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# Parent and Child Anxiety Evaluated During an Early Period of the COVID-19 Pandemic: A Mixed-Methods Study

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<b>Purpose</b>	The objective of this study was to explore parent and child anxiety during the pandemic. Unlike previous pandemics, measures implemented to prevent the transmission of the SARS-CoV-2 virus have been much more limiting.
<b>Methods</b>	An explanatory convergent mixed-methods design was used to describe anxiety of children 9–17 years of age and their parents during August–October 2020. Adult and child versions of State-Trait Anxiety Inventory (STAI) were used to examine levels as measured on STAI's state-anxiety subscale. Web-based interviews with a subset of patients were conducted qualitatively to analyze anxiety-related themes.
<b>Results</b>	A total of 188 parents and 140 children responded to the questionnaires. Mean overall anxiety scores for parents (49.17 [standard deviation: 12.247]) and children (35.43 [standard deviation: 7.894]) were higher than published norms. Parent and child anxiety were positively correlated ( $r=0.36$ ; $P=0.01$ ). From interviews with 11 parents and 11 children; 4 major themes and 10 subthemes describing physical and emotional outcomes resulting from limited social contact, work and family role strain, and uncertainty about COVID-19 were identified.
<b>Conclusions</b>	Parents and children reported elevated anxiety levels during the COVID-19 pandemic. Findings of this study can guide the development of strategies that mitigate the negative impact of isolation, role strain, and uncertainty related to future public health crises. ( <i>J Patient Cent Res Rev.</i> 2022;9:272-281.)
<b>Keywords</b>	anxiety; family; child; COVID-19; pandemic

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The COVID-19 pandemic has affected family life, resulting in significant changes in daily living and role structures.<sup>1-5</sup> Families have experienced death, illness, loss of opportunities, and social isolation.<sup>6</sup> Restrictions intended to prevent viral transmission impacted the family's psychological and psychosocial well-being.<sup>5,7</sup> Researchers have highlighted anxiety and an increased need for mental health services as a consequence of mitigation strategies among the general population, children, and adolescents.<sup>8-12</sup>

Anxiety is defined as “an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure.”<sup>13</sup> The long-term effect of the pandemic on families is unknown; however, exploring the early changes is critical to understanding the full effect over time. The overall objective of this study was to add to

the body of research describing impact of the COVID-19 pandemic on family processes by exploring anxiety among parents and their children early in the pandemic. This knowledge is essential to addressing family needs so that current and future targeted supportive strategies can be developed. The study's specific aim was to examine the anxiety levels of parents and their 9- to 17-year-old children and to identify experiences that may contribute to anxiety.

The Family Adjustment and Adaptation Response (FAAR) model<sup>14</sup> guided this study, as it depicts the experience of a family in crisis in terms of the meaning assigned to the context, the demands of the current situation and daily family life, and the capabilities or resources the family uses to cope. Families move through cycles of adjustment, eventually leading to adaptation.<sup>14</sup>

## METHODS

This study was conducted using an explanatory, convergent mixed-methods design<sup>15</sup> to describe the social and emotional experience of children and their parents during the COVID-19 pandemic. This approach was used

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due to the limited understanding of the possible sources of anxiety during the early period of the pandemic. Two phases of data collection were conducted to 1) understand the levels of anxiety among parents and children, and 2) describe anxiety with an overall impression of the experience. Data from the quantitative and qualitative phases were integrated during analysis (Figure 1).

After institutional review board approval was obtained, English-speaking parents and children 9–17 years old were recruited from across the United States via social media platforms such as Facebook, Instagram, and Twitter. The study flyer was posted on national and regional parent groups by the research team. Institutions affiliated with the research team also shared the study flyer through institutional social media accounts. During the study period of August–October 2020, interested individuals were instructed to click on a link or scan a QR code to be directed to the screening questionnaire and consent form. Consent was obtained electronically. Interviews also were conducted between August and October in 2020.

### Quantitative Data Collection

Study data were collected and managed using REDCap, an electronic data capture tool. Parents were instructed to complete the questionnaires first, followed by the child.

