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## Protective Factors and Changes in Parent and Sibling Dynamics During the COVID-19 Pandemic

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Protective Factors and Changes in Parent and Sibling Dynamics During the COVID-19  
Pandemic

by

Hannah Maciejewski

A Thesis Submitted In Partial Fulfillment of the Requirements for the  
Master of Science in Experimental Psychology, with a Concentration in Behavioral Sciences

In

The Department of Psychology

Seton Hall University

May, 2022

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SETON HALL UNIVERSITY

College of Arts & Sciences

Department of Psychology

**Approval For Successful Defense**

Masters Candidate, Hannah Maciejewski, has successfully defended and made the required modifications to the text of the master's thesis for the M.S. during this Spring Semester 2022.

THESIS COMMITTEE

(please sign and date beside your name)

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## Abstract

**Keywords:** Parent stress, Socioeconomic status, Daily routine, Family dynamics, Protective factors, COVID-19 pandemic, Siblings.

The COVID-19 pandemic disrupted life for everyone in different and unique ways. We recruited parents and children from the same families to investigate the changes families experienced since the start of the pandemic. Of interest were variables related to family dynamics as well as protective factors that may have influenced their pandemic experience. Twenty-three parents completed altered versions of the Perceived Coronavirus Threat Questionnaire short (CTQ-short), Perceived Coronavirus Impacts Questionnaire short (CIQ-short), and Oslo Social Support Scale (OSSS-3) as measures of perceptions of direct and indirect covid-related stress. Parents also completed a modified Parental Stress Scale (PSS) as a measure of reactions to stress. Lastly, parents completed a modified Family Routines Inventory (FRI) as a measure of consistency in family routines. For all measures, parents were asked to report how they feel now as compared to the start of the pandemic. Children of six parents also participated in virtual video interviews about play and relationship quality with siblings. Children responded to an altered Relationship Assessment Scale (RAS) as a measure of the quality of their sibling relationship. Children also answered questions about the kind of play they engage in to measure the frequency of free and guided play. Lastly, children responded to 3 open-ended questions to supplement their relationship and play measures. Overall, parents experienced increased reactions to stress today compared to the start of the pandemic, even though their perceptions of stress and family routines are unchanged. However, education was a protective factor in determining perceptions of direct stress and consistency of routines. Parents with more than a bachelor's degree (professional degrees) had lower perceptions of direct stress, and parents with

a bachelor's degree had more stable daily routines today. Additionally, children reported a robust score on the sibling RAS indicating positive relationship quality. The positive responses of the children on the RAS, supplemented by the open-response items suggest that the presence of a sibling is a protective factor. Altogether, family life today does not seem to be so different from life at the start of the pandemic, though several protective factors have softened the impact of the pandemic for some families.

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## **Introduction**

If you can remember the beginning of the COVID-19 pandemic, you may recall hearing messages of unity and solidarity because “we are all in this together.” While it is true that everyone experienced unprecedented disruptions and changes in their daily lives, the experience for each person has been vastly different. Parents have dealt with—and are still coping with—stress in all areas of life (Adams, 2021) and children have found new ways to play in a sea of precautions, in ways that are unique to each family. Family dynamics are nested in critical factors such as access to resources, parental stress, and daily routines. We examined these critical factors of the family environment to determine how family dynamics may have changed since the start of the pandemic, and if there are protective factors that lessened the impact of the pandemic. Whenever possible, family dynamic outcomes were investigated from the perspective of both parents and children from the same family to provide an insight to the whole family’s perception of the COVID-19 pandemic.

### **Parental Stress and Its Influence on Family Dynamics**

Family dynamics are patterns that shape interactions within the family. Family dynamics are important because family members rely on each other and spend time together—so much so that family dynamics can produce long-lasting physical and psychological outcomes (Jabbari & Rouster, 2022). Parental stress refers to the discomfort parents feel when their actions and needs do not align with the resources or opportunities they can offer their children (Holly et al., 2019). Even before the COVID-19 pandemic, parenting involved managing a plethora of stressors in everyday life, which was exacerbated during the COVID-19 pandemic. Parents have experienced increased stress during the pandemic (Adams, 2021; Brown et al., 2020; Park et al., 2020).

Parent stress can affect family dynamics. While parents typically attempt to shield their children from their stress, “spillover” is likely. Spillover describes how parent discontent goes beyond parents and seeps into other aspects of the family dynamic. Spillover can start at parent-parent discontent, move to parent-child discontent, and lead to child-child discontent (Prime et al., 2020). When parents perceive heightened stress levels, spillover can lead to more harsh parenting or child abuse (Brooks-Gunn et al., 2013; Brown et al., 2020; Chung et al., 2020), which may lead to decreased quality of parent-child relationships, and less close and supportive sibling relationships. More specifically, during the COVID-19 pandemic, parents who perceived a greater threat of the virus reported feeling the most stressed and had the highest levels of self-reported anxiety. As a result, stressed parents provided the least amount of learning activities for their children (Oppermann et al., 2021).

A particularly relevant factor related to parent stress is socioeconomic status (SES). SES is a measure of a family’s access to resources and is linked to a host of important parent experiences and child outcomes. Typically, higher SES parents, those who have higher paying employment and are highly educated, spend more time with their children at a young age than lower SES parents do (Guryan et al., 2008). By spending more time with their children, higher SES parents are better able to manage their children’s free time and provide more opportunities for guided activities and cognitive stimulation. For example, during the COVID-19 pandemic, higher SES parents were better able to take advantage of virtual enrichment opportunities such as museum tours, zoo visits, theatre shows, Mount Everest climbs, and Great Wall of China walks (Choi et al., 2020). While the virtual experiences were free and readily available to everyone with internet access, lower SES parents did not manage their children’s time as closely and

therefore did not utilize available resources as frequently. Particularly during such extraordinary times, such as the COVID-19 pandemic, access to resources may fluctuate, which can increase parental stress, aggression, differential parenting, tension between siblings, and household chaos (Kretschmer & Pike, 2009; Meunier et al., 2013; Tippett & Wolke, 2015). Higher SES parents may be better able to offset deficits in resources, decreasing their perceptions of stress. Thus, higher SES may be protective.

Family dynamics and parent stress can be affected by the family daily routine, which were also disrupted during the pandemic. A major stressor for parents during the COVID-19 pandemic was the sudden, intense, and unexpected change in the way families live their daily lives (Park et al., 2020). Regular routines, under normal circumstances and during COVID, such as going to school on weekdays and eating dinner at the same time provide structure and help to keep stress at bay for parents and children, making them better prepared to manage stressors (Glynn et al., 2021). If families have an unpredictable routine, there is a greater likelihood that stressors will have more of an impact, which can lead to other negative outcomes such as exacerbating chronic illnesses (Bridley & Jordan, 2012). However, during the pandemic, the number and magnitude of changes that families experience in their daily routines vary. Parents with more resources (i.e., those from higher SES families) can help mitigate pandemic-induced changes to routines. For example, having a stay at home parent could have significantly decreased the amount of change and stress experienced by a family (Choi et al., 2020).

In sum, parental factors are essential to investigate given the many ways that family dynamics are determined by them. The dramatic increase of stress that parents have experienced during the COVID-19 pandemic puts families at risk of experiencing spillover. Pandemic

regulations have also shifted the normal family routine for most families, which may not be easily recovered due to parent stress. However, SES could potentially be protective, and curb parental stress as well as inconsistency of daily routines.

