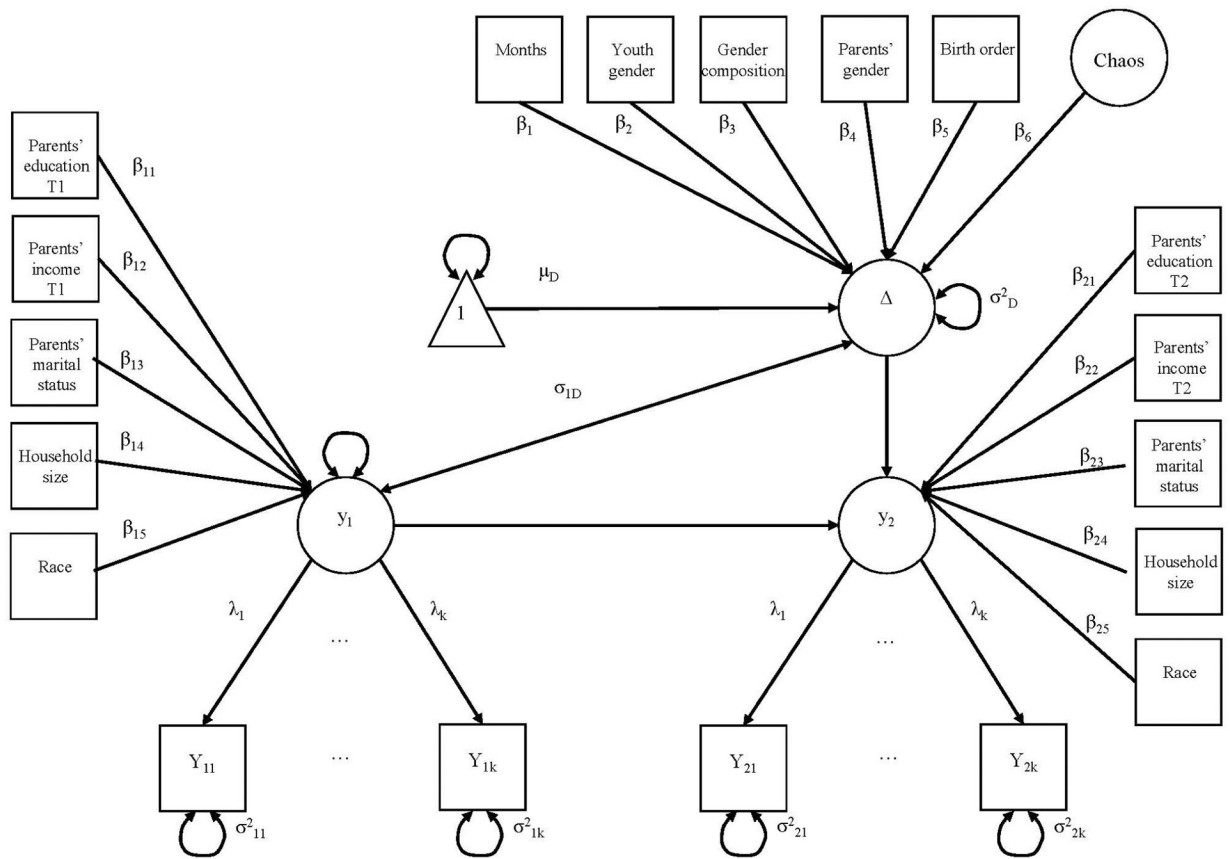


Figure 1.
 Example Two-Wave Latent Change Score Model Used to Estimate Change in Family Relationship Qualities across Time

Table 1

Bivariate Correlations for Key Study Variables at Time 1 (Pre-Pandemic)

	Parenting Behaviors					Parent-Child Relational Qualities					Sibling Relational Qualities		
	Family Chaos	Parental Knowledge	Educational Involvement	Autonomy Granting	Maternal Intimacy	Paternal Intimacy	Maternal Conflict	Paternal Conflict	Sibling Intimacy	Sibling Disclosure	Sibling Negativity		
Family Chaos	--	-.18***	-.15***	-.16***	-.11**	-.14**	.22***	.25***	-.19***	-.10**	.18***		
Parental Knowledge	-.15***	--	.51***	.17***	.25***	.15***	-.05	-.05	.18***	.15***	-.05		
Educational Involvement	-.17***	.44***	--	.05	.13**	.06	-.00	.01	.16***	.05	-.03		
Autonomy Granting	-.15***	.12**	.01	--	.16***	.17***	-.18***	-.10**	.11**	.04	-.07		
Maternal Intimacy	-.07	.22***	.14**	.11**	--	.38***	-.25***	-.18***	.40***	.20***	-.14**		
Paternal Intimacy	-.13**	.09*	.05	.16***	.32***	--	-.19***	-.04	.34***	.14***	-.14***		
Maternal Conflict	.24***	-.16***	-.07	-.23***	-.21***	-.17***	--	.61***	-.21***	-.06	.31***		
Paternal Conflict	.17***	-.17***	-.07	-.09*	-.14**	-.01	.63***	--	-.18***	-.03	.23***		
Sibling Intimacy	-.17***	.24***	.19***	.07	.36***	.23***	-.10**	-.11**	--	.46***	-.43***		
Sibling Disclosure	-.10**	.15***	.09*	.08*	.28***	.18***	-.10*	-.11**	.52***	--	-.22***		
Sibling Negativity	.19***	-.06	-.12**	-.06	-.11*	-.15***	.32***	.26***	-.35***	-.20***	--		