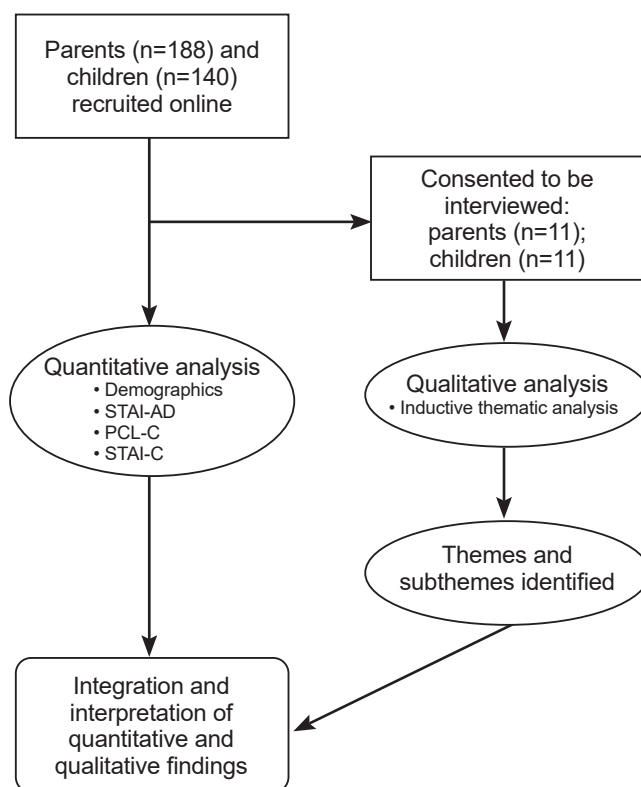
**Demographics.** Participant information, including parent/child age, race/ethnicity, marital status, education, income, employment, and pandemic-related mandates, was collected from the parent (Table 1).

**State-Trait Anxiety Inventory.** Parents' anxiety was measured using the state-anxiety subscale of the State-Trait Anxiety Inventory (STAI).<sup>16</sup> The subscale comprises 20 items measuring anxiety using a 4-point Likert scale. Total scores on the subscale range from 20 to 60, with higher scores indicating higher levels of state anxiety. Cronbach's alpha in previous studies ranged from 0.86 to 0.95. Reliability in this study was 0.94.

**State-Trait Anxiety Inventory for Children.** Children's anxiety was measured using the state-anxiety subscale of the State-Trait Anxiety Inventory for Children (STAI-C). The subscale comprises 20 items using a 3-point Likert scale. Estimates of Cronbach's alpha for STAI-C are 0.82 for males and 0.87 for females.<sup>16</sup> Reliability in this study was 0.93.

### Qualitative Data Collection

Participants who indicated an interest in being interviewed were contacted after completing the questionnaires. All interviews were conducted by 2 researchers (D.A. and K.M.A.) using a web-conference platform, audio-



**Figure 1.** Recruitment and data integration. STAI-AD, State-Trait Anxiety Inventory for Adults; STAI-C, State-Trait Anxiety Inventory for Children; PCL-C, Posttraumatic Stress Disorder Checklist – Civilian.

recorded, and transcribed by a professional transcription service. Interviews lasted 45–60 minutes. An interview guide (Table 1) based on the FAAR model<sup>14</sup> as well as initial findings from the study's quantitative phase was used when administering the semi-structured interviews. Probing questions were generated as the interviews progressed.

Parents and children were interviewed together unless a parent was unavailable or if parents chose for their child not to participate in the study. With parental consent, 2 siblings were interviewed together without their parents; 1 parent and 1 grandmother who was a legal guardian were interviewed without their children.

### Quantitative Data Analysis

Quantitative data were analyzed using SPSS® Statistics 26 software (IBM Corp.). Descriptive statistics were calculated for demographic variables and instrument scores. Instrument reliability was assessed using Cronbach's alpha. Correlations between parent and child state-anxiety scores were analyzed using the Pearson