### **The Role of Children and Their Siblings in Family Dynamics**

Many families are composed of parents and children. Therefore, another important aspect of family dynamics is children and their relationships with siblings. Siblings are children's first play mates, friends, and teachers. Siblings are also children's greatest rivals and sometimes, enemies. With this complex family dynamic, children who grow up with siblings experience a one-of-a-kind relationship that produces a unique and special bond. Sibling relationships are among the longest lasting and most intimate relationship that we experience (Kramer & Conger, 2009). The persistence, uniqueness, and depth of the sibling relationship is what makes it such an important contributing factor to development.

Multiple factors impact sibling relationships, which in turn influence family structure and dynamics. For example, a greater number of siblings may result in greater household chaos and fewer resources, which may consequently increase parental stress (Cruise & O'Reilly, 2014; Tippett & Wolke, 2015; Zajonc & Markus, 1975). The sex of siblings can influence how they play together. Male siblings incorporate more humor (Paine et al., 2019), and physical and verbal aggression during play (Tippett & Wolke, 2015), whereas female siblings tend to be more nurturing and positive towards each other during play (Havron et al., 2019). Siblings with a large age gap (four years or more) have more warmth, affection, and admiration for their siblings, which leads to less fighting and rivalry between them (Buhrmester & Furman, 1990). Younger siblings may not receive the same undivided attention that the oldest siblings did, requiring them

to put in more work to reach cognitive milestones (Cruise & O'Reilly, 2014). Conversely, older siblings may grow in up in an intellectually diluted setting due to their younger siblings' inability to enrich the environment (Zajonc et al., 1979).

The degree of influence that siblings have on each other is further amplified when children with siblings are compared to only children. Compared to children with siblings, only children perform better on cognitive tasks, such as tests of verbal memory, serial memory for words, and general information. However, only children lag in social and emotional abilities such as persistence, cooperation, and collectivism (Jiao et al., 1986). Children with siblings excel at the social and emotional tasks because they have had the opportunity to practice these skills with their siblings. Children with siblings are better at acceptance of peers during play, conflict management, caring for peers, and persevering through challenging tasks (Jiao et al., 1986, 1996; Kitzmann et al., 2002). Such differences in social/emotional skills and formal skills between only children and children with siblings are stronger when children are younger, suggesting that varied sources of socialization such as school and peer interaction help alleviate differences between only children and children with siblings as they grow older (Jiao et al., 1996). This “balancing out” of abilities can be a potential point of concern because socialization outside the household during the COVID-19 pandemic may have been reduced, leaving only children *and* children with siblings in need of an alternate form of interaction.

Play is an essential part of growth and development; it is also how most siblings interact and spend time together. Free play is characterized by a child's internal motivation for pleasure, whereas guided play, is characterized by an external motivator, usually a parent or a teacher. The developmental benefits of free and guided play are divergent; free play strengthens social

emotional skills (Kramer & Conger, 2009), and guided play leads to the development of formal skills like reading (Danniels & Pyle, 2018). Typically, children experience a balance of free and guided play through their interactions with various people. However, due to less opportunities to engage with teachers, peers, and parents because of the COVID-19 pandemic, free play between siblings could potentially be the primary form of play.

Free play may be the primary form of play during the pandemic because children have lost guided play opportunities through the closings of schools, daycares, or organized activities. Children are likely not making up for this loss of guided play because parents who experience stress due to the COVID-19 pandemic may lack the wherewithal to engage in guided play (McCormack et al., 2020; Oppermann, 2020). Additionally, siblings are not successful at guided play due to imbalances of cognitive, motor, and intellectual ability as well as competitiveness, being helpful, and providing correct information (Go et al., 2012). On the contrary, siblings excel at free play because it is the vehicle in which they can informally teach each other things about the world, and share experiences that lead to their unique and intimate relationship (Kramer & Conger, 2009). As a result of changed daily routines and parent stress, sibling free play might become the most accessible form of play for children.

Put together, there is strong evidence that sibling relationships are indispensable for children's development and that they influence family dynamics. Siblings serve as a unique companion for children during the pandemic; a physical playmate and an emotional confidant. It is possible that how they spend time together may have changed during the pandemic.

## **Current Study**

Due to the individual parent and sibling factors that establish family dynamics, it is likely that no two families have experienced the pandemic the same way. In this study, we examined changes in parent-related outcomes (perceptions of direct stress, perceptions of indirect stress, reactions to stress, and consistency of daily routines) to determine if life today is any different than the start of the pandemic. We also investigated if those parent changes impacted the direct sibling relationship by measuring sibling play, and relationship quality. Another goal of this study was identifying any protective factors that softened the impact of the pandemic. Whenever possible, parents and children from the same family provided information about their pandemic-related experience for a better understanding of the whole family dynamic. Children were between 7-10 years of age at the start of the pandemic. We focused on young elementary school age children because they may have been most affected by the stay-at-home order during the COVID-19 pandemic. While children of this age are somewhat independent (e.g., having their own routines such as going to school or participating in sports), they are also still heavily reliant on their parents (e.g., need parent supervision for virtual schooling).

It was predicted that there would be positive changes in the parent outcomes, such that parents would report less perceptions of direct stress, less perceptions of indirect stress, less reactions to stress, and more consistency of daily routines today as compared to the start of the pandemic. Due to the positive changes we expected to find in parents, we predicted that children would have equal proportions of free and guided play as well as a high quality relationships with their siblings. Additionally, based on previous findings, we anticipated that SES would serve as a

protective factor. In particular, we predicted that higher SES families would be less affected by the burden of the pandemic.

## **Method**

### **Participants**

Twenty-five families were recruited through listservs, science websites, and social media. The inclusion criteria was having at least two children (the target child and at least one sibling) living in the same house during the COVID-19 pandemic and one of the children (target child) between 7 and 10 years of age at the start of the pandemic. According to the screening survey (Appendix A), all parents and children had a satisfactory understanding of English, internet access, and access to a device with a video camera for child interviews and internet browser for parent surveys. One family was excluded from the final sample due to incomplete parent survey and another was excluded because the parent provided the same response on all survey items, resulting in a final sample of 23 families.

Of the 23 families, more mothers ( $n = 14$ ) than fathers ( $n = 9$ ) completed the virtual survey. The responding parents' average age was 37.57 years ( $SD = 6.61$ ). Of the parents, 26.1% were Hispanic or Latino and 73.9% were not; 78.3% were White and 21.7% of parents were Black or African American. For education attainment, 2 parents reported that their highest education attainment was a high school diploma, 7 reported completing some college, 1 reported having an associate's degree, 6 had bachelor's degrees, and 7 had professional (master's or doctorate) degrees. Parents were able to select more than one type of employment and provided responses demonstrating a variety of employment types: part-time ( $n = 3$ ), full-time ( $n = 8$ ), retired ( $n = 1$ ), owning a business that still opens ( $n = 1$ ), owning a business that has been shut

down due to the pandemic ( $n = 3$ ), working from home ( $n = 6$ ), working away from home ( $n = 1$ ), furloughed ( $n = 1$ ), taking a break from work ( $n = 1$ ), and other ( $n = 1$ ). The demographics information was collected using the survey shown in Appendix B.