Note. Reports about or from older siblings are below the diagonal. Reports about or from younger siblings are above the diagonal.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2
 Results from Two-Wave Latent Change Score Models Estimating Change in Parental Behaviors with the Onset of the COVID-19 Pandemic

	Parental Knowledge			Educational Involvement			Autonomy Granting		
	B	(SE)	p	B	(SE)	p	B	(SE)	p
Time 1 Parent education	.01	(.02)	.51	-.04	(.02)	.06	.01	(.01)	.50
Time 1 Income	.10	(.01)	.41	-.02	(.02)	.24	-.00	(.01)	.95
Time 2 Parent education	.00	(.02)	.96	-.07***	(.03)	.003	-.01	(.02)	.81
Time 2 Income	.01	(.02)	.72	-.04*	(.02)	.03	-.00	(.02)	.90
Time 1 Household size	-.14	(.03)	<.001	-.16	(.04)	<.001	-.03	(.03)	.29
Time 2 Household size	.00	(.03)	.89	.06	(.04)	.16	-.02	(.04)	.65
Time 1 Marital status	-.14	(.09)	.13	.00	(.12)	.98	-.24	(.09)	.01
Time 2 Marital status	.23	(.11)	.03	.52	(.16)	.001	.14	(.12)	.23
Time 1 Parent race	.13	(.11)	.24	-.50	(.16)	.001	.56	(.10)	<.001
Time 2 Parent race	-.24	(.12)	.05	-.13	(.21)	.53	-.10	(.14)	.45
Mean of Change score	1.60*	(.82)	.05	2.02*	(1.03)	.05	-1.09	(.72)	.13
Time 1 ←→ Change score	-.19***	(.04)	<.001	-.09	(.07)	.20	.92***	(.07)	<.001
Change score ←← Months between assessments	-.03*	(.01)	.03	-.02	(.02)	.32	-.02	(.01)	.07
Change score ←← Youth gender	-.27*	(.10)	.01	-.06	(.11)	.57	-.26**	(.10)	.01
Change score ←← Parent × Youth gender	.07	(.10)	.53	.23*	(.11)	.05	.25**	(.10)	.01
Change score ←← Parent gender	-.73***	(.13)	<.001	-.31*	(.14)	.03	.12	(.11)	.31
Change score ←← Birth order	.25***	(.04)	<.001	.18***	(.05)	<.001	-.14**	(.05)	.002
Change score ←← Age	-.10**	(.04)	.01	-.07	(.05)	.21	.09**	(.04)	.01
Change score ←← Chaos	-.30***	(.04)	<.001	-.09	(.06)	.09	-.16***	(.05)	<.001

* $p < .05$,

** $p < .01$,

*** $p < .001$

Results from Two-Wave Latent Change Score Models Estimating Change in Parent-Child Relationship Qualities with the Onset of the COVID-19 Pandemic