**Table 1.** Interview Guide With Probing Questions

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- 1. Parent & child: Tell me about what you and your family know about COVID-19 or Coronavirus.**
    - a. Where did you hear this information from?
    - b. What does this mean to you and your family?
    - c. How does your family talk about COVID19, coronavirus, or the pandemic?
    - d. Has anyone you know had or have COVID 19 or coronavirus?
      - Tell me about that.
  - 2. Parent & child: Tell me about what's changed for your family since the pandemic began.**
    - a. Tell me about how your family has managed the mandates (for example, lockdown, isolation, quarantine, stay-at-home orders, school closures).
    - b. Child only: What do you know about why schools are closed?
    - c. Tell me about what it's like to be at home (and not be in school or work)?
    - d. How have each of your responsibilities at home changed?
    - e. What else have you stopped doing since the pandemic began?
    - f. How have your emotions or feelings been affected by these changes?
    - g. How have you managed these emotions or feelings?
    - h. Has your family needed help from other people since the pandemic began? How so?
    - i. What other resources have you used during this time?
  - 3. Parent & child: How do you think things have changed for other people in your family?**
    - a. What worries you about the changes in your family?
    - b. How does your family manage all of these changes?
  - 4. Parent & child: Do you have any worries or concerns about the COVID-19 pandemic?**
    - a. Do you have any questions about what's happening during this time?
    - b. What has been the biggest challenge for each of you during this time?
- 

correlation coefficient. Sample mean instrument scores were compared with published mean scores via the 1-sample *t*-test. Significance level was set a priori at  $P \leq 0.05$ .

### Qualitative Data Analysis

Qualitative data were managed using Atlas.ti Version 9.0 software (ATLAS.ti Scientific Software Development GmbH). All transcripts were verified by researchers D.A. and K.M.A. for accuracy. A codebook was developed after 3 interviews and reviewed with the research team before proceeding with subsequent transcripts. The research team reviewed the codebook regularly to discuss conflicts and to reach a consensus on discrepant codes. Two cycles of inductive thematic analysis of the transcripts were performed until meaningful themes in accordance with the study's aim were identified. Triangulation of data was achieved through multiple rounds of peer debriefing, analytic memos, and thick descriptions.

## RESULTS

A total of 188 parents and 140 children ranging in age from 9 to 17 years completed the questionnaire (Table 2). A majority of parent participants were living in Texas (78%), female (95.7%), White (65.8%), married or living with a partner (91.4%), with a bachelor or graduate degree (81.9%), working full-time (67.6%), and with an annual household income of at least \$100,000 (63.1%).

Most children (81.4%) attended school in person before the pandemic; 59.1% ( $n=127$ ) of families experienced school closure, and 80.5% ( $n=173$ ) were mandated to wear masks when in public.

Researchers subsequently interviewed 11 parents and 11 children. All of these parents were female, and 82% of the children were female. Average age among the parents was 42.8 years (range: 31–62), and the average age among the children was 11.5 years (range: 9–17). Of the 11 parents interviewed, 3 worked with someone who had COVID-19 and 1 had a close relative or friend who had died as a result of COVID-19.

Parent anxiety (mean: 49.17, standard deviation: 12.247) was higher than published norms (mean: 35.2);<sup>16</sup>  $P < 0.001$  (Table 3). As the parent sample was 96% female ( $n=180$ ), findings were compared with published norms for adult females. Among child participants, 49% were male (47% female); as this makeup was similar to published STAI norm means, the lower mean was selected to compare with the sample. Child anxiety (mean: 35.43, standard deviation: 7.894) also was higher than published norms (mean: 30.7);<sup>16</sup>  $P < 0.001$ . Parent state-anxiety and child state-anxiety were positively correlated ( $r=0.36$ ;  $P=0.01$ ).

Qualitative analysis revealed 4 major themes: 1) emotional rollercoaster; 2) role strain; 3) physical impact; and 4) stress