Parents' education attainment and employment status served as a proxy for family SES. For education attainment, responses were sorted into three categories that were roughly equally distributed: Parents who completed *less than a bachelor's degree* (high school diploma, some college, or an associate's degree;  $n = 10$ ), parents who completed a *bachelor's degree* ( $n = 6$ ), and parents who completed *more than a bachelor's degree* (master's or doctorate degrees,  $n = 7$ ). For employment status, the parents were permitted to select more than one category to represent all the ways in which they were employed throughout the pandemic. However, for this small sample, this approach yielded too many unique responses for a meaningful organization of the data. Therefore, I categorized the different types of employment into *less stable* or *more stable* employment. More stable employment included full-time work, owning a business that still opens, working at home, and/or working away from home (69.6% of responses). Less stable employment included taking a break from work, part-time work, retired, owning a business that has been shut down due to the pandemic, furloughed, and/or other (30.4% of responses). The education and employment groupings were used in the following analyses to examine how stress and daily routines were influenced by approximate measures of SES and family resources. Tables 1 and 2 show the differences in parents' age, race, and ethnicity for the three education attainment and two employment status categories, respectively.

**Table 1.***Parents' Demographic Information by their Level of Education.*

		Less than bachelor's	Bachelor's	More than bachelor's
Mean parent age (standard deviation)		34.70 (6.26)	36.17 (7.78)	42.86 (1.57)
Race	White	7	4	7
	Black or African American	3	2	0
Ethnicity	Hispanic or Latino	5	1	0
	Not Hispanic or Latino	5	5	7

**Table 2.***Parents' Demographic Information by their Employment Stability.*

		Less stable employment	More stable employment
Mean parent age (standard deviation)		35.29 (7.40)	38.56 (6.21)
Race	White	4	14
	Black or African American	2	3
Ethnicity	Hispanic or Latino	5	1
	Not Hispanic or Latino	2	15

From the 23 families, 6 children also completed child virtual interviews (2 boys, 4 girls). The children's average age was 9.83 years ( $SD = 0.75$ ). Their parents' average age was 42.83 years ( $SD = 1.72$ ). For the children who completed interviews, all parents were White, not Hispanic or Latino, and had a professional degree (more than a bachelor's degree). We attempted to collect information about each target child's siblings (number of siblings, age, and gender). However, the information parents provided was not codable so this information was not used in

any analyses. Families who completed both parts of the study received a \$15 electronic gift card for their participation.

## **Procedure**

***Recruitment.*** Families were recruited through science listservs, social media, and other science websites for children. Interested parents completed a screening survey through Qualtrics (Appendix A). Families who met the participation criteria were directed immediately to the parent survey or provided a link for later access.

***Parent survey.*** The first part of this fully virtual study was the unmoderated parent survey. One parent from each family volunteered to complete the parent measures. Parents began by reading and responding to an informed consent form. Parents then responded to survey items about their demographics (Appendix B), changes in stress (Appendix C and D), and changes in their family's daily routine (Appendix E) by completing short answer, multiple choice, and check all that apply style questions. If parents did not complete the survey immediately after the screening process, they were sent regular email reminders about completing the survey. When they completed their survey, parents were prompted to schedule their child's interview using a personalized link to Calendly. Through Calendly, we scheduled a Microsoft Teams meeting at the parent's desired time, during which the child and the researcher had their interview.

***Child interview.*** We interviewed children directly rather than asking parents to provide answers for their children to capture children's perspective as accurately as possible. Parents were invited to remain in the room with their child but were instructed to allow their child to answer the questions by themselves. Children were read a verbal assent statement, and upon assent we reassured them that there are no correct answers. To ensure that children could use the

4-point Likert scale to answer questions, we asked a series of practice questions (Appendix F). Once children successfully completed the practice questions, they were asked to respond to the items about their sibling relationship quality and sibling play patterns using the self-report scale (Appendix F). Lastly, children responded to three open ended questions (Appendix F). Although the parent and child responses were recorded separately their responses were linked through a family ID number.

## **Measures**

*Family demographics.* Parents self-reported information about family demographics including education, employment status, and race/ethnicity (Appendix B).

*Parent survey: Perception of direct and indirect stress.* For each of the following measures, we modified the phrasing of the prompts to ask about change compared to the start of the pandemic and today. Asking about change provided an understanding of the direction and magnitude of the difference regardless of each parents' starting level of stress or routine. We also altered the response scales of each measure to ask about change rather than amount. Using a scale of 1 (much less) to 5 (much more), with 3 as a midpoint (about the same), parents reported the degree to which they experienced the items today as compared to the beginning of the pandemic.

Parents completed 12 questions from adapted versions of the Perceived Coronavirus Threat Questionnaire short (CTQ-short), the Perceived Coronavirus Impacts Questionnaire short (CIQ-short) (Conway et al., 2020), and the Oslo Social Support Scale (OSSS-3) (Kocalevent et al., 2018) as measures of perceived stress (Appendix C). The CTQ-short and CIQ-short have been validated and used in recent literature regarding the COVID-19 pandemic (Conway et al.,

2020; Ryerson, 2022). These two measures indicate stress related directly to the pandemic, and were created specifically to capture pandemic related stressors such as, “Compared to the start of the COVID-19 pandemic, thinking about the Coronavirus now makes me feel \_\_\_\_\_ threatened today” or “Compared to the start of the COVID-19 pandemic, the COVID-19 pandemic is impacting me negatively from a financial point of view \_\_\_\_\_ today”. Since these measures were developed and are commonly used together, in the current study, scores on the two measures will be summed and analyzed together. Higher scores on the measures of direct stress indicated experiencing increased direct pandemic stress now as compared to the start of the COVID-19 pandemic.

The OSSS-3 indicates stress indirectly related to the pandemic since it measures social support. The OSSS-3 has been found to be a reliable measure of social health (Kocalevent et al., 2018). The OSSS-3 asks questions like “Compared to the start of the COVID-19 pandemic, people today show \_\_\_\_\_ interest and concern in what I do”. Higher scores for the measure of indirect stress indicated increased social support now than at the start of the pandemic.

***Parent survey: Reaction to stress.*** As a measure of change in reactions to stressors, parents completed 17 items from a modified version of the Parental Stress Scale (PSS) (Appendix D). The PSS has been found to be a reliable measure of stress (Berry & Jones, 1995) and has been used in recent pandemic literature (Chung et al., 2020). Parents responded to items such as “Compared to the start of the COVID-19 pandemic, today I am \_\_\_\_\_ happy in my role as a caregiver” or “Compared to the start of the COVID-19 pandemic, today my child(ren) are a \_\_\_\_\_ significant source of stress in my life”. Higher scores indicated increased feelings of reactions to stress now compared to at the start of the pandemic.

***Parent survey: Daily routines.*** Lastly, parents responded to 28 items from a modified Family Routines Inventory (FRI) (Jensen et al., 1983) to indicate changes in daily routines (Appendix E). The FRI has been found to be a valid measure of family cohesion (Jensen et al., 1983) and has been used recently to draw conclusions about consistency of family routines amidst the COVID-19 pandemic (Glynn et al., 2021). Parents reported how much they have been able to uphold a family daily routine today compared to the start of the COVID-19 pandemic by responding to questions such as “Each child has some time each day for playing alone” and “Whole family eats dinner together almost every night”. Higher scores indicated a stronger (more consistent) sense of family routine.

***Child interview: Sibling relationships.*** During the interview, children were read the questions and verbally responded with their answer using a Likert scale. Children completed 7 items from an altered version of the Relationship Assessment Scale (RAS) (Hendrick, 1988) (Appendix F), which measured sibling relationship satisfaction. The RAS has been found to be a reliable measurement tool for assessing relationship satisfaction (Hendrick, 1988). Children responded to questions like “How often do you and [your sibling] get along?” and “How often do you like to be with [your sibling]?” Children were asked to use a 4 point Likert scale ranging from 0 “never” to 3 “always” to avoid a neutral response bias possible with a neutral response choice (e.g., using a 5-point scale). It is possible, however, that removing the middle score may have resulted in truncated data that fails to capture a true neutral response (Krosnick & Presser, 2010). Higher scores indicated better relationship quality.