Table 3

	Maternal Intimacy			Paternal Intimacy			Mother-Child Conflict			Father-Child Conflict		
	B	(SE)	p	B	(SE)	p	B	(SE)	p	B	(SE)	p
Time 1 Parent education	.03*	(.02)	.02	.04**	(.01)	.01	-.01	(.01)	.49	-.01	(.01)	.35
Time 1 Income	.02	(.01)	.07	.05***	(.01)	<.001	-.01	(.01)	.52	.00	(.01)	.85
Time 2 Parent education	.03	(.02)	.19	.03	(.02)	.06	-.01	(.02)	.60	.02	(.02)	.34
Time 2 Income	.01	(.02)	.35	.04**	(.01)	.003	-.01	(.02)	.42	-.00	(.01)	.84
Time 1 Household size	-.05	(.03)	.04	-.07	(.03)	.01	.07	(.03)	.02	.01	(.03)	.71
Time 2 Household size	.03	(.03)	.37	-.01	(.03)	.82	.01	(.03)	.87	-.01	(.03)	.63
Time 1 Marital status	-.34	(.09)	<.001	-.96	(.09)	<.001	.15	(.09)	.08	-.39	(.09)	<.001
Time 2 Marital status	.28	(.11)	.01	.20	(.11)	.06	-.18	(.11)	.10	-.07	(.13)	.59
Time 1 Parent race	-.21	(.11)	.05	.01	(.10)	.93	-.11	(.10)	.26	-.14	(.10)	.17
Time 2 Parent race	.10	(.11)	.39	.32	(.10)	.002	-.01	(.12)	.93	.12	(.11)	.28
Mean of Change score	-.09	(.80)	.91	-.49	(.67)	.46	.28	(.72)	.69	-.95	(.67)	.16
Time 1 ←→ Change score	.70***	(.06)	<.001	.43***	(.05)	<.001	.74***	(.06)	<.001	.75***	(.06)	<.001
Change score ← Months between assessments	.01	(.01)	.65	-.00	(.01)	.87	.03*	(.01)	.03	.03**	(.01)	.01
Change score ← Youth gender	-.19	(.10)	.06	.05	(.11)	.66	-.00	(.10)	.99	.22**	(.09)	.01
Change score ← Parent × Youth gender	-.05	(.10)	.59	.12	(.11)	.29	.03	(.10)	.77	-.02	(.09)	.78
Change score ← Parent gender	-.03	(.11)	.82	.29*	(.12)	.01	-.00	(.10)	.99	.01	(.10)	.92
Change score ← Birth order	.15*	(.06)	.02	.07	(.06)	.19	.02	(.06)	.77	.04	(.06)	.46
Change score ← Age	-.06	(.04)	.12	-.05	(.03)	.19	-.02	(.04)	.52	.02	(.03)	.53
Change score ← Chaos	-.06	(.04)	.15	-.20***	(.04)	<.001	.27***	(.04)	<.001	.25***	(.04)	<.001

* $p < .05$,

** $p < .01$,

*** $p < .001$

Results from Two-Wave Latent Change Score Models Estimating Change in Sibling Relationship Qualities with the Onset of the COVID-19 Pandemic

Table 4

	Sibling Intimacy			Sibling Disclosure			Sibling Conflict		
	B	(SE)	p	B	(SE)	p	B	(SE)	p
Time 1 Parent education	.03	(.02)	.10	.00	(.02)	.99	-.02	(.02)	.19
Time 1 Income	.01	(.02)	.54	.00	(.01)	.81	.00	(.01)	.83
Time 2 Parent education	.01	(.02)	.51	-.03	(.02)	.26	-.00	(.02)	.83
Time 2 Income	.01	(.02)	.60	.01	(.02)	.49	.01	(.02)	.47
Time 1 Household size	-.05	(.03)	.13	-.06	(.03)	.06	-.03	(.03)	.26
Time 2 Household size	.01	(.03)	.80	-.02	(.04)	.59	-.03	(.03)	.23
Time 1 Marital status	-.25*	(.10)	.01	-.11	(.10)	.28	.15	(.09)	.11
Time 2 Marital status	-.05	(.12)	.70	-.14	(.14)	.33	.00	(.11)	.99
Time 1 Parent race	-.34***	(.11)	.002	-.26*	(.11)	.02	.06	(.10)	.57
Time 2 Parent race	.01	(.12)	.93	.16	(.15)	.28	-.04	(.11)	.71
Mean of Change score	-.91	(.86)	.29	.41	(1.02)	.69	1.21	(.77)	.12
Time 1 ←→ Change score	.23***	(.06)	<.001	.62***	(.07)	<.001	.60***	(.06)	<.001
Change score ← Months between assessments	-.00	(.01)	.81	-.02	(.01)	.22	.01	(.01)	.35
Change score ← Youth gender	-.25***	(.08)	<.001	-.40***	(.09)	<.001	-.09	(.07)	.17
Change score ← Sibling gender composition	-.05	(.09)	.54	-.48***	(.10)	<.001	-.03	(.08)	.68
Change score ← Sibling age difference	-.05	(.04)	.30	-.11*	(.05)	.02	.03	(.04)	.49
Change score ← Birth order	.13*	(.06)	.02	.05	(.07)	.48	-.10*	(.05)	.03
Change score ← Age	.03	(.04)	.54	-.00	(.05)	.93	-.09*	(.04)	.02
Change score ← Chaos	-.36***	(.05)	<.001	-.14**	(.05)	.003	.31***	(.05)	<.001

* $p < .05$,

** $p < .01$,

*** $p < .001$