**Table 2.** Characteristics of the Questionnaire-Taking Sample (N=328)

Characteristic	Parent, n (%) or mean (SD, R)	Child, n (%) or mean (SD, R)
Age in years (parent n=184; child n=140)	42 (5.5, 28–62)	12 (2.5, 9–17)
Gender (parent n=188; child n=139)		
Female	180 (95.7)	65 (46.8)
Male	7 (3.7)	68 (48.9)
Prefer not to say	1 (0.5)	6 (4.3)
Race/Ethnicity (n=188)		
White	127 (65.8)	
Hispanic/Latinx	25 (13.0)	
Asian	22 (11.4)	
Black/African American	14 (7.3)	
Native American	3 (1.6)	
Prefer not to say	2 (1.0)	
Marital status (n=187)		
Married or living with partner	171 (91.4)	
Divorced	8 (4.3)	
Single, not married	4 (2.1)	
Separated	1 (0.5)	
Widowed	1 (0.5)	
Prefer not to say	2 (1.1)	
Level of education (n=188)		
Less than high school diploma	1 (0.5)	
High school	3 (1.6)	
Some college	28 (14.9)	
Bachelor's degree	76 (40.4)	
Graduate degree	78 (41.5)	
Prefer not to say	2 (1.1)	
Employment status (n=188)		
Full time	127 (67.6)	
Part-time	14 (7.4)	
Unemployed, looking for work	5 (2.7)	
Unemployed, not looking for work	3 (1.6)	
Unemployed, working as homemaker	24 (12.8)	
Self-employed	9 (4.8)	
Unable to work	3 (1.6)	
Prefer not to say	3 (1.6)	
Annual household income (n=187)		
<\$50,000	13 (7.0)	
\$50,000–\$100,000	33 (17.6)	
\$100,000–\$150,000	40 (21.4)	
>150,000	78 (41.7)	
Prefer not to say	23 (12.3)	
Health care provider (n=188)		
Yes	70 (37.2)	
No	118 (62.8)	

R, range; SD, standard deviation.

**Table 3.** Mean Parent and Child State-Anxiety Subscale Scores vs Published Norms

	Norm	Mean	SD	t	df	P*	95% CI
Parent (n=173)	35.2	49.17	12.247	15.000	172	<0.001	12.13–15.81
Child (n=116)	30.7	35.43	7.894	6.455	115	<0.001	3.28–6.18

\*P-value is two-tailed.

df, degrees of freedom; SD, standard deviation.

and anxiety management. Nested within these themes were 10 subthemes that illustrated parent and child responses related to anxiety-producing stressors and conditions.

### Emotional Rollercoaster

Participants described experiencing various emotions in response to COVID-19 and the associated prevention measures. Participants described “being on a rollercoaster” as they moved through feelings of uncertainty, inundation, fear, and frustration. One parent stated, “I’ve been up and down with my feelings, going through little bouts of sadness, and some days are good.” [parent, age 40].

**Uncertainty.** Parents and children described feelings of uncertainty about becoming infected. Participants attributed this uncertainty to constantly changing information about viral transmission and precautions. Despite their adherence to prevention measures, participants reported being anxious that their vigilance would not be enough to prevent infection. Parents became the primary source of pandemic-related information for their children. One parent described how information changed, “The age group that it was affecting was changing every time. Sometimes elderly people were more affected, then it was more children, and then it was more middle-aged people ... what to look for as symptoms ... changed drastically from the first to where we are now.” [parent, age unknown].

**Overwhelmed.** Parents felt overwhelmed with home and work responsibilities while trying to keep their families safe from infection. Responsibilities were described as “ongoing,” “continuous,” and “nonstop.” A parent described an overwhelming sense of responsibility, “I come home, and then I have to think about how to make sure my family is safe, taking care of my family when I’m already completely drained thinking about COVID at work.” [parent, age 36].

**Fear.** Parents and children discussed being afraid of becoming infected. They described being preoccupied with fear, especially during interactions with others

outside of their household. One child described his experience of going to a store, “... sometimes I see somebody that is not wearing their mask or just having it down by their chin, I can get worried and start to feel like what if they had it and they spread it, and then the person, they were not six feet apart.” [child, age 9].

**Frustration.** Participants described being frustrated with those who chose not to follow public health guidance, with having their lives disrupted by the pandemic, and with officials for their slow response to the apparent threat. A parent who was socially active before the pandemic described their frustration, “It is frustrating. I had a lot of anger and some crying at the very beginning of all this when I just hadn’t adjusted. I like to have a routine and a schedule, and so when all of it went away overnight, that was hard for me to deal with.” [parent, age 47].

A child shared, “... people should understand better that this whole thing is going on, that for their safety and for the world’s safety that they should be following the orders.” [child, age 9].

### Role Strain

Participants struggled to maintain their responsibilities and relationships at home, work, and school. School closures resulted in increased responsibilities, shifts in roles at home and work, and social isolation.

**Parental strain.** When schools and workplaces were closed, parents assumed the role of the teacher in addition to their jobs. Parents found themselves navigating unfamiliar learning platforms, expressing frustration in balancing their children’s online learning with full-time work. “It was really on the fly. We had to figure out how to do it, schoolwork in the spring was a joke. It was just harp on her to get the work done and I did my work as best I could ... it was really frustrating.” [parent, age 47]. “Some days I’m in tears because I’m trying to work on a call and trying to homeschool them in the beginning, trying to get them logged into all of their stuff ... it’s been really stressful.” [parent, age 40].