***Child interview: Amount and types of play.*** Children responded to 10 items related to free and guided play (Appendix E). These questions were created for the purpose of this study

and were modeled after items on the FRI. The measure included items such as “Parent(s) read or tell stories to me almost every day” and “I have some time each day for playing alone”. Items were grouped into subsets for free or guided play, higher scores indicated more free/guided play.

***Child interview: Open-ended questions about siblings.*** Children answered 3 open-ended questions: “When you play with your sibling(s) what do you normally play?”, “What was something you liked doing with your sibling(s) throughout [the pandemic]?”, and “How do you think [the pandemic] would’ve been different if you didn’t have a sibling(s)?” (Appendix F, child responses in Appendix G). We created these questions as a way to supplement children’s responses to the measures above, to further examine the importance of the presence of a sibling during the pandemic.

## **Design and Analysis**

One-sample *t*-tests were used to determine whether perceptions of direct stress, perceptions of indirect stress, reactions to stress, and perceptions of daily routine consistency had changed significantly since the start of the pandemic.

Because SES has been found to be critical to the pandemic experience, indicating lower income is related to heightened pandemic-related stress (Bates et al., 2021; Park et al., 2020), two of the family demographic variables were used as indexes of SES and grouping variables in the parent survey outcomes. The 3 categories of education (please see the Results section for an explanation) were used in one-way ANOVAs to examine if the parent survey outcomes varied as a function of education. The 2 categories of employment stability (please see the Results section for an explanation) were used in independent-samples *t*-tests to determine if the parent survey outcomes varied as a function of employment.

The child outcome variables were examined descriptively due to the small sample size.

## Results

### Parent Survey Outcomes

*Perception of direct and indirect stress.* I began by examining parent's perceptions of stress directly and indirectly related to the COVID-19 pandemic since stress can impact the ability to maintain daily routines. Perception of stress was measured in two ways: Directly related to the pandemic via the CTQ-short and the CIQ-short, and indirectly related to the pandemic via the OSSS-3.

On direct measures (summed across the CTQ-short and CIQ-short), the minimum possible score was 9 and the maximum possible score was 45, putting the midpoint or "no change" score at 27. The parents' average score was 25.39 ( $SD = 5.61$ ), which was not significantly different from the "no change" score,  $t(22) = -1.37, p = .18, d = -.29$ . Therefore, as a group, parents reported no difference in perceptions of direct stress today as compared to the start of the pandemic.

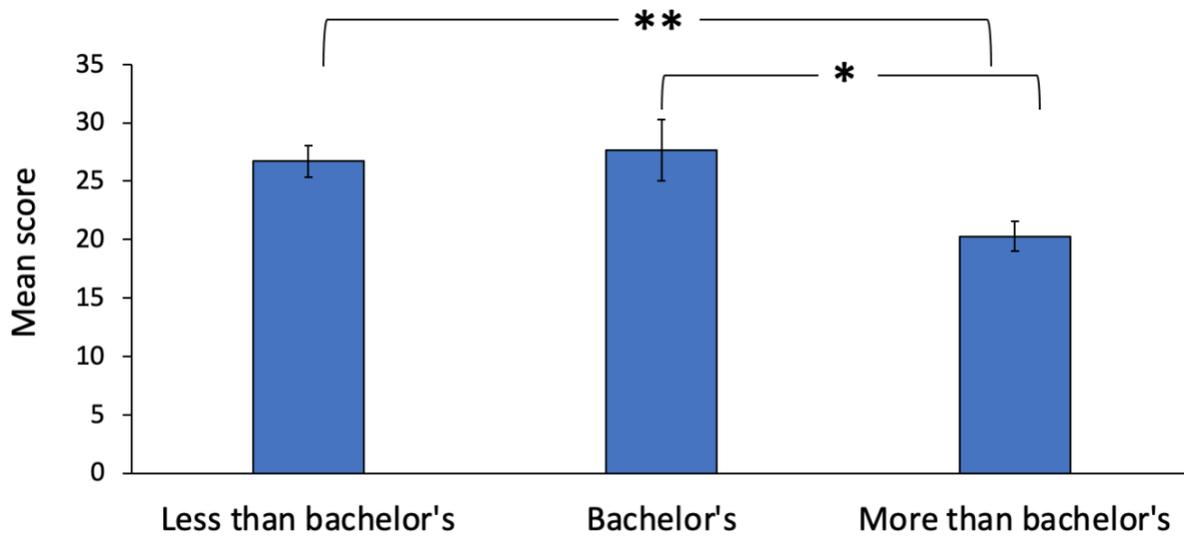
However, a one-way ANOVA revealed that perceptions of direct stress did differ as a function of education,  $F(2, 20) = 6.08, p = .01, \eta^2 = 0.38$  (Figure 1). A post-hoc Tukey test showed that parents with more than a bachelor's degree ( $M = 20.29, SD = 3.30$ ) reported lower scores compared to parents with a bachelor's degree ( $M = 27.67, SD = 6.41$ ),  $p = .03$ , 95% CI [-13.92, -0.85]. Parents with more than a bachelor's degree also reported lower scores compared to parents with less than a bachelor's degree ( $M = 27.60, SD = 4.22$ ),  $p = .01$ , 95% CI [-13.10, -1.53] (Figure 1). In other words, parents with the highest education attainment level had the

lowest perceptions of direct stress. There was no difference between parents with less than a bachelor's degree and parents with a bachelor's degree,  $p = 1.00$ , 95% CI [-6.13, 6.00].

An independent-samples  $t$ -test indicated that perceptions of direct stress did not vary by employment stability,  $t(21) = -.06$ ,  $p = .95$ ,  $d = -.03$ . Parents with less stable employment reported similar scores ( $M = 25.29$ ,  $SD = 3.99$ ) as parents with more stable employment ( $M = 25.44$ ,  $SD = 6.31$ ).

**Figure 1.**

*Parent's Perceptions of Direct Stress by their Education Level.*



*Note:* Parents with more than a bachelor's degree (those with master's or doctorates) responded with lower scores on change in perceptions of direct COVID stress than did parents with bachelors' degrees or less than bachelor's degrees. The error bars denote mean standard error.  $*p = .05$ ,  $**p = .01$ .

For perceptions of indirect stress (measured by the OSSS-3), the minimum possible score was 3 and the maximum possible score was 15, putting the midpoint or “no change” score at 9. The average score was 9.26 ( $SD = 2.47$ ), which did not differ significantly from the “no change” score  $t(22) = .51, p = .62, d = .11$ , indicating that as a group, parent’s perception of stress indirectly related to the pandemic was about the same today as compared to the start of the pandemic.

A one-way ANOVA revealed that perceptions of indirect stress did not differ as a function of education,  $F(2, 20) = 2.40, p = .12, \eta^2 = .19$ . Scores were similar across parents with less than a bachelor’s degree ( $M = 8.40, SD = 1.84$ ), a bachelor’s degree ( $M = 11.00, SD = 3.74$ ), and more than a bachelor’s degree ( $M = 9.00, SD = 1.15$ ).

An independent-samples  $t$ -test indicated that indirect stress also did not vary by employment stability in a significant way,  $t(21) = -.33, p = .75, d = -.15$ . Parents with less stable employment reported similar scores ( $M = 9.00, SD = 1.41$ ) as parents with more stable employment ( $M = 9.38, SD = 2.85$ ).

**Reaction to stress.** To examine how parents react to perceived stress, their responses on the PSS were summed. The minimum possible score was 17 and the maximum possible score was 85, putting the midpoint or “no change” score at 51. On average, parents scored a 53.65 ( $SD = 5.84$ ), which did differ significantly from the “no change” score,  $t(22) = 2.18, p = .04, d = .45$ , meaning that parents are reacting more to stress today than at the start of the pandemic.

A one-way ANOVA revealed that reactions to stress did not significantly differ by education,  $F(2, 20) = 2.63, p = .10, \eta^2 = .21$ . Scores were similar across parents with less than a

bachelor's degree ( $M = 50.70, SD = 2.36$ ), a bachelor's degree ( $M = 55.50, SD = 7.82$ ), and more than a bachelor's degree ( $M = 56.29, SD = 6.29$ ).

An independent-samples  $t$ -test determined that reactions to stress did not differ significantly as a function of employment stability  $t(21) = -.81, p = .43, d = -.37$ . Parents with less stable employment reported similar scores ( $M = 52.14, SD = 5.64$ ) as parents with more stable employment ( $M = 54.31, SD = 5.97$ ).

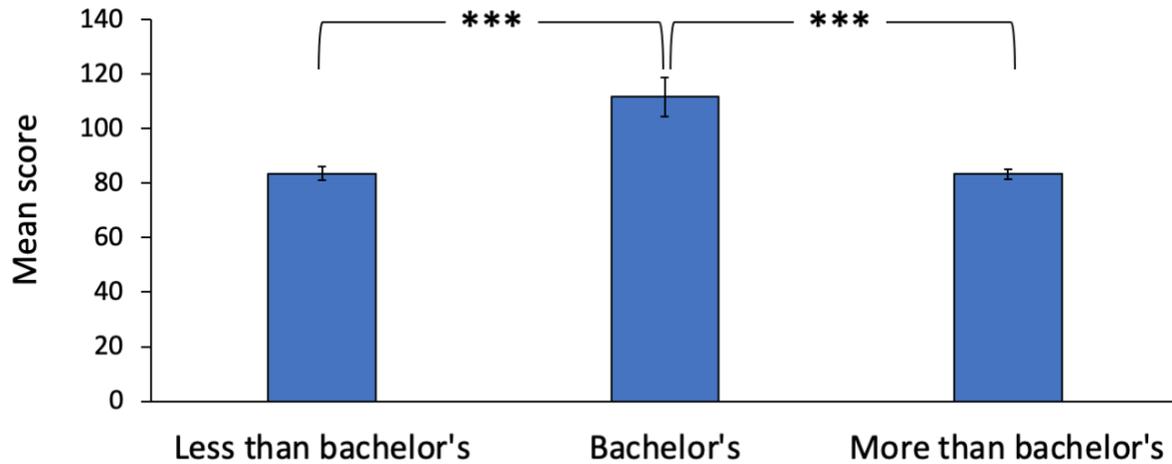
**Daily routines.** As a measure of consistency in family daily routines now compared to throughout the pandemic, parents completed the FRI. The minimum possible score was 28 and the maximum possible score was 140, putting the midpoint or “no change” score at 84. On average, parents scored a 90.83 ( $SD = 16.25$ ), which did not differ significantly from the “no change” score,  $t(22) = 2.02, p = .06, d = .42$ , indicating that family routine consistency is about the same now as compared to the start of the pandemic.

A one-way ANOVA revealed that routine consistency does vary by education,  $F(2, 20) = 15.44, p < .001, \eta^2 = .61$ . A post-hoc Tukey test showed that the mean score of parents with bachelor's degrees ( $M = 111.67, SD = 17.53$ ) was different from parents who had less than bachelor's degrees ( $M = 83.60, SD = 8.32$ ),  $p < .001, 95\% CI [14.11, 42.03]$  and parents who had more than a bachelor's degree ( $M = 83.29, SD = 4.54$ ),  $p < .001, 95\% CI [13.34, 43.42]$  (Figure 2). In other words, parents with a bachelor's degree had the most stable daily routines today.

An independent-samples  $t$ -test indicated that there was no significant difference in the consistency of family routines as a function of employment stability,  $t(21) = -.68, p = .50, d = -.31$ . Parents with less stable employment reported similar scores ( $M = 87.29, SD = 8.48$ ) as parents with more stable employment ( $M = 92.38, SD = 18.71$ ).

**Figure 2.**

*Family Routine Consistency by Parent Education Attainment.*



*Note:* Parents who obtained a bachelor's degree have significantly more stable family routines today than parents who have less than a bachelor's degree and more than a bachelor's degree.

The error bars denote mean standard error. \*\*\* $p = .001$

### **Child Interview Outcomes**

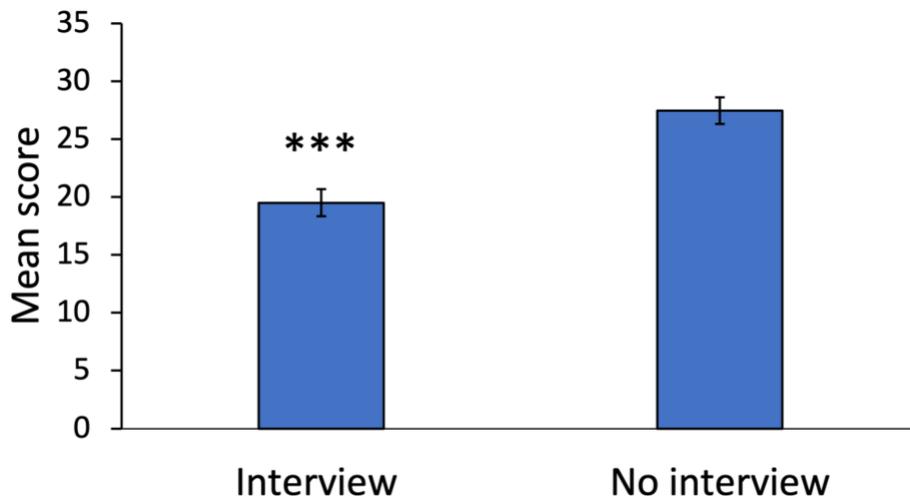
Due to a small sample size ( $N = 6$ ), outcomes related to children and their family dynamics are descriptive. Whenever possible, qualitative data supplements the quantitative data.

***Parent stress and daily routines.*** Of the 23 parents who completed the parent measures, 6 of their children also completed the virtual interview. The parents of these 6 children scored an average of 19.50 ( $SD = 2.81$ ) for perceptions of direct stress, 9.00 ( $SD = 1.26$ ) for perceptions of indirect stress, 56.83 ( $SD = 6.71$ ) for reactions to stress, and 84.33 ( $SD = 3.93$ ) for daily routines.

Independent-samples *t*-tests were conducted to determine if these parents differed significantly from the other parents in terms of their scores for stress or daily routine outcomes. There was a significant difference for direct stress only,  $t(21) = 3.79, p = .001, d = 1.80$  (Figure 3). All other comparisons were not significant,  $ps > .12$ .