**Relationships.** Being unable to leave the house disrupted regular activities and interactions with extended family. “... we always go in the spring, and we helped my grandfather plant tomatoes, and we didn’t get to do that. We don’t know how long they’re going to be around. This whole thing completely disrupted that.” [parent, age 40].

Tension arose between family members with divergent beliefs about the pandemic. Parents shared that they avoided discussions about the pandemic and visits with extended family members to avoid conflict and maintain relationships.

### Physical Impact

The fear of becoming infected impacted participants’ eating habits, physical activity levels, and sleep patterns. Eating habits were described as unhealthy with frequent snacking. Some parents reported drinking more alcohol than usual. Physical activity decreased for the participants. A parent described how walking became scary, “I used to like to go walking ... but now it’s kind of scary because I don’t know if everybody outside is going to have a mask. Now we take the kids to the park, and we’re even scared of that. We don’t even want them to get on anything.” [parent, age 45].

A child described having difficulty sleeping, “One time I was scared and it was one o’clock in the morning, and I didn’t go back to sleep until three ... my heart was pumping, and I kept looking around because I was scared, I just couldn’t go to sleep.” [child, age 9].

### Managing Stress And Anxiety

Parents and children used personal and external sources of support to manage stressors. Coping strategies fit into 4 main categories: staying active; practicing mindfulness; staying connected; and engaging in spirituality.

**Staying active.** Child participants used play to stay active and connected. A child shared, “... with my sister, sometimes we watch movies and we play with our pets. We have a hamster and a dog, so we like to go outside and play with them. We play basketball. We ride our bikes. We do a bunch of crafts. We’re just doing things to stay busy and have fun.” [child, age 12].

**Practicing mindfulness.** A child described how meditation helped them fall asleep, “I look at the sun rising. I see like the little blue, and then I think about the sun rising and it looks really beautiful in my head. I try to picture it in my mind and try to fall asleep.” [child, age 9]. When asked about how they manage their worries, another child responded, “I like to imagine myself in like a book or a movie as the main character who always survives in the end.” [child, age 11].

**Staying connected.** Connecting via social media and gaming platforms was described by parents and children as a way to feel less isolated. Parents attended virtual gatherings, while children played games with their friends who were at their own homes. A child described how they stayed connected, “I have this app where I can talk to my friends ... I try to talk to my friends at least once or twice a day to catch up with them and see how they’re doing.” [child, age 11].

**Engaging in spirituality.** Participants described praying and going to church in person or virtually as a way to connect with friends and spiritual care providers, and to make sense of their situation. One child discussed how attending church helped ease their worries, “I like to do it because it gives me something to look forward to during the week ... my church leader just talks to me and makes me feel better. ... It makes me feel better when I read the Bible and go to church.” [child, age 12].

## DISCUSSION

This mixed-methods exploration of the anxiety experienced by parents and children during the COVID-19 pandemic highlights the social and emotional consequences of the pandemic-related changes that were intended to prevent transmission of SARS-CoV-2, the virus that causes COVID-19. Elevated levels of state anxiety among parents and children in this sample relative to published norms for adult females and school-aged children were found. Interviews revealed the social and emotional implications of closing places that had been major sources of support for individuals and families. This study also highlighted the implications of prolonged lockdowns for relationships; differing beliefs about the pandemic were a source of frustration and division in several families. Positive changes related to prolonged isolation were identified.