**Figure 3.**

*Parent's Perceptions of Direct Stress by Interview Status.*



*Note:* Parents whose children completed the interview portion of the study perceived significantly less direct stress today compared to parents whose children did not complete the child interview. The error bars denote mean standard error. \*\*\* $p = .001$

***Play and relationship quality.*** Types of play provide a rough measure of how children spend their time, level of parent involvement (e.g., guided play), and interactions with siblings (e.g., free play). To assess the types of play the target child typically engages in, children completed a set of questions that capture the frequency of free or guided play. The maximum

possible score on the free play scale was 18 and the minimum possible score was 0, with higher scores indicating more free play. On average, children scored 9.17 ( $SD = 0.75$ ) for free play. On the measure of guided play, the maximum possible score was 12 and the minimum possible score was 0, with higher scores indicating more guided play. On average, children scored 6.33 ( $SD = 1.51$ ) for guided play. What is particularly illuminating about the measures of play is how they relate to each other. Children reported engaging in each type of play about half the time, therefore the results suggest that children experienced equal amounts of free and guided play. This means that children benefitted from both continuing parent involvement (in the form of guided play) and interactions with siblings (in the form of free play).

Another important observation to draw from the play measure is that while children reported to be engaging in equal amounts of free and guided play on the play measure, when they responded to one of the open-response items: “When you play with your sibling, what do you normally play”, all 6 children reported only free play activities (Appendix G). This aligns with the literature that free play is the primary and preferred form of play between siblings.

To better understand the target child’s relationship quality with their sibling, we asked them to completed a RAS, which had a maximum possible score of 21 and a minimum possible score of 0, with higher scores indicating better sibling relationship quality. The average score on the RAS was 13.83 ( $SD = 2.64$ ). Although this is a relatively mid-level score, children’s open response answers to the question “How do you think the pandemic would have been different if you didn’t have a sibling(s)?” suggest that most children benefitted from having a sibling throughout the pandemic. All six children reported that if they not had their siblings, they

would've lacked not only a play mate, but also a unique source of physical and emotional support (Appendix G).

## **Discussion**

It has been over two years since our lives have changed in reaction to the COVID-19 pandemic. While it is tempting to believe that the virus treated us all equally, our experiences have been varied. The current study attempted to capture some of those differences at the family level.

Overall, we found evidence that parents *perceive* no change in life today as compared to life at the start of the pandemic for perceptions of direct stress, indirect stress, and family routine consistency. However, they are *reacting* to stress more today than at the start of the pandemic. We also found that education was a protective factor that influenced parent's perceptions of direct stress as well as their ability to uphold a consistent daily routine. Additionally, we found the presence of a sibling was also protective, in that children reported positive feelings towards their sibling relationship.

Parents may be reacting more to stress now compared to the start of the pandemic due to burnout. After two years of stress, parents may feel that their ability to react appropriately to stressors is diminished. Recent research confirmed that stress levels have risen during the pandemic and have not returned to what they were pre-pandemic (Adams, 2021). Additionally, women tend to interpret events during the pandemic, such as changes in daily routines, as more stressful compared to men (Park et al., 2020). Because our sample included more mothers than fathers, some of the findings may also be due to gender-related differences in pandemic stress.

While burnout may account for the changes that parents reported in reactions to stress, the lack of changes that parents reported in direct stress, indirect stress, and routine consistency may be attributed to the time period during which they took the survey. The data collection period (January and early February of 2022) coincided with the severe surge of the Omicron variant in the Northeast. During this time, schools and work returned to mostly remote and opportunities for social interactions decreased once again. Due to the threat of the new variant, life at the time of data collection truly may not have been all that different from life at the start of the pandemic.

Parents who had the highest SES also had the lowest perceptions of direct stress. Since education is a proxy of SES, parents with more education likely have greater access to resources, which would counteract the most pressing issues of the pandemic. For example, parents with more resources would feel less afraid of the pandemic today because they know they have access to good medical care and the financial ability to seek necessary care. More resources may also allow more help for parents, such as baby-sitters or nannies, and more opportunities for children, such as extracurricular lessons or access to activities.

However, it is important to note that the size of the final sample was a major restriction in the analyses we were able to conduct and the conclusions we were able to draw. An initial power analysis indicated that 100 or more families would be necessary for a sufficiently powered sample. A final sample of 23 parents and 6 children fell short of what was needed, and produced a sample that varied little in demographic factors. This lack of diversity was particularly salient for the child sample, all of whom had parents with a professional degree, were not Hispanic or Latino, and were White. A larger sample, in addition, would have allowed for a more in-depth

analysis such as a regression analysis to determine which factors predict the parent survey outcomes.

A larger sample size would have also helped clarify unexpected findings. We found that parents with less than a bachelor's degree or more than a bachelor's degree did not report changes to their families' daily routines. Based on the general importance of SES, it was predicted that parents with more education would experience a better, more consistent daily routine in the family lives (much like their decreased perception of direct stress) compared to the other two education groups.

Child responses indicated that siblings are protective. Not only did children report that they would have been lacking a source of entertainment, but also an essential source of physical and emotional support during a time when they would have needed it. Children who are between the ages of 7-10, are used to going to school and other activities, but when those became inaccessible they may have realized a new appreciation for their siblings. However, a limitation of the child sample that we collected might have been the age range we chose. As the literature suggests, the closeness of sibling relationships waxes and wanes throughout life. Most children tend to be closest during childhood, grow apart as teens, and become close again later in life (Kim et al., 2006). Therefore, by measuring children who are 7-10 years of age, we might have captured children during the phase when they are just generally close with their siblings. For that reason, we cannot be certain that this positive relationship finding generalizes to children of other age groups. The positive responses that we collected from children could also be very circumstantial, in that if it wasn't for the extraordinary circumstances of the COVID-19

pandemic, children may not have appreciated being forced to spend so much time with their siblings.

Children also reported equal proportions of free and guided play. This is an important finding, as it imitates what we know from the literature, in that children do not excel at, and therefore do not willingly engage in guided play (Go et al., 2012). Since all the parents of these children had more than a bachelor's degree, this would make them higher SES, meaning they are better able to manage their children's time, leaving them with more normal or equal amounts of free and guided play that they would have outside of the pandemic.

Aside from the sample limitations, there is room for improvement in the measures that were deployed. First, we attempted to capture the impact of employment by creating an employment stability variable. However, unlike education, our employment categories were not related to any of the parent variables. The lack of a relationship between employment and parent variables was unexpected since income and employment do influence the pandemic experience (Bates et al., 2021; Glynn et al., 2021). The discrepant finding is likely due to the way in which we asked participants to report employment, which resulted in too many unique responses, and the subsequent manner in which we created the less and more stable employment groups. A more direct measure of SES and employment would have been income, which was not measured in the current study.

Second, in other studies related to the pandemic, participants are asked whether anyone in the family has contracted the COVID-19 virus or is a health care worker. If we had asked these questions, we may have had additional insight into how parents interpret stress and react to it.

Third, we used the FRI to examine family routine. Although the FRI has been used in recent

studies, a more up-to-date measure that includes important aspects of modern life (e.g., screen time) may have been more useful. Lastly, the play measure we gave children was created for the purpose of this study, and therefore has not been found to be psychometrically sound. It seems the play measure may be measuring parent availability more than play.

In conclusion, despite some of the methodological limitations, it appears that the pandemic did not treat us all equally, in that some family factors did influence the pandemic experience.

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## Appendix A

### Screening survey

Please answer a few simple questions to see if you and your family qualify for this survey. Please click on the arrow below to proceed.

Please enter your email here (Don't forget to check for spelling). Your email will be kept confidential. We will never share your email with anyone.

---

May we use this email to contact you about this study?

Yes

No

We want to learn about the experience of a child who was between 7 and 10 years of age at the start of the pandemic (*target child*), the child's relationship with their brother(s) and/or sister(s) (*siblings*), and their connection to the family (*people living in their household during the COVID-19 pandemic*).

Are you the parent/guardian of at least two children (target child and sibling(s))?

Yes

No

Was the target child between the ages of 7 and 10 on March 11, 2020?

Yes

No

Is the target child willing and able to complete a brief virtual interview?

Yes

No

Does the target child or the sibling(s) have developmental delays?

Yes

No

Do you, the target child, and the sibling(s) live in the same household?

Yes

No

Are you and the target child able to communicate in English?

Yes

No

Do you and the target child have access to a device that can connect to the internet and support virtual meetings? Common examples are laptop with a camera, tablet with a camera, or a smart phone with a camera.

Yes

No

## Appendix B

### Demographics and SES

Inspired by the Coping with COVID-19 tool (University of Chicago, 2020).

Please enter your email (don't forget to check for spelling).

---

What is your age?

---

What is your relation to the target child?

Mother

Father

Other

What is the target child's date of birth? Please use the format (mm/dd/yy)

---

What is the gender of the target child?

Male

Female

Transgender

Non-binary

Prefer not to say

Are you a primary caregiver to this child?

No

Yes

Which of the following best describes your ethnicity?

Hispanic or Latino

Not Hispanic or Latino

Which of the following categories best describes your race? (check all that apply)

White

Black or African American

American Indian or Alaska Native

Asian

Native Hawaiian or Pacific Islander

Other \_\_\_\_\_

Please list the members of your family. These are the people that have lived in your home at any point throughout the pandemic to now, including yourself and the participating child. Please note their relationship to the target child and their age. (e.g. Mother, 45. Brother, 9.)

For the remainder of the survey, when you see "family", we are referring to these people.

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What is your level of education?

Completed middle school

Some high school

High school diploma

Some college

Associate's degree

Bachelor's Degree

Some graduate school

Professional degree (Masters or Doctorate)

If the target child has another primary caregiver, what is their level of education?

There are no other primary caregivers

Completed middle school

Some high school

High school diploma

Some college

Associate's degree

Bachelor's Degree

Some graduate school

Professional degree (Masters or Doctorate)

Which of the following describes your employment status over the course of the pandemic to now? (check all that apply)

Student

Retired

Owning a business that still opens

Owning a business that has been shut down due to the pandemic

Working from home

Working away from home

Self-employed but out of work

Furloughed

Laid off

Taking a break from work

Full time

Part time

Other \_\_\_\_\_

When talking about the COVID-19 pandemic with the target child, we usually referred to it as...

The pandemic

COVID

Other \_\_\_\_\_

We didn't talk about it

## Appendix C

### Direct and Indirect perceptions of Stress

Adapted from the Perceived Coronavirus Threat Questionnaire (short), the Coronavirus Impacts Questionnaire (short) (Conway et al., 2020) and the Oslo Social Support Scale (Kocalevent et al., 2018).

“Please keep in mind that we are interested in the changes you experienced throughout the COVID-19 pandemic. Therefore, as you answer the following questions please report on how your life is today and compare it to how it has been since the start of the pandemic.”

Much less	A little less	About the same	A little more	Much more
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1. Compared to the start of the COVID-19 pandemic, thinking about the coronavirus (COVID-19) makes me feel \_\_\_\_\_threatened today.
2. Compared to the start of the COVID-19 pandemic, I am \_\_\_\_\_ afraid of the coronavirus (COVID-19) today.
3. Compared to the start of the COVID-19 pandemic, I am \_\_\_\_\_stressed around other people because I worry I’ll catch the coronavirus (COVID-19) today.
4. Compared to the start of the COVID-19 pandemic, the Coronavirus (COVID-19) is impacting me negatively from a financial point of view \_\_\_\_\_today.
5. Compared to the start of the COVID-19 pandemic, today I have loss of income due to the Coronavirus (COVID-19) \_\_\_\_\_ today.

6. Compared to the start of the COVID-19 pandemic, I have a hard time getting needed resources (food, toilet paper) due to the Coronavirus (COVID-19) \_\_\_\_\_ today.
7. Compared to the start of the COVID-19 pandemic, it is difficult for me to get the things I need due to the Coronavirus (COVID-19) \_\_\_\_\_ today.
8. Compared to the start of the COVID-19 pandemic, I am depressed because of the Coronavirus (COVID-19) \_\_\_\_\_ today.
9. Compared to the start of the COVID-19 pandemic, the Coronavirus (COVID-19) outbreak is impacting my psychological health negatively \_\_\_\_\_ today.
10. Compared to the start of the COVID-19 pandemic, today I am \_\_\_\_\_ close with others and feel that I can count on them if I have great personal problems.
11. Compared to the start of the COVID-19 pandemic, people today show \_\_\_\_\_ interest and concern in what I do.
12. Compared to the start of the COVID-19 pandemic, today I could easily get help \_\_\_\_\_ from friends/family if I should need it.

## Appendix D

### Reactions to Stress

Adapted from the Parental Stress Scale (Berry & Jones, 1995).

“Please keep in mind that we are interested in the changes you experienced throughout the COVID-19 pandemic. Therefore, as you answer the following questions please report on how your life is today and compare it to how it has been since the start of the pandemic.”

Much less	A little less	About the same	A little more	Much more
-----------	---------------	----------------	---------------	-----------

1. Compared to the start of the COVID-19 pandemic, today I am \_\_\_\_\_ happy in my role as a caregiver.
2. Compared to the start of the COVID-19 pandemic, today there is \_\_\_\_\_ I would do for my child(ren) if it was necessary.
3. Compared to the start of the COVID-19 pandemic, today I feel that caring for my child(ren) takes \_\_\_\_\_ time and energy than I have to give. \*
4. Compared to the start of the COVID-19 pandemic, today I worry \_\_\_\_\_ whether I am doing enough for my child(ren).
5. Compared to the start of the COVID-19 pandemic, today I feel \_\_\_\_\_ close to my child(ren).
6. Compared to the start of the COVID-19 pandemic, today I enjoy spending time with my child(ren) \_\_\_\_\_.

7. Compared to the start of the COVID-19 pandemic, today my child(ren) is (are) a \_\_\_\_\_ important source of affection for me.
8. Compared to the start of the COVID-19 pandemic, today having children gives me a \_\_\_\_\_ certain and optimistic view for the future.
9. Compared to the start of the COVID-19 pandemic, today my child(ren) are a \_\_\_\_\_ significant source of stress in my life. \*
10. Compared to the start of the COVID-19 pandemic, today having children leaves \_\_\_\_\_ time and flexibility in my life.
11. Compared to the start of the COVID-19 pandemic, today having children has been a \_\_\_\_\_ significant financial burden. \*
12. Compared to the start of the COVID-19 pandemic, today it has been \_\_\_\_\_ difficult to balance different responsibilities because of my child(ren). \*
13. Compared to the start of the COVID-19 pandemic, today the behavior of my child(ren) is \_\_\_\_\_ embarrassing or stressful to me. \*
14. Compared to the start of the COVID-19 pandemic, today I feel \_\_\_\_\_ overwhelmed by the responsibility of being a parent. \*
15. Compared to the start of the COVID-19 pandemic, today I feel my children have limited the choices and control I have over my life \_\_\_\_\_. \*
16. Compared to the start of the COVID-19 pandemic, today I am \_\_\_\_\_ satisfied as a caregiver.
17. Compared to the start of the COVID-19 pandemic, today I find my child(ren) \_\_\_\_\_ enjoyable.