Early in the pandemic, studies about the potential psychosocial and psychological impacts on families emerged. Previous researchers found that children and adults experienced mental health problems, including anxiety, when lockdowns and social distancing measures were implemented.<sup>17</sup> At the time of this study, COVID-19 was novel and little information was known about transmissibility, mortality, and long-term effects, which became a source of stress and anxiety for many. Vindegaard and Benros<sup>18</sup> found higher anxiety scores in the general population than before the pandemic. Other researchers reported prevalence rates of anxiety between 15% (95% CI: 12.29–18.54)<sup>9</sup> and 32% (95% CI: 27.5–36.7).<sup>19</sup> Internationally, children and adolescents had clinically significant symptoms of anxiety,<sup>20-24</sup> with children who closely follow the news

having higher odds of state anxiety (odds ratio: 2.41, 95% CI: 1.10–6.70).<sup>20</sup>

A weak positive, but statistically significant, correlation between parent and child anxiety was found in our study, suggesting that although a relationship exists between parent and child anxiety in the sample, variables that may influence levels of anxiety among parents and children may differ. Other researchers who have studied parent and child responses to the COVID-19 pandemic have reported similar findings.<sup>25,26</sup> Spinelli et al explored individual and dyadic perceptions of stress among parents and children and found that parent perceptions of stressors mediated the child's behavioral and emotional problems.<sup>25</sup> Similarly, Robertson et al found that caregiver stress regarding pandemic-related changes led to increases in child behavioral and emotional problems.<sup>26</sup> Although further analysis of the correlation between parent and child anxiety was not conducted in this study, qualitative data suggest that children witnessed their parents' reactions to pandemic-related stressors.

Major places of gathering were closed at the beginning of the pandemic to prevent transmission of SARS-CoV-2. Closures of places where families access supportive resources may have influenced mental health outcomes.<sup>2,27,28</sup> The interruption of school-based health, social, and spiritual services may have affected protective social connections, further contributing to the development of mental health problems, including anxiety.<sup>29</sup> At the time of data collection, studies that aimed to assess the impact of stay-at-home orders and closures were emerging. Researchers found that stay-at-home orders and the perceived impact of the pandemic were associated with greater health anxiety<sup>30</sup> and parent-reported anxiety among children and adolescents.<sup>31</sup> Recognizing the importance of the school system for children's well-being, researchers studied the impact of school closures on COVID-19 hospitalizations and transmission rates.<sup>27,32,33</sup> Walsh and colleagues' earlier review found that school closures did not affect transmission, and school re-openings did not increase incidence rates.<sup>33</sup> A later review reported similar findings, suggesting that schools can remain open if appropriate prevention measures are adopted by policymakers.<sup>34</sup> Measures that reduce the opportunity for contacts, make contacts with others safer, and surveillance and response measures have been found to reduce transmission within schools.<sup>35</sup> Given these findings, the influence of social connections on the well-being of families should be considered when implementing future closures.<sup>27,36</sup>

Public disregard for mitigation measures was a source of frustration and stress for participants in the study. At the time of data collection, differing opinions about the

pandemic and its associated preventive measures divided the country.<sup>37,38</sup> Despite overwhelming scientific evidence, many local and state leaders balked at federal guidance, and media reports further polarized the public. Social media was inundated with inaccurate and unverified information.<sup>39</sup> Parents in the current study attributed the country's division to the assertion of personal freedoms and the right to choose preventive measures, and the politicization of a public health crisis.<sup>40</sup>

Families had been confined to their homes for approximately 3 months during data collection. Had this study been conducted earlier when adherence and support may have been higher, frustration and anxiety may have been lower in our sample. In April 2020, at the beginning of U.S. government-led mandates, researchers<sup>41</sup> sought to understand the public's adherence to and support of mitigation measures in nations with different SARS-CoV-2 infection and death rates. They found high adherence (81.8%, N=4560) across all countries regardless of infection and death rates. Despite the disruption to participants' daily lives, support for the continuation of mitigation measures was high (90.1%, N=5022).<sup>41</sup> One month after their study ended, researchers noted public nonadherence and willful disregard of mitigation measures.<sup>41</sup>

Participants in our study described positive changes that occurred as a result of their experiences during the pandemic. Parents and children described practicing mindfulness techniques, journaling, and gaining new perspectives about living in a postpandemic world. Other authors who studied posttraumatic growth (PTG) in various populations have reported similar findings.<sup>42,43</sup> Posttraumatic growth is defined as positive cognitive, emotional, or behavioral changes that occur after experiencing a major stressor or crisis; individuals who experience posttraumatic growth develop new perspectives and behaviors that help them to function in a new environment.<sup>44</sup> The definition of trauma is controversial, but Tedeschi et al assert that an actual violent or accidental event need not occur for an individual to have a traumatic experience.<sup>44</sup> While the experiences of parents and children in this sample do not fit the definition of posttraumatic stress disorder,<sup>44</sup> the COVID-19 pandemic may be considered a traumatic event or major life event, as it threatens harm to individuals and can cause fear and terror.<sup>45,46</sup>

### Study Limitations

This study had several limitations warranting discussion. Convenience sampling of interview participants led to the oversampling of female, White, economically advantaged, and well-educated families from Texas. Different perspectives may have been gleaned from



fathers, individuals with variable income and education, and families from other states. Racial and ethnic minority groups that have been disproportionately affected by the pandemic were not well-represented. It is possible that anxiety levels would be higher among these groups, and their experiences with online education, employment status, and access to health and social resources may have added to this study's findings. It is also possible that anxiety levels may vary depending on geographical area. At the time of the study, there were federal-level prevention mandates and additional measures that varied by state. A mostly female and well-educated sample may have skewed our results. Being female has been associated with intention to adhere to public health measures,<sup>47</sup> and social determinants of health such as parent unemployment and apartment living have been found to be predictors of decreased likelihood of adherence.<sup>48</sup>

Anxiety levels and participant experiences may have been more pronounced had children been more impacted at the time of data collection. This study was conducted before the emergence of the COVID-19 delta variant in the United States, a period when children were generally spared from infection and severe illness. Finally, participant anxiety and experiences throughout the pandemic cannot be ascertained with cross-sectional data. Follow-up data are needed to understand family life throughout the different surges, stages of reopening, and levels of restrictions.

### Implications for Practice

Policymakers should carefully consider the impact of closing institutions from which families draw support. If necessary, evidence-based guidelines should be shared among all levels of government, educational, and industry sectors to ensure standardization and clarity.

The U.S. Department of Education Office of Safe and Supportive Schools has a central location for educational resources for families and professionals who wish to learn more about school emergency management and closures.<sup>49</sup> Resources from the National Association of School Psychologists and the National Association of School Nurses<sup>50</sup> also are available for families, educators, and clinicians; guidance for supporting children through a pandemic are provided in easy-to-read formats. On the U.S. Department of Health and Human Services Early Childhood Development website, resources developed for a range of audiences are available on topics such as social-emotional behavioral support and trauma. Adult caregivers should be offered support. The Substance Abuse and Mental Health Services Administration offers fact sheets and assistance with locating treatment centers during infectious disease outbreaks.<sup>51</sup>

Online education is unlikely to meet all of the needs of parents and children. Effective online education strategies need to be further developed and disseminated broadly. The National Academy of Sciences has developed a library of school-based strategies to assist professionals with promoting the mental health of children and adolescents in the post-pandemic era.<sup>52</sup> Current strategies used as alternatives to face-to-face instruction should be evaluated. Educators bear the responsibility of preparing parents and caregivers to provide the curriculum at home;<sup>53</sup> therefore, state-level education agencies must be prepared to fund online education.

### Implications for Research

The pandemic has lasted over 2 years and has affected all aspects of family life. Social and emotional issues among the family were evident early in the pandemic. Research is needed to assess how these concerns have evolved over the long term. Positive changes resulting from parents' and children's experiences during the pandemic should be studied to understand how to facilitate growth after future pandemics. Finally, since vaccines have become available for most groups, studies to understand how this intervention has impacted family views of health-related issues should be conducted.

## CONCLUSIONS

This study conducted early in the COVID-19 pandemic identified the emotional responses of parents and children. No one fully comprehended the true implications of the pandemic in terms of how families lived and interacted with each other and their social networks. Understanding early and long-term responses is key to developing potential interventions.

### Patient-Friendly Recap

- Onset of the COVID-19 pandemic in the United States uniquely altered family conditions for both parents and children.
- Based on data from 328 questionnaires (188 parents, 140 children), mean anxiety levels in mid-2020 were significantly elevated as compared to preestablished norms. Child anxiety modestly correlated to their parent's.
- Analysis of follow-up interviews with a small subset of participants found that anxiety was induced most commonly by limited social contact, strain from work and family roles, and uncertainty about COVID-19.
- These findings could help guide strategies to mitigate the negative impacts of isolation and uncertainty come future public health crises.

## Author Contributions

Study design: Abela, Acorda, LoBiondo-Wood. Data acquisition or analysis: all authors. Manuscript drafting: all authors. Critical revision: all authors.

## Conflicts of Interest

None.

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