## Appendix E

### Daily Routines

Family routines inventory (Jensen et al., 1983)

“Please keep in mind that we are interested in the changes you experienced throughout the COVID-19 pandemic. Therefore, as you answer the following questions please report on how your life is today and compare it to how it has been since the start of the pandemic.”

Please answer the following questions based on how consistently you or your family are able to engage in the following behaviors today, as compared to the start of the COVID-19 pandemic.

Answer these questions to the best of your ability.

Much less	A little less	About the same	A little more	Much more
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1. Caregiver(s) have some time each day for just talking with their children.
2. There are certain things we do every morning while getting ready to start the day.
3. Caregiver(s) have regular play time with the children after coming home from work.
4. Caregiver(s) takes care of the children some time almost every day.
5. Children do the same things each morning as soon as they wake up.
6. Family plays together some time each day.
7. Family does something together outside the home almost every day (e.g., shopping, walking, etc.)
8. Family has a “quiet time” each evening when everyone talks or plays quietly.

9. Family goes some place special together each week.
10. Family has certain "family time" each week when they do things together at home.
11. Caregiver(s) read or tell stories to the children almost every day.
12. Each child has some time each day for playing alone.
13. Children take part in regular activities after school.
14. Young children go to day care the same days each week.
15. Children do their homework at the same time each day or night during the week.
16. We have a certain hobby or sport we do together regularly.
17. Children have special things they do or ask for each night at bedtime (e.g., a story, a good-night kiss, a drink of water).
18. Children go to bed at the same time almost every night.
19. Dinner takes place at a certain time each night.
20. At least some of the family eats breakfast together almost every morning.
21. Whole family eats dinner together almost every night.
22. At least one caregiver talks to his or her parents regularly.
23. Family regularly visits with the relatives.
24. Family checks in or out with each other when someone leaves or comes home.
25. Caregiver(s) comes home from work at the same time each day.
26. Family has certain things they almost always do to greet caregiver(s) at the end of the day.
27. Family has certain things they almost always do each time the children get out of line.
28. Children do regular household chores.

## Appendix F

Child interview

Practice questions

Set one:

1. I brush my teeth every morning – acceptable answer: 3
2. I brush my teeth every night – acceptable answer: 3/2
3. Dinner is the last meal I eat everyday – acceptable answer: 3
4. I put on shoes when I leave the house – acceptable answer: 3
5. I drive my parents' car to school – acceptable answer: 0

Set two: (ONLY IF THEY DO NOT ANSWER 4/5 CORRECT ON SET ONE)

1. I close the door when I use the bathroom – acceptable answer: 3
2. I eat breakfast in the morning – acceptable answer: 3/2
3. I wear a seatbelt in the car – acceptable answer: 3
4. I go to sleep before midnight – acceptable answer: 3/2
5. I drink coffee in the morning – acceptable answer: 0

If they scored 4/5 correct on either of the practice sets, proceed to the study questions.

If children did not pass the practice question section read debriefing form.

Relationship quality

Inspired by the Relationship Assessment Scale (Hendrick, 1988).

1. How often do you and your sibling(s) get along?
2. How often do you like to be with your sibling(s)?
3. Do you ever feel like you get along better with friends than you do with your sibling(s)?\*
4. How often do you not want to play with your sibling(s)? \*
5. Do you love your sibling(s)?
6. How often do you have problems or fights with your sibling(s)? \*
7. Do you have fun when you're playing with your sibling(s)?

Type of play

1. I play with my sibling(s). \*
2. I play with my friends.
3. I play by myself. \*
4. I have regular activities after school with friends.
5. My family has a "quiet time" when everyone plays quietly. \*
6. My parent(s) reads or tell stories to me.
7. I have some time every day for playing alone. \*
8. I have regular activities after school with my sibling(s). \*
9. My parent(s) play with me every day.
10. My sibling(s) play with me every day. \*

\* items indicate free play, others indicate guided play.

### Open-ended questions

1. When you play with your sibling(s) what do you normally play?

What kind (of board/video games)?

What sorts of things do you do when (you play house/you play outside)?

2. What was something you liked doing with your sibling(s) throughout [the pandemic]?

Why did you like doing that?

3. How do you think [the pandemic] would've been different if you didn't have a sibling(s)?

Why do you think it would've been (boring)?

## Appendix G

### Child open-ended responses

When you play with your sibling(s) what do you normally play?
Wrestle
Board games- chess, checkers, Candyland, Frozen. Dolls- American Girls. Online games.
We play imaginary games, but also rough games- like pillow fights and wrestling
Dance, sing
Normally play with his sisters dollhouse, they trade furniture for the rooms, and add new furniture, and convert rooms into other rooms.
Board games like Life, or during winter they play Spikeball downstairs in the basement, or other times they go outside and play sports.
What was something you liked doing with your sibling(s) throughout [the pandemic]?
Hiking- its very easily accessible. Video games- playing video games is fun.
Drawing, going outside- they have a playground in the backyard.
We did a lot of roleplaying, that was really fun. We both have almost the same ideas, but when we put them together they make a really good story.
Being near them, knowing they are there, getting closer with them
They curl up on the couch and read a book, he liked doing this because there's a book he really likes and the couch is really comfy

Similar to what he already said (response to Q1). They would play outside, they didn't have Spikeball until after Christmas, so they would color, go to sister's house. Play Spikeball because it was something to do, they are both competitive. His sister has a son, who he liked to play with.

How do you think [the pandemic] would've been different if you didn't have a sibling(s)?

Wouldn't have had as many things to do. Would have done less social activities because there weren't many other people.

Plain, been more bored, have less things to do, dull, no company, may feel alone, wouldn't be as much fun on her own, she doesn't have as much fun with her dog as she does with her siblings.

I think it would be worse because I wouldn't have anyone to play with during that hard time when I couldn't see anybody.

Lonely- because her parents and friends were busy

Would have been harder because there would have been no other children to play with, because children and parents often have different views on the world.

Wouldn't have had anything to do, well, he has a trampoline and stuff but he wouldn't be able to play Spikeball, he wouldn't have anything to do with someone.

## Appendix H



December 7<sup>th</sup>, 2021

Amy Joh, Ph.D.  
Seton Hall University

Re: Study ID# 2022-266

Dr. Joh,

The Research Ethics Committee of the Seton Hall University Institutional Review Board reviewed and approved your research proposal entitled “Sibling play and family dynamics during the COVID-19 pandemic” as resubmitted. This memo serves as official notice of the aforementioned study’s approval as exempt. Enclosed for your records are the stamped original Consent Form and recruitment flyer. You can make copies of these forms for your use.

The Institutional Review Board approval of your research is valid for a one-year period from the date of this letter. During this time, any changes to the research protocol, informed consent form or study team must be reviewed and approved by the IRB prior to their implementation.

You will receive a communication from the Institutional Review Board at least 1 month prior to your expiration date requesting that you submit an Annual Progress Report to keep the study active, or a Final Review of Human Subjects Research form to close the study. In all future correspondence with the Institutional Review Board, please reference the ID# listed above.

Thank you for your cooperation.

Sincerely,

Mara C. Podvey, PhD, OTR  
Associate Professor  
Co-Chair, Institutional Review Board

Phyllis Hansell, EdD, RN, DNAP, FAAN  
Professor  
Co-Chair, Institutional Review Board

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